Undergraduate Bulletin 1995•1997

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 national Higher Education General Information Survey (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 *Undergraduate Bulletin* are approved unless otherwise indicated.)

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, laboratory, or studio settings. It is not the total number of supported graduate students. The *estimated number of adjunct faculty* refers to temporary instructors whose names do not appear in the preceding faculty list.

Actuarial Science (complementary to degree program) 228

Africana Studies (Interdisciplinary Major), **2211, B.A.** (see also Minors) 79

American Sign Language (complementary to degree program) 160

Anatomical Sciences (complementary to degree program) 265

Anthropology, 2202, B.A. (see also Minors) 82

Applied Mathematics and Statistics, 1799, B.S. (see also Minors) 227

Arabic (complementary to degree program) 169

Art History and Criticism, 1003, B.A. (see also Minors) 87

Astronomy/Planetary Sciences, 1911, B.S. 113

Astrophysics (see Physics) 187

Atmospheric Sciences/Meteorology, 1913, B.S. 270

Bachelor's/Master's Degree Programs

- Applied Mathematics and Statistics 228
- Chemistry/Materials Science and Engineering 246
- Engineering Chemistry/Materials Science and Engineering 246
- Engineering Science/Marine Sciences 270
- Engineering Science/Materials Science and Engineering 246
- Geological Oceanography (Geology/Marine Sciences) 113, 270
- Physics/Materials Science and Engineering 246
- Political Science/Public Affairs 191

Biochemistry, 0414, B.S. 95

* **Biology, 0401, B.S.** (see also Minors) 96

Biomedical Engineering (complementary to degree program) 245

Biophysics (complementary to degree program) 266

Business Management, 0506, B.S. (see also Minors and Harriman School) 257

Certification (see Teacher Preparation)

* **Chemistry, 1905, B.A., B.S.** 102, 103

Child and Family Studies (Minor) 106

Chinese Studies (Minor) 106

Classical Civilization (Minor) 107

Classics and Classical Languages (complementary to degree program) 107

Comparative Studies in Literature (Interdisciplinary Major), **1503, B.A.** (see also Minors) 109

Computer Engineering (Major Concentration) 237

Computer Science, 0701, B.S. 232

Cytotechnology, 1223, B.S. (See also *Health Sciences Center Bulletin*) 262

Dance (Minor) 111

Dental Health (complementary to degree program) 264

Design (Minor) 88

Diversified Education Curriculum (general education program) 62

* **Earth and Space Sciences, 1999, B.A.** 113

East European Languages (complementary to degree program) 139

Economics, 2204, B.A. 117

Electrical Engineering, 0909, B.E. 236

Engineering Chemistry (Interdisciplinary Major), **1999, B.S.** 121

Engineering Science, 0901, B.E. 244

* **English, 1501, B.A.** (see also Minors) 122

English as a Second Language (complementary to degree program) 127

Enrichment Courses 74

Environmental Geoscience (major and minor concentration) 112

Environmental Science (Minor) 128

Federated Learning Communities 70

Foreign Languages

- Arabic 169
- Chinese 106
- French 130
- German 135
- Greek (Ancient) 108
- Hebrew 154
- Italian 130
- Japanese 152
- Korean 155
- Latin 108
- Polish 139
- Portuguese 140
- Russian 136
- Sanskrit 202
- Spanish 139
- Uncommonly Taught Languages 160

Foreign Languages Teacher Preparation 128

* **French Language and Literature, 1102, B.A.** (see also Minors) 131

Geological Oceanography 113

Geology, 1914, B.S. (see also Minors) 112

* **Germanic Languages and Literature, 1103, B.A.** (see also Minors) 135

Greek (see Classics and Classical Languages)

Health and Society (Minor) 265

Health Technology and Management (see also *Health Sciences Center Bulletin*) 264

Hebrew (complementary to degree program) 154

Hispanic Languages and Literature (see also Spanish, Foreign Languages) 139

History, 2205, B.A. (see also Minors) 143

Honors College (complementary to degree program) 68

Human Sexual and Gender Development (Minor, Langmuir Living/Learning Center) 148

Humanities (Interdisciplinary Major), **4999, B.A.** 149

Information Systems, 0702, B.S. 241

Interdisciplinary Courses (see Environmental Science, Humanities, Human Sexual and Gender Development, International Studies, Health and Society, Latin American and Caribbean Studies, Science and Engineering, Engineering Science, Women's Studies, Social Sciences, Enrichment Courses)

International Studies (Minor, Keller Living/Learning Center) 151

Internships (complementary to degree program) 73

* **Italian Language and Literature, 1104, B.A.** (see also Minors) 132

Japanese Studies (Minor) 152

Journalism (Minor) 153

Judaic Studies (Minor) 154

Korean Studies (Minor) 155

Undergraduate Bulletin 1995•1997

STATE UNIVERSITY OF NEW YORK AT STONY BROOK

Undergraduate Bulletin Volume XXIV

Press Date: March 1, 1995

The university represents that the information in this publication, which pertains to academic years 1995-96 and 1996-97, 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.

Equal Opportunity and Affirmative Action

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

Discrimination is unlawful. If you are a student or an employee of the University 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 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 noncompliance should be directed to:

Gary Matthews
Assistant to the President for
Diversity and Opportunity
Administration Building 474
University at Stony Brook
Stony Brook, NY 11794-0251
Telephone: 516-632-6280

The Americans with Disabilities Act (ADA), which became effective January 26, 1992, requires that individuals with disabilities be afforded equal opportunity in the areas of public services and programs, employment, transportation, and communications. Prior to this federal legislation, the University had been subject to similar provisions under Sections 503 and 504 of the Rehabilitation Act of 1973. In compliance with the ADA's broader definition of disabilities, the University makes concerted efforts to provide reasonable accommodation and access to services and programs.

For more information contact:
Sylvia Geoghegan
Assistant ADA Coordinator
Disabled Student Services
133 Humanities Building
University at Stony Brook
Stony Brook, NY 11794-5328
516-632-6748/9, V/TDD

Additional Information

For general information about undergraduate programs and/or application, please write or phone:

Office of Undergraduate Admissions
University at Stony Brook
Stony Brook, New York 11794-1901
516-632-6868
Fax 516-632-9027
TDD 516-632-6859

The general university telephone number is 516-689-6000.

This publication can be made available in alternative format upon request.

PUS 12 R 3-95

Contents

An Introduction to Stony Brook 5

Student Services 15

Admission 24

Financial Information 31

Scholarships and Awards 41

General Academic Information 46

University Studies 60

College of Arts and Sciences 75

College of Engineering and Applied Sciences 222

W. Averell Harriman School for Management and Policy 256

Health Sciences Center 261

Marine Sciences Research Center 268

Directories 273

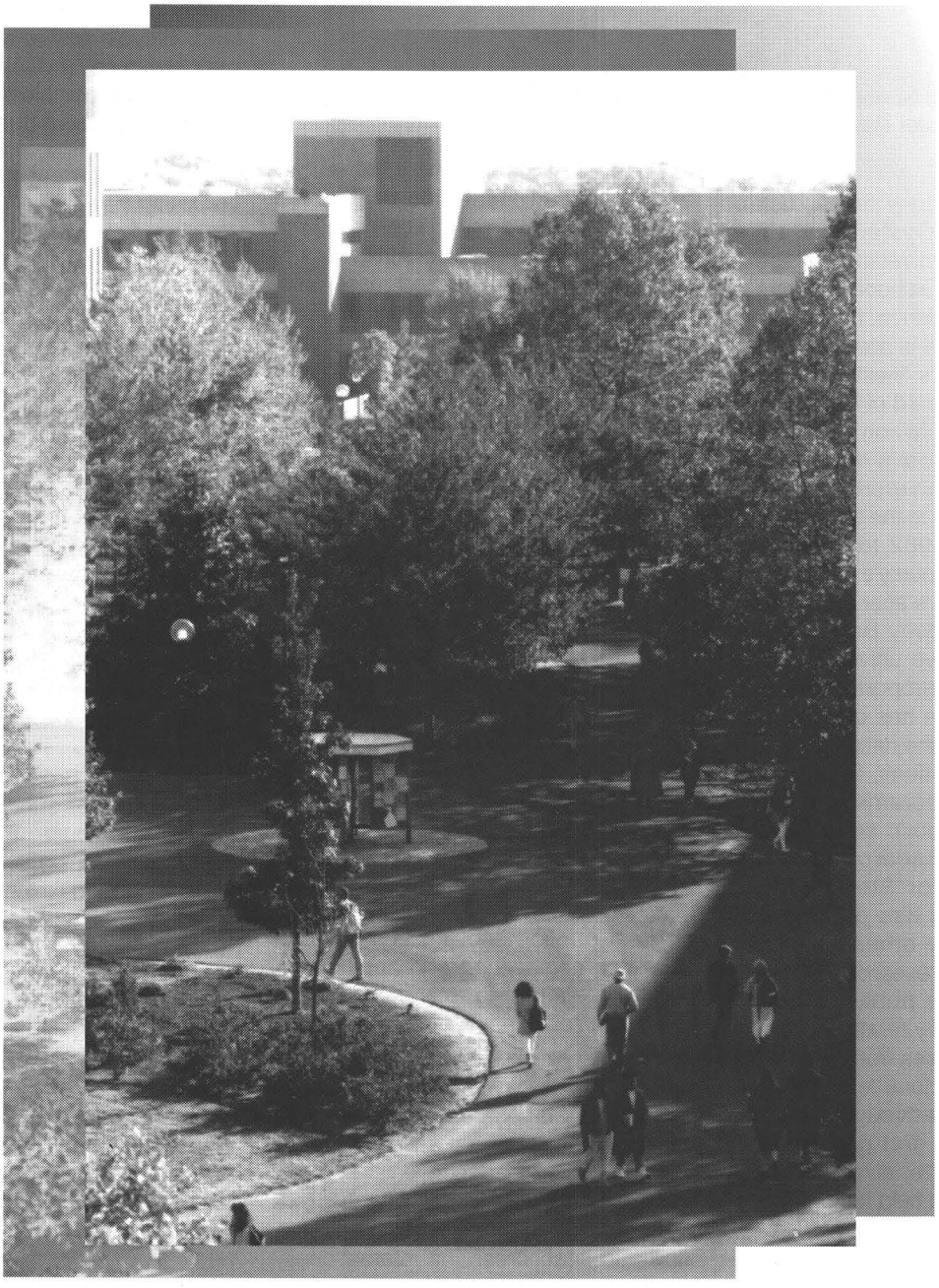
Index 281

Academic Calendar 286

Campus Map 287

Undergraduate Courses of Study ..... *Inside Front and Back Covers*

An Introduction to Stony Brook



The University's Oyster Bay campus, 1957

Background

The University at Stony Brook, established in 1957 at Oyster Bay, Long Island as a State University college to prepare secondary school teachers of mathematics and science, has grown at a prodigious rate and is now recognized as one of the nation's finest universities. 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." The school moved in 1962 to its present location on Suffolk County's north shore.

Now, only 38 years after its founding, the University at Stony Brook is New York's comprehensive university center for the downstate metropolitan area. The Carnegie Foundation has classified the University as one of the nation's 70 leading research institutions. Stony Brook offers excellent programs in a broad spectrum of academic subjects and conducts major research projects. Funded support for Stony Brook's research programs has grown faster than at almost any other university, making it the major research campus in the nation's largest public university system. Internationally renowned faculty members offer courses from the undergraduate to the doctoral level for more than 17,000 students through more than 100 undergraduate and graduate degree programs. Extensive resources and support services help foster intellectual and personal growth.

The quality of Stony Brook's programs was praised by a distinguished national team of scholars in the 1984 Middle States Association of Colleges and Secondary Schools Reaccreditation Report, which recognized Stony Brook's spectacular achievements in so quickly becoming "an institution of national stature. The University is in an excellent position to make major contributions in policy and problem-oriented research of regional as well as national importance." The most recent Middle States Report confirms that "Stony Brook has made outstanding progress" in becoming "one of our nation's topmost research universities."

Stony Brook has expanded to encompass 105 buildings on 1,100 acres. The faculty has grown from about 175 to 1,568, the student body from 1,000 to 17,621, and the annual budget from about $3 million to $650 million.

One of Long Island's largest employers, Stony Brook 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 Cold Spring Harbor Laboratory are not far away. Located near the historic 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, spectacular Atlantic beaches along Fire Island, the craggy coastline and cliffs of Long Island Sound, and picturesque village greens and gracious country homes. Long Island's hundreds of miles of magnificient 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 a performing arts center.

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 the Colleges of Arts and Sciences and Engineering and Applied Sciences, the Van de Graaff nuclear accelerator, the Administration Building, Jacob K. Javits Lecture Center, Computer Science Building, Educational Communications Center, Computing Center, Stony Brook Union, Indoor Sports Complex, and other service and activities buildings. In the most recent step toward fulfilling the campus master plan, Central Hall is being reconfigured to become the new Student Activities Center. Locating student activities at the geographical center of the campus will emphasize the importance of extracurricular involvement in the quality of student life. Stony Brook's Staller Center for the Arts 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 Melville Library, Stony Brook Union, and Staller Center in the middle of the campus. The 350-bed Long Island State Veterans Home was completed in the fall of 1991. In October 1992 the Long Island High-Technology Incubator opened its doors to 20 start-up companies in biotechnology and other high-technology fields.

Encircling the academic buildings are six residential quadrangles with living space for about 1,000 students each. The quads are the basic social units for on-campus students, providing residence halls, study and social spaces, and dining facilities in several quads. Each quad consists of three to five coeducational "colleges," or resi-

dence halls, housing 200 to 400 students each. About 60 percent 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, and a 220-bed apartment unit provides housing on the southwest corner of campus.

The architecturally striking Health Sciences Center comprises academic and support areas for five professional schools and University Hospital, a 504-bed facility that admitted its first patients in 1980.

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

All vehicles parked on campus are required to have a valid parking permit. Commuter students with a valid permit may park at any of the three commuter lots. South "P" Lot is located at the south entrance to campus on Stony Brook Road. North "P" Lot is located near the north entrance, next to the L.I. Rail Road commuter lot. There is also a commuter lot by the Health Sciences Center. Bus service is available from the commuter lots to various areas of West Campus.

Parking is available in any of three parking garages, located by the Administration Building, the Health Sciences Center, and the hospital. The hourly rate is $1.50 up to a maximum $7.50 for the day.

After 4:00 p.m. commuters with a valid permit can park in any lot except those posted as 24-hour faculty/staff lots, the Indoor Sports Complex lot, the Chapin and Schomburg apartment lots, and specially designated areas.

Parking is available in the Administration and Health Sciences Center garages after 4:30 p.m. at $3.00 per day or at the special evening student rate of $7.00 plus tax per month. A commuter permit is required to purchase a monthly garage pass.

Commuter buses leave the South "P" Lot every five minutes between 7:30 a.m. and 6:10 p.m. After 6:15 p.m. there is one bus every fifteen minutes until 9:00 p.m., Monday through Friday. The university also provides access services to persons with disabilities. Bus passes can be obtained for $25.00 per semester at the Traffic Office during regular office hours. Otherwise, the cost is $.50 per ride.

Students

Stony Brook's fall 1994 enrollment was 17,621 (11,309 undergraduates and 6,312 graduate students). Approximately 10,000 undergraduates and 3,400 graduate and professional students are full time. Many part-time undergraduate and graduate students are enrolled in late afternoon and evening courses offered by several departments and the School of Professional Development and Continuing Studies, formerly the School of Continuing Education.

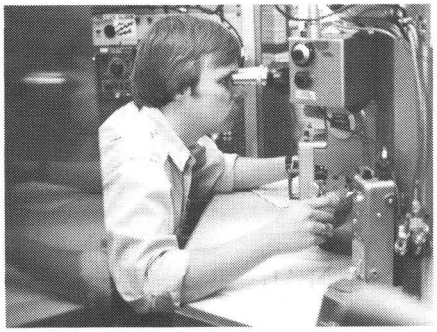
Approximately 95 percent of Stony Brook's undergraduates come from New York State; 59 percent of these are from Nassau and Suffolk counties and 30 percent from New York City. At any one time more than 100 Stony Brook students are studying abroad in approved exchange programs in such diverse countries as France, Poland, Italy, Bolivia, Jamaica, Spain, Germany, England, and Korea, and foreign students representing some 75 countries are studying at Stony Brook.

Of first-time, full-time Stony Brook students who entered in fall 1990, 80 percent were still in attendance after the first year. Many students who do not return full time do return for continued study at a later date, while others choose another college. Approximately 55 percent of each incoming freshman class graduate from Stony Brook; 36 percent in four years, and an additional 19 percent after their fourth year. The graduation rate exceeds the national rate of approximately 50 percent.

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 University's success in making high-quality programs available to a broad and diverse student body.

Faculty and Research

The vast majority of Stony Brook's 1,568 faculty members hold doctoral degrees and 90 percent 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 1984 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 17 students.

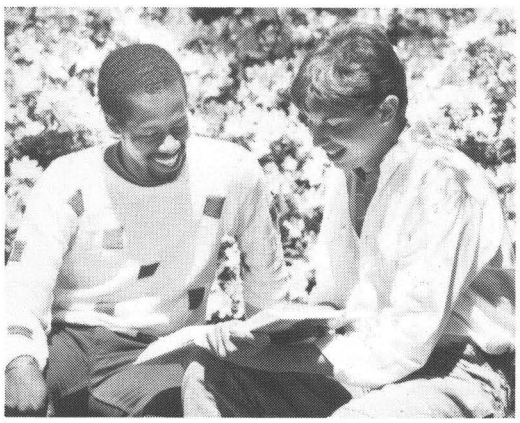


Eminent faculty members include Einstein Professor C.N. Yang, Nobel laureate in physics; University Professor John H. Marburger in Physics and Electrical Engineering, former president of the University at Stony Brook; Distinguished Professors K. Daniel O'Leary in Psychology, John Milnor in Mathematics, Gerald E. Brown in Physics, James Glimm in Applied Mathematics and Statistics, Benjamin Chu in Chemistry, Robert Sokal in Ecology and Evolution, Edward Reich in Pharmacological Sciences, H. Blaine Lawson, Jr. in Mathematics, and Robert Cess in the Marine Sciences Research Center; Distinguished Professors Emeriti Lewis Coser in Sociology and Louis Simpson in English; Distinguished Teaching Professors Norman Goodman in Sociology, Elof Carlson in Biological Sciences, Barbara Elling in Germanic and Slavic Languages and Literatures, Judith Tanur in Sociology, Alan Tucker in Applied Mathematics and Statistics, Rose Zimbardo in Theatre Arts, Jonathan F. Levy in Theatre Arts, and Shi Ming Hu in Social Sciences Interdisciplinary; Distinguished Teaching Professors Emeriti John Truxal in Technology and Society and Homer Goldberg in English; Distinguished Service Professors Sidney Gelber in Philosophy, Robert Cess in the Marine Sciences Research Center, Norman Goodman in Sociology, Lester Paldy in Technology and Society, Velio Marsocci in Electrical Engineering, Peter Paul in Physics, Eli Seifman in Social Sciences Interdisciplinary; and Distinguished Service Professors Emeriti Marvin Kuschner, former dean of the School of Medicine, and J.R. Schubel, former dean and director of the Marine Sciences Research Center.

Stony Brook's distinguished faculty is also proud to include nine 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 coun-

tries conduct research and teach at Stony Brook for various periods of time throughout the year.

The 1994 Middle States Reaccreditation Report obseves that "Stony Brook has been strikingly successful in developing its research enterprise." Among the hundreds of subjects currently under examination by faculty and students are cancer, arthritis, diabetes, lasers, semiconductor chips, recombinant DNA, the mathematics of nonlinear systems, three-dimensional imaging systems, the psychology of political attitudes and behavior, the social history of American slavery, the interface between art and science, and urban problems. In 1993-94 Stony Brook faculty members attracted $89.5 million from the federal government, private foundations, and individuals to support research, the largest dollar amount in the SUNY system. Nearly 1,900 sponsored projects are actively being pursued, including 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 by the general education program to sample courses in a wide variety of disciplines and through their major to delve deeply into one field, guided by nationally distinguished scholars. Major programs build on the Diversified Education Curriculum (D.E.C.), which stresses writing, quantitative literacy, and the serious examination of intellectual and societal issues. The undergraduate curriculum benefits from the special resources that a comprehensive university center can provide. The caliber 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. The faculty provides a broad spectrum of opportunities for undergraduates to collaborate with them in research and creative activities.

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 degree programs in fine arts and humanities, in biological and physical sciences, in mathematics, and in social and behavioral sciences. In addition to departmental majors, special interdisciplinary majors and programs leading to provisional certification in secondary education are available. The Diversified Education Curriculum ensures that in addition to concentration in the chosen major, students build a firm base of academic skills while being exposed to diverse cultural traditions and intellectual endeavors. Independent study and research are available and encouraged. Living/learning centers offer residence hall environments designed to enhance learning experiences, career development, and informal contact with faculty members through seminars and other activities.

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 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. Three 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 School for Management and Policy* provides comprehensive education and research for the business, public, and nonprofit sectors. Named for one of New York's most distinguished public servants, the school trains students for careers primarily as managers. The school offers an undergraduate major and minor in business management and a graduate program in management in business, government, and the nonprofit sector. The admission requirements and curriculum for the major and minor are described on pp. 258-260 of this bulletin. The graduate program's curriculum and degree requirements are described in the *Graduate Bulletin*.

The *Health Sciences Center* includes five professional schools and a teaching hospital. Undergraduate and graduate degrees are offered in health technology and management, nursing, and social welfare. Many health sciences courses are open to upper-division students from the other academic areas. Graduate degrees are also offered in dentistry and medicine. Further details may be obtained from the *Health Sciences Center Bulletin*.

The *Marine Sciences Research Center* (MSRC) is the center for research, graduate and undergraduate education, and public service in the marine sciences for the State University of New York system. The MSRC is considered by most to be one of the leading coastal oceanography institutions in the world. The center also hosts five institutes, including the Institute for Terrestrial and Planetary Atmospheres. The focus of the educational effort includes an undergraduate degree program in meteorology/atmospheric sciences and a minor in marine sciences. Upper- and lower-division undergraduate courses are taught through the MSRC. Research opportunities and graduate-level courses are also available to outstanding undergraduate students.

The *School of Professional Development and Continuing Studies* (SPD), formerly the School of Continuing Education, offers several options for part-time graduate study. Degree programs include an interdisciplinary program, the Master of Arts in Liberal Studies (M.A./L.S.), which is designed for persons seeking a broader postbaccalaureate education than is ordinarily found in programs that focus on a single discipline, and is especially attractive to teachers who may use this degree to satisfy the master's degree requirement for permanent teacher certification. Also offered are the Master of Arts in Teaching (M.A.T.) for persons seeking provisional teacher certification in English, French, Italian, German, Russian, chemistry, earth science, physics, or social studies, and the Master of Professional Studies (M.P.S.) with a concentration in

labor management, public affairs, or waste management. In addition, SPD offers advanced graduate certificate programs in Long Island regional studies, waste management, environmental/occupational health and safety, coaching, school administration and supervision, and school district administration. Also available is the graduate special student (GSP) option, which provides an opportunity for graduate study to postbaccalaureates not yet enrolled in a degree program or to those whose educational goal is other than that of obtaining a graduate degree. A broad selection of University courses is open to students under all of these options.

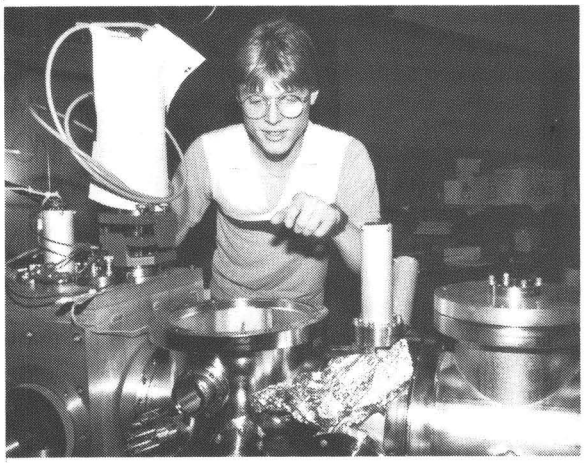
For an *SPD Bulletin* or additional information on the School of Professional Development and Continuing Studies, call or write the SPD Office, N201 Ward Melville Social and Behavioral Sciences Building, University at Stony Brook, Stony Brook, NY 11794-4310; telephone (516) 632-7050.

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 Arts in Teaching, M.A.T.; Master of Fine Arts in Dramaturgy or Studio Art, M.F.A.; Master of Music, M.M.; Master of Philosophy, M.Phil.; Master of Professional Studies, M.P.S.; 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 Medicine and Doctor of Philosophy, M.D./Ph.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 Schools. The College of Engineering and Applied Sciences 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 *Abdominal Imaging; Advances in Learning and Behavioral Disabilities; Art Criticism; Biological Psychiatry; Circuits, Systems, and Signal Processing; Continental Philosophy; Developmental Review; Evolution; Evolutionary Anthropology; Forum Italicum; Gradiva; Heat Transfer—Japanese Research; Humanities Series in Contemporary Studies in Philosophy; Humanities Series in Philosophy and Literary Theory; Indiana Series in Philosophy of Technology; International Association of Philosophy and Literature; Journal of College Science Teaching; Journal of Educational Technology Systems; Journal of Histotechnology; Journal of Urban Analysis and Public Management; Long Island Historical Journal; Materials Science and Engineering; minnesota review; Philosopher's Annual; The Physics Teacher; Previews of Heat and Mass Transfer; Quarterly Review of Biology; Romantic Movement Bibliography; Slavic and Eastern European Arts; Stony Brook Bulletin for Theory and Criticism; SUNY Series in Aesthetics; SUNY Series in Contemporary Studies in Philosophy; SUNY Series in Political Thought; Taproot; Thermal Spray Technology; Transplantation Proceedings;* and *Victorian Literature and Culture.*



Graduate Study at Stony Brook

The graduate programs at Stony Brook rank among the best in the nation. In 1987 the Carnegie Foundation classified Stony Brook as a "Type I Research Institution." Stony Brook was one of two public universities in New York and one of only 70 institutions in the country to be so designated. The classification reflects the volume of federally sponsored research, the high percentage of doctoral students, and the emphasis on scholarship at Stony Brook.

Faculty of international stature, in close collaboration with graduate students, conduct their scholarly inquiry using state-of-the-art laboratories, extensive library facilities, and advanced computing equipment. Unique opportunities are available for students to participate in frontier research sponsored by federal agencies, private foundations, and industry. Indeed, such opportunities are expanding at a prodigious rate since, according to a recent National Science Foundation study, our campus has one of the most rapidly growing research funding volumes of all universities in the country. Moreover, students in the humanities, arts, and social sciences, where sponsored support is not as necessary for the conduct of frontier inquiry, will find other unusual opportunities to work with scholars and artists who are world leaders in their respective areas.

Graduate study is offered in 41 different degree program areas as well as in the five schools of the Health Sciences Center and the School of Professional Development and Continuing Studies. For a full listing of graduate programs of study consult the *1994-1996 Graduate Bulletin.*

Admission to Graduate Programs

Applicants to the Graduate School must have a bachelor's degree with a minimum overall grade point average of 2.75 and a grade point average of 3.0 in the major and related courses. Some departments establish additional requirements and deadlines for graduate admissions. Address any inquiries concerning graduate admission requirements to the specific department or program.

Financial Assistance

Financial assistance through the University is available to graduate students in the form of assistantships, fellowships, scholarships, loans, tuition scholarships, and work study programs. Most of these awards are available only to full-time, matriculated students.

Graduate Opportunity Tuition Scholarship Program

A scholarship equivalent to the cost of full tuition is available to former EOP, SEEK, or HEOP students who enroll in a registered State University of New York graduate or first professional degree program.

Graduate and Professional Tuition Scholarship Program for Economically Disadvantaged Students
This program provides a scholarship equivalent to partial or full tuition for students who qualify according to an analysis of household size, income, and family financial circumstances.

Tuition Scholarships
Scholarships are available to students who enroll in a registered SUNY graduate or first professional program. These scholarships are awarded on a competitive basis.

Assistantships
Assistantships provide the principal form of support for graduate students. Graduate students perform duties in three principal areas: teaching, research, and administration.

For the 1994-95 academic year the full assistantship carries a ten-month stipend of $9,204, which may be supplemented by other funds. Both state-funded TAs and GAs and externally funded assistantships are renewable at the discretion of the department, most for up to four years. Teaching and graduate assistants are affiliated with the Graduate Student Employees Union (GSEU).

Fellowships
Among the several fellowships Stony Brook awards for graduate study, the Graduate Council Fellowships and the W. Burghardt Turner Fellowships are the most prestigious. Graduate Council Fellowship awards result from Graduate School-wide competition and, funds permitting, may be renewed for four additional academic years by students in superior academic standing. Graduate Council Fellows usually qualify for full tuition scholarships.

The W. Burghardt Turner Fellowship, funded by the State University of New York Underrepresented Graduate Fellowship Program, provides stipend support and full tuition scholarships for African-American, American Indian, and Hispanic-American graduate students. The statewide fellowship program currently supports some 607 students.

Incoming graduate students who are members of underrepresented groups may apply for Patricia Roberts Harris Fellowships, which are funded by the U.S. Department of Education. They provide a stipend and tuition scholarship, with possible renewal for a maximum of three additional years.

Special Centers and Institutes

The University is home to a myriad of centers, laboratories, and institutes, many of them externally funded, which reflect the broad diversity of academic and research-oriented pursuits on campus. Many of these organizations are directed by Stony Brook faculty and staff. Students may benefit from these facilities by tapping them as resources for academic work. Among these organizations are the AIDS Education and Resource Center; Alzheimer's Disease Assistance Center; Applied Behavioral Medicine Research Institute; Arms Control and Peace Studies Center; Bach Aria Festival and Institute; Cancer Center; Center for the Analysis and Synthesis of Macromolecules; Center for Behavioral Neuroscience; Center for Biotechnology; Center for Corporate Continuing Education and Training; Center for Education on Substance Abuse; Center for Excellence and Innovation in Education; Center for Health Policy and Management; Center for Industrial Cooperation; Center for Italian Studies; Center for Regional Policy Studies; Center for Religious Studies; Center for Science, Mathematics, and Technology Education; Center for Womyn's Concerns; Educational Communications Center; Empire State College; and the Executive Management Center.

Other campus-based institutes and laboratories include the High Energy Physics Group, Howard Hughes Medical Institute in Neurobiology, Humanities Institute, Institute for Advanced Studies of World Religions, Institute for Cell and Developmental Biology, Institute for Decision Sciences, Institute for Interface Phenomena, Institute for Long Island Archaeology, Institute for Mathematical Modeling, Institute for Mathematical Sciences, Institute for Medicine in Contemporary Society, Institute for Mental Health Research, Institute for Pattern Recognition, Institute for Social Analysis, Institute for Terrestrial and Planetary Atmospheres, Institute for Theoretical Physics, Laboratory for Arthritis and Related Diseases, Laboratory for Behavioral Research, Laboratory for Experimental Mechanics Research, Laboratory for Image Analysis, Laboratory for Personal Computers in Education, Laboratory for Political Research, Long Island High Technology Incubator, Long Island Leadership Institute, Long Island Library Resources Council, and the Long Island Regional Advisory Council on Higher Education.

Stony Brook also houses the Lyme Disease Center, Microscopy Imaging Center, New York Sea Grant Institute, Nuclear Theory Group, Occupational and Environmental Health Center, Research Group for Human Development and Educational Policy, Sleep Disorders Center, Small Business Development Center, Stony Brook Radiation Laboratory, Sudden Infant Death Syndrome Regional Center for Eastern New York State, Suffolk Partnership Program, Taproot Workshops, Inc., Transplantation Society, and the Waste Management Institute.

Campus and Community Ties

As the public university center for the bicounty-metropolitan New York region, Stony Brook plays a major role in the Long Island community. Excluding the state and county governments, the University is Long Island's second largest employer, with 9,590 people on the campus payroll. It is estimated that the University generates approximately a billion dollars annually in direct and indirect economic impact on the region. In addition to its function as Long Island's major research university and source of advanced and specialized instruction, Stony Brook provides a social and cultural center, a specialized referral center for health care, recreational opportunities, and a broad range of other services for individuals and groups in the public and private sectors.

Stony Brook is the only major research university on Long Island, one of the nation's largest and most vital suburban regions, with a population larger than that of ten states. The University is a principal regional resource for high-technology research collaboration, the development needs of a highly skilled

work force, and technical support for myriad public policy challenges. The 1994 Middle States Reaccreditation Report comments that "the result of these many initiatives is that the institution has gained the respect of the business and industries who have learned to use and benefit from its vast resources of expertise and facilities."

The campus houses the Long Island High-Technology Incubator, a protected setting for 20 start-up technology companies. The campus' Center for Advanced Technology in Medical Biotechnology, a founding member of the New York Biotechnology Association, manages a $2 million per year publicly and privately funded program promoting commercially viable biotechnology research, University-industry collaboration, and technology transfer. The Strategic Partnership for Industrial Resurgence (SPIR) is a state-funded project that matches the resources of the colleges of engineering at Stony Brook and three other State University campuses to research and development initiatives in the industrial sector. The region's extraordinary profusion of coastal environments is a living laboratory for the Marine Sciences Research Center, one of the world's leading centers for coastal oceanography. Senior public and private sector managers are trained by the Harriman School for Management and Policy, while the Center for Corporate Continuing Education and Training serves all segments of business and industry with noncredit instruction. In 1994 the Center for Regional Policy Studies completed the wide-ranging Long Island Strategic Economic Development Plan, which provides recommendations for a sound regional economy through the year 2010.

Liberty Partnerships is a program that sends undergraduate and graduate tutors and interns into the field to help at-risk students remain in junior and senior high school and go on to college. The Teacher Opportunity Corps recruits and trains Stony Brook students from underrepresented groups to become teachers in areas with the greatest need. The Science and Technology Entry Program (STEP), sponsored by the New York State Education Department, provides academic enrichment, counseling, and tutoring for underrepresented minorities and low-income secondary school students interested in scientific, technical, and health-related careers.

The goal of the Center for Excellence and Innovation in Education is to play a major role in the Long Island region by coordinating, supporting, strengthening, and developing undergraduate (pre-service) and graduate (in-service) teacher certification and teacher education programs, educational research and development programs, and school-University partnership programs. The center has had a significant positive impact on the Long Island region, and is widely recognized as a symbol of the University at Stony Brook's commitment to teacher education, educational research and development, and partnership programs with schools in the Long Island region.

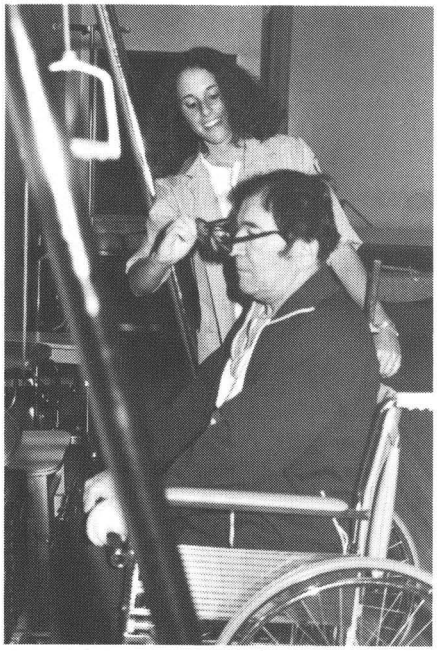
University Hospital and Medical Center serves the health care needs of the residents of Long Island and provides training for dentists, physicians, nurses, social workers, and other health professionals such as physician assistants, physical therapists, and medical technologists. The hospital, which opened in 1980, is the only tertiary care center in Suffolk County and serves as a regional center for advanced patient care, education, research, and community service.

University Hospital offers the most sophisticated instrumentation and computerized physiological monitoring systems available. Medical and surgical services include a full array of highly specialized diagnostic and treatment techniques. The hospital consists of 504 beds with eight intensive care units dedicated to anesthesia, burn, cardiovascular, coronary, pediatric, medical, surgical, and transplant patients. In addition, a fully equipped neonatal intensive care unit provides the only tertiary care services for premature and newborn infants in Suffolk County. Obstetrical services also include antepartum care and a perinatal education program.

University Hospital serves many regional roles. The Emergency Medicine Department operates as the designated level-one trauma center for the county. The hospital has designations as a perinatal center, a regional transplant center, a cardiac diagnostic center, a comprehensive center for total cancer care, a sleep disorders laboratory, and a Lyme disease center. It further serves as the region's burn center and directs the state-designated AIDS center. It also offers adult and pediatric surgery and orthopaedic services, including a comprehensive pain and rehabilitation program.

Among the services provided are cardiac catheterization, angioplasty, and electrophysiological studies, complete renal services, endoscopy, hematology studies, detailed analysis of allergic and immune disorders, and diagnostic and interventional radiology. Advanced services such as lithotripsy, laser surgery, ophthalmic laser treatment, and nuclear medicine are provided. Multidisciplinary teams care for adults and children with chronic conditions such as diabetes, cystic fibrosis, multiple sclerosis, and the physical and psychosocial effects of headache and pain. A full array of psychiatric services for children and adults is available. Psychiatric emergency care is provided 24 hours a day.

University Hospital's clinical laboratories offer extensive services to patients. They include diagnostic radiology imaging, magnetic resonance imaging,



stereotactic core breast biopsy, special procedures, interventional radiology, and nuclear medicine. In addition, University Hospital provides clinical neurophysiology monitoring and testing, endoscopy and gastroenterological services, pulmonary function studies, renal care, respiratory care, vascular diagnostic services, and the full range of physical and occupational therapies.

In the course of a year, University Hospital cares for more than 25,000 inpatients and treats more than 43,600 people in its Emergency Department. Close to 2,500 babies are born here each year, and more than 475,000 patients visit the medical center for physician care and ambulatory diagnostic and treatment services. In addition, the hospital dental service meets the needs of about 6,000 patients a year who have particularly complex dental problems.

Consistent with the hospital's community service mission, Stony Brook plays a key role in providing medical care to underserved communities and is a leading provider of both hospital- and community-based cancer screening programs. The medical center recently established a health care teleservices department that provides a variety of health-related informational services to the community using a comprehensive, up-to-the-minute computer database. Specially trained oncology nurses answer questions about cancer. Staff nurses assist patients with information about other health concerns. Nurses serve as advocates for callers and help streamline their access to the medical center.

Each year about 400 volunteers contribute more than 50,000 hours of service. Every semester 100 to 120 undergraduate students serve as volunteers in the hospital, where they gain valuable experience while exploring careers in health care.

As an academic medical center, University Hospital at Stony Brook is an integral part of the Health Sciences Center of the State University of New York and is the principal clinical resource for the educational and research programs of the Schools of Dental Medicine, Health Technology and Management, Medicine, Nursing, and Social Welfare. University Hospital provides training for 484 residents and fellows in 45 approved specialty programs (including subspecialties) and the general practice/dental medicine program. Each clinical service of University Hospital is headed by a chief who is also the chair of the related department in the School of Medicine.

The medical center has a strong commitment to research. Investigators pursue clinical research, new diagnostic methods and patient therapies, as well as basic research into the causes and mechanisms of disease at the cellular and molecular levels. Recently, the medical center was designated as one of 24 centers nationwide to conduct the Women's Health Initiative. Under the auspices of the National Institutes of Health, this research initiative includes a series of clinical studies seeking to estimate the influence of environmental, genetic, and lifestyle factors on health and disease in women.

The Health Sciences Center operates the Long Island State Veterans Home, which is a 350-bed skilled nursing facility situated on the University campus. The home provides state-of-the-art, long-term and intermediate-level care to veterans of the United States Armed Forces. The home offers a broad range of services and features two 25-bed special care units, one for veterans with Alzheimer's disease and the second for those with respiratory disease. In addition, the home's services include medical-model adult day care that provides a full range of medical, allied health, and social services for veterans living in the community.

Regional business and civic leaders help guide the Stony Brook Foundation, Inc., the university's independently incorporated development arm, and community members with special interests in campus programs participate in the Friends of the Staller Center for the Arts and the University Hospital Auxiliary. In addition to the University's many degree programs, there are broad opportunities for credit- bearing and noncredit 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.

Campus Activities

A wide variety of lectures, seminars, concerts, exhibits, theatrical performances, movies, and sporting events are scheduled regularly during the academic year. Campus Life Time is a 90-minute period on Wednesdays from 12:40 to 2:10 p.m. when no classes are scheduled, allowing students, faculty, and staff opportunities to participate in campus programs, convocations, meetings, and student club/organization activities.

Some recent well-known speakers at Stony Brook have included educator Henry Louis Gates, authors Maxine Hong Kingston, Louise Erdrich, and Umberto Eco, scientist-writer Paul R. Ehrlich, paleontologist Robert Bakker, human rights leader Julian Bond, former U.S. Attorney General Ramsey Clark, actress Phyllis Frelich, professor of law Lani Guinier, National Science Foundation Director Walter Massey, and His Holiness Tenzen Gyatso, the XIV Dalai Lama of Tibet.

Art galleries in the Staller Center for the Arts, 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.

Approximately five films are shown weekly on campus, including vintage and current productions; admission is usually 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 Staller Center for the Arts, which opened in 1978, is a fully equipped facility for education in music, theatre, and fine arts, and is recognized

as the most important performing arts center in Suffolk County. It includes the 1,100-seat Main Theatre, the 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 Staller Center, and by the art, music, and theatre students at Stony Brook.

The Staller Center for the Arts 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 past seasons include performances by the Martha Graham Dance Company, MOMIX, the Vienna Choir Boys, Rita Moreno, Midori, the Tchaikovsky Chamber Orchestra, and the Peking Acrobats, as well as performances by the Stony Brook Concert Band, Chamber Symphony and Symphony Orchestras, Chamber Chorus, 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 that are not sold out. "Student rush" tickets are $6.50 and go on sale 15 minutes before curtain time. The Staller Center for the Arts 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.

In recent years, popular student-sponsored concerts have featured Fishbone, Red Hot Chili Peppers, Patra, KRS, AniDifranco, Phish, and Jimmy Cliff.

Student Polity, the undergraduate student government organization, and its related groups, particularly the Student Activities Board, sponsor many campus activities. Student Polity presently funds more than 100 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 at Law, Cycling Club, Committee on Cinematic Arts (COCA), the Holography Club, Returning Student Network, the Chess Masters, the Science Fiction Forum, and the Young Parents Are Students Too Support Network, to name just a few.

Stony Brook currently offers 20 intercollegiate varsity sports, 11 for men and nine for women, competing with the National Collegiate Athletic Association (NCAA), the Eastern Collegiate Athletic Conference (ECAC), the New York State Women's Collegiate Athletic Association (NYSWCAA), and the National Intercollegiate Squash Racquets Association (NISRA), along with local conferences for various sports.

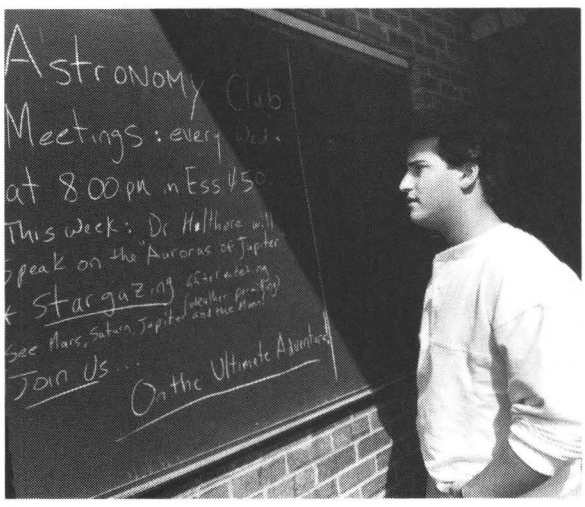
In July 1993, Stony Brook initiated a process of complying with Division II regulations that will ultimately take its entire athletic program to the NCAA Division I level. The process, which takes a minimum of five years to complete, is currently in its second year. In the 1995-96 season, Stony Brook will begin competition in the New England Collegiate Conference, one of the nation's premier Division II conferences. Stony Brook's men's lacrosse and women's soccer teams already compete at the NCAA Division I level and will continue to do so.

Stony Brook teams have enjoyed success in recent seasons with NCAA tournament appearances by the men's and women's basketball and women's volleyball teams, and by members of the men's and women's track and cross-country teams and the men's and women's swimming teams. Over the past three years, the women's volleyball team has captured a New York State championship and advanced to the NCAA Division III Women's Volleyball Championships five times. In 1992, the volleyball team captured the Eastern Regional title in the NCAA playoffs and finished third in the nation. The men's basketball and baseball teams have each appeared in two ECAC playoffs, with the baseball team capturing the title in 1992.

The student newspaper, *Statesman,* is published twice 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; *Blackworld*, a newspaper focusing primarily on news of interest to the black community on campus; *Stony Brook Shelanu*, a Jewish newspaper; and *Specula*, the campus yearbook.

The Interfaith Center is the representative organization for chaplains and campus ministry persons who are officially selected representatives of religious denominations and have a major concern for and a working relationship with the University. Members cooperate with administration, faculty, students, and staff in programs that contribute to the human quality of the University and to the integrity of its academic purpose. Worship services are held and opportunities are provided to learn about and appreciate diverse religious traditions. Students should also be aware of Section 224-a of the New York State Education law as it pertains to exceptions from classes and coursework on religious holidays. See p. 57 for more information regarding this law.

Baptist Campus Ministries is an organization of the Southern Baptist Convention. The campus office is in 166 Humanities. B'nai B'rith Hillel Foundation is the umbrella organization that serves the needs and concerns of Jewish students on campus, offering cultural, educational, religious, and social programs, as well as overseeing the kosher meal plan. Check with the Hillel Office, 165 Humanities, for the schedule and location of weekly and high holiday services. The Catholic Campus Ministry offers liturgies, retreats, the sacraments, and opportunities for Christian living and service, as well as full social and educational programs. Its office is in 158 Humanities. The Islamic Society of North America, 153 Humanities, addresses the social needs and spiritual development of Muslim students. The Protestant Campus Ministry, 160 Humanities, provides the opportunity to worship, social gatherings, study, counseling, and retreats. It also provides transportation to local churches. The Unitarian Universalist Campus Ministry is sponsored by the Long Island Area Council of U.U. Societies.



Offices of the Interfaith Center are in rooms 153-167 of the Humanities Building. Students are invited to visit, ask questions, and participate.

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

Equal Opportunity and Affirmative Action

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

Discrimination is unlawful. If you are a student or an employee of the University 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 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 noncompliance should be directed to:

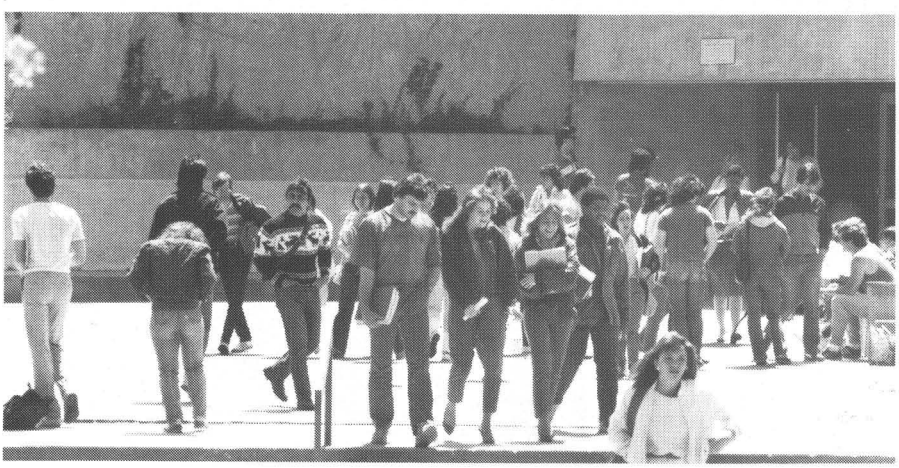
Gary Matthews
Assistant to the President for
Diversity and Opportunity
Administration Building 474
University at Stony Brook
Stony Brook, NY 11794-0251
Telephone: 516-632-6280

The Americans with Disabilities Act (ADA), which became effective January 26, 1992, requires that individuals with disabilities be afforded equal opportunity in the areas of public services and programs, employment, transportation, and communications. Prior to this federal legislation, the University had been subject to similar provisions under Sections 503 and 504 of the Rehabilitation Act of 1973. In compliance with the ADA's broader definition of disabilities, the University makes concerted efforts to provide reasonable accommodation and access to services and programs.

For more information contact:
Sylvia Geoghegan
Assistant ADA Coordinator
Disabled Student Services
133 Humanities Building
University at Stony Brook
Stony Brook, NY 11794-5328
516-632-6748/9, V/TDD

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—Compilation 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 Building.



Student Conduct Code

As a document, the University Student Conduct Code defines acceptable community behavior. For a resident student, it translates into respect for your neighbors and their property. It prohibits tampering with fire safety equipment, i.e., fire alarms, fire extinguishers, fire bells, etc. It includes respecting state property as well as maintaining an acceptable noise level in the residence halls conducive to study and sleep.

For all students, the Student Conduct Code supports compliance with state and federal laws pertaining to drugs, alcohol, weapons, discrimination, physical abuse, sexual harassment, sexual assault, acquaintance (date) rape, relationship violence, and racial or sexual preference harassment.

It is impossible to separate the concept of student freedom or rights from student responsibility. The Student Conduct Code guarantees the right of students to pursue their legitimate interests on the campus. To this end, it is imperative that students desiring respect for their rights must also accord other segments of the community the same respect.

All students are expected to know and understand the provisions contained in the Student Conduct Code to help ensure a successful academic and residential experience on the Stony Brook campus.

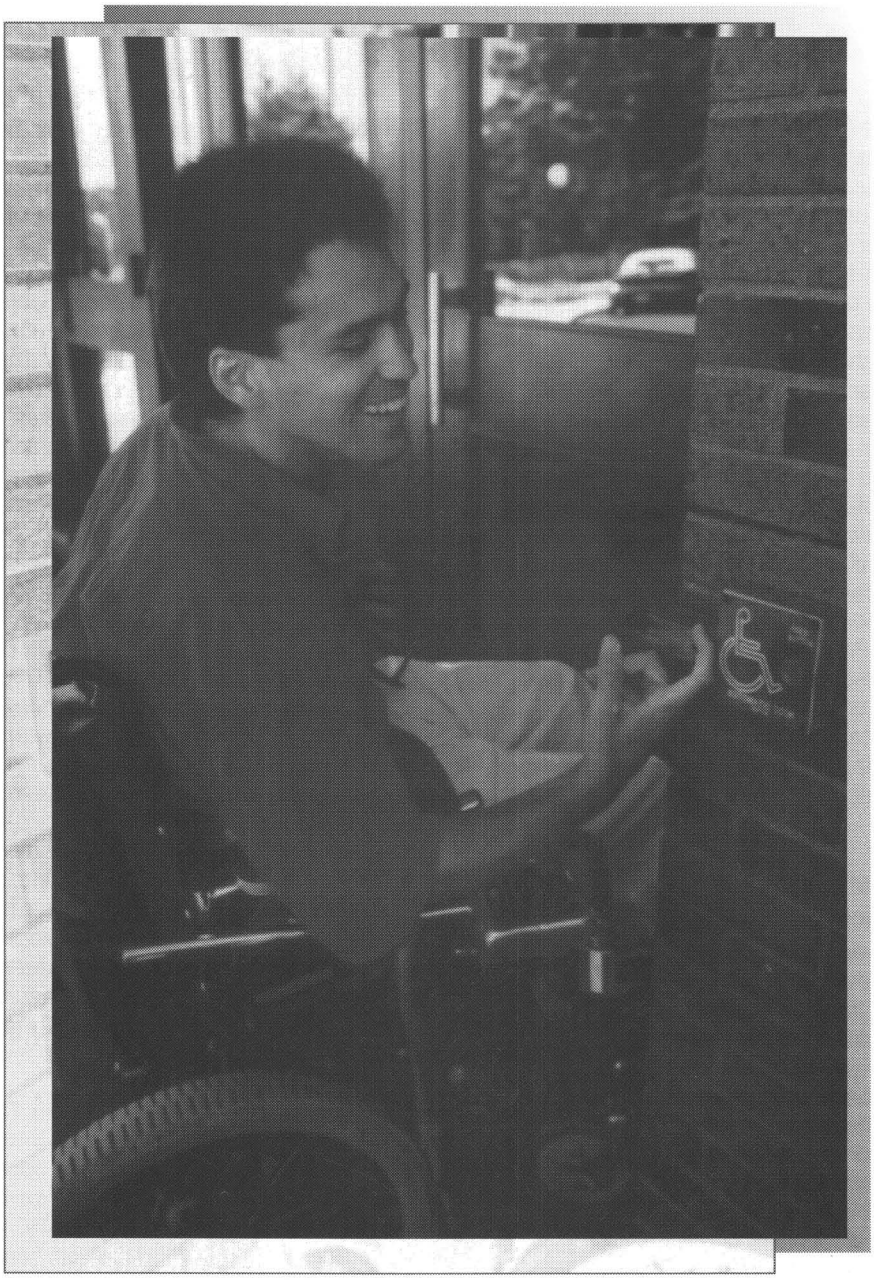
To obtain a copy of the code or information regarding campus regulations and disciplinary proceedings as well as procedures for filing a complaint, contact the University Hearing Officer in the Office of the Student Judiciary, 347 Administration Building, or call 632-6705.

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 Traffic Office, 192 Administration Building.

Note: At the present time, resident students, *except freshmen and sophomores,* are permitted to register a motor vehicle for parking in the resident student lots. Freshmen and sophomores must petition and be approved to have vehicles on campus. Applications may be obtained at the Traffic Office.

Student Services



Center for Academic Advising

The Center for Academic Advising is responsible for advising all College of Arts and Sciences continuing students on a walk-in basis prior to a formal declaration of major, and for coordinating the academic advising of entering freshmen. Advisors, available from 10 a.m. to 4 p.m. Monday through Friday, explain academic regulations and help students select courses and plan their academic programs. The center also distributes computer-generated degree audits (DARTS) that chart student progress toward fulfilling University graduation requirements. As part of its function, the center conducts the academic portion of new student orientation and, with the Office of New Student Programs, coordinates USB 101, a one-credit extended orientation course for entering students taught by University faculty and staff. Preprofessional advising for lower-division students also takes place in the center.

Undergraduate Transfer and Evening Studies Office

The Undergraduate Transfer and Evening Studies Office provides academic advice to prospective transfer students, evaluates transfer credits for Diversified Education Curriculum (D.E.C.) requirements, works with academic departments to facilitate the evaluation of transfer credits for major and upper-division requirements, enters transfer credits on the Stony Brook record, and advises enrolled transfer students throughout their first semester at Stony Brook. In addition, this office provides academic advice to both prospective and enrolled evening students and publishes the undergraduate evening class schedule.

Engineering and Applied Sciences Undergraduate Student Office

The Engineering and Applied Sciences 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 Diversified Education Curriculum (D.E.C.) requirements, and requirements for admission to its majors. It receives and processes student petitions and grievances, advises students of administrative procedures, and assists with the processing of transfer credits. The office also serves as the center for the Internships Program, publicizing internship openings and assisting corporate offices with selection and placement of student interns.

Campus Community Advocate (Ombuds Office)

The services of the Campus Community Advocate are available to all students, faculty, and staff. The office is a comfortable, receptive place to turn if a student is having trouble getting through a bureaucratic maze or needs help resolving a dispute with someone or in solving a problem.

All matters handled by the Advocate's Office remain confidential. Depending on the nature of the question or problem, the Advocate's Office might direct a student to the appropriate place to get it resolved, help directly to get the needed information, or offer specific advice or mediation. And if a student is simply looking for someone who can listen impartially and privately and suggest a course of action, the Advocate's Office is the place to come.

The Campus Community Advocate Office is located in 114 Humanties. Hours are 9 a.m. to 5 p.m., Monday through Friday. Walk-in visits are possible, but appointments in advance will keep waiting to a minimum. Call 632-9200.

Career Development Office

The Career Development Office of the Student Affairs Department 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. Two computerized guidance services, DISCOVER and SIGI Plus, are also available for students to utilize as part of their career decision-making process.

Job fairs during the fall and spring semesters enable students to meet with prospective employers to discuss job opportunities. The National Employment Wire Service (NEWS) computerized job matching system gives students access to employers across the country. A credentials service supports students in their application for jobs or advanced study by maintaining letters of recommendation that can be copied and sent directly to employers and schools.

Students are encouraged to participate in the Student Volunteer Service Program (VITAL), in which they may gain experience in specific career areas by working with agencies and institutions seeking volunteers.

The Job Search Preparation Program includes group workshops that assist students and alumni in writing resumés, interviewing effectively, and developing job search strategies. As part of the Career Development Office's Outreach Program, career counselors visit residence halls and academic departments on a special request basis in order to provide exposure to career-related information.

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 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). Many of these examinations are administered on campus by the office for the convenience of Stony Brook students. There is also a growing collection of videotapes on a variety of career topics. In addition, the Career Advisor's Network (CAN) enables students to contact Stony Brook alumni for information on specific career areas (e.g., social work, business management, etc.). Finally, the Self-Service Career Center has a variety of information sheets on career planning topics that are available for students to pick up.

It is suggested that students visit the Career Development Office and become familiar with the services it provides. The office, located in W-0550 Melville Library, is open weekdays from 8:30 a.m. to 4 p.m. The telephone number is 632-6810 (Voice/TDD).

Computing Services

An ever-increasing variety of computing resources is available to undergraduate students to assist them in performing the tasks associated with their undergraduate education: word processing and typesetting programs for the preparation of papers, lab reports, and theses; networked workstations for writing and running programs in a UNIX environment; mainframe computing for large-scale data analysis and numerical computation; high-speed laser printers for quality text and graphics output; and networks that link universities throughout the nation and around the world.

Computer applications are increasingly used in the classroom as well: students use HyperCard® in a poetry class for analysis of language and imagery and in introductory English courses for collaborative writing; in a biostatistics course, students use a program to build population models; in electrical engineering, students use computer-aided design for building circuits; in calculus, students understand concepts by using a program that graphically demonstrates the plotting of variables; in philosophy, students solve logic problems with the aid of a computerized logic notebook.

Students may use the many Macintosh and IBM PC and PS/2 personal computers located at a variety of sites on West Campus and in the Health Sciences Center buildings. These sites are available to students on a walk-in basis; the student simply supplies diskettes on which to store work.

All undergraduates are automatically entitled to accounts on the HP Unix system, the IBM, and the VAX cluster. To obtain an account, submit a request on the terminal set up for this purpose in the public terminal areas. The accounts are valid until the time the student graduates from the university. All systems are accessible from the terminal sites on campus as well as from residence hall rooms through the ROLM phone and by dialing in from off campus.

The Hewlett-Packard Unix system is a distributed, networked system, accessible from workstations and terminals at five campus locations and by dialing from remote locations. It is the most widely used system for programming and engineering coursework. Software includes X-windows on the work stations, PASCAL, FORTRAN, TEX, LATEX, Electrical Engineering Design Capture System, C, C++, and a vast array of shareware.

The IBM mainframe is an IBM 3090-180E with a Vector Facility, running the VM/XA and MVS/EXA operating systems. The DEC VAX cluster comprises two digital 2100-A600MP servers running open VMS.

Instructional Computing, located in Room S1460 of the Melville Library, offers one-hour introductory courses in using Macintosh and IBM PC software.

The campus computer store, open to all faculty, staff, and students of the university, is a source of personal computing equipment, software, and supplies at prices that reflect the higher-education discounts the university has negotiated with IBM, Apple, Inc., and software vendors. Purchases may be made with either cash or credit card. Most equipment is in stock, allowing for same-day purchase and pickup.

Indoor Sports Complex

The west wing of the Indoor Sports Complex, next to the Stony Brook Union, opened in the fall of 1990. Connected to the existing gymnasium, the 105,000 square-foot complex seats 4,900 for basketball and volleyball and 5,000 for lectures, concerts, and other special events. The facility houses a four-lane, six-sprint-lane track (177 meters in distance), six glass back-walled squash courts, locker rooms, six team rooms, and a training room equipped for hydro- and electrotherapy. Attractive lobbies, offices, and two concession stands complete the facility.

The Pritchard Gymnasium, which is now the east wing of the Indoor Sports Complex, opened in 1964. The gymnasium features seating for 1,800 for basketball and volleyball; a six-lane, 25-yard pool; eight racquetball courts; two Universal weight rooms and a free weight room; a dance studio and exercise room; and three multipurpose courts for volleyball, badminton, or indoor soccer, available when not in use for competition. The gymnasium, along with the new structure, provides an expansive, self-contained athletic complex, constituting Long Island's premier college sports facility, second in size only to Nassau Coliseum.

Outdoor facilities extend over 25 acres and include Seawolves Field, the home of football and lacrosse; 20 tennis courts; a six-lane, 400-meter track; four single-wall handball/paddleball courts; and recently renovated fields for varsity soccer, baseball, and softball. The intramural fields, also recently renovated, are

used for softball, touch football, soccer, beach volleyball, and many other sports.

The complex serves as the center for physical education as well as intercollegiate and intramural athletics for the University, and addresses the recreational, educational, and entertainment needs of the University community. Special events include track and basketball championships, trade shows, and concerts, as well as sports clinics.

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 Indoor Sports Complex. Hours are subject to change depending on availability of staff. The Indoor Sports Complex is open Monday through Friday from 7 a.m. to 11 p.m. and weekends from 8 a.m. to 11 p.m. It is closed on all major holidays.

Stony Brook Union

The Stony Brook Union is the campus center for hundreds of activities planned for and by students. It is the home of student organizations, student government, and clubs, and is essential and significant to students' lives and experiences. The union is an integral part of the educational life of the campus, sharing with the classroom the common goal of intellectual and personal growth. The continuing aim of the union is to create an environment that permits self-exploration and encourages members of the campus community and their guests to meet and share interests and ideas.

The union has space for many kinds of events. There are ten meeting and conference rooms, an auditorium that seats 365 people, a large multipurpose room called the Bi-Level, and a ballroom that accommodates 600. The art gallery displays the works of campus and community artists and is open weekdays for browsing.

The union is also a gathering place for students between classes. Some students gravitate to the arcade or the billiards and ping-pong room, where they can also rent videos, while others prefer to relax, watch television, read, or mingle with friends and other members of the campus community in the lounges. Hungry students, whether looking for a quick snack or a complete meal, can satisfy their appetites in one of the union's eateries—a cafeteria, a delicatessen, a pizzeria, a coffeehouse, a bakery-candy counter, and a restaurant. For information call the SB Union Information Center at 632-6830.

The building houses campus services such as check cashing and the Information Center, which is a campus-wide resource center. Campus directory information, campus maps, bus and train schedules, and concert, film, and other social events information are available. The Information Center's phone number is 632-6830.

The Union Crafts Center offers workshops in ceramics, photography, silk-screening, leatherwork, bartending, cooking, and many other crafts and skills. These noncredit classes are taught by professional instructors and are open to all. Fees are nominal. For information call 632-6822.

The union serves as headquarters for many student groups such as Student Polity (the undergraduate student government) and the Commuter Students Association. In addition, the student newspapers; WUSB-FM (90.1), the university radio station; and Polity AV, a student-operated audio-visual service, are housed in the union.

The Faculty Student Association (FSA) is the campus auxiliary service organization. Located in Room 282, FSA operates many services including check cashing, vending, recreation areas, food services, the meal plan office, a convenience store, graduate and commuter student lounges, the campus computer store, a course materials publishing service, test preparation services, student health insurance plans, flea markets, and several eating places including the main cafeteria, the Union Station Deli, and the End of the Bridge Restaurant and Pub.

Weekends at Stony Brook are filled with concerts, plays, movies, speakers, sporting events, and parties. Past concerts have included the Ramones, Eddie Murphy, Bob Dylan, the Cover Girls, and George Carlin, to name only a few. Craft fairs, club fairs, and special cross-cultural exhibits are popular weekend activities on campus.

The Student Union and Activities staff works with individuals and campus groups in planning programs. The staff also offers workshops in leadership development and in personal skills training that include assertiveness, time management, and an accredited course in theory and practice in leadership.

The Department of Student Union and Activities is located in Room 266 of the union; call 632-6820 for further information.

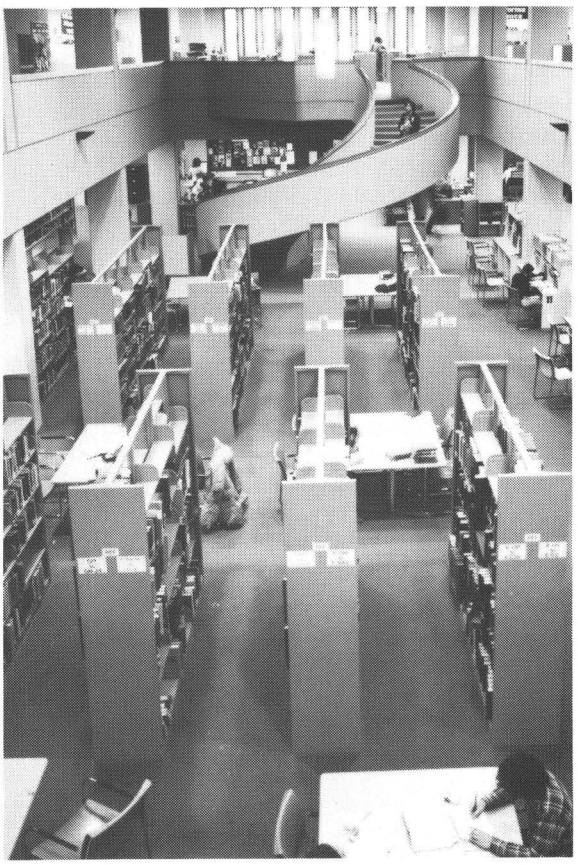
Hours of Operation

During the fall and spring semesters the Stony Brook Union is open Monday through Wednesday, 8 a.m. to 1 a.m.; Thursday, 8 a.m. to 2 a.m.; 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 and intersession it is open Monday through Friday, 8:30 a.m. to 5 p.m. and 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. For more specific building hours information call 632-6830.

University Libraries

The Stony Brook campus is endowed with a number of libraries 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 periodicals, government documents, maps, microforms, and legal materials. Other facilities of note are a music listening center, a student lounge, and a variety of individual study carrels. The full range of library services, including open stack privileges and database searches, are available to all students.

There are seven branch science libraries. Six of these—chemistry, computer science, engineering, earth and space sciences, marine and atmospheric sciences, and mathematics/physics—are located in departmental buildings. The seventh, biology, is located in its own building. A Health Sciences Library is located in the Health Sciences Center. Collectively, the university libraries contain more than 1.8 million bound volumes and 3 million publications in microformat. Numerous datafiles in CD-ROM and other electronic formats are also available.

Other library facilities of note are the Senator Jacob K. Javits Collection of private papers and memorabilia and the William Butler Yeats Archives.

Library Hours

During the academic year, the library is generally open Monday through Thursday, 8:30 a.m. to midnight; Friday, 8:30 a.m. to 8 p.m.; Saturday, 10 a.m. to 6 p.m.; and Sunday, noon to 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. Students are urged to check the posted hours of operation at the various branch libraries, as well as at the main library.

Bookstores

Textbooks, trade books, supplies, and clothing are stocked in the University bookstores at two locations on campus: ground level of the Melville Library (opposite the Stony Brook Union) and L-2 Health Sciences Center. Books are priced according to the manufacturer's list price. Shop early to obtain any available used books. Books may be returned within the first ten days of classes providing they are in the same condition as when purchased. Refunds can be made only during the first two weeks, and a receipt is required. During the first two weeks of each semester, the bookstores hold extended hours.

A selection of reference and general reading books is available, and titles not in stock can be ordered. The clothing department sells custom-printed T-shirts and sweat shirts. Art and engineering supplies are stocked in addition to regular stationery items. The stores also carry a selection of greeting cards, gifts, and health and beauty aids.

For more information, call the University bookstores at 632-6555 (West Campus) or 444-3686 (East Campus).

Calculus Resource Room

Instructors of calculus courses staff the Calculus Resource Room, located in Mathematics 4-130. Students who need assistance with coursework in any of the 100-level calculus courses can find someone in the room most of the time between 10 a.m. and 4 p.m., Monday through Friday, and during several weekday evenings. Call the Undergraduate Mathematics Office at 632-8250 for evening hours.

Mathematics Learning Center

The Mathematics Learning Center offers help to students who are having trouble in basic math or applied math courses and non-math courses that require math skills. Assistance is provided individually and in small groups on a first-come, first-served basis or by appointment. The center is located in S235 Math Building (632-9006), and is open during the day and some evenings. Please call for hours.

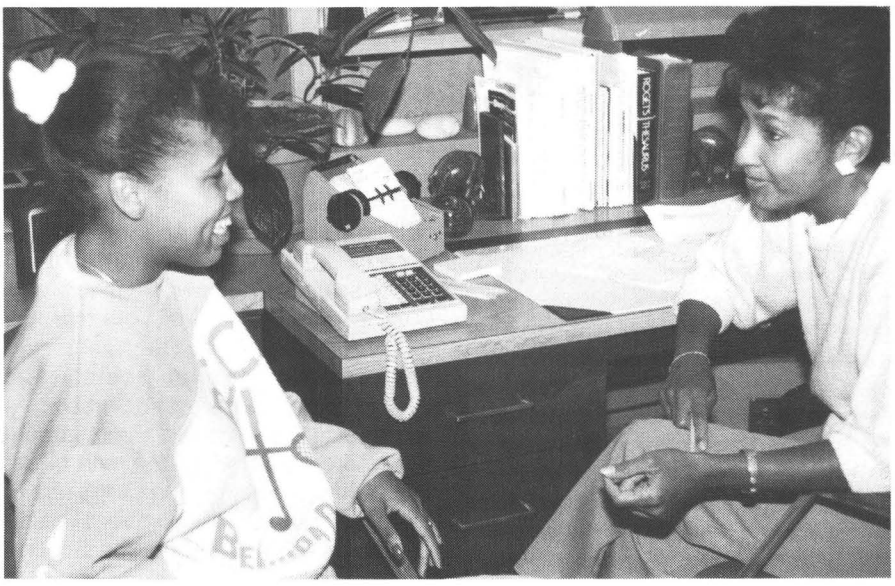
Writing Center

The English Department's Writing Center offers individual tutoring to all members of the Stony Brook community including undergraduate and graduate students, faculty, and staff. Tutors provide guidance in all stages of writing from getting started to revising, and for all types of projects from research papers to resumes. In addition, tutors provide general writing instruction for those interested in improving their skills apart from work on assigned writing tasks. Throughout the semester, tutors conduct workshops on various aspects of writing. The schedule of workshops is available in the Writing Center, 198 Humanities.

The Writing Center is open from 9 a.m. to 5 p.m., Monday through Friday and selected evenings that change from semester to semester. Appointments are recommended (632-7405), since last-minute requests cannot always be accommodated.

Student Affairs Vice Presidential Executive Area

The Student Affairs Vice Presidential Executive Area comprises three major divisions: Campus Life, Enrollment Planning and Management, and Campus Residences. Campus Life includes Career and Developmental Services (Career Development, Veterans Affairs, Disabled Student Services), the Student Health Service, Stony Brook Union and Activities, and the University Counseling Center. Enrollment Planning and Management is responsible for admissions marketing and recruitment efforts



for all undergraduate colleges and programs. This division comprises Financial Aid and Student Employment, Records/Registrar, Health Sciences Center Student Services, New Student Programs, and Undergraduate Admissions.

Campus Residences includes an administrative central office, six residential quads (26 residence halls), the Chapin Apartment Complex, and the Schomburg Apartment Complex. These major components are situated in various buildings across campus, but all report to the Office of the Vice President for Student Affairs (348 Administration).

Another student service located in the vice president's office is the Student Judiciary. The Office of the Vice President for Student Affairs also serves as a referral and information center for campus resources.

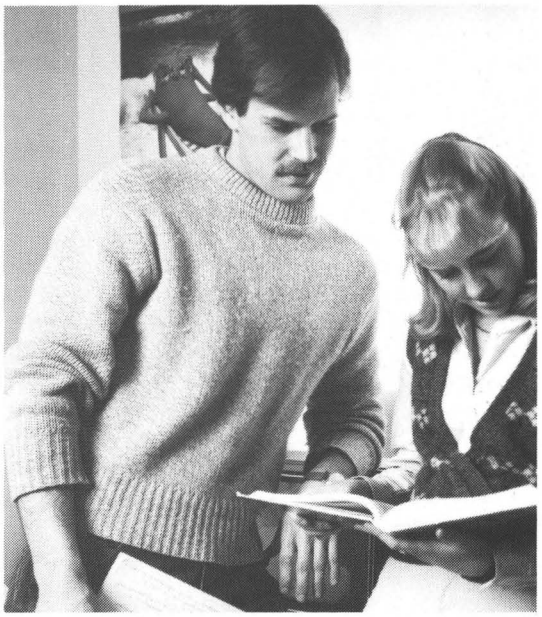
Campus Residences

The Division of Campus Residences is committed to providing quality housing and educational service to its resident students. The residence halls on campus house 60 percent of all undergraduate students. Forty professional Campus Residence staff members, assisted by approximately 300 student staff members, help students structure their experience within the framework of the overall Campus Residences 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. The residential colleges, each housing approximately 220 students, are arranged in quadrangles. Each quadrangle has a unique atmosphere and personality.

Each residence hall is supervised by a residence hall director (RHD). 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, resumé 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.

Several quandrangles have dining halls. First-year and transfer students living on campus must participate in one of the meal plan options during their first two semesters of enrollment. Several residence halls have been designated as cooking-free buildings and students living in those buildings are required to enroll in one of the meal plan options offered by the University Food Service. Many residence halls offer the options of quiet communities and substance-free rooms. These options have become increasingly popular with the residence hall population. Each residential college has public lounges, laundry rooms, kitchen facilities, and recreational facilities. Every residence hall room is equipped with a telephone and cable television hookup, which provides quality television reception as well as access to more than 40 cable stations. Access to University computing facilities is also available from residence hall rooms.



A large percentage of the on-campus activities take place within the residence halls. College legislatures are student councils within each building empowered to spend the monies allotted by Student Polity, the undergraduate student government. College legislatures and the Campus Residences 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.

The Residence Hall Association, representing all students who live on campus, addresses important issues of concern to quad residents, including an annual review of the complete residence hall budget. Students are encouraged to become active members of this organization.

The Harry Chapin Apartment Complex houses 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. Rental agreements are made on a 12-month basis. The cost varies depending on the size of the apartment and the number of occupants. On West Campus, the Schomburg Apartments house single graduate and Health Sciences Center students in four-bedroom apartments and married couples in one-bedroom apartments.

Information regarding Campus Residences programs and procedures for applying for housing can be obtained by writing to the Division of Campus Residences, Mendelsohn Quad, Irving/O'Neill Colleges, or by calling 632-6750.

Living/Learning Centers

Five living/learning centers, located in Langmuir College (H Quad)—Human Sexual and Gender Development, Baruch College (Kelly Quad)—Science and Engineering, Stimson College (Roosevelt Quad)—International Studies, Mount College (Roth Quad)—Wellness, and Gershwin College (Roth Quad)—Environmental Studies, integrate the student's residence hall experience with academic concerns, and enrich both aspects of the college education. Langmuir, Gershwin, and Stimson colleges allow resident students to earn academic minors in the areas of human sexual and gender development, environmental studies, and international studies; Baruch College provides courses for students with an interest in the sciences and engineering, while Mount College focuses on a wellness model that concentrates on living well, making health decisions, and developing positive behaviors. Classes are held within the residential buildings and building activities are centered around the living/learning center topic. Students in these programs benefit from an exciting social atmosphere with convenient classrooms, study areas, multimedia rooms, computer rooms, and social/rec-

reational facilities. For information on other living/learning centers anticipated for the future, contact the Division of Campus Residences.

Hendrix College (Roth Quad) is the home of the Honors College. All new students admitted to the Honors College who choose to live on campus will be housed in Hendrix College.

Another academic program that includes a residential component is WISE (Women in Science and Engineering).

Off-Campus Housing Service

An off-campus housing service, located in 104 Administration Building, is available to assist students in finding off-campus living arrangements. This service includes computer-generated and bulletin-board listings of available facilities, tenant information, and local transportation guidance. Call 632-6770 for further information.

Student Health Service

The Student Health Service, located in the Infirmary Building, provides health care to all registered students, and to faculty and staff on an emergency basis only. There is a mandatory fee of $60 for full-time students and $6 per credit for part-time students.The health service is open Monday through Friday, 8 a.m. to noon and 1 p.m. to 6 p.m. The hours during intersession and in the summer are 8 a.m. to 4:30 p.m. When the Student Health Service is closed, students are requested to use the Emergency Department of University Hospital on a fee-for-service basis.

The walk-in clinic at the health service is staffed by physicians, physician's assistants, and nurses. Students need only "walk in" to the Infirmary Building, register, and they will be seen by the medical staff. Some prescriptions can be filled and laboratory work completed as part of the mandatory fee. There is a gynecology clinic (Women's Center), wart clinic, rheumatology/orthopaedic clinic, health educator, psychiatrist, and social worker.

The University strongly recommends a voluntary health insurance plan because extensive medical assistance not available at the Health Service may cause financial difficulty. Information about insurance is available in the Infirmary Building. For further information call 632-6054.

University Counseling Center

The University Counseling Center provides consultation, crisis intervention, and brief psychotherapy, group, and couples therapy for full-time students. Part-time students may request referrals for the campus Psychological Center or counseling services elsewhere and are welcome to register for Group Shop programs. Counseling services are available year-round. All information about counseling at the center is strictly confidential, except in situations where there is an imminent threat or danger.

A student does not have to be confronting desperate or overwhelming difficulties in order to benefit from a visit to the center. Understanding a situation before it reaches the crisis stage often allows for greater freedom when making choices. The center's staff encourages students to come in and discuss problems, 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. For many students, dealing effectively with emotional and social issues increases their success with academic work. Some have an unrealistic image of college life, which minimizes or overlooks the significant life changes required. Even those students who are flexible and resilient can feel the stress associated with being a university student. For example, the transition from home to college is sometimes difficult. Residents must cope with the pressures of residence hall life. Commuting students may need help juggling competing priorities. Academic requirements are usually more rigorous and competition keener than previously experienced. Other students experience major life crises, losses, family or relationship problems, and self-esteem and identity issues while in college. The University Counseling Center is a place for help with issues such as these and with growth and development.

The Counseling Center also has mental health and outreach programs designed to enhance personal growth and skill development. Some of the most popular workshops in the Group Shop deal with stress management, interviewing for success, assertiveness training, study skills, effective public speaking, and feeling better about yourself. Group learning experiences offering a more extended format include adult children of alcoholic support groups, eating concerns groups, and support groups for women who have experienced sexual abuse. The programs are free for all Stony Brook students, staff, and faculty. In addition to workshops, the University Counseling Center sponsors a weekly radio show, "Take Care of Yourself," which focuses on health and mental health issues.

The University Counseling Center realizes the need to understand the diverse mix of cultural and social groups that make up the campus community. Through its liaisons, the Counseling Center works cooperatively with the following groups: EOP/AIM, the Mentor Program, Campus Residences, Undergraduate Studies, academic departments, Foreign Student Services, and Disabled Student Services.

The center is open 8 a.m.-5 p.m. on Monday, Wednesday, Thursday, and Friday, and 8 a.m.-8 p.m. on Tuesday during the academic year, and 8 a.m.-4 p.m. during intersession, summer, and spring break. Appointments for an initial visit are made on a same-day or next-day basis by calling 632-6720. If all appointments are filled for that day, students who cannot wait for an appointment the next day may come to the center's urgent care clinic between 1 and 2:30 p.m., Monday through Friday. This clinic is offered on a walk-in basis. In emergency situations, students are seen right away without a scheduled appointment. The Counseling Center is located on the second floor of the Student Health Center.

For mental health emergencies after hours and on weekends, students should call Public Safety (632-3333) or go to University Hospital. Students who are not experiencing an emergency but want to speak to someone after hours and on weekends can call the Response Hotline at 751-7500 or the University Response Hotline at 632-HOPE.

Commuter Student Association

The Commuter Student Association (CSA), 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 meet old and new friends. In addition, a variety of services are available to everyone, including a typing room, indoor recreational facilities, tutoring, car pooling, a video entertainment lounge, and a newsletter. The CSA sponsors campus events such as films, holiday parties, and theatre trips. Often, special events are offered at reduced rates for commuters. Commuters find the CSA 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.

Office of Special Programs

Special Programs is an administrative unit within the Office of Undergraduate Studies. Programs in this area provide services to populations with special interests, abilities, needs, and/or circumstances. Innovative programs, specialized advising, and enrichment opportunities are afforded to students who are academically talented as well as those who need academic support. Assistance in completing undergraduate studies and guidance in entering graduate or professional schools are the twin missions of the Office of Special Programs.

Pre-law and pre-medicine advising, the Honors College, the Advancement through Individual Merit (AIM) Program, the Mentor Program, Undergraduate Research and Creative Activities (URECA) Program, the Summer Research Program, living/learning centers, and internship opportunities are among the diverse programs administered through this office. The Honors College recruits and enrolls talented students in a stimulating and challenging program based on a liberal arts model. AIM, the University's educational opportunity program, provides access to higher education for historically disadvantaged students who are academically capable but who otherwise might not have an opportunity to attend college. The Mentor Program facilitates adjustment to university life by providing a warm, friendly relationship with faculty and professional staff who volunteer as mentors. URECA serves as a broker for undergraduates who wish to engage in research and other creative activities under the direct tutelage of a faculty mentor. Five living/learning centers afford students the opportunity to live in residence halls with specific academic themes as the core focus.

Professionals in this area also extend the educational resources of the University into the Long Island community through special projects for targeted populations. Support for minority interests and student organizations are also integrated into the various activities and programs that emanate from this area.

Returning Student Services Network

The Returning Student Services Network is a support system for undergraduate students 25 years of age 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 periodic newsletter, and a student government-sponsored club.

Disabled Student Services

Disabled Student Services (D.S.S.) is organized as part of the Student Affairs Department of Career and Developmental Services. The office coordinates advocacy and support services for students with disabilities. These services assist in integrating students' needs with the resources available at the University to eliminate physical or programmatic barriers and to ensure an accessible academic environnment.

It is the students' responsibility to identify and document their disability through the D.S.S. office. D.S.S. staff plan and implement the academic adjustments or reasonable accommodations necessary to support the students' academic program. All information and documentation of disability is confidential.

Students receive assistance with admission and orientation; registration information and referrals; special housing and transportation; recruitment of readers, interpreters, note-takers, aides, and attendants; University procedures and requirements; test accommodations; and counseling. A learning disabilties specialist is available to refer students for diagnostic testing and individualized educational programming, meet accommodation needs, and provide in-service training to the University community.

Special equipment available for student use on short-term loan includes two- and four-track tape recorders, wheelchairs, note-takers paper, an FM amplification system, keys for elevators, and a TDD. Also available are temporary handicapped parking permits, a volunteer taping service, typing of papers (request guidelines), and the use of a computer, a reading machine, and other equipment in the Frank Melville, Jr. Memorial Library.

The office advises STAC (Students Toward an Accessible Campus), a Polity-sponsored club for disabled and nondisabled students. STAC is a social and community service club.

The Americans with Disabilities Act (ADA), which became effective January 26, 1992, requires that individuals with disabilities be afforded equal opportunity in the areas of public services and programs, employment, transportation, and communications. Prior to this federal legislation, the University had been subject to similar provisions under Sections 503 and 504 of the Rehabilitation Act of 1973. In compliance with the ADA's broader definition of disabilities, the University makes concerted efforts to provide reasonable accommodation and access to services and programs.

Students who anticipate requiring assistance should notify the Disabled Student Services office as early as possible to allow time for implementing recommended services. The office is located in Room 133 Humanities Building, or call 632-6748/9, V/TDD.

Veterans Affairs

The Office of Veterans Affairs, operating within the Student Affairs Department of Career and Developmental Services, provides counseling and advice 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 the office as soon as possible.

The office is located in W0510 of the Melville Library. The telephone number is 632-6815.

International Programs

The Office of International Programs—through its Study Abroad programs, exchange agreements, foreign student services, and the Intensive English Center—brings an international dimension to the undergraduate experience. Study abroad opportunities are available to all Stony Brook students at low cost. Students may study at excellent universities on every continent. We have special arrangements with universities in England, France, Germany, Poland, Italy, Spain, Bolivia, and other countries. In each case, students receive assistance with transportation, housing, and curriculum selection. Most programs have resident coordinators in the host country to provide guidance and counsel to participating students. Students interested in programs such as these should visit E5340 Melville Library, where materials and assistance are available, or call 632-7030.

Foreign Student Services

The Office of Foreign Student Services (FSS) is the part of International Programs that counsels students from other countries concerning finances, housing, government regulations (including immigration and tax concerns), cross-cultural differences, and other general matters. The foreign student advisors are the officers on campus responsible for F-1 and J-1 student visas. Questions relating to academics are usually handled by academic advisors within the individual's school or department.

FSS supervises the SUNY Health Insurance Plan for Foreign Students and Scholars. The Japanese language program developed by International Outreach has received national attention. In addition, FSS works with community groups and student organizations to provide access to a varied program of activities, including tours and trips, discussion groups, home hospitality, speaking engagements, and other events. The office publishes a handbook and two newsletters each year. FSS also provides a liaison for students with the community host family group.

An F-1 or J-1 foreign student must take a full course of study of 12 credits, must attend a mandatory orientation program, and must consult a foreign student advisor (1) before accepting employment, (2) before leaving the United States either permanently or temporarily, (3) when transferring to another institution, (4) when withdrawing from the University, (5) when extending his or her entry permit, (6) before leaving the University, (7) when changing his or her address for any reason, (8) when anticipating a status change (for example, from "F" to "permanent resident"), or (9) when changing his or her major or level of study.

FSS is located in E5340 Melville Library and is open from 10 a.m. to 4 p.m. The telephone number is 632-7025.

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. For additional information contact the Linguistics Department at 632-7777.

Intensive English Center

The Intensive English Center (IEC) offers an intensive English language program for potential Stony Brook students who need full-time instruction prior to matriculation. An applicant who meets the academic criteria for admission can be given conditional admission into the University with the provision that he or she attend the IEC for one semester or longer. The program consists of 18 hours per week of English language courses, optional electives, and the possibility of auditing or registering for one University course with the permission of the IEC director. The IEC program is also open to people who do not plan to enroll at Stony Brook after completing the language training. Participants are eligible to receive a student visa (F-1), may live on campus, and may use all University facilities.

In the summer, the IEC offers a four-week summer program. Students attend English classes and join excursions to places of cultural and historic interest. A three-day trip to Washington, D.C. affords students the opportunity to visit our nation's capital. Admission is open to all foreign students who have completed the equivalent of a secondary school education.

For additional information prospective students may call or visit the Intensive English Center, E5320 Melville Library, telephone 632-7031. The hours are Monday through Friday, 10 a.m. to 4 p.m.

Office of the Student Judiciary

The Office of the Student Judiciary is responsible for investigating and adjudicating cases of alleged student misconduct (in nonacademic matters) in violation of the University Student Conduct Code. In addition, the judiciary educates the campus community about the code and provides a learning experience for students who volunteer to become student hearing board members.

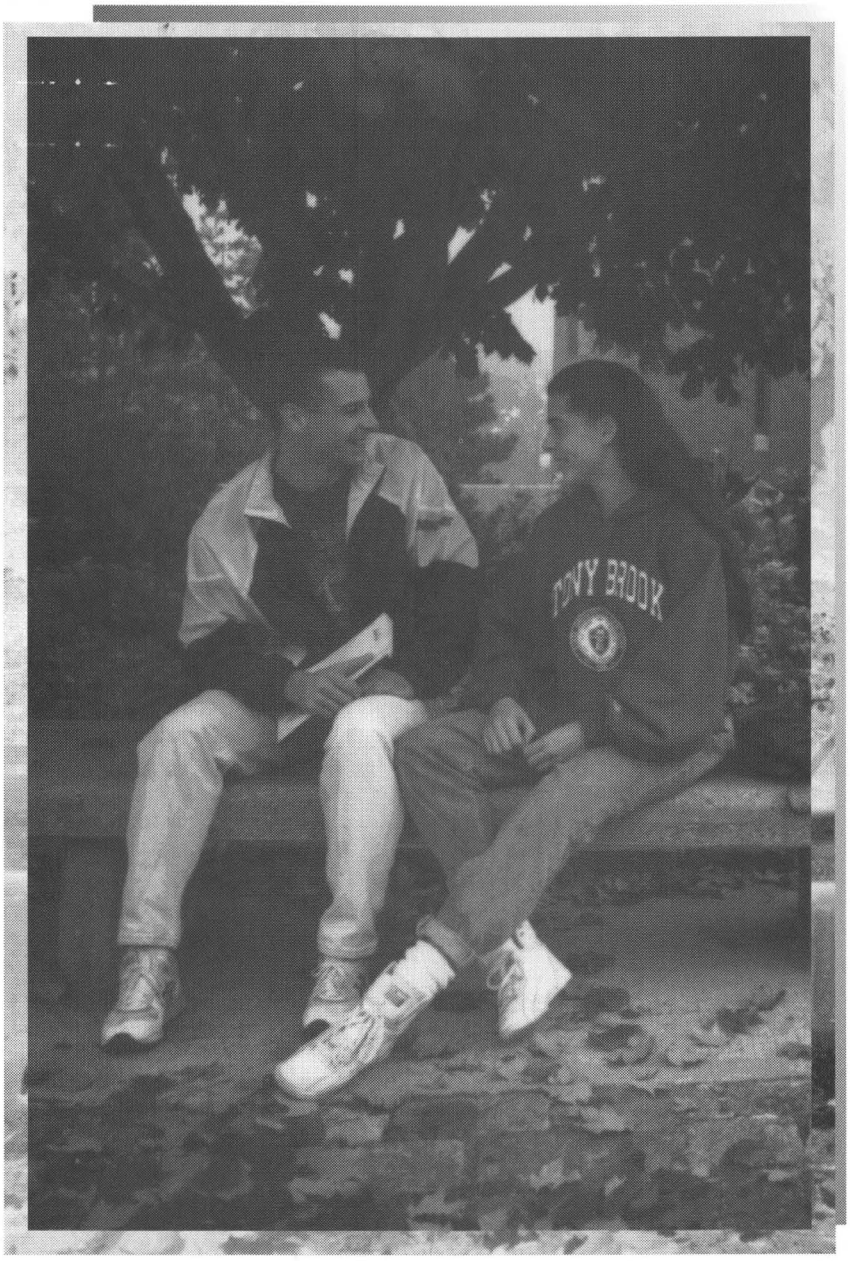
Any questions regarding the Conduct Code, the judiciary process, or procedures for filing a complaint should be directed to the University Hearing Officer, 347 Administration Building, 632-6705.

Child Care Services

Stony Brook Child Care Services is a nonprofit service for University students, faculty, and staff that provides child care services for children ranging in age from two months to five years old. Four on-campus facilities in newly renovated houses are staffed with professionals in the early childhood field, who are assisted by students enrolled in coursework practice. The primary aim is to provide a warm, supportive, and creative atmosphere in which each child, and each child's family, are regarded as individual. Two of the centers, Toscanini and Clark, are for children from 2 months to 3 years old, and the other two, Early Childhood Center (ECC) and Benedict, are for children three to five years old. Hours of operation vary. Fees are charged on a sliding fee scale based on income.

There are extensive waiting lists for these centers; therefore, it is wise to call for an application well before you will need the service, since placement cannot be guaranteed. Call Toscanini at 632-6933, Benedict at 632-6932, ECC at 632-6931, Clark at 632-9011, or the executive director, Lucille Oddo, at 632-6930.

Admission



The information in this chapter refers only to undergraduate admission to the College of Arts and Sciences, the College of Engineering and Applied Sciences, the W. Averell Harriman School for Management and Policy, and the Marine Sciences Research Center (MSRC). (A section of particular importance to students interested in the Harriman School appears on p. 256. A section of particular importance to students interested in the School of Health Technology and Management appears on p.264.) Transfer students and current Stony Brook students who seek admission directly 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 Admission

Entrance Requirements

For students applying from high school, the University entrance requirements include:

- a high school diploma preferably with Regents designation;
- a high school academic average of 85, which should include:
  3 to 4 units of mathematics (4 units required for engineering)
  4 units of English
  3 units of social studies
  3 units of science (4 units required for engineering)
  2 or 3 units of a foreign language recommended;
- a combined SAT score of approximately 1050 or an ACT composite score of approximately 25; and
- two letters of recommendation from counselors and teachers.

Entry Skill in Mathematics

Students admitted to the University should have reached a minimum level of mathematics achievement so that they are able to use basic mathematics to formulate and solve problems arising in their University work. Students may satisfy the entry skill in mathematics requirement in any one of the following ways:

A. By having passed, while in high school, the New York State Regents Examination in Sequential Mathematics III or Mathematics Eleven with a score of at least 75.
B. By having achieved a score of 525 or higher on the College Entrance Examination Board Achievement Test in Mathematics, Level I or II; or a score of 550 or higher on the mathematics portion of the Scholastic Aptitude Test (SAT); or a score of 55 or higher on the mathematics portion of the Preliminary Scholastic Aptitude Test (PSAT); or a score of 23 or higher on the American College Testing (ACT) Test in Mathematics. In some cases students who are otherwise qualified will be admitted to the University with the understanding that they will satisfy the entry skill in mathematics requirement as soon as possible on campus. See University Studies chapter, p. 62, for ways of satisfying the requirement after admission.

Entry Skill in Foreign Language

The College of Arts and Sciences entry skill in foreign language requirement, while not an entrance requirement, may be satisfied by a third-year high school Regents examination score of 75 or higher or a score of 525 or higher on the College Entrance Examination Board Achievement Test in a foreign language. 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 requirement. A third-year high school foreign language course passed with a grade of 85 or higher fulfills this requirement for those students whose high school does not offer the New York State Regents examination or its New York City equivalent. Stony Brook strongly recommends that students satisfy the requirement in high school. Students whose secondary school transcripts and transcripts from prevously attended universities show a total of two years of formal language study in an institution where the language of instruction is other than English also have satisfied this requirement.

Special Admissions Programs

Stony Brook offers special admissions programs for freshmen and transfer students; these are described on p. 27. They include the Educational Opportunity Program/Advancement on Individual Merit (EOP/AIM) and Returning Students (for applicants who are 25 years of age or older).

University Scholarships

The university awards scholarships to selected students based on merit and/or need. The main merit scholarship programs are the Presidential, Freshman, and Honors College Scholarship programs.

Presidential Scholars are selected based on a collaborative effort between high school and university officials. Fifteen four-year, full New York State tuition scholarships are awarded each year. Students must have an average of 94 and combined SAT scores of 1200 to be considered for this program. Letters of recommendation are also required.

Freshman Scholarships are awarded based on the results of a competitive examination. In order to take the examination, students must have a high school average of 88 or above. Counselor recommendations are also required.

Honors College Scholarships are awarded to students of proven academic ability who desire intellectual challenge and the opportunity for creative interaction in a highly personalized teaching environment. Students must submit a separate application for this scholarship and are required to submit detailed letters of recommendation and an essay on a designated topic.

Students admitted to the Honors College receive a $2,000 scholarship for their first year of study. A limited number of students receive full New York State tuition scholarships for two or four years. Up to 40 Honors College Scholarships are awarded each year.

For further information on any of the merit scholarship programs, contact the Office of Undergraduate Admissions at (516) 632-6868 or the Office of Enrollment Planning and Management at (516) 632-6857. For information on need-based scholarships, contact the Office of Financial Aid and Student Employment at (516) 632-6840.

Freshman Conditional Acceptance to the W. Averell Harriman School for Management and Policy

Harriman School offers freshmen admission into the business management major. Requirements include an unweighted high school average of 85 or higher in a college preparatory curriculum and a combined SAT score of 1050 or higher or an ACT score of 25 or higher.

*The Office of Undergraduate Admissions reserves the right to modify entrance requirements when necessary.

Accepted students must maintain a minimum cumulative grade point average of 3.00 or higher and complete a minimum of 56 credits at Stony Brook, including:

AMS 102
ECO 101
MAT 123 or higher
BUS/ECO 114
SOC 105 or 106 or PSY 103 or 104

Early Admission from High School

While the University does not actively seek students who expect to leave high school before completing all requirements for either a Regents or high school diploma before they matriculate 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.

Early admission students who are still included on their high school rosters after enrolling at the University are not eligible for financial aid.

Application Procedures for New Freshmen

Freshmen are admitted to the University rather than to a particular program. Students considering applying to the College of Engineering and Applied Sciences 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. 223.

All applicants must submit a completed application for undergraduate admission available either through the Office of Undergraduate Admissions or in their high school guidance office. All applications are to be sent to the Application Processing Center (APC) in Albany. APC will then forward all applications to Stony Brook.

Notification of Freshman Admission

Students are notified of their admission for the fall semester on January 15 and on a rolling basis thereafter. Notification for spring admission begins on November 1 and continues on a rolling basis thereafter. Applications will be accepted only through mid-July for admission for the fall semester. Deadlines for housing and financial aid may differ. Admission to the University is determined approximately two weeks after all credentials are received and evaluated.

Deferred Enrollment

Stony Brook permits admitted freshmen to defer enrollment for a maximum of two semesters. Requests for deferred enrollment must be put in writing and sent to the director of admissions by May 15 for students accepted for the fall semester and November 15 for those accepted for the spring semester. The request for deferred enrollment must include a justification for the deferment and the length of time for which the deferment is being requested. A deferment is not honored if the student attends another institution.

Transfer Student Admission

Entrance Requirements

The entrance requirements for transfer students are:

- a minimum cumulative grade point average of 2.5;
- official transcripts from every postsecondary institution attended; and
- high school transcripts in order to determine if entry skills in mathematics and foreign language requirements have been met.

Application Procedures for Transfer Students

All applicants must submit a completed application for undergraduate admission, available through the Office of Undergraduate Admissions. All applications are to be sent to the Application Processing Center (APC) in Albany, which then forwards them to Stony Brook.

All offers of admission are conditional, pending receipt of all official records showing successful completion of academic work in progress.

It is the student's responsibility to see that a final college transcript is sent to the Undergraduate Admissions Office prior to final registration. 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.

Note: Any deliberate falsification or omission of data (including transcripts) may result in denial of admission or dismissal.

Dual Degree/Joint Admissions

Stony Brook participates in a Joint Admissions Program with the College of Technology at Farmingdale, Nassau Community College, and Suffolk County Community College. Through this program, students are jointly admitted to one of the participating colleges and to Stony Brook. Participating students must remain in good academic standing prior to commencing their studies at Stony Brook.

Further information and details on this program are available from an admissions counselor at Stony Brook or from the admissions office at one of the participating colleges.

Second Bachelor's Degree Program

Students who previously earned a bachelor's degree, either at Stony Brook or another institution, may be eligible for the Second Bachelor's Degree Program.

All applicants must file a SUNY application, submit an official transcript indicating previous degree earned, and have a minimum cumulative grade point average of at least 2.5.

Students who earned a degree from either a foreign university or an institution that is not regionally accredited are reviewed individually to determine eligibility for the Second Bachelor's Degree Program.

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 technical colleges within the State University of New York and City University of New York systems. Students are not, however, guaranteed admission into the program of their choice.

In order to prepare for a smooth transition to Stony Brook after completing the associate's degree, 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 several SUNY and CUNY two-year institutions. Graduates of career-oriented programs (A.A.S. and A.O.S.) will be considered for admission on an individual basis and in competition with other transfer applicants.

To facilitate students' transfers to Stony Brook and to maximize the University's service to applicants, Stony Brook strongly encourages students to file applications in the fall of their sophomore year for the following fall semester. Such early application makes possible an early decision, enabling transfer students to participate in orientation and

advance registration. It also increases the likelihood of their receiving the financial aid for which they are eligible. The university is prepared, therefore, to render decisions to students on the basis of two semesters of full-time work, since its offer of admission is conditional on the student's final transcript showing a grade point average of 2.5 (A=4.0) 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. Graduates of SUNY or CUNY colleges who earned an Associate in Arts or Associate in Science degree prior to matriculation at Stony Brook receive transfer credit for all coursework completed as part of their associate degree requirements. Official proof of an A.A. or A.S. degree must be submitted by October 1 for fall semester entry or February 15 for spring semester entry.
2. Credits for students transferring from SUNY or CUNY colleges without a degree, or with any degree other than the A.A. or A.S., or from colleges that are not part of SUNY or CUNY are handled differently. All credits passed with a letter grade of C or higher earned at regionally accredited institutions or recognized by the Program on Noncollegiate Sponsored Instruction of the State University of New York and recorded on official transcripts are accepted for transfer credit and evaluated for applicability to specific Stony Brook requirements. Successfuly completed courses from these institutions for which a letter grade was not assigned are also accepted for transfer credit.
3. Students are 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.
4. 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 and upper-division credit are available in the Undergraduate Admissions Office and in the Engineering and Applied Sciences Undergraduate Student Office. Students may begin the evaluation process as soon as they accept the offer of admission. Any applicant who has completed college-level study at an institution outside of the United States must request an evaluation of each course.
5. Credits earned at community and technical colleges are usually considered lower-division credit, with the exception of two-semester courses in organic chemistry with laboratories, a few other courses recommended by a Stony Brook academic department and approved by the College of Arts and Sciences Curriculum Committee, and certain engineering courses determined by the College of Engineering and Applied Sciences.
6. Transfer courses are reviewed by the Undergraduate Admissions Office individually for their applicability toward fulfillment of Diversified Education Curriculum (D.E.C.) requirements. All Arts and Sciences students who have earned an A.A. or A.S. degree in a university-parallel program at a SUNY or CUNY two-year college have automatically met categories A through H of the Diversified Education Curriculum; all Engineering and Applied Sciences students who earned a degree have met categories A through G. All other transfer students have their previous courses evaluated for applicability according to the criteria set forth on p. 63.
7. Transfer credit is entered on the official University transcript with the understanding that neither previous grades nor cumulative averages are shown. Students wishing additional information should consult an admissions counselor.
8. Credit may be given for courses taken in foreign secondary schools having a thirteenth year equivalent to the first year of college. Students who have studied in such schools should consult the Undergraduate Admissions Office before seeking a departmental course evaluation.

Special Admissions Programs

Educational Opportunity Program/ Advancement on Individual Merit (AIM)

EOP/AIM is responsible for 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 into EOP/AIM, each student is assigned to a professional counselor who provides academic advising and encourages academic achievement. All EOP/AIM freshmen are required during their first year to enroll in either *AIM 102 Expository Writing* or *AIM 103 Analysis and Critical Reasoning,* which are offered through the program. Tutorial assistance in academic subjects is provided for EOP/AIM students, who are encouraged to use all academic support services available through the program or other university offices.

Entering freshmen admitted through EOP/AIM are required to attend an intensive six-week summer session designed to enhance academic skills and better prepare them for the rigorous academic atmosphere that they will be entering.

To be considered for admission to the university through EOP/AIM, applicants must be within the following economic eligibility parameters:

Number of Members in Household (including head of household)	*Total Annual Income**
1	$ 9,900
2	16,200
3	18,650
4	23,200
5	27,500
6	32,300
7	35,950

*Add $3,650 for each member in excess of seven.

All applicants for admission through EOP/AIM must also be academically eligible for acceptance at the time of application. To be academically eligible, applicants must normally meet the following criteria:

1. High school average below minimum for regular admission to the University (usually 80.0 to 84.9);
2. Three-year sequence of mathematics and science; and
3. Combined SAT score of 750 (minimal verbal score of 370 or a TOEFL score of 550).

Freshmen may also be considered with a GED score of 285 or higher.

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 stu-

dent entered. Transfers must also have a minimum grade point average of 2.3 with at least 18 credits completed at their previous college.

Students wishing to apply to the University through EOP/AIM should contact their school guidance office or the Undergraduate Admissions Office at (516) 632-6868. Applicants are encouraged to apply early, as there is limited space in the program.

Returning Students

The University welcomes applications from motivated individuals of all ages. Previously earned grades are evaluated differently for adults who have not been enrolled in school for five or more years. All applicants are required to submit high school and/or college transcripts. If SAT scores or additional documentation is required, the Undergraduate Admissions Office will contact the applicant. An admissions interview before or soon after filing an application has proved helpful for returning students, providing a chance for them to discuss what they have done since attending school and to learn about the University's programs and services.

Working together with professional staff, the Returning Student 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 a special advisor to offer information and assistance to returning students.

Acceptance to the College of Engineering and Applied Sciences Programs

Qualified freshman and transfer applicants to the University may be accepted directly into the electrical engineering, mechanical engineering, engineering science, applied mathematics and statistics, computer science, or information systems major; however, they must specify their interest at the time they apply. Admission to the University does not guarantee acceptance into any of these six programs.

Pre-Enrollment Deposit and Refund Policy

Each new student is required to pay an advance tuition deposit of $100 and an additional $200 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. Housing deposits are fully refundable until July 1; thereafter, they are refundable according to a prorated schedule. 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 11794-1301, and must be received by the University not later than 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

Students who are unable to attend Stony Brook full time may wish to apply for study as part-time matriculated students. Part-time students may enroll for up to 11 credits per semester and are subject to all academic rules and regulations appropriate to that status. First-time matriculants at Stony Brook should follow the application procedures described elsewhere in this chapter. (Freshmen see p. 25, transfer students see p. 26.)

Undergraduate Evening Study

The university offers evening classes for students whose work, child-care, or other responsibilities make attendance during the day difficult. Matriculated admission to the university for evening study is geared toward transfer students who have already successfully completed two or more years of college studies and intend to complete their bachelor's degree at Stony Brook.

Evening classes are available in a wide range of subjects and are taught by the same distinguished faculty who teach day classes. Degree requirements are the same for both day and evening students, making it possible for students to move freely between day and evening classes as circumstances dictate. Two interdisciplinary majors provide evening students with the flexibility to design their own programs of study and complete a bachelor's degree entirely in the evening by combining varied interests and previously earned credits. Disciplinary majors currently available in the evening include business management, English, political science, and psychology; secondary teacher preparation in social studies is also available. Evening students interested in other disciplinary majors should contact the appropriate department's director of undergraduate studies to discuss their academic background and the feasibility of completing the requirements in the evening.

Students with a Disability

The academic admission procedures for students with a disability are the same as for all other applicants. Students with a disability, including students with a learning disability, are evaluated on the basis of high school transcript and grade point average, standard or untimed SAT scores, and letters of recommendation. An interview is strongly recommended.

Foreign Students

Foreign students interested in applying to the university should 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 Application 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 when converted to the American system's grading scale. 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. (For transfer credit policies, see p. 27.)

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: SAT verbal score of 350 or higher or proof of attendance at an Intensive English Language Institute at an advanced level in the United States with completion of a program at the high-intermediate or advanced level.

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 considered as sufficient funding may vary from year to year. Contact the Undergraduate Admissions Office for full details.

Early application completion is crucial. Applicants should keep in mind the following deadlines for completed applications: for the fall semester the deadline is April 1; for the spring semester it is October 1 for applicants outside the United States and October 31 for applicants within the United States.

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 accepts 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 Stony Brook's own Challenge Program. (See below for details about these programs.) Credit by examination may not be used to satisfy most Diversified Education Curriculum requirements; however, they may be used to satisfy one course in each of categories E, F, and G, and AP credit may satisfy category C. 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 residence requirement. (See p. 54.)

Credit requested for 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.

Second Baccalaureate Candidates

Students who hold a bachelor's degree from the University at Stony Brook or another institution may be eligible to apply for undergraduate study toward a second baccalaureate. Some majors have special admission requirements and/or restrictions. For details regarding second baccalaureates, see p. 53.

Advanced Placement Credit

Advanced placement credit may be extended to freshmen 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.

College-Level Examination Programs

The University awards 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 is not 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. 54.)

Summer Session Admission

Each year the University offers a wide range of courses, from lower division (100 and 200 level) to upper division (300 and 400 level), during the Summer Session, which usually consists of two consecutive terms, each equivalent to a semester. These classes are the same as those offered during the academic year and offer the same number of credits. During the summer most classes meet two or three times per week, although some may meet as often as five times per week. Day and evening classes are available in both terms.

The University has an open admission policy during the summer to all graduates of accredited high schools or equivalency programs. In addition, high school students who have completed their junior year by the end of June may take selected introductory-level summer courses if their grade average is 85 or higher.

Admission to summer classes is for the Summer Session only. Those students who wish to continue studying at Stony Brook during the academic year, either toward a degree at Stony Brook or as non-degree students, must apply for admission following the procedures outlined in this bulletin. Upon acceptance as students at Stony Brook they may use Summer Session credits taken at Stony Brook toward fulfillment of their academic requirements.

To request information about the Summer Session, write or phone:

Office of the Summer Session
217 Old Chemistry Building
State University of New York
at Stony Brook
Stony Brook, NY 11794-3730
(516) 632-7070

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 graduate 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 requirements 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 a small administrative fee.) 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 as a visiting student should see a financial aid counselor on their home campus about continuing to receive financial aid.

Applications for non-matriculated study are available in the Undergraduate Admissions Office. They should be completed and returned with transcripts from all previous institutions. Applicants for full-time non-matriculated study (FTNM) must have achieved a minimum G.P.A. of 2.5 for a minimum of 15 credit hours at their previous institutions. Applicants for part-time non-matriculated study (PTNM) must have achieved a minimum grade point average of 2.3 for a minimum of 15 credit hours. Adults returning to school after an absence of five or more years may request special consideration if they do not meet these standards.

Non-matriculated students' academic performance will be reviewed at the conclusion of each semester. Students earning less than a 2.0 semester grade point average are not permitted to continue. Generally, students who did not initially qualify for matriculation and who wish to do so must successfully complete either 15 credits at Stony Brook

with a cumulative grade point average of at least 2.5, or 12 credits with a cumulative grade point average of 3.0 or higher.

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, and on Saturday. In past semesters, course offerings have included Calculus III: Differential Equations, Spanish Composition and Conversation, Structure and Methods in Sociology, Introduction to Psychology, 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 offer them 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 parents and guidance counselor or principal before acceptance into the program.

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

Office of Undergraduate Admissions
118 Administration Building
State University of New York
at Stony Brook
Stony Brook, NY 11794-1901
516-632-6868

Visiting the Campus

Visits to the campus are strongly recommended. During the academic year, knowledgeable students conduct campus tours that leave from the Undergraduate Admissions Office. Prospective students are invited to tour the campus with guides who are informative about Stony Brook and responsive to questions. It is advisable to call for the schedule when planning a visit to the campus.

Orientation/Academic Advising Program

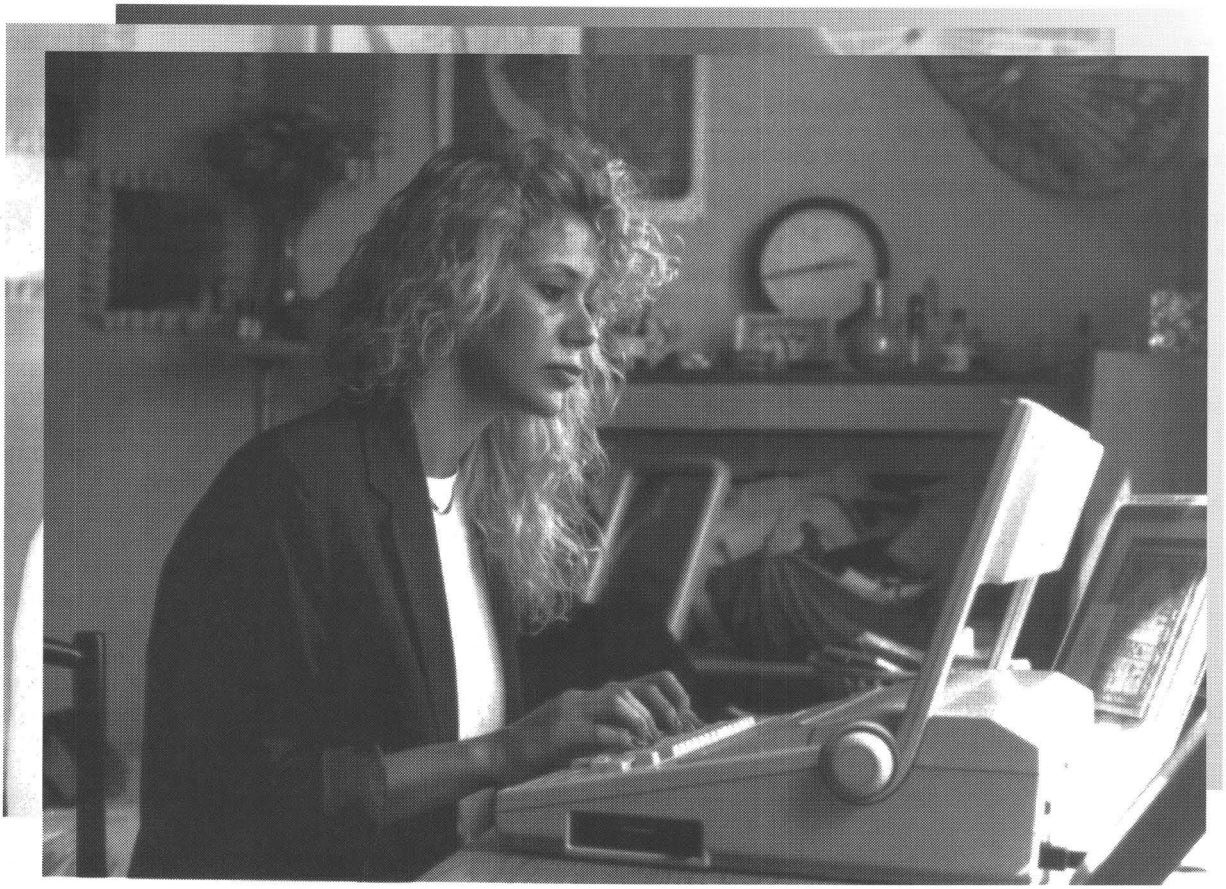
Each semester prior to the start of classes, all new freshmen and transfer students are required to attend a one-, two-, or three-day orientation session during which they may confer with faculty members who advise them about academic programs and potential careers, learn about campus life from student leaders, and register for classes.

Separate freshman and transfer student orientation programs are conducted during the summer for fall entrants, and in January for spring entrants. Detailed information concerning the content, costs, and dates of orientation is sent shortly after the offer of admission.

Withdrawal, Readmission, and Leave of Absence

Information concerning withdrawal, readmission, and leave of absence from the University appears on p. 57.

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. 33 under "Refund of Tuition." ***All fees and charges are subject to change without prior notice.***

Tuition and Fees

At the time of publication, tuition amounts were unavailable. Please contact the Office of Student Accounts at 516-632-6175 for further information.

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
Single occupancy	$1821.00
Double occupancy	1584.00
Meal plan	999.00
Cooking fee (on-campus resident not on meal plan)	
Hall	208.00
Suite	134.00
	Second Semester
Single occupancy	$1821.00
Double occupancy	1584.00
Meal plan	991.00
Cooking fee (on-campus resident not on meal plan)	
Hall	208.00
Suite	134.00
	Year
Single occupancy	$3642.00
Double occupancy	3168.00
Meal plan	1990.00
Cooking fee (on-campus resident not on meal plan)	
Hall	416.00
Suite	268.00

Student Activity Fee[1]

	First Semester
Undergraduate, full time	$75.00
	Second Semester
Undergraduate, full time	$75.00
	Year
Undergraduate, full time	$150.00

Athletic Fee

(per semester)	
Full-time student (12 credits or more)	$30.00
Part-time student (per credit hour up to 11 credits)	2.50

Lost Identification Card $10.00

Student Health Insurance

To be announced

Orientation[2]

Freshmen	3 days	$225.00
Transfer Students	1 day	50.00

Returned Check Fee $20.00

Late Registration Fee $30.00

Late Payment Fee $30.00

[1]This fee is set by Student Polity (Undergraduate Student Government).
[2]Includes orientation fees and charges for room and board. Prices are approximate and subject to change.

Advance Tuition Deposit[3]

(Freshmen and transfers only) $100.00

Advance Housing Deposit $200.00

Transcript Fee $5.00 each

Bus Pass Fee

Per Semester	$25.00
Per Month	$10.00
Per Ride	.50

[3]Applies toward first-semester charges.

Summer Session

At the time of publication, tuition amounts were unavailable. Please contact the Office of Student Accounts at 516-632-6175 for further information.

Fees

Double room, single occupancy	$99.00/week
Single room, single occupancy	114.00/week
Double room, double occupancy	85.00/week
Cooking fee	13.00/week
College fee	.85/cr. hr.
Student activity fee	Determined by status
Late registration fee	30.00

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.

The Office of Student Accounts offers a Time Option Payment Program (TOPP). This program allows for the budgeting of expenses over a ten-month period (June-March). This is not a loan of any sort; therefore, no interest will be charged. The only cost is a $30.00 per student annual processing fee to help defray the administrative expenses of the program. For further information please contact the Office of Student Accounts.

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 fee of $30.00. Payments postmarked after the due date printed on the bill are subject to a $30.00 late payment fee. Late payment

fees are cumulative up to $120.00 per semester. Fees may not be waived and are nondeferrable. The late registration period ends at the close of the second week of classes.

Students failing to meet financial obligations incurred while in attendance at Stony Brook may be subject to additional collection agency fees and/or fines.

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 amount of the award must be presented at the time of payment for the deferment to be applied to the account (only current awards are deferrable). Students should refer to pp. 35-39 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. *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 Office of Financial Aid and Student Employment. (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. *Federal Perkins Loan, Federal 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 Office of Financial Aid and Student Employment prior to registration. Acceptance of these awards must be returned to the Office of Financial Aid and Student Employment promptly.
3. *Federal Pell Grant:* Students will receive an award notice (Student Aid Report) from the federal government. This notice must be submitted to the Office of Financial Aid and Student Employment 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 covering all current charges from the Office of Student Accounts 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 Loans (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.

Refund Policy

All requests for refunds must be submitted in writing to the Office of Student Accounts, University 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 $100. Deposits for the fall semester are due by the date indicated on the deposit card's preprinted label. Deposits are applied to 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 $200 advance room deposit when requesting a future room assignment; this deposit will be applied to the housing charges for the first semester. A request for refund of room deposit must be made in writing to the Division of Campus Residences by June 30 (for the 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 or decrease their academic load shall be liable for payment of tuition in accordance with the following schedule:

Liability during	*Semester*
First week	0%
Second week	30%
Third week	50%
Fourth week	70%
Fifth week	100%

Liability during	*Six-Week Summer Session*
First week	0%
Second week	75%
Third week	100%

Liability during	*Five-Week Summer Session*
First week	0%
Second week	75%
Third week	100%

The first day of classes as published by the University in the academic calendar shall be considered the first day of the semester, quarter, or other term.

Certification of the effective date of withdrawal must be made by the Office of Records/Registrar.

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 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
When occupancy levels are at or above 100 percent capacity, residents wishing to cancel their housing will be billed a prorated portion of their housing fees through the end of the week in which they last occupied a space in the residence halls.

More importantly, should the total occupancy in the residence halls fall below 100 percent of utilization, students who cancel their housing assignment after the start of the semester will be responsible for the full cost of room rent for the semester. No prorations of the room rent will be offered.

Refund of Meal Plan Fee
Students wishing to cancel their meal plan contract must do so through the Campus ID/Meal Plan Office, located in Room 0319 Melville Library. On notification from this office, the Office of Student Accounts will credit the account and prepare a refund if appropriate.

Refund of Student Activity Fee
As determined by Student Polity and GSO, full refunds of the student activity fee will be granted if the student withdraws during the first week of classes. No refunds will be granted for withdrawals after the first week of classes.

Refund of Cooking Fee
The 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.

Other Expenses

Food
The University, through a food service contractor, provides several meal plan options. There are three dining halls located in the residential areas; Kelly and "H" dining halls offer all-you-can-eat breakfast, lunch, and dinner. Roth Food Court houses the kosher dining room and offers traditional meals as well as alternatives to traditional meals such as Burger King, Deng Lee's Chinese Cuisine, and the SeaWolves Sub Shop.

New undergraduates who choose to reside on campus are required to participate in a meal plan for one year. This policy applies to transfer students as well as freshmen. Meal plan participation is also mandatory for all occupants of the residence halls or sections thereof designated as non-cooking areas. Resident students who do not sign up for a meal plan are required to pay a cooking fee of $208 per semester if they reside in a hall and $134 per semester if they reside in a suite. Students who elect to do this may expect to spend between $45 and $60 a week for food.

There are several meal plans offered at a rate of $995 per semester that combine various declining balance and traditional mean options. There is an additional option open to continuing students residing in non-mandatory buildings at a rate of $797 per semester. For more information, please refer to the meal plan brochure or call or visit the Campus ID/Meal Plan Office, Room 0319 Melville Library (adjacent to the bookstore), 632-6517. 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.

Students may utilize their declining balance or pay cash in the residence dining halls at prices, depending on the meal and the selection, currently ranging from about $3.50 to $7.25 per meal. Dining halls are open daily but hours of operation vary from year to year. Students are advised to consult dining hall staff for hours applicable during their residency.

In addition to the dining halls, the food service contractor operates several other eateries. The End of the Bridge Restaurant in the Stony Brook Union is open for a buffet lunch from 11:30 a.m. to 2 p.m. and for dinner from 5 p.m. to 9 p.m., Monday to Friday; prices range from $4.00 to $7.00 per meal. The Bleacher Club (a cafeteria) is open Monday to Thursday from 11 a.m. to 8 p.m., and Friday from 11 a.m. to 3 p.m. Prices range from $3.00 to $5.00 per meal. Also in the union are Papa Joe's Pizza Parlor, open Monday to Friday from 11:30 a.m. to 9 p.m. and Saturday and Sunday from 1 p.m. to 9 p.m., and the Union Deli, open Monday to Friday from 8 a.m. to 11 p.m. and Saturday and Sunday from 11 a.m. to 11 p.m.

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.

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 $750 for nine months (September-May). This figure is used for computing the basic student aid budget.

Miscellaneous Expenses
The average estimated personal expense is $1,120 for nine months. This figure is used for computing the basic student aid budget.

Travel Expenses
The average estimated expense is $600 for nine months on campus for a student residing in a dorm. The average estimated expense is $1,922 for nine months for a student residing with parents and commuting to the campus. These amounts are also used for computing the basic student aid budget.

Study Abroad Expenses
Students who participate in Study Abroad programs (in such countries as France, Germany, Italy, Bolivia, Poland, etc.) pay the normal SUNY tuition. They must also pay round-trip transportation and housing costs. Programs in some countries also carry a program fee to cover exceptional administrative expenses. As a rule the costs of studying abroad do not substantially exceed those of studying as a resident student at Stony Brook.

Off-Campus Housing
The Off-Campus Housing Office provides information concerning rentals of rooms, apartments, and housing within a 15-mile radius of the University. All landlords listing property with the University

must sign a statement assuring nondiscriminatory 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 $350. 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 $300-$400 per month plus a percentage of the utility costs.

Apartment listings cover those available in standard apartment building complexes and in private homes. The usual rental rate of a studio apartment (one large room, bathroom, closets, kitchenette) in a house is approximately $450-$550 per month. A studio apartment in one of the apartment facilities is usually $500-$600. 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 $550-$850 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 $800-$1,400 per month, not including utilities. The price depends on the number of rooms in the house, the condition of the house, and its 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 Federal Perkins Loan, Federal Supplemental Educational Opportunity Grant (FSEOG), Federal Work Study (FWS), Educational Opportunity Program (EOP), and some private scholarships. The office also manages the Federal Pell Grant, Federal Family Education Loan Program, and New York Higher Education Services Corporation program (TAP). 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 Free Application for Federal Student Aid and the Tuition Assistance Program (TAP) Application. Application forms and information about application guidelines and deadlines are available at the Office of Financial Aid and Student Employment, 230 Administration Building, 632-6840.

"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 define an independent student as being in one of the following categories:

1. The student is 24 years old or older by December 31 of the award year.
2. The student is an orphan, ward of the court, or a veteran of the armed forces, or has legal dependents other than a spouse.
3. The student is a graduate, professional, or married student.

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.

FEDERAL PROGRAMS

Federal Pell Grant

Application Procedures

Students may apply for the Federal Pell Grant by filing a Free Application for Federal Student Aid. The completed application should be submitted for processing according to the directions included on it. A calculated Expected Family Contribution (EFC) 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 Expected Family Contribution (EFC), 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 Federal Pell Grant Program is an entitlement program. Eligibility and award amount are based on need. The applicant must be enrolled as a matriculated undergraduate student, for at least three credits, in an approved postsecondary institution.

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 Expected Family Contribution (EFC) is calculated by this formula.

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

Award Schedule

Currently awards range from $400 to $2,300. 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.

Note: Also see Responsibliites of Recipients, under Federal Parent Loans for Undergraduate Students, p. 37, for further information.

Federal Supplemental Educational Opportunity Grant (FSEOG)

Application Procedures

Application is through the institutional financial aid office, which is responsible for determining who receives a Federal 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; and (2) an undergraduate degree candidate.

Award Schedule

The award ranges from $100 to $2,000. A student may be eligible to receive grants for the period required to complete a first bachelor's degree. Priority is given to Pell recipients.

Responsibilities of Recipients

The student must continue to make satisfactory academic progress.

Note: Also see Responsibilities of Recipients, under Federal Parent Loans for Undergraduate Students, p. 37, for further information.

Federal Perkins Loans

Application Procedures

Application is made through the institution's 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, Federal Perkins Loans are available to matriculated students enrolled at least half time as graduate or undergraduate degree candidates. However, awards are made on a funds-available basis.

Award Schedule

Annual loan limits are establishd at $3,000 for undergraduate students and $5,000 for graduate students. The maximum amounts that may be borrowed are $15,000 as an undergraduate and $30,000 for graduate study, to include any amount borrowed through a Federal Perkins Loan for undergraduate study.

Actual Federal Perkins Loans are limited based on annual allocations and collections, and presently average $1,500 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 five percent on the unpaid principal. Repayment begins nine months after graduation or leaving school, and may extend over a period of ten years. Payment may be extended over an additional ten-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, VISTA, or similar national program volunteers.

Note: Also see Responsibilities of Recipients, under Federal Parent Loans for Undergraduate Students, p. 37, for further information.

Federal Work-Study Program (FWS)

Application Procedures

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

Selection of Recipients and Allocation of Awards

The applicant must be enrolled at least half time as a graduate or undergraduate degree candidate.

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 FWS than there are funds available, preference is given to students who have the greatest financial need.

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 variable and currently range from $4.25 to $7.00 per hour for undergraduate students.

Factors considered by the Office of Financial Aid and Student Employment in determining whether, and how many hours, the recipient may work under this program are financial need, class schedule, and academic progress.

Responsibilities of Recipients

See Responsibilities of Recipients, under Federal Parent Loans for Undergraduate Students, p. 37.

Note: Eligibility for Federal SEOG, Federal Perkins Loans, and Federal WS is determined on the basis of student need analysis, and by means of the Free Application for Federal Student Aid (FAFSA). All awards under these programs are contingent upon the individual institution's allocation and on the availability of funds.

Subsidized and Unsubsidized Federal Stafford Loans

Application Procedures

Application is made by completing the Free Application for Federal Student Aid. After receipt of the federal analysis the institution will notify the student of his or her eligibility to borrow under the Federal Family Educational Loans Programs.

Selection of Recipients and Allocation of Awards

To be eligible for a Federal Stafford Loan, a student must be a U.S. citizen or permanent resident alien, or other eligible resident, and 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 in an approved foreign country.

Loan Schedule

An undergraduate may borrow up to a total of $2,625 for the first year of undergraduate study, $3,500 for the second year, and $5,500 for subsequent undergraduate study, up to an aggregate of $23,000.

A graduate student may borrow up to a total of $8,500 per class year, up to an aggregate of $65,000 *including* any loans for undergraduate study.

As of July 1994, independent undergraduates can apply for an additional $4,000 for each of their first two years of study, and $5,000 annually for the remaining years as undergraduates. Graduate students may apply for an additional $10,000 for each year of graduate study.

Responsibilities of Recipients for Subsidized Loans

A student may borrow at a relatively low interest rate (currently the treasury bill rate plus 3.1 percent with a cap of 8.25 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. Interest does not accrue on this loan during periods of enrollment or the grace period. The federal government pays the interest for the student during this time period. Payment of principal may be deferred for up to three years for certain categories of borrowers.

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 $50 plus interest. Under unusual and extenuating circumstances the lender may, on request, permit reduced payments.
2. The maximum repayment period is ten 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.

Responsibilities of Recipients for Unsubsidized Loans

The terms of the unsubsidized loan are the same as the terms for the subsidized loan, except that the federal government does not pay the interest on this loan. The student is responsible for paying all of the interest that accrues on the loan while in school, during the grace period, and during any periods of deferment or repayment.

Note: Also see Responsibilities of Recipients, under Federal Parent Loans for Undergraduate Students, below, for further information.

Federal Parent Loans for Undergraduate Students (FPLUS)

These loans are available for parents of financially dependent undergraduate students. FPLUS loans for which the first disbursement is made on or after July 1, 1993 have no annual or aggregate loan limits. Borrowing is based on cost of education minus aid. The interest rate is the treasury bill rate plus 3.1 percent with a cap of 9 percent and is adjusted each July, and repayment begins within two months of receipt of the loan. Applications are available at participating banks.

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 WS, Federal Stafford Loan, Federal Perkins Loan, Federal SEOG, and Federal Pell Grant programs is contingent on the candidate's meeting Stony Brook's "quality" and "quantity" criteria (see p. 55). 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.

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 may apply for TAP using the Tuition Assistance Program Application and the Free Application for Federal Student Aid. Both forms are available at any high school guidance office or at a financial aid office.

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.

Selection of Recipients and Allocation of Awards

The 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, paroled 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; and (3) 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. a 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. financially independent due to the involuntary dissolution of your family, resulting in relinquishment of your parents' responsibility and control, *or*
   e. married on or before December 31 of the year preceding the academic year for which application is made, *or*
   f. enrolled as a graduate student, *or*
   g. 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," p. 35.

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 EOP/AIM 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 $100 to a maximum of $2,600.

Note: The income measure is the family's (or independent student's) New York State *net taxable income* from the preceding tax year 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.

TAP Regulations (Undergraduate Students)

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

The regulations of the New York State Commissioner of Education provide that

good academic standing consists of two elements:

1. Satisfactory academic progress—A requirement that a student accumulate a specified number of credits and achieve a specified grade point average each term of an award.
2. Pursuit of program—Satisfactory academic program pursuit is defined as receiving a passing or failing grade in a certain percentage of a full-time course load in each term for which an award is received. The percentage increases from 50 percent of the minimum full-time course load in each term of study in the first year for which an award is received, to 75 percent of the minimum full-time course load in each term of study in the second year for which an award is received, to 100 percent of the minimum full-time course load in each term thereafter.

The chart below 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 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, if eligible, can be approved for no more than 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, either 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.

Educational Opportunity Program (EOP)

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

Stony Brook's Educational Opportunity Program (EOP), Advancement on Individual Merit (AIM), 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 advising, 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 bachelor's degree program, and many continue their education in graduate and professional schools throughout the country.

For further information on EOP/AIM, contact:

The EOP/AIM Program
Library W3520
University at Stony Brook
Stony Brook, NY 11794-3375
Telephone: (516) 632-7090

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. Telephone 632-6815 for information and office location.

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

Semester Calendar
Bachelor's Degree Program

Before Being Certified for This Award	1st	2nd	3rd	4th	5th	6th	7th	8th	9th**	10th**
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	0	.5	.75	1.20	1.40	1.50	1.60	1.70	1.80	1.90

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

The Montgomery G.I. Bill

Selection of Recipients and Allocation of Awards

This program became effective July 1, 1985 for persons contracting for a minimum of two years active duty with the armed services. Those incurring such an obligation after July 1, 1985 will be eligible to receive a maximum of 36 months of educational assistance upon completing their obligated period of service. Eligible individuals must voluntarily contribute to an educational assistance fund. At the time the participant enters training, the appropriate branch of the military will match the individual's contribution on an eight-for-one basis. Eligible students are entitled to 36 months of full-time educational assistance.

Award Schedule

Status	Rate
Full-time	$400
Three-quarter	300
Half-time	200
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 of a service-connected disability after release or discharge from active duty, 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 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. Under current law total contributions by the serviceperson may not exceed $2,700. 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 or 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 that entitles him or her to VA disability compensation and who is in need of vocational rehabilitation because his or 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 generally has 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.

Selected Reserve Educational Assistance Program

Selection of Recipients and Allocation of Awards

This program provides benefits to individuals enlisting, reenlisting, or extending their enlistment with the Selected Reserve or National Guard. The obligation must be incurred after July 1, 1985 and be for a period of at least six years. Students meeting the eligibility requirements for this program are entitled to a maximum of 36 months of educational benefits. However, unlike the other educational assistance programs, these benefits may only be used for undergraduate education. A student's entitlement under this chapter will normally expire at the end of a ten-year period of satisfactory participation in the Selected Reserve, or on the date the individual is separated from the reserve, whichever occurs first.

Award Schedule

Status	Rate
Full-time	$190
Three-quarter	143
Half-time	95
Less than half	Tuition and fees

OTHER FINANCIAL ASSISTANCE

Student Employment Opportunities

The University provides a number of student employment opportunities not based on financial need. Wages vary and are paid by the employing department of the University. Students may contact the Office of Financial Aid for additional information. Students should specify that they are seeking information on Student Employment (or Student Assistance) and not College Work-Study.

Faculty-Student Association

The Faculty-Student Association (FSA), which operates an array of auxiliary business services and programs for the campus such as dining, bookstores, and the campus ID Office, employs close to 500 students in a wide range of capacities. The FSA Office of Student Staffing Resources (SSR) is dedicated to providing placement, advising, and special training programs for its on-campus employment and internship opportunities. FSA also offers a range of scholarship and work-incentive awards to student staff who demonstrate excellence or innovation in job performance. FSA Student Staffing Resources should be contacted for additional information.

Parents' Affiliations

If a student's parents belong to a union or fraternal group, the student could be eligible for financial aid. Other sources of scholarships include Daughters of the American Revolution, Junior Achievement, Parent-Teacher Associations, Boy or Girl Scouts, Elks, and Chambers of Commerce.

Scholarship Search Service

The Office of Financial Aid maintains a scholarship database called College Aid Scholarship for Higher Education (CASHE). For a nominal fee, information from an application is matched to various data elements of private scholarship eligibility.

For information and application contact the Financial Aid Office.

Scholarships and Grants from Private Sources

There are many private student aid programs available. Awards may be based on need, need plus criteria, or criteria alone. Students are encouraged to investigate scholarships for which they may be eligible. These are some of the criteria for which a grant or scholarship may be awarded: academic achievement, artistic talent, athletic ability, career plans, community activities, leadership potential, parents' employers, proposed college major, religious affiliation, special interests.

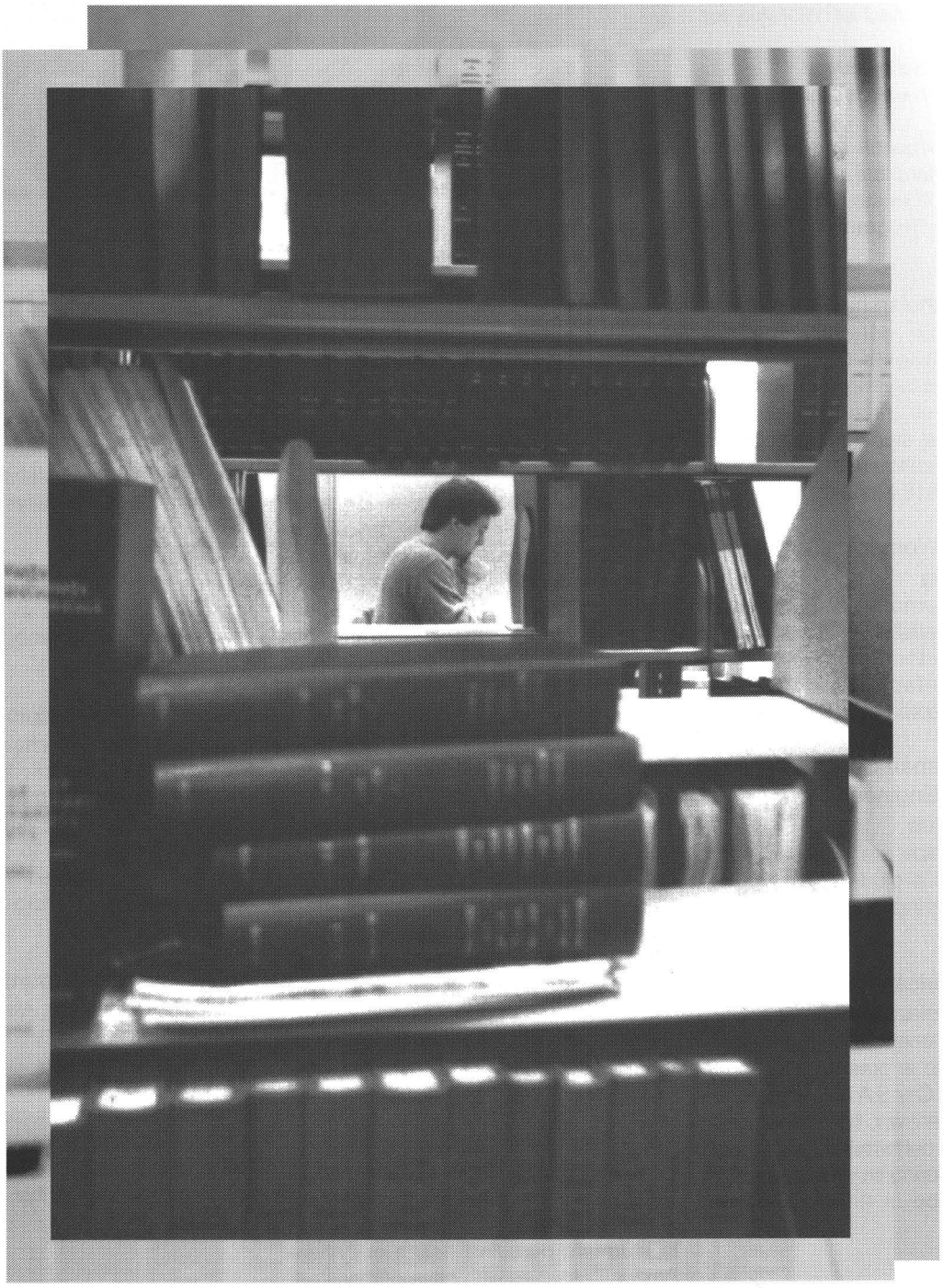
Job Locator Service

The Office of Financial Aid provides a job locator service for off-campus jobs available during a student's tenure at Stony Brook. Postings are on a bulletin board outside of the Financial Aid Office.

Professional Associations

If a student has settled on a career, he or she should investigate the professional associations in that particular area. They may have scholarships available to encourage students to pursue careers in their field. A good source of information about scholarships and grants offered by private organizations is the *Student Aid Annual* published by Chronicle Guidance Publications. Students may ask their school counselor or librarian if a resource copy is available.

Scholarships and Awards



Scholarships

The University's scholarship program includes a selected number of scholarships awarded to students based on meritorious academic performance. The following scholarship programs are available.

Honors Programs

Provost's Honors Scholarships

- Four-year full New York State tuition scholarships for freshmen.
- Two-year New York State tuition scholarships for transfer students.

Honors College Scholarships

- $2,000 merit-based scholarship for one year.

Honors Program Scholarships

- $1,000 merit-based scholarship for one year.

For detailed information and criteria for the above scholarships, students may contact Donna DiDonato, director of the Honors College Program, at 516-632-7080.

Competitive Scholarship Program

$1,500 one-year scholarships are awarded to students based on the results of a scholarship examination. The examination is offered once a year. For further details, students may contact the Office of Enrollment Planning and Management at 516-632-6146.

Project WISE–Women in Science and Engineering

Awards in the amount of $500 each semester are available for the first year of study. For further information, students may contact Wendy Katkin, Project WISE director, at 516-632-6947.

Northrop Grumman Scholarships in the College of Engineering and Applied Sciences

These scholarships are awarded each year to meritorious students in the College of Engineering and Applied Sciences.

Society of American Military Engineers Scholarship

The Society of American Military Engineers Scholarship 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.

Students interested in this scholarship should contact the Engineering and Applied Sciences Undergraduate Student Office at 516-632-8381.

Research Careers for Minority Scholars Scholarships

These scholarships, funded by the National Science Foundation, are awarded to high-achieving entering freshmen who plan to major in mathematics, engineering, computer science, physics, or chemistry, or to high-achieving juniors or seniors majoring in mathematics or applied mathematics and statistics. Students interested in this scholarship should contact Michelle McTernan at 516-632-7093.

Howard Hughes Medical Institute Undergraduate Research Fellow Scholarships

This program provides fellowship support to selected students engaged in research in the biological sciences at Stony Brook. Women and students from underrepresented groups are strongly encouraged to apply. Available for both the academic year and the summer. Students interested in this scholarship should contact the Department of Biochemistry and Cell Biology at 516-632-9750.

Pope Foundation Scholarships

These scholarships in the amount of $500-$1,500 per year are awarded annually on behalf of the Pope Foundation to students pursuing Italian or Italian-American studies who have demonstrated outstanding academic performance and are in financial need. These scholarships may be renewed for up to four years. Students wishing to apply should contact the Center for Italian Studies.

Other Scholarships

The scholarships listed above are merely examples of the several available on campus. Undergraduate students interested in other scholarships should contact their academic department.

Awards

Awards at the University at Stony Brook are given to students at the end of the academic year in recognition of high achievement.

Ward Melville Valedictorian Award

In honor of the first chairperson of the Stony Brook Council, the University annually presents its 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 Award

The H. Lee Dennison Award, named in honor of Suffolk County's first chief executive, is presented by the University 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 highest academic average in that work.

William J. Sullivan Award

This award is presented annually by the University in honor of Justice William J. Sullivan, late chairperson of the Stony Brook Council. The 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.

Health Sciences Undergraduate Award

This award is presented annually by the University Association of the University at Stony Brook to a Health Sciences Center junior for academic excellence and outstanding nonacademic service activities on campus and in the community.

Junior Class Award

This award is presented annually by the University Association to two outstanding juniors in recognition of academic excellence and personal contributions to the University community.

Mortimer Kreuter Award

This award is presented annually to selected teacher certification candidates in recognition of excellent performance in student teaching and outstanding service to the school community where they were placed for this experience. The award was established by the friends and family of Dr. Kreuter in memory of his years at the University as professor of education, director of teacher certification, and acting dean of continuing education.

Edward Countey Award

This award is presented each year by a committee consisting of the faculty in biological and medical illustration to the outstanding undergraduate student in that field.

Elisabeth Luce Moore Award

The Elisabeth Luce Moore Award in International and Religious Studies is given annually to a deserving student, graduate or undergraduate, who has demonstrated outstanding academic achievement and gives promise of contributions of unusual stature to the fostering of international understanding and/or to the appreciation of religious values.

S.A.I.N.T.S. Awards

Founders Award

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

Graduate Fellowship Awards

These awards are presented annually to two exceptional graduating African-American, Latino, or Native American students who are about to enter graduate school, one in the natural sciences, mathematics, or engineering, the other in the social sciences or humanities. Consideration is given to both academic achievement and community service.

Outstanding Achievement Awards

These awards are presented annually to two freshmen, two sophomores, and two juniors to recognize outstanding African-American, Latino, and Native American students.

Yacub E.L. Shabazz Award

This award is presented annually to the outstanding upper-division African-American, Latino, or Native American student who has demonstrated a high level of commitment to community service.

African Student Union Akuwasi Owusu-Baah Award

This award is presented annually to a student who is a member of an underrepresented group and has shown a commitment to promoting an awareness of African culture within the University setting.

Minorities in Engineering and Applied Sciences Award

This award is presented annually by the Minorities in Engineering and Applied Sciences Organization to an African-American, Hispanic, or Native American student who has demonstrated outstanding achievement in mathematics, physical science, engineering, or computer science.

Northrop Grumman-*Tau Beta Pi* Award

This award is presented annually by the Northrop Grumman 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.

Raymond F. Jones Award

This award is presented annually in memory of Raymond F. Jones, professor of biology and director of international programs. It is presented in alternating years to an exchange student who has made an outstanding contribution in scholarly achievement, creative endeavor, or teaching excellence, and to a student in the Division of Biological Sciences in recognition of outstanding academic accomplishments.

Minorities in Medicine Award

This award is presented annually by the Minorities in Medicine Organization to an outstanding African-American, Latino, or Native American upper-division student who has demonstrated a commitment to pursuing a career in the health professions.

William and Teresa Meyer Award

This award is presented to an upper-division or graduate student in the humanities or social sciences who shows promise in Middle Eastern or Asian studies.

Faculty-Student Association Joseph Atlonito, Esq. Pre-Law Award

The Faculty-Student Association annually offers an award to an outstanding pre-law student who has rendered excellent service to the campus community.

Faculty-Student Association Elsa Jona Quality of Campus Life and Enrichment of Work Environment Awards

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

Martin B. Travis Award

This award is made annually to a student completing a major in political science who plans to attend law school. The award honors Professor Emeritus Martin B. Travis.

Elizabeth Couey Alumni Association Award
This award is given to a junior who has been active in campus affairs and who has done the most to foster communication and create understanding among students, faculty, and administrators.

Ashley Schiff Alumni Association Award
This award is presented to a student who has made significant contributions to conserving and preserving the natural environment.

Sophomore Student Alumni Association Award
This award is presented to a sophomore who has demonstrated leadership in creating an environment of tolerance and understanding on campus.

Class of 1970 Alumni Association Award
This award is presented to the student who made the most significant contribution to the University in his or her freshman year.

Babak Movahedi Senior Leadership Award
This award, established by Babak Movahedi, Class of '82, is presented annually to a graduating senior who has made a significant change in the University environment by bringing together various constituencies through the development of community life.

Emile Adams Award for Community Service
This award is presented annually by the Latin American Student Organization to a graduating Latino student who has done excellent community service.

Undergraduate Entrepreneurial Achievement Award
This award, established by Larry Roher '79, is presented to a deserving student who has served in a managerial and leadership role either on or off campus, and who has pursued entrepreneurial and innovative activities including but not limited to student business management, student government, demonstrable actions within student clubs, and independent actions for the good of the University.

Michael Flynn Award
Established by the Flynn family in memory of their son, Michael, this award is presented to a student who has overcome physical adversity.

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

President's and Provost's Art Acquisition Awards
These awards are given 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 become part of the University's permanent collection and are displayed in University offices.

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 an African-American, Latino, or Native American student completing the sophomore year who has shown a high level of commitment to community service.

Delta Sigma Theta Sorority Merit of Excellence Award
This award is presented annually by the *Pi Delta* chapter of the *Delta Sigma Theta* sorority to an African-American, Latino, or Native American woman completing the freshman year who has shown a high level of commitment to community service and scholastic achievement.

Alpha Kappa Alpha Sorority Achievement Award
This award is presented annually by the *Alpha Kappa Alpha* sorority to an African-American, Latino, or Native American woman completing the freshman or sophomore year in recognition of academic accomplishments and service contributions to the community.

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.

Phi Beta Kappa Undergraduate Research and Creative Activities Awards
These awards, one in research and one in creative activities, are presented annually to recognize superior performance by undergraduate students at any level in the liberal arts and sciences.

Undergraduate Excellence Recognition Certificates
These certificates, presented annually by the offices of the President, Student Affairs, and Undergraduate Studies, recognize the special achievements of undergraduates who have demonstrated excellence in a wide range of categories including, but not limited to, academic achievement, research, the performing and creative arts, leadership, and service to the campus community.

Senior Leadership and Service Awards
These awards are presented annually by the Department of Student Union and Activities to graduating students who have exhibited outstanding leadership and service to the campus community.

Elizabeth D. Couey Award
The Stony Brook Union Advisory Board and the Department of Student Union and Activities present this award to a graduating senior who has exhibited outstanding contributions toward the improvement and growth of student services and programs and exemplifies Elizabeth Couey's unique qualities, which include the ability to listen with understanding, guide without boundaries, give and take with love, and grow with each passing day.

Outstanding Student Achievement Awards
The Office of Special Programs presents the this award to Educational Opportunity Program (EOP) seniors who graduate with a cumulative grade point average of 3.0 or higher.

Norma Mahoney Black and Hispanic Alumni Association Award
This award is presented to an African-American, Latino, or Native American graduating senior who has excelled in his or her studies and who has demonstrated a concern for the black and Latino communities.

Stewart Harris Undergraduate Award
This award is presented to a high-achieving incoming student in the College of Engineering and Applied Sciences.

Returning Student Award
This award is presented by the University Association to an undergraduate who has successfully returned to college after years or decades away from higher education. The award recognizes academic excellence and service to the community beyond the campus.

Patricia E. Herman Award
This award is presented annually in memory of Patricia E. Herman to a junior or senior majoring in political science who has an interest in urban planning and/or environmental issues.

Patrick W. Warner Award in Economics and Applied Mathematics
This award is presented annually to a junior majoring in economics or applied mathematics and statistics to recognize outstanding academic achievement. The award honors Patrick W. Warner, M.A. '74.

Single Parent Awards
These awards are presented to full-time students in their junior year who are single parents in need of financial assistance.

Edward Lambe Science Teaching Award
This award is presented annually to a student preparing for a career in science teaching.

Daniel Cohen Research Award
This award is presented to an undergraduate to support a research project in hematology. The award is in memory of Daniel Cohen, a former Stony Brook student.

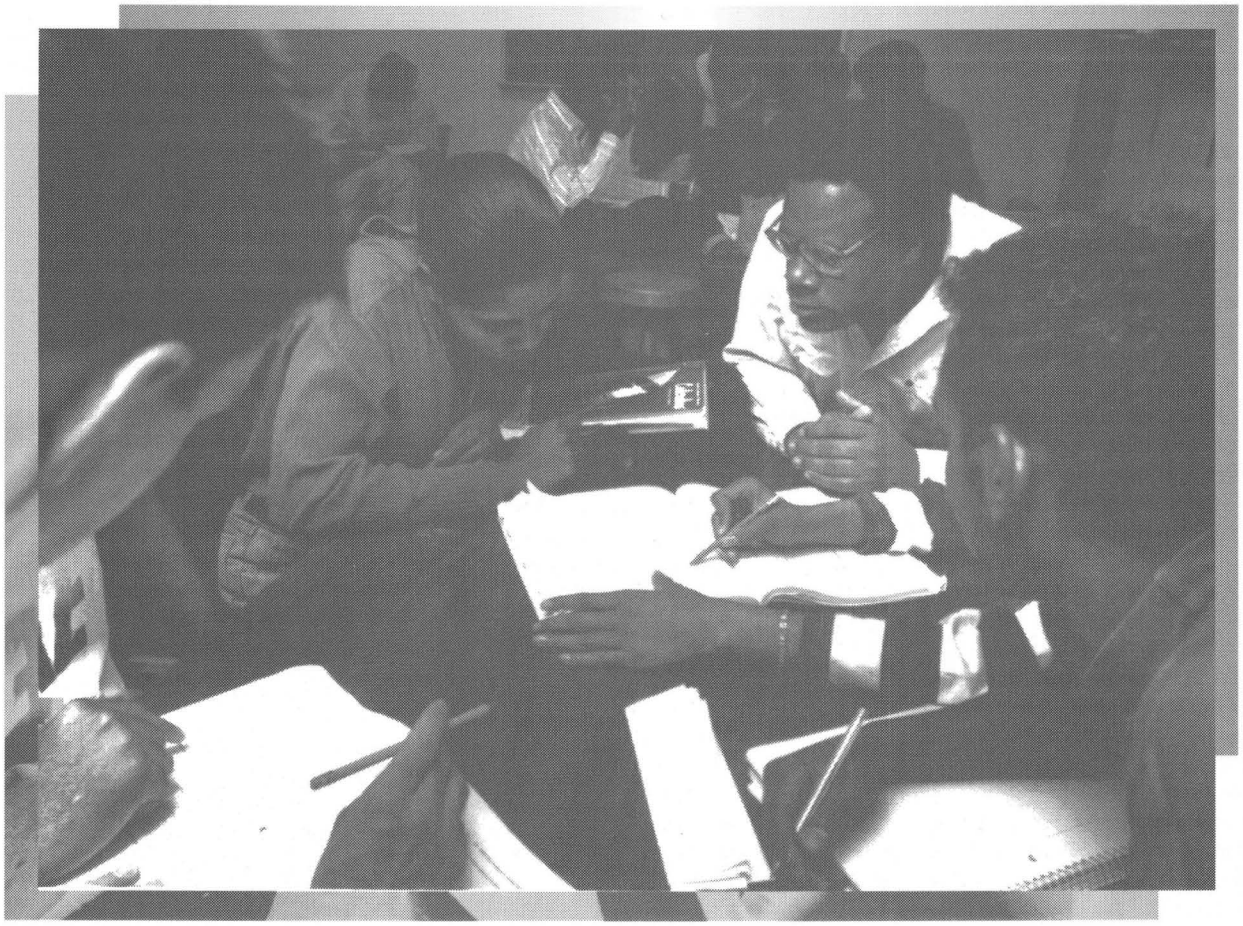
Nominations for State, National, and International Awards
The University nominates candidates for awards such as the Rhodes Scholarships, Mellon Fellowships in the Humanities, the Luce Scholars Program, Herbert H. Lehman Graduate Fellowships, Fulbright Grants for Graduate Study Abroad, the Harry S. Truman Scholarship Program, Rotary Foundation Scholarships, the Benjamin and David Scharps Prize, National Science Foundation Graduate Fellowships, National Collegiate Athletic Association Postgraduate Scholarships, the Winston Churchill Foundation Scholarship, the Barry Goldwater Scholarship, the British Marshall Scholarship, and the Empire State Mathematics and Science Teacher Program.

For application information see Donna DiDonato in the Office of Undergraduate Sutdies.

Departmental Awards
Chemistry—CRC Freshman Award, Emerson Award to Outstanding Junior, American Institute of Chemists' Senior Award, Sei Sujishi Prize, Outstanding Chemistry Senior Award, Oustanding Engineering Chemistry Senior Award. *Earth and Space Sciences*—Myron Fuller Award for the outstanding student majoring in geology, Sherman Raftenberg Award for the outstanding student majoring in astronomy. *English*—Naomi Stampfer Scholarship, Lillian E. Kahn Award, Homer Goldberg Scholarship. *French*—French Embassy Cultural Services 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*—Richard S.L. Lee Award. *Music*—Edith Salvo Award for the outstanding student in the Department of Music, Natale and Josephine Maresca Award for Distinction in Piano Performance, Billy Jim Layton Prize. *Physical Education*—Athletic awards presented to intercollegiate athletes for outstanding achievement in sports. *Physics*—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 Awards. *Theatre Arts*—Richard Hartzell Prize for a senior major, preferably a film-maker, Peter J. Rajkowski Award for a major in recognition of leadership, initiative, and organizational skills in theatre projects. *Women's Studies*—Award presented to a graduating minor for academic excellence and community service.

In addition, the Stony Brook Foundation presents awards at commencement to undergraduate students demonstrating high academic achievement as determined by their departments.

General Academic Information



The information in this chapter refers primarily to the undergraduate programs of the College of Arts and Sciences, the College of Engineering and Applied Sciences, the W. Averell Harriman School for Management and Policy, and the Marine Sciences Research Center (MSRC), and to lower-division students accepted as freshmen into Health Sciences Center majors. Although some of the information is relevant for undergraduates in Health Sciences Center upper-division programs, students in these programs should consult the separate Health Sciences Center Bulletin. *West Campus students who are interested in taking Health Sciences Center courses should also consult the Health Sciences Center chapter in this bulletin.*

Semester Registration

Completion of registration each semester in accordance with instructions issued by the Office of Records/Registrar is a prerequisite to class attendance. Although the Registrar will attempt to send an Authorization-to-Register form to every eligible student in advance of each registration period, changes in status and address (see p. 59) make it impossible to guarantee that every student will automatically receive this form. 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. Registration after the close of the final registration period announced in the academic calendar requires the payment of a late registration fee of $30. 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. 57, and "Refund of Tuition," p. 33.)

Change in Course Registration

During the first ten class days a student may add or drop courses by submitting an add/drop 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 "Committees on Academic Standing and Appeals," p. 48).

From the eleventh class day through the ninth week of classes a student may withdraw from a course (see "Course Load," below, and "Grading System," p. 49). 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 for specific deadline dates.) Students who obtain permission from the appropriate academic standing committee to add or drop courses after the normal deadlines for doing so will be charged a fee of $15 for each program change form processed by the Registrar.

First-Week Attendance

Students are expected to attend all classes from the first day of the semester on. Those who do not attend any meetings of an undergraduate course for which they are registered during the first full week of the semester risk being deregistered by the instructor unless prior arrangements to preserve the registration have been made by the student with the instructor.

Not all faculty members exercise this prerogative. Students must take responsibility for dropping a course by submitting an add/drop form if they wish to avoid an NR (No Record) in that course. (See "Grading System," p. 49.)

Faculty deregistration authority may be exercised only if there are unregistered students who wish to add the course; it is limited to the add period at the beginning of each semester.

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. Students may change to part-time status without special permission by registering for fewer than 12 credits (see "Full-Time/Part-Time Status," p. 48). Changes to or from part- or full-time status may be made during the first two weeks of classes without special permission. After the second week of classes, 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, loans, and intercollegiate athletic eligibility. 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," p. 48.

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.

Citizens of other countries who are in the United States on an F-1 or J-1 visa must register for at least 12 credits each semester unless formal approval to do otherwise has been obtained from the Foreign Student Services office.

Multiple Registrations for the Same Course

Repeating Courses

Certain courses may be taken more than once for credit toward graduation. Each of these courses specifies, in its *Undergraduate Bulletin* description or in a note preceding the group of courses in which it is included, that it may be repeated. Grades for such repeated courses, as well as the original grades, are computed in the student's grade point average. If, however, any stated restrictions on repetition (e.g., "May be repeated once") are exceeded, credits for over-the-limit courses are deleted from students' academic records when the graduation clearance audit is performed.

Retaking Courses

A student may register again in a course for which a C–, D+, D, F, I/F, NC, U, or W has been recorded. (See also "Pass/No Credit Academic Record Option," item H, p. 50.) When such a course has been retaken, each grade will appear on the student's academic record (transcript) and will be included in the computation of the grade point average. Although the credit hours will be counted only once toward satisfaction of degree requirements, the credits assigned to the retaken course will be considered part of the semester credit load. Credit for such retaken courses may remain in the cumulative credit total shown on grade reports until the student's application for graduation initiates an audit of the academic record. At that time, the course credit for any retaken course originally passed with a C–, D+, or D is subtracted from the number of credits counted toward the degree.

Other Multiple Course Registration Regulations

The regulations on repeating and retaking courses also apply to courses that have been renumbered and are listed under the new number, followed by the former number in parentheses, in the next *Undergraduate Bulletin* published and, until then, in the *Undergraduate Bulletin Supplement.* (See also p. 78 and p. 225.)

This policy also applies to mutually exclusive courses. (Mutually exclusive courses are those for which credit will not be granted in addition to credit for one or more other courses as listed in the *Undergraduate Bulletin* course descriptions.) When mutually exclusive courses are in more than one department, they are also shown in the "remark" part of each course's Class Schedule listing. Mutually exclusive courses within the same department, however, are not indicated in the Class Schedule. When mutually exclusive courses with different credit values are taken, only the course with the higher number of credit hours will be counted toward graduation regardless of which course was taken first. If credit values are equal, only the course taken first will be counted.

Both the credit and the grade will be removed from the academic record for any repeated course that does not meet the above criteria. This applies whether the course was originally taken at Stony Brook or another institution.

Final Examinations

The academic calendar provides five days each semester for a final examination period. 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 to an instructor only for compelling academic reasons.

Auditing

Auditing refers to the practice of attending a course for informational instruction only. The privilege of auditing courses is limited to matriculated students and senior citizens; the department chair may grant permission to others only in exceptional cases.

Matriculated students who wish to audit a course must first obtain permission of the instructor. Senior citizens must arrange to audit courses through the School of Professional Development and Continuing Studies. No credit is granted for auditing a course nor does the University maintain any record of the student's attendance in the course.

Auditors are expected to refrain from participating in class discussions and from turning in or asking for grading of homework, term papers, or examinations. A student may not change his or her status in a course from auditor to registered once the add/drop period has ended.

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 most forms of financial aid and intercollegiate athletics and provides priority status for on-campus housing.* 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. 55.

Committees on Academic Standing and Appeals

Undergraduate students whose declared major is applied mathematics and statistics, computer science, electrical engineering, engineering science, information systems, or mechanical engineering should make requests in matters outlined below to the Committee on Academic Standing and Appeals of the College of Engineering and Applied Sciences.

All other West Campus undergraduate students should make their requests to the Committee on Academic Standing and Appeals of the College of Arts and Sciences.

For College of Arts and Sciences Students

Exceptions to regulations pertaining to 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. Written information about academic regulations or CASA policies may be obtained from the Center for Academic Advising or, for AIM/EOP students, the Office of Special Programs.

For College of Engineering and Applied Sciences Students

Petitions for exceptions to regulations pertaining to 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 pp. 55-56). Information about academic regulations and advice about individual requests to the committee may be obtained from the Engineering and Applied Sciences Undergraduate Student Office.

Academic Advising

Academic advising encompasses the exploration of life goals and vocational aims to determine each student's program choice. Advisors begin with these broader issues to help entering and continuing students select courses and plan appropriate schedules. Speaking with an academic advisor can help to clarify values and to relate interests and abilities to educational and career plans. Departmental faculty advisors assist in the selection and fulfillment of a major or minor. Professional advisors in the Center for Academic Advising help students select courses that satisfy the Diversified Education Curriculum (D.E.C.) requirements. More important, discussion with an advisor can help the student adjust to new learning styles required at a large university with lecture classes, team teaching, and laboratory instruction. In addition, advisors can help students understand the University's academic structure and their responsibilites to understand degree requirements and fulfill them successfully. While an advisor can assist in exploring these important issues, the academic judgments and decisions concerning the student's college career rest with the student.

The *Center for Academic Advising* has overall responsibility for the coordination of academic advising of all new freshmen and for advising continuing students until they officially select a major. The *Undergraduate Transfer and Evening Studies Office* advises two groups of students: new transfer students through their first semester at Stony Brook, and students in the Undergraduate Evening Studies program. The *Engineering and Applied Sciences Undergraduate Student Office* provides specialized advising for students interested in College of Engineering and Applied Sciences professional programs. A

designated faculty member for each academic department and program in both the College of Arts and Sciences and the College of Engineering and Applied Sciences directs the undergraduate program and coordinates the advising of students regarding the discipline or program. All students are expected to consult an appropriate advisor before each registration (see "Prime Time for Students," p. 49).

Before their first registration at the University, all new students are required to participate in an *orientation,* which includes an academic advising program. During orientation, students receive academic information and advice from faculty members, professional advisors, and student orientation leaders, and take the English Placement Examination and the Mathematics Placement Examination. Those planning to take the basic physics course take a short placement examination. Transfer students also attend sessions at which they discuss the application of previous courses to Stony Brook's programs. All orientations end with registration for the coming semester.

Through the *Freshman Faculty Advising System,* all new freshmen are provided with a special academic advisor to help them select classes for their second semester and assist them in having a pleasant and productive experience at the University. Students continue with their special faculty advisor until they declare a major. (See also "Mid-Semester Advisory Grades," p. 50.)

Freshmen enrolled in USB 101 (see p. 74) work with their instructors to select courses and plan their college curriculum. Faculty and professional staff instructors serve as mentors who guide new students during their first year through the transition from high school to university, helping them take advantage of the University's broad variety of student services and extracurricular activities.

Freshmen in the Honors College and the Educational Opportunity Program, most varsity athletes, and those admitted directly to majors in the College of Engineering and Applied Sciences are assigned to special academic advisors associated with those entities.

All other freshmen who have not declared a major or who did not enroll in USB 101 are informed by mail of the name, location, and telephone number of their faculty advisor, whom they must see before they will be allowed to register.

Stony Brook students interested in preparing for health professions programs should consult advisors in the Center for Academic Advising (CAA) during their initial semesters at the University regarding course preparation, establishing a reference file, and participating in extracurricular and volunteer activities prior to application to specific undergraduate and graduate health programs. Those interested in the health professions may obtain from the CAA general information booklets and information sheets with suggested academic schedules for each of the health professions programs offered at Stony Brook as well as other popular programs. Upper-division students ready to apply to graduate health professions schools must see the pre-health professions advisor in the Office of Special Programs.

Students interested in preparing for careers in law should seek academic advice in the Center for Academic Advising. Upper-division students ready to apply to law schools should consult the pre-law advisor in the Office of Special Programs.

Students who have selected a major department are expected to seek assistance in academic planning from representatives of that department. Those who are considering graduate study should seek advice from faculty members in the same discipline.

Degree Audit Report and Tracking System

The Degree Audit Report and Tracking System (DARTS) provides a computer-generated report indicating each student's progress toward graduation in terms of met and unmet university, college, and major requirements. The report is designed to be a helpful advisory tool and is not an official evaluation of a student's progress. Although transfer credit equivalencies and the requirements for most majors had not been written into the system at press time, it is anticipated that they will be available within the period of this edition of the *Undergraduate Bulletin.* As majors are added to the system, their availability will be announced in the *Undergraduate Bulletin Supplement.*

DARTS reports are available in the Center for Academic Advising for College of Arts and Sciences students at Prime Time each semester.

Prime Time for Students

Each November and April, for a period approximately coinciding with advance registration for the next semester, 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.

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. Diversified Education Curriculum requirements and requirements for overall credit hours, grade point average, residence, and upper-division credits are listed in the University Studies chapter, p. 60. Requirements especially for College of Engineering and Applied Sciences students are listed on p. 224.

Grading System

Final Grades and Reports of R and W

Except for yearlong 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 and carrying no academic implications.

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:

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)
Q (indicates academic dishonesty)
S (indicates satisfactory work)
U (indicates unsatisfactory work)

The term "letter grade" refers to A-F grades and in certain circumstances to S grades (see next page); it never refers to U, P, Q, or NC, which are explained below.

A grade of Q is assigned to a student found guilty of academic dishonesty. The Q remains on the transcript and is computed in the G.P.A. as a grade of F. In most cases students who have a single finding of dishonesty may have the Q replaced by a letter grade after satisfactory completion of a noncredit seminar addressing issues around academic dishonesty.

Instructors of yearlong 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.

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 cannot 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 cannot 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.

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 the instructor, at his or her discretion, 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. 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. 55.)

An Incomplete may not be made up by auditing or registering again for 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. The instructor, at his or her discretion, 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 grade point average (G.P.A.) or determining other aspects of the student's academic standing.

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 report of NR (No Record) for that student. An NR may not be assigned for any other reason. If the student was actually in the class, he or she must ask the instructor to correct the record by submitting a grade to replace the NR. In this matter a student whose declared major is applied mathematics and statistics, computer science, electrical engineering, engineering science, information systems, or mechanical engineering petitions through the Engineering and Applied Sciences Undergraduate Student Office; all other West Campus students petition through the Office of Undergraduate Studies.

Mid-Semester Advisory Grades

All lower-division students enrolled in 100- or 200-level courses are sent advisory grade reports after several weeks of classes. One of the following grades is assigned:

1 (indicates above-average performance at mid-term)
2 (indicates satisfactory performance at mid-term)
3 (indicates unsatisfactory performance; in danger of failing)

The advisory grades are not recorded on students records; they indicate progress in the course midway through the semester. Advice for seeking additional help in mastering the material is available through the instructor and the Center for Academic Advising.

Pass/No Credit Academic Record Option

Within the limit noted below, with the exception of AIM 102 and 103, EGC 101, and MAP 102 and 103, and the likely exception of courses in the major and (optional) minor programs, 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 encourage exploration of less familiar areas of study without weakening standards of evaluation or masking a record of poor performance.

A. At least 100 credits of the 120 credits required for the B.A. or B.S. or of the 128 credits required for the B.E. degree must be passed with a letter grade.
B. Election of the P/NC option is limited to the first nine weeks of each semester. After the date specified 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 elect the P/NC option.
D. Courses in which the grade of P is received may not be used to satisfy Diversified Education Curriculum requirements.

E. 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.

F. Courses for which the grade of P is recorded are not considered among the minimum of 12 credits required for a student to be on the Dean's List. (See p. 56.)

G. 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.

H. A student may not retake a course with a grade recorded as P unless the assigned grade was C– or below. See also "Retaking Courses," p. 47.

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. If a course is approved for S/U grading, notification of this appears in the description of the course in the *Undergraduate Bulletin* or the *Undergraduate Bulletin Supplement.* 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. Courses with S/U grading are counted among the 100 credits required for the degree that must be taken for a letter grade. They also apply to the criteria for Dean's List and *Sigma Beta* membership (see p. 56).

Grade Point Average (G.P.A.)

For the purpose of determining grade point average, 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
Q	=	0.00

Other grades do not affect the grade point average, nor do grades for 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 are prepared shortly after the conclusion of each semester and mailed to students. (See "Change of Address," p. 59.) Credit for repeated courses is included in the cumulative credits shown, even though not all such credits will ultimately count toward the degree.

Transcripts

Students who desire transcripts of their academic record at Stony Brook, either for their own use or to have forwarded to another institution or agency, must submit a written request to the Office of Records/Registrar at least 72 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 $5 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 be released only if the student's financial record shows no outstanding obligation.

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 while maintaining 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 goals may conflict and 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. See "College Time Limits for B.E. and B.S. Degrees" in the College of Engineering and Applied Sciences chapter, p. 226.

Procedures

The declaration-of-major procedures outlined below 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 program) category. At orientation they are encouraged (but are not required) to declare one of the following areas of interest:

GAH - pre-Health Technology and Management
GAM - pre-Applied Mathematics and Statistics
GBI - pre-Biological Sciences
GBM - pre-Business Management
GCS - pre-Computer Science or Information Systems
GEE - pre-Electrical Engineering
GES - pre-Engineering Science
GFH - pre-Humanities and Fine Arts
GME - pre-Mechanical Engineering
GNS - pre-Nursing
GPS - pre-Physical Sciences and Mathematics
GSB - pre-Social and Behavioral Sciences
GSW - pre-Social Welfare

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

Each student should declare an area of interest before registering for the first semester of the sophomore year if he or she has not already declared either a specific major or an area of interest.

New transfer students who matriculate as sophomores should declare either a major or an area of interest when they register 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 or more credits may not retain an area of interest.

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 officially an area of interest; 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 declare a major 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 must declare a major by 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. *Declaration of a major at this time is also an eligibility requirement for most forms of financial aid.* The Change-of-Major/Minor/Area of Interest Declaration 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 GBI, GFH, GPS, or GSB area of interest.

Students whose first choice of major is one of the limited-acceptance major programs and who have not been accepted into the major of their choice by the end of the sophomore year must choose a major in the College of Arts and Sciences. Should the student subsequently be accepted into the College of Engineering and Applied Sciences, the Harriman School's business management major, or the Health Sciences Center, the originally declared major may be changed or completed under the double major or double degree regulations (see below and p. 53). Continuing students who expect to apply to an Engineering and Applied Sciences, Harriman School, 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.

New transfer students who indicated a major on their application for admission should confirm their major status in person with their chosen department or program early in their first semester at Stony Brook.

Students who have declared a specific major may change majors at any time before 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: Qualified freshmen and transfer applicants who indicate an interest in a specific 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. Students not accepted upon admission 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. (See p. 223 for details about acceptance into College of Engineering and Applied Sciences programs.) Application for these programs may be made each semester through the Engineering and Applied Sciences Undergraduate Student Office beginning at Prime Time and until the end of the semester's final examination week.

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. 228). Application is made directly to the department.

Computer Science and Information Systems: Qualified freshman and transfer applicants, who must specify their interest on their application, will be accepted into the computer science major or the information systems major upon admission to the University. Students not accepted upon admission or through a joint admissions program must complete a prescribed set of courses before acceptance into one of these majors (see p. 232 for computer science and p. 241 for information systems). Application for either major is made directly to the Department of Computer Science.

The College of Engineering and Applied Sciences officially designates the major for all students accepted into the six 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 the respiratory care or medical technology program on their application to the University are conditionally accepted directly into the major shortly after they are admitted to the University (see School of Health Technology and Management, p. 264). 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 of the year preceding the year of anticipated admission and be formally accepted. 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 also advise students seeking information about their majors and courses.

Academic departments, in addition to advising interested students about their courses and majors, are responsible for 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 (except multidisciplinary studies) in the College of Arts and Sciences *or* any Arts and Sciences major (except multidisciplinary studies) with business management, or with any major in the College of Engineering and Applied Sciences. Within the College of Engineering and Applied Sciences double majors may be formed of computer science and applied mathematics and statistics *or* of information systems and applied mathematics and statistics, *or* by adding one of these three applied sciences majors to any one of the engineering majors. It is not possible to have two engineering majors or to combine computer science and information systems. Students accepted into the School of Health Technology and Management 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 Simultaneous Bachelor's Degrees," p. 53).

When a double major includes one Bachelor of Arts program and one Bachelor of Science program in the College of Arts and Sciences (for this purpose, including the Harriman School and the Marine Sciences Research Center), students must specify either a B.A. or B.S. as the desired degree. 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 must fulfill the desired degree-granting 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 or the Bachelor of Engineering.

Whatever the pair of majors, the number of credits taken to fulfill the requirements of both must total at least 60. The University does not officially recognize triple majors. Students wishing to pursue a concentration in a third area that will be recorded on the transcript 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 or director is required. Students may have up to three declared minors recorded on the transcript.

Two Simultaneous Bachelor's Degrees

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

Bachelor of Engineering and Bachelor of Arts or of Science

Qualified students whose special interests and career plans make such study appropriate may be granted permission to earn two degrees simultaneously 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 and Applied Sciences 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 Diversified Education Curriculum (including all the special requirements that each college imposes) and other graduation requirements, 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 a West Campus College

Students at Stony Brook may simultaneously earn bachelor's degrees from both a West Campus college and the Health Sciences Center if they have been admitted formally to each unit and fulfill 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, a Bachelor of Science, or a Bachelor of Engineering degree from a West Campus program and a Bachelor of Science degree from the Health Sciences Center.

The second bachelor's 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 competency in two essentially different areas of specialization, i.e., in a Health Sciences Center program and a West Campus 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 Diversified Education Curriculum, including the entry skills requirements, of the West Campus college (the completion of which also satisfies the general university requirements of the Health Sciences Center); (4) a minimum of 36 Stony Brook liberal arts credits, 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 School of Nursing or the School of Social Welfare and a West Campus college. Students in the School of Health Technology and Management 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.

Sequential Bachelor's Degrees

It is also possible to earn two bachelor's degrees sequentially. In contrast

to requirements for Stony Brook students who pursue two bachelor's degrees simultaneously, students who pursue a second baccalaureate *after* receiving the first one are not limited to choosing a major for the second degree that is housed in a different college or school from the first. They are, however, subject to following established procedures for acceptance into limited-acceptance major programs and to the additional requirements outlined in the next paragraph.

A student who has completed the requirements for and received a bachelor's degree from Stony Brook or another institution and who wishes to earn a second degree from a West Campus program at Stony Brook must apply and be accepted as a matriculated student for the second baccalaureate. After completing the first degree, the student must earn at least 36 credits in residence at Stony Brook and complete a new major. These 36 credits must include satisfaction of the "Expanding Perspectives and Cultural Awareness" portion of the Diversified Education Curriculum and 21 credits of upper-division work chosen primarily from courses for the major and the D.E.C. *Coursework completed for the first bachelor's degree, whether taken at Stony Brook or elsewhere, does not count toward completing these requirements.* Students who for the first bachelor's degree did not pass with a grade of C or higher a course judged equivalent to Stony Brook's EGC 101 are required to take the English Placement Examination. Those whose placement score is 3 or lower are required to complete D.E.C. category A. Also, students who did not previously pass with a grade of C or higher a course that satisfies Stony Brook's D.E.C. category C are required to complete this category.

For purposes of registration and academic standing, matriculated candidates for a second baccalaurate will be treated as seniors.

Credit Options

Challenge Program for Credit by Examination*

The University's Challenge Program permits matriculated undergraduates to meet requirements, earn credit, and receive advanced placement 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 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. Although Challenge credit may be used to satisfy one course in each of the three D.E.C. Disciplinary Diversity categories (E, F, and G), it may not be used in any other D.E.C. category. It may not be used to fulfill the residence requirement (see p. 61), and it does not count as part of the semester credit required for good academic standing. In addition, Challenge credit may not be used to satisfy the 55 credits in residence required of candidates for degrees with distinction. Written guidelines describing in detail the Challenge Program's procedures, regulations, and fees 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 appropriate college's curriculum committee. Upper-division credit for courses transferred from four-year colleges will be granted only after being evaluated and approved in writing by 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.

The application of credits earned at other institutions to Diversified Education Curriculum requirements is discussed in the next chapter (pp. 61-68).

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 coordinated by the Undergraduate Transfer and Evening Studies 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.

Cross Registration

As part of the Academic Enrichment Program of the Long Island Regional Advisory Council on Higher Education (LIRACHE), the University participates in a cross-registration agreement with 14 other university and college campuses in Nassau and Suffolk counties. The program affords full-time Stony Brook undergraduates an opportunity to register elsewhere during the same semester (summer session is excluded) for courses that are not offered at Stony Brook. Similarly, students enrolled at other campuses may register at Stony Brook for courses not available at their home institutions. Tuition, exclusive of special fees, is paid by students to the home institution, even though they are taking one or more courses at a host campus. Information is available from the Office of Records/Registrar.

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 appropriate departmental academic advisor and the Stony Brook Undergraduate Transfer and Evening Studies Office, where they can obtain assistance in filling out a form listing the intended courses and their Stony Brook equivalents. After the University receives an official transcript indicating that the student has completed the courses with passing grades, appropriate transfer credit will be granted.

National Student Exchange

The National Student Exchange (NSE) offers undergraduate students an opportunity to study for up to one year at one of more than 100 state colleges and universities in the United States and its territories. Students return from exchange with new perspectives on their education and a better appreciation of their home regions, families, and campuses, as well as an increased awareness of the differences in ideas and value systems that exist across the United States.

To qualify for the program students must be studying full time at the time of application and have completed a full-time course of study in the semester

*See also p. 29, "Advanced Standing by Examination."

**See also p. 27, "Transfer Credit Policies."

prior to the exchange semester with a cumulative G.P.A. of 2.50 or higher. The application, which includes recommendations and a personal statement of intent, as well as academic advising and an interview with the program coordinator, must be completed by February 15.

Students are encouraged to select schools in geographic and cultural settings that provide academic enrichment opportunities not available on the home campus.

NSE brochures, information about tuition and fees, application forms, and interviews are available in the Office of Enrollment Planning and Management.

Study Abroad

Stony Brook encourages students to enrich and broaden their undergraduate education through participation in programs of study, residence, and travel in other countries. Students may choose from a wide variety of programs in virtually every major geographic area in the world, studying abroad during the summer, for a semester, or for a full academic year.

Students interested in learning more about specific overseas programs should consult the University Studies chapter, "Study Abroad," p. 71. Study Abroad programs are designed to fit with undergraduate major and degree requirements, and the Office of International Programs helps students plan programs that meet their individual needs and interests.

Academic Standing

This information applies to all West Campus undergraduate students.

Minimal acceptable academic progress is measured in terms of the rate at which course credit is earned and the cumulative grade point average. The number of credit hours earned in a semester is the total number of credit hours for which grades of A, A–, B+, B, B–, C+, C, C–, D+, D, S, P, or R are assigned. Academic progress is reviewed at the end of each semester and students will be placed on notice or 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 a waiver of dismissal, which applies only to the semester immediately following notice of dismissal. All of the circumstances in the case will be considered and a timely decision made. A student who has been dismissed may apply for termination of that dismissal after a minimum of one semester's absence from the University. 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), No Credit (NC), or Academic Dishonesty (Q) grades do not count as earned credits. Second, the quality of work is considered. The quality standard entails the achievement of at least the cumulative grade point average appropriate to the student's class status as shown on the following chart.

Quantity Standard

Class Standing (determined by credit accumulated prior to beginning of semester)	*Minimum credits in any one semester**
Freshmen (0-23 credits)—accepted into CEAS programs	12
Freshmen (0-23 credits)—all others	9
Sophomores (24-56 credits)	12
Juniors (57-84 credits)	12
Seniors (85 or more credits)	12

Quality Standard**

	*Minimum cumulative G.P.A. at end of semester**
Freshmen—accepted into CEAS programs	2.00***
Freshmen—all others	1.75
Sophomores	2.00
Juniors	2.00
Seniors	2.00

*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. See p. 29 for information on academic standing review for non-matriculated students.

**Grades earned in remedial courses are not calculated in the cumulative G.P.A. and do not affect the quality standard. The credits, however, are counted for the quantity standard if the student earned a passing grade in the course.

***Freshmen who are dismissed from the College of Engineering and Applied Sciences but who meet the standard for all other freshmen may petition for transfer to the College of Arts and Sciences as general program students; the procedure for doing so will be outlined in the dismissal letter.

A. Any student who in a semester fails to meet the *Quantity* standard for his or her class status will be placed *On Notice.*
B. Any student who meets the *Quantity* standard but who fails to meet the *Quality* standard for his or her class status will be placed *On Notice.*
C. Any student eligible for a *Second Consecutive Notice* will be *Dismissed.*
D. Any student eligible for a *Third Notice* will be *Dismissed.*
E. 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 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 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. A student who has been dismissed because of an "On Notice" semester due solely to one or more Incompletes, *and* who has received a waiver of the period of such dismissal, *and* who completes the uncompleted courses by the published deadline, may have the notation of dismissal and the waiver notation removed from his or her academic record.

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 preprofessional committees.

Information about the procedures for hearings and other functions of these committees dealing with academic dishonesty is available in the Office of Undergraduate Studies and in the Engineering and Applied Sciences 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 students' complaints of arbitrary, capricious, malicious, or otherwise improper actions related to grading and other evaluations; assignments, examinations, and other requirements for credit; and 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 West 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 agreements between New York State and United University Professions (the faculty-staff union) and GSEU (the Graduate Student Employees Union).

The committees consider only charges of clearly improper academic practices; they will not intervene in disagreements about an instructor's intellectual judgment (e.g., grading). 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 one month of the alleged impropriety. Further information about academic grievance procedures may be obtained from the Office of Undergraduate Studies or the Engineering and Applied Sciences Undergraduate Student Office.

Academic Honors

Honor Societies

Besides the annual awards listed in the Scholarships and Awards chapter (pp. 41-45), induction into an honor society acknowledges the student's outstanding academic performance.

Phi Beta Kappa, the nation's oldest academic honor society, is devoted to fostering the liberal ideal in education and encouraging the spirit of critical inquiry. Admission is by election, based on the breadth and balance of a student's career academic program as well as superior performance. The number of initiates is limited by the national body; members of the junior class may constitute only a small fraction of the annual total. The minimum cumulative G.P.A. in recent years has averaged 3.6 for seniors and 3.8 for juniors.

Sigma Beta, Stony Brook's own honor society, is devoted to academic excellence and university service. Membership is open to students with no more than 80 credits who have, at the conclusion of the fall semester, a 3.5 grade point average as a full-time student using the same criteria as for the Dean's List, below.

Sigma Xi is a national honor society for achievement in pure or applied scientific research. Any student associated with the University at Stony Brook who has through initial research achievements shown a marked aptitude for research that 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 engineering honor 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.*

The *Golden Key National Honor Society* recognizes junior and senior students who have achieved at least a 3.3 G.P.A. at Stony Brook. The campus chapter endeavors to add to the vitality of the University's intellectual and social life through sponsorship of extracurricular events.

Various disciplines have their own honor societies. Those with chapters at Stony Brook include *Sigma Gamma Epsilon* (Earth Science), *Omicron Delta Epsilon* (Economics), *Eta Kappa Nu* (Electrical Engineering), *Phi Sigma Iota* (Foreign Languages), *Delta Phi Alpha* (German), *Alpha Eta* (Health Technology and Management), *Phi Alpha Theta* (History), *Phi Sigma Tau* (Philosophy), *Sigma Pi Sigma* (Physics), *Pi Sigma Alpha* (Political Science), *Alpha Epsilon Delta* (pre-medical curriculum), *Psi Chi* (Psychology), *Dobro Slovo* (Slavic Languages), and *Alpha Kappa Delta* (Sociology).

Dean's List

After each fall and spring 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 in that semester at least 12 credits for letter grade (including S) and have no I's, U's, NR's, NC's, F's, or Q's. P grades are not considered to be letter grades. The grade point average cutoffs for West Campus students are as follows: seniors, 3.40; juniors, 3.30; sophomores, 3.20; and freshmen, 3.10. Part-time students must have earned 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, F's, or Q's. They will be evaluated according to the semester G.P.A. that applies to their class.

Degrees with Distinction

Degrees with distinction are conferred on candidates for the Bachelor of Arts, Bachelor of Science, or Bachelor of Engineering degree who have completed at least 55 credits at Stony Brook (excluding Challenge credit) 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 indicated 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.

Departmental Honors Programs

While selection of students for all the above 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 in the College of Arts and Sciences chapter. For those students who qualify, this fact is indicated on their diploma and on their permanent academic record.

Student Participation in University-Sponsored Activities

By their participation in, for example, research conferences, dramatic or musical performances, intercollegiate athletic

competitions, or leadership meetings, students make contributions to, and serve as ambassadors of, the University. In recognition of the students' time commitment both to their regular academic programs and to related activities, the University makes every effort to accommodate their unique situations. Therefore, since academic responsibilities are paramount, instructors should make arrangements for West Campus undergraduates participating in University-related activities to complete examinations, quizzes, or class assignments early or late.

The student is responsible for presenting a printed copy of his or her semester obligations to all relevant professors at the beginning of the semester to alert the professors to activities that may present conflicts. The intent of the advance notification is to allow the student and faculty member to identify a mutually agreeable solution concerning examinations, quizzes, laboratories, or the submission of assignments.

Some events occur by invitation only during the semester, and this policy should not exclude those events. Faculty or administrators responsible for supervising these activities will provide written verification for the professor.

Application for Graduation

In order to become a candidate for graduation, a student must file an "Application for Degree" form with the Office of Records/Registrar. The deadline for such application is the end of the second week of the candidate's final semester. First-semester seniors wishing to receive notice of unfulfilled degree requirements before the beginning of their final semester must file the application form by the end of the second week of the semester previous to anticipated graduation. (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 in the *Summer Session Bulletin.*) December and August candidates are urged to file the previous February; May candidates are urged to file the previous September. 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. Nonattendance 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.

Foreign students on an F-1 or J-1 visa must consult with the Foreign Student Services office when withdrawing from the University.

Leave of Absence

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 or 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, Educational Opportunity Program students must obtain clearance for readmission from the A.I.M./E.O.P. Office, and foreign students must obtain a visa clearance from the Foreign Student Services office. 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 at that institution. A student in that situation should contact an admissions counselor at the earliest opportunity.

Returning to the University

Students who leave the University in good academic standing and who have no disciplinary action or academic judiciary action pending are eligible to resume their studies under the following conditions:

If a withdrawal form is submitted prior to October 31 in the fall or March 15 in the spring semester, students may return the following semester.

If a withdrawal form is submitted after October 31 in the fall or March 15 in the spring semester, students may return after one full semester has elapsed. Students with documented extenuating circumstances, e.g., health problems, may petition the appropriate Committee on Academic Standing and Appeals to return in the next semester.

College of Arts and Sciences students who withdraw from the University and who have earned no credit at the University for four consecutive semesters (not counting summer terms) will be assigned a new matriculation date and will be responsible for the academic requirements in effect at the time of their return. Rematriculated students will be required to meet with an academic advisor and to pay a $50 rematriculation fee prior to registering for classes.

College of Engineering and Applied Sciences students will be assigned a new matriculation date after one semester of absence from the University and will be responsible for the academic requirements in effect at the time of their return. They will be required to meet with a faculty advisor prior to registering for classes.

Prior to registering for classes, all foreign students returning to the University must contact the Foreign Student Services office, and all returning A.I.M./E.O.P. students must meet with their A.I.M. counselor.

Upon their return to the University, students must resolve outstanding financial obligations to all campus offices prior to registration for classes.

Equivalent Opportunity/Religious Absences

Some students may be unable to attend classes on certain days because of religious beliefs. Section 224-a of the New York State 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 his or her religious beliefs, to register or 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 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 his or her religious beliefs, an equivalent opportunity to register for classes or make up any examination, study, or work require-

ments 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 registration, classes, examinations, study, or work requirements are held on Friday after four o'clock post meridiem or on Saturday, similar or makeup classes, examinations, study, or work requirements, or opportunity to register 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, or registration 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 student because of his or her availing himself or herself of the provisions of this section.
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.

6a. It shall be the responsibility of the administrative officials of each institution of higher education to give written notice to students of their rights under this section, informing them that each student who is absent from school, because of his or her religious beliefs, must be given an equivalent opportunity to register for classes or 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 such student such equivalent opportunity.

7. As used in this section, the term "institution of higher education" shall mean any institution of higher education, recognized and approved by the regents of the university of the state of New York, which provides a course of study leading to the granting of a post-secondary degree or diploma. Such term shall not include any institution which is operated, supervised, or controlled by a church or by a religious or denominational organization whose educational programs are principally designed for the purpose of training ministers or other religious functionaries or for the purpose of propagating religious doctrines. As used in this section, the term "religious belief" shall mean beliefs associated with any corporation organized and operated exclusively for religious purposes, which is not disqualified for tax exemption under section 501 of the United States code.

Research Involving Human Subjects

All experiments conducted by Stony Brook personnel, whether on or off campus, in which human subjects are involved, are required to be reviewed and approved by the campus Committee on Research Involving Human Subjects (CORIHS) before they can begin. This requirement extends to questionnaires, both written and oral, and other instruments of personal data collection. Application forms for approval of such experiments can be obtained in most departmental offices or from the University coordinator for research compliance in the Office of the Vice President for Research. A faculty advisor is required for any student-conducted experiment involving human subjects.

Undergraduates are often asked to act as subjects in experiments. They should be aware that their rights as subjects include knowing that an experiment has received the approval of CORIHS. State University policy forbids campuses to require the participation of students as subjects in human research. In almost every instance of such participation, an informed consent form is required of the subject. This form outlines the risks and benefits of participation, enumerates the subject's rights, and describes the nature of the subject's participation. Inquiries about subject rights should be directed to the executive secretary of the Committee on Research Involving Human Subjects in the Office of the Vice President for Research.

Research Involving Safety Considerations

Campus committees also review and approve projects involving several safety concerns. These include the use of radioactive materials or devices that generate ionizing radiation and the use of recombinant DNA techniques or activities that may involve biologically hazardous materials or the use of chemically hazardous materials.

The appropriate forms to request approval for such projects are generally available in departmental offices. Questions may also be directed to the University coordinator for research compliance in the Office of the Vice President for Research.

Use of Laboratory Animals in Research or Instruction

Any research, teaching, or creative activity that involves the use of vertebrate animals must be approved by the Institutional Animal Care and Use Committee (IACUC) prior to ordering animals and prior to commencement of the activity. Applications for such approval may be obtained from the director of the Division of Laboratory Animal Resources (DLAR) or from the University coordinator for research compliance. The chairs, deans, and division heads of departments in which laboratory animals are routinely used also have a supply of these applications.

The following is a brief summary of the federal, state, and campus regulations that govern the use of laboratory animals at Stony Brook:

1. Except as stated in provision 2, all vertebrate animals must be ordered through DLAR. If a university purchase order is unacceptable to the supplier, the DLAR must be so informed in order to determine whether another supplier may be contacted.
2. The IACUC may waive the requirement of mandatory acquisition of animals through DLAR in cases where the activity involves fieldwork. Such a waiver is granted when the detailed methods of observation, capture, and/or tagging of vertebrate animals are determined by the IACUC to be in compliance with applicable regulations governing such work.
3. Use of privately owned animals is prohibited.
4. Users of vertebrate animals must adhere to policies set forth in the *N.I.H. Guide for the Care and Use of Laboratory Animals* (available from all chairs, deans, and division heads).
5. In the event that the animals must be euthanized, the method of euthanasia must conform to those reported in

the 1986 report of the A.V.M.A. Panel on Euthanasia, or subsequent revisions (available from all chairs, deans, and division heads). Methods of euthanasia for species not covered by this report must be employed as per IACUC recommendation.

6. All individuals involved in research or teaching activities in which animals are used *must* attend the training session given by the director of the DLAR in order to satisfy requirements indicated in Stony Brook's assurance filed with the NIH.
7. IACUC approval is required in cases where members of the University propose to engage in collaborative work that involves the use of animals in facilities other than those under the auspices of the University at Stony Brook.

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. As provided by law, written consent of students will be required before personally identifiable information about them will be released from their educational records.

Specific guidelines and procedures are available from the Office of the Vice President for Campus Finance and Management. After administrative remedies available at the University have been exhausted, inquiries or complaints may be filed with the Family Policy Compliance Officer, U.S. Department of Education, 400 Maryland Avenue S.W., Washington, DC 20202-4605.

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 that office for this purpose. On-campus housing address changes should be reported to the appropriate Campus Residences quad office rather than to the Registrar. Foreign students must also report any change of address to the Foreign Student Services office.

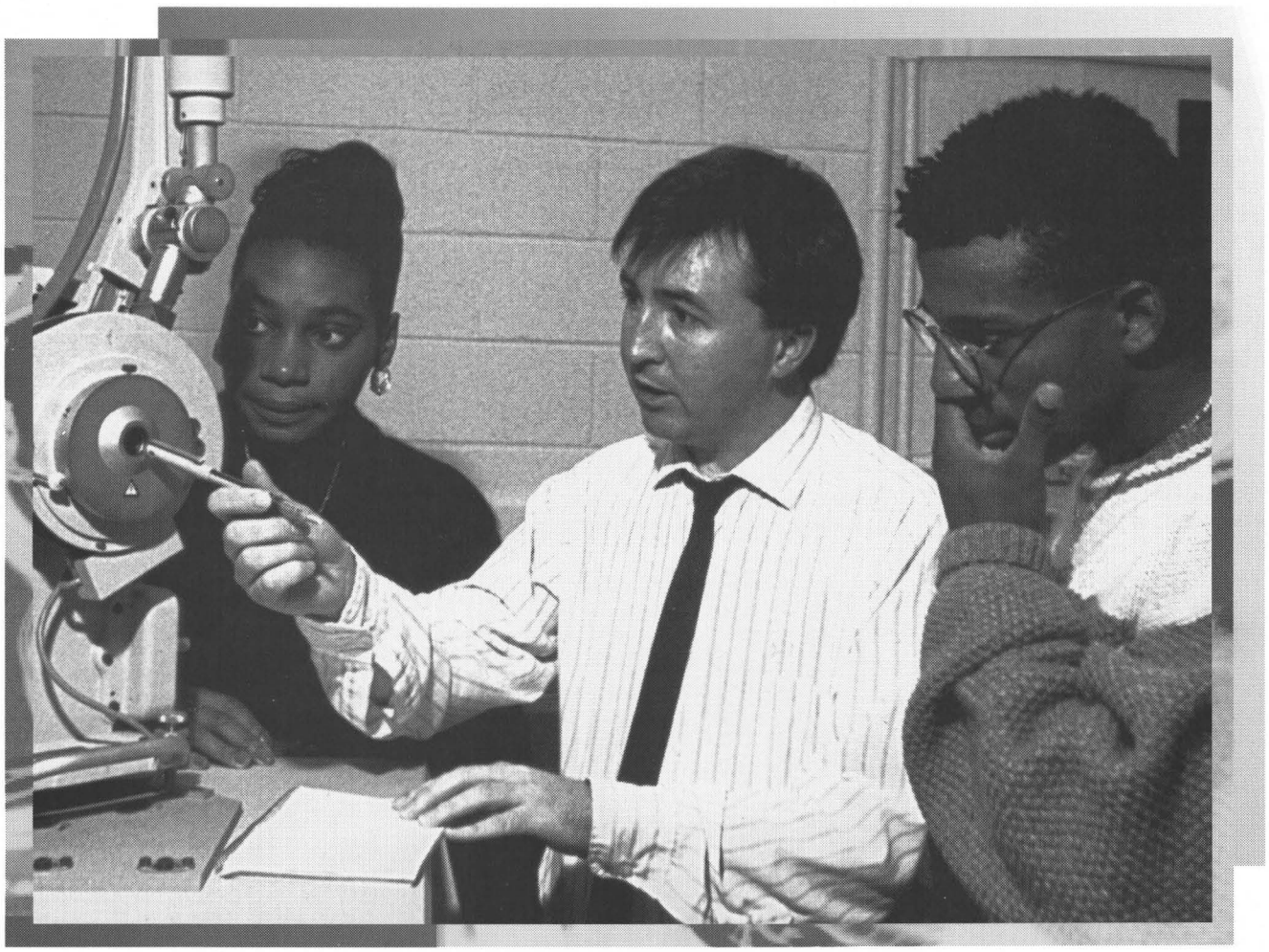
Campus Telephone Directory

It is the policy of the University at Stony Brook to publish a campus telephone directory including students' names, addresses, and telephone numbers. If a student does not wish to have his or her home address and phone number listed in the directory, or in the case of a minor student, if a parent does not wish such a listing, he or she will be required to so indicate at the time of registration for each fall semester by filing SUSB Form 503-B at the Office of Records/Registrar.

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 Prime Time each semester.

University Studies



The Diversified Education Curriculum: General Education and University Degree Requirements

The Diversified Education Curriculum is required of all undergraduate students in the College of Arts and Sciences, the College of Engineering and Applied Sciences, the W. Averell Harriman School for Management and Policy, and the Marine Sciences Research Center (MSRC). All other university graduation requirements pertaining to undergraduates are also listed in this section. In addition to describing the Diversified Education Curriculum and offering guidance in choosing appropriate courses, this section explains the place of general education in an undergraduate program and the reasons for each requirement.

What is General Education?

General education courses, the major, and electives are the three components of a university education. By completing a major, students learn to use the methods of a discipline to gain insight into its subject matter, about which they acquire some depth of knowledge. Electives give students freedom to choose courses that enhance their educational goals beyond the basic requirements set by the faculty. General education courses provide breadth of knowledge within a carefully balanced framework. They are an essential element in students' intellectual development.

General education requirements help students to place the more specialized parts of their undergraduate study—their major and preprofessional training—in a cultural and historical context. They also develop the intellectual skills necessary to enhance learning during the university years and later. In this complex world, distant places and past history have a major effect on all human life. The knowledge of the variety, richness, and interdependence of the human experience that students gain during their undergraduate years will enrich their future professional and personal life. The person with a broad education in the arts and sciences and with well-developed communication and quantitative skills is most likely to flourish in changing times.

Stony Brook's General Education Program

The Diversified Education Curriculum (D.E.C.) exposes students to a wide range of skills, disciplines, and cultural perspectives within and without American society. The program assumes that students have reached a basic level of competence in mathematics, writing, and (except for students in the College of Engineering and Applied Sciences) a foreign language—the Entry Skills. Most students will have mastered these basic skills in high school or a previously attended institution of higher education. For students who do not have the basic skills when they matriculate, the University provides the instruction to attain them.

The first stage of the Diversified Education Curriculum *per se*, University Skills, focuses on ways of learning essential to the entire academic experience and subject matter intrinsic to liberal learning. The ability to organize and present ideas and information in written English and to understand and employ quantitative reasoning are critical to higher education. Through practice in reading literary and philosophic texts critically, students enhance their ability to learn in subsequent courses. They also discover ways of reading with pleasure and understanding that should serve them throughout their lives. A systematic introduction to the fine and performing arts familiarizes students with the achievements and methods of these distinctive expressions of our common humanity and provides a basis for lifelong enrichment.

No matter what their specific educational and career goals, students will emerge as better thinkers and doers if they have learned about the modes of thinking, methods of study, and subject matter of several major branches of knowledge. This is the premise of the second group of D.E.C. categories, Disciplinary Diversity.

The final group of D.E.C. categories, Expanding Perspectives and Cultural Awareness, challenges students to confront the world beyond the university as it is and as it may become. Courses in this part build on study in the first two groups of categories. The goal of category H, to understand the social and global implications of science and technology, is crucial for citizens in the 1990s and beyond. The next two categories familiarize students with the diverse cultures, histories, social structures, political institutions, and value systems of people in other parts of the world. European traditions and the world beyond European traditions are distinguished so that students may heighten their understanding and appreciation of each through their knowledge of the other. Appropriately, the curriculum culminates in the American pluralism category, which applies the knowledge of these diverse traditions to the understanding of America's unique social and cultural diversity, a principal source of its strength.

For the College of Engineering and Applied Sciences the form of the Diversified Education Curriculum is somewhat different from that of the College of Arts and Sciences. The differences are primarily due to the need to make room in engineering and applied sciences programs for the many mathematics, science, and engineering credits mandated by the Accreditation Board for Engineering and Technology (A.B.E.T.). The Arts and Sciences curriculum applies to students in the W. Averell Harriman School for Management and Policy and the Marine Sciences Research Center (MSRC). The University degree requirements, below, apply to all students.

University Degree 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 and 128 credit hours for the Bachelor of Engineering degree.

Residence Requirement*

After the 57th credit, at least 36 credits must be earned at Stony Brook.

Grade Point Average (G.P.A.) Requirement

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

Major Requirement

Each candidate for a degree must satisfy the requirements of a declared major.

* Restrictions on the number of credits that may be counted toward the residence and credit hour requirements are stated in "Restrictions on Credits," p. 225 (for College of Engineering and Applied Sciences students only), "Course Credit and Prerequisites," p. 77, and "Multiple Registrations for the Same Course," p. 47. Among the kinds of courses with restrictions are independent study, activity-related courses, courses for undergraduate teaching assistants, graduate courses, studio and performance courses, remedial courses, and repeated courses.

Upper-Division Credit Requirement

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

Some of these credits may be earned through courses transferred from other colleges and individually evaluated at Stony Brook as upper division. See p. 27, "Transfer Credit Policies."

Upper-Division Writing Requirement

All bachelor's degree candidates must satisfy a writing requirement established in their major discipline. Individual programs and departments appraise the writing of students in their major according to the standards they set of acceptable communication of ideas in their disciplines. The specific form of the requirement for each major is listed with the other requirements for the major.

Diversified Education Curriculum (D.E.C.)

Details of the three Entry Skills as well as course lists for the D.E.C. categories begin on pp. 63 and 65, respectively. Not all courses in the *Undergraduate Bulletin* fall into a D.E.C. category. For those that do, the letter of the category follows the course number in the departmental lists of courses and in the *Class Schedule* published each semester.

No courses for which a student receives the grade of P may be used to satisfy D.E.C. requirements.

AP, CLEP subject examinations, CPE, or Challenge credit, or other approved credit by examination with appropriate scores may be used to satisfy one course in each of the categories E, F, and G; an appropriate score in the AP mathematics examination satisfies category C. Course credit by examination may not be used in any other category.

Relevant courses completed under the auspices of an accredited college while the student was in high school may be substituted for one of the courses required in categories E, F, and G only if taken on the college campus and taught by members of the college faculty. Such courses may not be used in any other category.

Entry Skills

1. Basic Mathematics Competence: MAP 102 *or* MAP 103
2. Basic Writing Competence: EGC 100
3. Elementary Foreign Language: language through the 112 level *(College of Arts and Sciences, W. Averell Harriman School, and MSRC students only).*

University Skills

Category A: English Composition
(all students: one course)
This category is satisfied by EGC 101, EGC 102 (with special permission only), *or* EGL 202, depending upon placement. This requirement may not be fulfilled by transfer credit after matriculation. Students must earn a grade of C or higher in a course used to satisfy this requirement.

Category B: Interpreting Texts in the Humanities
(all students: one course)
Courses satisfying this requirement (1) introduce students to a range of useful questions and ways of reasoning appropriate to the comprehension and analysis of literary or philosophic texts, and (2) provide instruction and practice in reading and interpreting a variety of humanistic texts of some complexity, so as to articulate the role of personal and cultural values in these texts and their interpretation. The study of humanistic texts will prepare the student for courses in category G.

Category C: Mathematical and Statistical Reasoning
(all students: one course)
Courses that satisfy this requirement introduce a substantial amount of mathematical or statistical content and develop a student's ability in mathematical or statistical reasoning. Such courses both communicate ideas and require practice in their implementation. Suitable topics for such courses include any of the following: precalculus, calculus, finite mathematics, linear algebra, statistics, computer programming (but not word- or data-processing), or symbolic logic. These courses must be taken after achieving the appropriate level on the Mathematics Placement Examination or successful completion of one of the courses designated to satisfy basic mathematics competence. Students must earn a grade of C or higher in a course used to satisfy this requirement.

Category D: Understanding the Fine and Performing Arts
(Arts and Sciences, Harriman, and MSRC students: one course)
The fine and performing arts express the values, insights, and creative imaginations of human cultures and individual artists. Courses in this category (1) train students in appropriate modes of perception and analysis and introduce vocabulary basic to each art, and/or (2) acquaint students with a significant range of repertory and central works that represent diverse viewpoints and cultures.

Disciplinary Diversity

With the following exceptions, courses of three credits or more in the appropriate fields satisfy categories E, F, and G. Exceptions are:

1. Courses placed in any other Diversified Education Curriculum category
2. Elementary language courses
3. Studio and performance courses
4. Activity-related courses
5. Independent study, directed readings, and directed research courses
6. Upper-division departmental honors program courses
7. 400-level courses
8. Secondary teacher preparation courses, including student teaching and student-teaching seminars, methods and materials courses, and observation
9. Undergraduate teaching practica
10. Certain courses considered inappropriate for any of the Disciplinary Diversity categories.

Category E: Natural Sciences
(all students: two courses)
The natural sciences engage in the study of objects in the material universe, their mutual interactions, and the processes by which they are transformed. A natural science may be classed as a biological science or a physical science, according to whether the principal objects of study are living or not.

Category F: Social and Behavioral Sciences
(Arts and Sciences, Harriman, and MSRC students: two courses; Engineering and Applied Sciences students: one course)
The social and behavioral sciences provide a better understanding of the elements underlying the structure and evolution of society by studying the behavior of individuals and their interactions in groups and organizations.

Category G: Humanities
(Arts and Sciences, Harriman, and MSRC students: two courses; Engineering and Applied Sciences students: one course)
The humanities are fields concerned with interpreting human life, especially by analyzing and articulating the values that give meaning to personal life and cultural activity.

Expanding Perspectives and Cultural Awareness

Category H: Implications of Science and Technology
(all students: one course)
Courses that satisfy this category introduce the student to the wider social context within which science and technology operate. These courses (1) develop a deeper understanding of the scientific principles underlying the specific area(s) of science or technology studied, and/or (2) include a significant examination of the effects of scientific and technological developments on culture and society (and vice versa) with explicit attention paid to value issues in science-society interactions. All courses that satisfy this category require at least one three-credit introductory natural science course as a prerequisite.

Category I: European Traditions
(all students: one course)
Courses in this category acquaint students as broadly and deeply as possible with the culture of a nation or region in Europe through the study of its language, social structure, gender roles, political institutions, or value systems.

Category J: The World Beyond European Traditions
(all students: one course)
Courses in this category acquaint students as broadly and deeply as possible with the culture of a nation or region in Africa, Asia, Latin America, or the Pacific islands through the study of its language, social structure, gender roles, political institutions, or value systems. This category includes the study of Native American culture.

In choosing courses for categories I and J, Engineering and Applied Sciences students must select one course with a humanities designator and one with a social sciences designator (see details of categories F and G, p. 66, for appropriate designators).

Students are strongly encouraged to complete categories I and J before taking a course to fulfill category K.

Category K: American Pluralism
(all students except ESC, ESE, and ESG majors: one course)
Courses in this category enable students to build upon their knowledge of diverse traditions in order to examine in detail the role of these traditions in forming American society. Courses included here explore either the diversity of ethnic, religious, gender, or intellectual traditions in the United States through a multicultural perspective *or* the relationship of a specific ethnic, religious, or gender group to American society as a whole.

Application of Transfer Credits to the Diversified Education Curriculum

Because D.E.C. requirements for students in the College of Engineering and Applied Sciences (CEAS) are slightly different from the requirements for students in the College of Arts and Sciences, the W. Averell Harriman School for Management and Policy, and the Marine Sciences Research Center, application of transfer credits is also slightly different. Where these differences occur in the regulations below, the CEAS application is shown in brackets and italics.

1. All Entry Skills requirements must be met either through a specified examination, through courses taken at Stony Brook, or by transfer of equivalent courses. Satisfaction of these requirements will be evaluated at the time of matriculation.
2. All students who have earned an A.A. or A.S. degree in a university-parallel program at a SUNY or CUNY two-year college prior to matriculation at Stony Brook will automatically have met categories A through H [*CEAS: A through G*] by completion of the liberal arts requirement of their previous college.
3. All other transfer students will have their previous courses evaluated for applicability to the D.E.C. as follows:
   a. Students who, at matriculation, provide official transcripts showing *all* of the following will be considered to have met the D.E.C. requirements in categories A through H [*CEAS: A through G*]. A total of eleven [*CEAS: seven*] courses must be used.
      - One college English composition course with a grade of C or higher
      - One mathematics or statistical reasoning course with a grade of C or higher
      - Three [*CEAS: two*] courses in the humanities and fine arts
      - Three [*CEAS: two*] courses in the natural sciences and mathematics (including no more than one in mathematics in addition to that used for mathematical or statistical reasoning)
      - Three [*CEAS: one*] course(s) in the social and behavioral sciences
   b. Entering students whose transcripts at matriculation lack *any* of the eleven [*CEAS: seven*] required courses listed above will have their courses evaluated for each category using a broad interpretation of D.E.C. principles.
   c. All students may satisfy categories A through H [*CEAS: A through G*] by transfer from accredited colleges and universities, except that category A may *not* be fulfilled through transfer credit after matriculation at Stony Brook.
   d. Relevant courses completed under the auspices of an accredited college while the student was in high school may be substituted for one of the courses required in categories E, F, and G only if taken on the college campus and taught by members of the college faculty. Such courses may not be used in any other category.
   e. [*All College of Engineering and Applied Sciences students must satisfy category H at Stony Brook.*]
   f. Students must fulfill categories I and J at Stony Brook, with two exceptions: (1) They may fulfill these categories through transfer either before or after matriculation only by transferring an intermediate or higher foreign language course, as appropriate to the category. An intermediate or higher foreign language transferred course used to fulfill one of the three [*CEAS: two*] required humanities distribution courses (see 3.a above) may not be used also to fulfill category I or J; (2) Six credits of college-level study abroad (with no more than three of these credits at the elementary level of the appropriate foreign language) in an appropriate geographic area may also be used to satisfy category I or J.
   g. All students must fulfill category K at Stony Brook.

Details of Entry Skills Requirements

Basic Mathematics Competence

Students admitted to the university should have reached a minimum level of mathematics competence in order to be able to formulate and solve problems arising in their university work. All entering students who have not achieved this entry-level mathematics proficiency by passing one of the standardized tests listed in the Admissions chapter with the

required score (see p. 25) may satisfy the basic mathematics competence requirement in one of the following ways:

1. By scoring level 3 or higher on the Mathematics Placement Examination during their first year at Stony Brook. (This examination is offered during freshman and transfer orientation sessions, during the first week of each semester, and once a month during the academic year.) Students who do not attain the proficiency-level score must enroll in an appropriate course (MAP 101 or a course that will satisfy proficiency) during their first year on this campus.
2. By earning a grade of C or higher in MAP 102, 103, or a transferred course of at least three credits evaluated by Stony Brook as equivalent to MAP 102 or 103.
   Note: Credit toward graduation will not be given for such courses taken after matriculation.
3. By obtaining at least three transfer credits or Challenge credit for any MAT course numbered 123 or higher or any AMS course.
   Note: Students who received transfer credit for such a course taken under the auspices of a college while they were in high school must attain the proficiency-level grade on the Mathematics Placement Examination to satisfy this requirement, unless the course was taken on the campus of an accredited college and taught by a member of the college faculty.
4. By passing with a grade of C or higher, while enrolled in a degree program at any two- or four-year college, any other mathematics course (excluding basic arithmetic, elementary algebra, and business or finance mathematics courses) of at least three credits counting toward graduation.
5. By passing a Stony Brook course that meets D.E.C. category C with a grade of C or higher.

Students with problems achieving basic mathematics competence should consult the director of the Mathematics Learning Center.

Basic Writing Competence

All entering students who have not already passed, with a grade of C or higher, a composition course equivalent to Stony Brook's EGC 101 must take a diagnostic placement examination on entry and begin the writing requirement during their first two semesters at Stony Brook. A score of 3 or 4 on the placement examination satisfies the basic writing competence requirement. (A course taken at another college will not be considered equivalent to EGC 101 unless the student took it while matriculated at that college.) Students who are assigned to preparatory courses (i.e., EGC 100 and ESL courses) must take those courses, then EGC 101, in sequence in successive semesters until they have completed category A.

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

Placement 1 is given to students whose composition skills are weak and whose writing shows evidence of interference from a foreign language background. They are required to pass an assigned ESL course or sequence of courses, followed by EGC 100, and then to satisfy category A.

Placement 2 is given to students whose composition skills are weak and who are required to pass EGC 100 and then to satisfy category A.

Placement 3 is given to students whose composition skills reflect a satisfactory preparation for college study and who are placed in EGC 101 for category A.

Placement 4 is given to students whose composition skills are strong and who are placed in EGL 202 for category A.

Elementary Foreign Language

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

1. By enrolling in and passing with a grade of C or higher a foreign language course numbered 101 or 112, or by passing with a letter grade any three-credit foreign language course numbered above 112 with one of the following designators: ARB, CHI, FRN, GER, GRK, HBW, ITL, JPN, KOR, LAN, LAT, PSH, RUS, SKT, SLN, or SPN. (Students who elect to use the P/NC grading option do not satisfy the requirement.)
   Note: Literature and culture courses taught in English translation under the auspices of the foreign language departments do not satisfy the elementary foreign language requirement.
2. By obtaining equivalent transfer credit in a foreign language course with the required grade.
   Note: Students who received transfer credit for such a course taken under the auspices of a college while they were in high school must attain the acceptable score on one of the examinations listed in 3, 4, and 5 below to satisfy this requirement, unless the course was taken on the campus of an accredited college and taught by a member of the college faculty.
3. 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 elementary foreign language requirement. (A third-year high school foreign language course passed with a grade of 85 or higher fulfills the Stony Brook proficiency requirement for those students whose high school does not offer the New York State Regents examination or its New York City equivalent.)
4. By having passed the College Entrance Examination Board Achievement Test in a foreign language with a grade of 525 or higher.
5. By passing a Stony Brook Challenge examination in a foreign language.
   Note: Students who wish to fulfill the elementary foreign language requirement by examination may do so by Challenge examination for a language course numbered 101, 112, 191, or higher. When the Challenge examination is used to fulfill the elementary foreign language requirement, no credit will be awarded unless the student meets all rules and regulations outlined in "Guidelines for the Stony Brook Challenge Program," which is available in the Center for Academic Advising.
6. Students have fulfilled the elementary foreign language requirement if their secondary school transcripts and transcripts from previously attended universities show a total of two years of formal study in an institution where the language of instruction is other than English.
7. Students who know a language not included in Stony Brook's curriculum may satisfy the elementary foreign language requirement with that language if there is a member of the faculty willing and able to evaluate the student. Although this evaluation will

serve to satisfy the elementary foreign language requirement, it will not result in the awarding of credit.

Details of Diversified Education Curriculum Categories

D.E.C. courses are shown in departmental lists of courses with the category letter tagged to the course number—e.g., EGC 101-A. Courses added to the D.E.C. categories will be published in the *Undergraduate Bulletin Supplement.* The category letter for all D.E.C. courses appears in the *Class Schedule* in the third column, headed "DEC." Courses with a D.E.C. category tag that are taken for the major can also be used for the appropriate D.E.C. category.

Category A: English Composition

Students who have achieved basic writing competence by passing EGC 100 or by a score of placement 3 on the English Placement Examination register for EGC 101. Students who do not receive a grade of C or higher in EGC 101 will be assigned a U grade, which conveys no credit; they must repeat the course the following semester or, if their EGC 101 instructor so recommends, elect instead to take EGC 102 for a letter grade; they must pass either course with a grade of C or higher.

Students who achieved placement 4 are required to pass EGL 202 with a grade of C or higher.

Placement 3 and 4 students must register for the appropriate course in their first or second semester at Stony Brook.

All transfer and rematriculated students who have already passed, with a grade of C or higher, a composition course judged equivalent to Stony Brook's EGC 101 will have satisfied this requirement. (A course taken at another college will not be considered equivalent to EGC 101 unless the student took it while matriculated at that college.)

Category B: Interpreting Texts in the Humanities

AFH 206 Great Books of the Black Experience
CLS/CSL 113 Greek and Latin Literature in Translation
EGL 191 Introduction to Poetry
EGL 192 Introduction to Fiction
EGL 193 Introduction to Drama
EGL/WNH 276 Feminism: Literature and Cultural Contexts
HUF 111 French Masterpieces in Translation
HUG 121 German Literature in Translation
HUI 131 Italian Masterpieces in Translation
HUM 107 The Literature of Commitment
HUM 121 Death and Afterlife in Literature
HUM 122 Images of Women in Literature
HUM 123 Sexuality in Literature
HUR 141 Introduction to Russian Literature (in English) I
HUR 142 Introduction to Russian Literature (in English) II
JDH/EGL 261 The Bible as Literature
MVL 141 The Legend of King Arthur
PHI 100 Concepts of the Person
PHI 103 Philosophic Problems
PHI 104 Moral Reasoning
PHI 108 Logical and Critical Reasoning
PHI 109 Literature and Human Life
PHI 110 Arts and Ideas
PHI 111 Introduction to Eastern Philosophy
RLS 110 The Bible: A Critical Introduction
RLS 150 The Religious Dimension
THR 104 Play Analysis
THR 114 Play Analysis: Honors

Category C: Mathematical and Statistical Reasoning

AMS 101 Introduction to Finite Mathematics
AMS 102 Elements of Statistics
CSE 110 Introduction to Computer Science
CSE 113 Foundations of Computer Science
EST/AMS 194 Patterns of Problem Solving
ISE/CSE 112 Fundamentals of Computer Information Systems
MAT 123 Introduction to Calculus
MAT 125 Calculus A
MAT 131 Calculus I
MAT 141 Honors Calculus I
PHI 220 Introduction to Symbolic Logic
PHI 330 Advanced Symbolic Logic
POL 201 Introduction to Statistical Methods in Political Science
PSY 201 Statistical Methods in Psychology
PSY 203 Statistical Methods with Computer Laboratory
SOC 202 Statistical Methods in Sociology
SOC 312 Methods and Statistics

A score of 6 or higher on the Mathematics Placement Examination or 4 or 5 on the AP mathematics examination also satisfies this requirement.

Category D: Understanding the Fine and Performing Arts

ARH 101 Art in Culture from Prehistoric Times to the Age of the Cathedrals, ca. 1400 A.D.
ARH 102 Art in Culture from the Early Renaissance, ca. 1400, to Postmodernism
ARH 201 Arts of Africa, Oceania, and the Americas
ARS 150 Fundamentals of Drawing
ARS 151 Fundamentals of Composition, Still Life, Painting, and Drawing
ARS 152 Fundamentals of Figure Drawing and Painting
ARS 153 Fundamentals of Sculpture and Three-Dimensional Design
ARS 174 Beginning Printmaking
ARS 264 Ceramics
ARS 281 Photography I
HUF 211 French Cinema (in English)
HUG 221 German Cinema Since 1945 (in English)
HUI 231 Italian Film (in English)
HUM 201 Film and Television Studies I
HUM 202 Film and Television Studies II
HUR 145 Russian Film and History (in English)
MUS 101 Introduction to Music
MUS 103 Music Cultures of the World I
MUS 104 Music Cultures of the World II
MUS 119 The Elements of Music
PHI 264 Philosophy and the Arts
THR 101 Understanding Theatre
THR 105 Acting I
THR 161 Modern Dance Technique and History
THR 162 Ballet Technique and History
THR 163 Jazz Dance Technique and History
THR 164 Tap Technique and History
THR 216 Introduction to Theatrical Design
THR 223 Stage Costume
THR 246 Stage Lighting
THR 256 Stage Design
THR 264 Movement Awareness and Analysis

Category E: Natural Sciences

Most courses of three credits or more in the natural sciences, with the exceptions listed in the D.E.C. Disciplinary Diversity description, p. 62, satisfy this requirement. Courses satisfying this requirement can be found among the offerings with the following designators (only courses with the letter E tagged to the course number in the departmental lists of courses, e.g., CHE 131-E, may be used): astronomy (AST), atmospheric sciences (ATM), biological sciences (BIO), chemistry (CHE), geology (GEO),

marine sciences (MAR), physical anthropology (ANP), physics (PHY), science interdisciplinary (SCI), technology and society (EST).

Category F: Social and Behavioral Sciences

Most courses of three credits or more in the social and behavioral sciences, with the exceptions listed in the D.E.C. Disciplinary Diversity description, p. 62, satisfy this requirement. Courses satisfying this requirement can be found among the offerings with the following designators (only courses with the letter F tagged to the course number in the departmental lists of courses, e.g., POL 101-F, may be used): Africana studies (AFS only), anthropology (ANT only), economics (ECO), history (HIS), Judaic studies (JDS only), linguistics (LIN only), political science (POL), psychology (PSY), social sciences interdisciplinary (SSI), sociology (SOC), women's studies (WNS only).

Category G: Humanities

Most courses of three credits or more in the humanities, with the exceptions listed in the D.E.C. Disciplinary Diversity description, p. 62, satisfy this requirement. Courses satisfying this requirement can be found among the offerings with the following designators (only courses with the letter G tagged to the number in the departmental lists of courses, e.g., EGL 224-G, may be used): Africana studies (AFH only), art (ARH, ARS), classics (CLS), comparative studies in literature (CSL), English (EGL only), French (FRN), German (GER), Hebrew (HBW), humanities interdisciplinary (HUM), Italian (ITL), Judaic studies (JDH only), music (MUS), philosophy (PHI), religious studies (RLS), Russian (RUS), Spanish (SPN), theatre arts (THR), women's studies (WNH only). Also certain Health Sciences Center courses (HMC 331 and 361).

Category H: Implications of Science and Technology

ANP 360 Primate Conservation
ANT 290 Science and Technology in Ancient Society
AST 248 The Search for Life in the Universe
ATM/PHY 237 Current Topics in World Climate and Atmosphere
BIO 204 Ecology of Food Production
BIO 208 Cell, Brain, Mind
BIO 306 Ecological Risks and Environmental Decisions
BIO 347 Botany and Biotechnology
BIO 351 Ecology
BIO 385 Plant Ecology
BSE 310 Issues in Science and Engineering
CHE 310 Chemistry in Technology and the Environment
ENS 301 Seminar on Environmental Studies
EST 290 Technology, Society, and Values: Balancing Risks and Rewards
EST 291 Energy, Environment, and People
EST 320 Communication Technology Systems
EST 325 Technology in the Workplace
EST 330 Natural Disasters: Societal Impacts and Technological Solutions
EST/POL 411 Science, Technology, and Arms Control
GEO 304 Energy, Mineral Resources, and the Environment
GEO 311 Geoscience and Global Concerns
HIS 237 Science, Technology, and Medicine in Western Civilization I
HIS 238 Science, Technology, and Medicine in Western Civilization II
HIS 352 The Social History of Science
HIS 394 Human Reproduction in Western Civilization
MAR 333 Coastal Oceanography
MAR 340 Environmental Problems and Solutions
MAR 390 Development of Aquaculture
PHI 230 The Nature and Practice of Science
PHI 364 Philosophy of Technology
PHI 368 Philosophy of Science
SOC 315 Sociology of Technology
SOC 353 Sociology of Science

Category I: European Tradition

ANT 365 The Stone Age Foundations of Western Civilization
ARH 300 Greek Art and Architecture
ARH 301 Roman Art and Architecture
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 306 The Early Renaissance in Italy
ARH 307 High Renaissance and Mannerism in Central Italy
ARH 310 Renaissance Art in Venice
ARH 314 Baroque Painting in the Netherlands
ARH 315 Spanish Painting, 1560-1700
ARH 316 Baroque Art in Italy and France
ARH 320 Art of the 18th Century
ARH 337 Northern Renaissance Art
ARH 341 Art of the 19th Century
CLS 215 Classical Mythology
CLS 320 Topics in Classical Civilization
CSL 211 Literary Survey: Medieval through late Renaissance
CSL 212 Literary Survey: Enlightenment through Modern
EGL 205 Survey of British Literature I
EGL 206 Survey of British Literature II
EGL 243 Shakespeare: The Major Works
FRN 191 Intermediate French I
FRN 192 Intermediate French II
FRN 195 Intermediate French (An Intensive Course)
FRN 221 Conversation and Composition
FRN 222 Introduction to Stylistics
FRN 390 French Civilization
GER 191 Intermediate German I
GER 192 Intermediate German II
GER 221 German Conversation and Composition
GER 222 German Conversation and Composition
GER 300 German Civilization
HIS 208 Ireland from St. Patrick to the Present
HIS 209 Imperial Russia
HIS 210 Soviet Russia
HIS 234 Medieval Europe: A Survey
HIS 248 Europe, 1815-1914
HIS 249 Modern Europe, 1914-1945
HIS 251 Europe Since 1945
HIS 301 Early Modern Europe
HIS 302 The Medieval Imagination
HIS 303 Medieval Culture and Society
HIS 304 Early Modern England: Change and Reformation, 1509-1603
HIS 305 Early Modern England: Revolution and War, 1603-1714
HIS 307 European Radicalism from the Protestant Reformation to the Russian Revolution
HIS 309 Modern France, 1815-1900
HIS 310 Modern France, 1900 to the Present
HIS 311 The Rise of Imperial Germany, 1806-1890
HIS 312 From Empire to Third Reich: Germany, 1890-1945
HIS 313 18th-Century England, 1714-1830
HIS 314 Victorian England, 1830-1901
HIS 315 20th-Century Britain
HIS 318 Social and Intellectual History of Europe

HIS 336/ WNS 334 Women, Work, and Family in Modern European History
HIS 338 Modern Russian Intellectual History
HIS 339 Russian Social History, 1825-1929
HIS/WNS 360 Women in Premodern Europe
HUE 269 Topics in Contemporary Slavic Culture (in English)
HUF 219 Modern France (in English)
HUG 229 Germany Today (in English)
HUI 239 Modern Italy (in English)
HUR 241 Special Russian Author in Translation
HUR 242 Special Genre or Period in Russian Literature in Translation
HUR 249 Russia Today (in English)
HUS 255 Modern Spain (in English)
ITL 191 Intermediate Italian I
ITL 192 Intermediate Italian II
ITL 195 Intensive Intermediate Italian
ITL 221 Italian Conversation and Composition I
ITL 222 Italian Conversation and Composition II
ITL 390 The Italian Scene
JDS/HIS 241 The Holocaust: The Destruction of European Jewry—Causes and Consequences
LAT 251 Readings in Latin Literature I
LAT 252 Readings in Latin Literature II
LAT 353 Literature of the Roman Republic
LAT 354 Literature of the Roman Empire
LAT 355 Early Medieval Latin
LAT 356 Late Medieval Latin
MUS 301 Music of the Baroque
MUS 302 The Music of J.S. Bach
MUS 303 The Music of Beethoven
MUS 307 Music and Drama
PHI 300 Ancient Philosophy
PHI 304 Medieval Philosophy
PHI 306 Modern Philosophy
PHI 308 19th-Century Philosophy
PHI 312 Topics in Contemporary European Thought
POL 305 Government and Politics of the United Kingdom
POL 307 Politics in Germany
POL 309 Politics in France and Italy
POL 350 Contemporary European Political Theory
POR 191 Intermediate Portuguese I
POR 192 Intermediate Portuguese II
RLS 270 Christianity
RLS 321 Christian Classics
RUS 191 Intermediate Russian I
RUS 192 Intermediate Russian II
RUS 193 Intermediate Russian for Students of Russian-Speaking Background
RUS 221 Russian Conversation and Composition
RUS 222 Russian Conversation and Composition
SPN 190 Intermediate Spanish I (Emphasis on Spain)
SPN 192 Intermediate Spanish II
SPN 221 Spanish Conversation and Composition
SPN 391 The Culture and Civilization of Spain
SPN 397 Introduction to Spanish Literature I
SPN 398 Introduction to Spanish Literature II
THR 311 European Theatre and Drama

Six credits in a Study Abroad program in Europe (with no more than three credits in elementary foreign language).

Category J: The World Beyond European Traditions

AFH 329 Pan-African Literature I
AFH 330 Pan-African Literature II
AFS 225 The African Revolution
AFS 239 Introduction to the Caribbean Experience
AFS 240 Issues in Caribbean Society
AFS/WNS 275 Black Women and Social Change: A Cross-Cultural Perspective
AFS/POL 335 Contemporary African Problems
AFS/POL 337 The Politics of Africa
AFS 345 Culture and Gender: Women in Africa and the Caribbean
ANT 201 Peoples of South America
ANT 203 Native Peoples of North America
ANT 219 Peoples of the Caribbean
ANT 230 Peoples of the World
ANT 240 Immersion in Another Culture
ANT 285 Prehistoric Peoples of the Americas
ANT 310 Ethnography
ANT 358 Ways to Civilization
ANT 360 Ancient Mesopotamia
ANT 362 Long Island Archaeology
ANT 364 African Stone Age
ARB 191 Intermediate Arabic I
ARB 192 Intermediate Arabic II
ARH 203 Survey of Far Eastern Art
ARH 318 History of Chinese Painting
ARH 326 Arts of Ancient Mesoamerica
ARH 327 Arts of Central Africa
ARH 328 Arts of West Africa
CHI 191 Intermediate Chinese I
CHI 192 Intermediate Chinese II
CHI 221 Advanced Chinese I
CHI 222 Advanced Chinese II
CNS 249 Chinese Culture and Society: Traditional China
CNS 250 Chinese Culture and Society: Modern China
CSL 220 Non-Western Literature
ECO 339 China's Economy Since 1949
EGL 368 Contemporary Native American Literature
FRN 319 Caribbean and African Literature in French
HBW 191 Intermediate Hebrew I
HBW 192 Intermediate Hebrew II
HBW 221 Advanced Hebrew I
HBW 222 Advanced Hebrew II
HIS 213 Colonial Latin America
HIS/POL 214 Modern Latin America
HIS/POL 216 U.S.-Latin American Relations
HIS 219 Introduction to Chinese History and Civilization
HIS 220 Introduction to Japanese History and Civilization
HIS 341 20th-Century China
HIS 343 Roots of Modern Japan
HIS 344 20th-Century Japan
HIS/POL 382 Politics and Political Change in Latin America
HIS 385 History of Aztec and Inca Societies
HIS 386 Modern Brazil
HIS/WNS 387 Women, Development, and Revolution in Latin America
HIS 389 Modern Mexico
HIS 395 History of South Africa
HIS 396 Intellectual Background of Third World Revolutions
HUF/AFH 212 French Caribbean Literature (in Translation)
HUS 254 Latin America Today (in English)
JDS/HIS 225 The Formation of the Judaic Heritage
JNH 240 Introduction to Japanese Studies
JNH 251 Japanese Literature in Translation
JNH 331 Topics in Japanese Studies
JNH 332 Topics in Japanese Studies
JNH 351 Studies in Japanese Literature (in English)
JNS 331 Topics in Japanese Studies
JNS 332 Topics in Japanese Studies
JPN 191 Intermediate Japanese I
JPN 192 Intermediate Japanese II
JPN 221 Advanced Japanese I
JPN 222 Advanced Japanese II
KOR 191 Intermediate Korean I
KOR 192 Intermediate Korean II
KOR 221 Advanced Korean
KOR 351 Studies in Korean Literature
KRH 240 Introduction to Korean Culture
KRH 251 Korean Literature in Translation
KRH 331 Topics in Korean Studies
KRH 332 Topics in Korean Studies

KRH 346 Philosophy of Education in Korea and Japan
KRS 331 Topics in Korean Studies
KRS 332 Topics in Korean Studies
LAC 200 Introduction to Latin American and Caribbean Studies
LIN 345 Writing Systems of the World
LIN 355 Language and Life in a Selected Area of the World
MUS 312 Music in the Middle East
PHI 342 History of Chinese Philosophy
PHI 344 Japanese Thought and Philosophy
POL 372 Politics in the Third World
RLS 240 Confucianism and Taoism
RLS 246 Korean and Japanese Religions
RLS 260 Buddhism
RLS 280 Islam
RLS 341 Meditation and Enlightenment
RLS 361 Japanese Buddhism
RLS 380 Islamic Classics
SOC 264 Introduction to Middle Eastern Society
SOC 364 Sociology of Latin America
SOC 386 State and Society in the Middle East
SPN 191 Intermediate Spanish I (Emphasis on Latin America)
SPN 193 Intermediate Spanish for Speakers of Spanish
SPN 220 Spanish Grammar and Composition for Students of Hispanic-American Background
SPN 396 Introduction to Spanish-American Literature
THR 313 Asian Theatre and Drama
WNH 250 Women in the Third World

Six credits in a Study Abroad program in Africa, Asia, Latin America, or the Pacitic (with no more than three credits in elementary foreign language)

Category K: American Pluralism

AFH 249 African-American Literature and Music in the 19th and 20th Centuries
AFS 200 American Attitudes Toward Race
AFS 300 Blacks in the City
AFS/HIS 325 The Civil Rights Movement
AFS 360 African-American Social Commentary
AFS 370 The African-American Family
AFS 372 Contemporary Political Thought and the Black Community
ANT 356 Urban Anthropology
ANT 392 Topics in American Cultural Alternatives
ARH 331 American Art to 1890
ARH 332 Art of the United States, 1890-1930
CSL 235 American Pluralism in Film and Literature
CSL 320 Multicultural Experience in American Literature
EGL 217 American Literature I
EGL 218 American Literature II
EGL 226 Contemporary American Literature: 1945 to the Present
EGL 274 Black American Literature
EGL 369 Topics in Ethnic Studies
HIS 262 American Colonial Society
HIS 263 Age of the American Revolution
HIS 264 The Birth of Modern America
HIS 265 Civil War and Reconstruction
HIS 266 Jefferson's America
HIS 267 American History/American Film
HIS 268 Recent U.S. History, 1919 to the Present
HIS 272 America in the 1960s
HIS/AFS 277 The Modern Color Line
HIS/WNS 333 Women in U.S. History
HIS/AFS 366 Race, Class, and Culture in the United States Since 1930
HIS 367 Change and Reform in the United States, 1877-1919
HIS 369 American Social History to 1860
HIS 370 U.S. Social History, 1860-1930
HIS 371 American Roots
HIS 372 Assimilation and Pluralism in American Social Thought
HIS 375 History of U.S. Foreign Relations to 1920
HIS 380 Origins of American Society
HUI 333 The Italian-American Experience in Literature (in English)
HUI 336 Italian Americans and Ethnic Relations (in English)
LIN 200 Language in the United States
LIN 307 Sociolinguistics
LIN/SCI 385 Language and Science: A Multicultural Perspective
MUS 308 History of Jazz
MUS 310 Music and Culture in the 1960s
PHI 310 American Philosophy
POL 327 Urban Politics
POL/WNS 330 Women and the Law
POL/WNS 347 Women and Politics
SOC/WNS 247 Sociology of Gender
SOC 302 American Society
SOC 310 Ethnic Relations
SOC/WNS 371 Gender and Work
SSI 345 Parental Roles in a Pluralistic Society
THR 312 American Theatre and Drama

The Honors College

Master: Elof Axel Carlson, Biochemistry and Cell Biology

The Honors College, the most selective academic program for undergraduates at the University, offers a limited number of exceptional students from each class the opportunity to become members of a special community of scholars. Through the college they pursue a challenging four-year curriculum designed to promote intellectual curiosity, independence, and critical thinking.

Acceptance

Students accepted by the Honors College must demonstrate high academic or creative achievement, extraordinary motivation, diversified interests, intellectual curiosity, and sufficient maturity to carry out a challenging program of study. To enter the Honors College as freshmen, students must have shown overall academic excellence in high school by such accomplishments as achieving high grade averages in major subject areas, a cumulative average greater than 92, combined SAT scores over 1200, a record of advanced or college-level coursework, and evidence of writing ability. Demonstrated talents in the fine and performing arts also serve to qualify a student for admission to the Honors College. Similar criteria are applied to students wishing to enter as sophomores or juniors.

Curriculum

In the course of their undergraduate careers, students entering the Honors College as freshmen are required to complete a minimum of 40 credits (16 courses) of honors coursework designed to fulfill the objectives of the Diversified Education Curriculum and distributed as follows:

A. Interdisciplinary Seminars

Each student will take a yearlong seminar in his or her first year and a one-semester seminar in each succeeding year.

Freshman Year

HON 101, 102 Progress and Its Discontents

Sophomore Year
HON 201 Brief Lives

Junior Year
HON 301 Science, Values, and Society

Senior Year
HON 401 Global Issues in the 20th Century

B. Honors College Seminars
Each student is required to participate in these informal seminars, designed exclusively for the Honors College, to build an academic and scholarly community.

HON 103, 104 Academic Profiles: Models of Successful Intellectual and Artistic Careers

HON 203, 204 The University as a Cultural Microcosm

C. Departmental Honors Courses
During their undergraduate careers, Honors College students who enter as freshmen must take at least two honors courses from among those offered by various academic departments. Course selection is subject to approval by the college advisor.

D. Complementary Electives
Each Honors College student will select, with the approval of the college advisor, three additional courses that help to round out his or her program of honors study.

E. Senior Project
Each Honors College student will prepare a scholarly thesis based on library, laboratory, or field research under the supervision of a faculty sponsor. Some honors students may undertake joint projects such as the production of a play or musical performance or implementation of a community project.

The program requirements for students entering the college after the freshman year are modified according to the time spent in the program. Those entering as sophomores must complete 32 credits of honors coursework (three one-semester interdisciplinary seminars, two Honors College seminars, six credits of honors coursework, nine credits of complementary electives, and the senior project). Those entering as juniors must complete 24 credits (two one-semester interdisciplinary seminars, six credits of honors coursework, six credits of complementary electives, and the senior project).

The Honors Center

The Honors Center includes meeting space for student honor societies and clubs, a computer facility, a library collection of cultural periodicals, the college master's office, a lounge, and study areas. Seminars, colloquia, and special events scheduled for honors students are held in the Honors Center throughout the year.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. HON courses do not satisfy D.E.C. requirements.

HON 101, 102 Honors College Interdisciplinary Seminar: Progress and Its Discontents
The emergence of progress as a dominant concept at the beginning of the 19th century, its incorporation into various disciplines through the 20th century, and its implications for the next century. Students examine the ways capitalism, socialism, evolution, social Darwinism, totalitarianism, democracy, political modernization, technological revolution, and other social issues and historical events served to shape the idea of progress. The course closes with a critique of "progress."
Prerequisite to HON 101: Acceptance into and permission of the Honors College
Prerequisite to HON 102: HON 101
Fall (101) and spring (102), 3 credits each semester

HON 103, 104 Academic Profiles: Models of Successful Intellectual and Artistic Careers
Autobiographical reflections by distinguished scholars, artists, and professionals on how their careers developed. The presenters—Stony Brook faculty, staff, and alumni—serve as models to Honors College students.
Prerequisite to HON 103: Acceptance into and permission of the Honors College
Prerequisite to HON 104: HON 103
Fall (103) and spring (104), 1 credit each semester

HON 201 Honors College Interdisciplinary Seminar: Brief Lives
An exploration of the interconnections between art and society, focusing on the biographies and autobiographies of notable artists and writers. Along with consideration of the creative life and work, each week's discussion focuses on an analytical problem to which an understanding of the social sciences can contribute, i.e., art and politics, tradition and charisma, generational change and the life course. Integrated with the readings are analysis and appreciation of the works themselves.
Prerequisite: Acceptance into and permission of the Honors College
Fall or spring, 3 credits

HON 203, 204 The University as a Cultural Microcosm
An introduction for Honors College students to many of the University's numerous cultural activities, including the Poetry Center, the Distinguished Lecture Series, campus musical and theatrical presentations, art exhibits at the Staller Center and the Stony Brook Union, and art films presented on campus. Students consider how a university's resources can enrich their lives, how culture is a composite of many arts and learned activities, and how various experts develop their special gifts.
Prerequisite to HON 203: Acceptance into and permission of the Honors College
Prerequisite to HON 204: HON 203
Fall (203) and spring (204), 1 credit each semester

HON 301 Honors College Interdisciplinary Seminar: Science, Values, and Society
An examination of science and technology through social, political, historical, and philosophical perspectives.
Prerequisites: Acceptance into and permission of the Honors College; junior standing
Fall or spring, 3 credits

HON 351 Creating a Scholarly Book
A faculty member writing a book conducts a seminar on that work to show students how an idea eventually becomes a book. Students read chapters from the book and collateral readings on these topics.
Prerequisites: Upper-division standing; 12 credits of honors coursework (any combination of Honors College courses, freshman honors courses, and other departmental honors courses)
Spring, 3 credits

HON 401 Honors College Interdisciplinary Seminar: Global Issues in the 20th Century
An advanced interdisciplinary seminar focusing on selected topics and regions of the world. Students examine how historical background, geographical context, political systems, and economic structures affect regional and global developments.
Prerequisites: Acceptance into and permission of the Honors College; senior standing
Fall or spring, 3 credits

HON 495-496 Honors College Senior Project
A two-semester sequence for senior members of the Honors College. Arranged in consultation with the master and director, the project involves independent study and writing a paper or presenting a project on a topic selected by the student under the supervision of a faculty sponsor. Students enrolled in HON 495 are obliged to complete HON 496.
Prerequisites: Acceptance into and permission of the Honors College; senior standing
Fall (495) and spring (496), 3 credits each semester

Federated Learning Communities

Director: Ronald Douglas, Vice Provost for Undergraduate Studies

The Federated Learning Communities (FLC) creates within the large University an academic community that provides many of the advantages of smaller institutions. Students and faculty work closely together in FLC programs, building genuine academic communities based on shared exploration of common intellectual and personal interests. FLC programs work as follows:

Program Theme

For each yearlong program FLC selects an issue of major importance and interest for special attention and study. Previous FLC programs have dealt with such themes as world hunger, global problems/national priorities, international understanding, and issues in management and business. Information on current program themes is available in the FLC Office. FLC staff members will work with students to devise a long-range plan for fitting an FLC program into their schedules.

Program Courses

During each of two consecutive semesters, students who enroll in an FLC program take three regular University courses that have been selected on the basis of their relevance to the program theme. Program courses are drawn from the full spectrum of University offerings and are chosen to provide varied and comprehensive perspectives on the issues in question.

Program Seminar

The distinctive heart of each FLC program, the program seminar provides a small, student-centered learning community that seeks to focus and integrate the material of the program courses. The program seminar offers unique opportunities for enhancement of essential skills and abilities, such as oral and written communication, critical thinking and analysis, group interaction, and personal initiative.

Master Learner

For each yearlong program, on the basis of demonstrated excellence and commitment to teaching, FLC invites a senior member of the Stony Brook faculty to serve as master learner. The master learner becomes a student for the year, enrolling in the program courses, attending all of the classes, writing term papers, and taking examinations. The master learner serves as model and resource for the FLC students; directs the program seminar; and with the help of FLC students, provides ongoing feedback to the faculty on the effectiveness of their courses.

The FLC Minor and Program Requirements

Students may choose to enroll in FLC for one or two semesters; however, in order to derive maximum benefit from the FLC experience, it is recommended that students take the full program. Successful completion of the two-semester sequence earns an FLC minor in the program theme. Since participation in an FLC program semester typically involves 12 credits, students are free to take additional courses related to their main undergraduate program. Many departments accept FLC work, including program seminars, toward satisfaction of major requirements, and students are advised to consult with FLC concerning the relationship between FLC programs and individual academic plans and needs.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. Courses with the FLC designator do not satisfy D.E.C. requirements.

Note: Courses for individual programs are described in detail in separate brochures available from the FLC office.

FLC 299 Federated Learning Communities Special Seminar
Analysis and investigation of particular aspects and components of the FLC program theme. May be repeated with permission of FLC director.
Corequisites: To be announced for each FLC program
Schedule to be announced, 1 to 3 credits, to be assigned when course is scheduled

FLC 301, 302 Program Seminar I, II
This seminar integrates the material of its corequisite courses. The agenda of the seminar will be determined by the problems, difficulties, and interests of the students. Discussions and frequent written and oral reports will focus on assisting the students in learning how to learn; deepening understanding of the concerns and ideas of the corequisite courses; comparing, contrasting, and synthesizing the material of these courses; and developing confidence to think and write independently. May be repeated for credit for different FLC minors.
Corequisites: Varying according to FLC theme
Fall (301) and spring (302), 3 or 4 credits each semester, to be assigned when course is scheduled

FLC 399 Federated Learning Communities Special Seminar
Analysis and investigation of particular aspects and components of the FLC program theme. May be repeated with permission of FLC director.
Corequisites: To be announced for each FLC program
Fall and spring, 1 to 3 credits, to be assigned when course is scheduled

FLC 475 Teaching Practicum
Supervised participation with the master learner in teaching the program seminars of the Federated Learning Communities. The teaching assistant and the supervising master learner meet weekly with enrolled students for the preparation of seminar meetings. Responsibilities 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, and responding to journals. Teaching assistants are invited to attend FLC's bimonthly seminar. Satisfactory/Unsatisfactory grading only.
Prerequisites: Completion of an FLC minor; permission of FLC director
Corequisites: At least two courses federated with the program seminar
Fall and spring, 3 credits

Interdisciplinary Program in Science and Engineering

Director: Thomas G. Robertazzi, Electrical Engineering

The interdisciplinary program in science and engineering is designed for the residents of Baruch College. The program is intended for motivated students who wish to broaden their exposure to science and engineering beyond that offered by their major department. Participation in this living/learning center adds an academic component to each student's residential experience.

Students from all disciplines are invited to apply for admission to the program, but it is expected that most will pursue majors in one of the departments of the Division of Biological Sciences, the Division of Physical Sciences and Mathematics, or the College of Engineering and Applied Sciences. Participation in

the program is particularly valuable for those who plan careers in the sciences or engineering.

The program curriculum consists of two types of courses. The introductory courses are designed to help entering students to select and pursue a successful course of study in the sciences or engineering. The upper-division courses are designed to broaden the student's exposure to all aspects of science and engineering and to prepare students for the issues and events that they will confront in subsequent careers or graduate study.

Although the program is intended primarily for residents of Baruch College, a residence hall in Kelly Quad, other students may participate with permission of the program director.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

BSE 101 University Studies in Science and Engineering
An introduction to studies in the sciences and engineering, discussing the tools and techniques needed by modern scientists and engineers. Possible topics include the interdisciplinary nature of science and engineering, applications of computers, the conduct of laboratory experiments, mathematical methods, the library and technical literature, basic communication skills, and the importance of the humanities and social sciences. Satisfactory/Unsatisfactory grading only.
Prerequisite: Freshman standing; residence in Baruch College (nonresident students with permission of the program director)
Fall, 1 credit

BSE 102 Opportunities in Science and Engineering
A survey of the various science and engineering disciplines. Guest speakers describe their respective fields of research and study and the opportunities for students entering the field today. The interdisciplinary nature of science and technology is emphasized. The course includes research laboratory tours and demonstrations. Satisfactory/Unsatisfactory grading only.
Prerequisite: Residence in Baruch College (nonresident students with permission of the program director)
Fall or spring, 1 credit

BSE 310-H Issues in Science and Engineering
A study of the issues and events that confront scientists and engineers today. Student presentations and student-led discussions cover such topics as ethics, social responsibilities, the environmental impact of technology, and the economics of research and technology.
Prerequisites: Junior or senior standing; completion of at least two upper-division science or engineering courses; residence in Baruch College (nonresident students with permission of program director)
Spring, 3 credits

BSE 315 Research Seminar in Science and Engineering
A series of seminars in which guest speakers describe their ongoing research projects in science and engineering. Other topics include preparing for research careers, the origin of good research ideas, and ways to minimize errors in scientific research. Students make oral and written presentations on research results reported in the literature.
Prerequisites: Upper-division standing; completion of at least two upper-division science or engineering courses; residence in Baruch College (nonresident students with permission of program director)
Fall, 3 credits

Study Abroad

The campuses of the State University of New York collectively sponsor more than 250 approved, credit-bearing overseas academic programs in more than 40 countries. These programs include a diverse array of disciplines, ranging from archaeology to theatre arts. Students report that the overseas programs have been among the most important experiences of their lives. For these students, experience abroad results in greater maturity, better academic performance in subsequent study, broadened intellectual interests, and heightened sensitivity, not only to other cultures but also to the United States and its role in the world.

Program Choice and Selection

Students may choose from programs directly sponsored by Stony Brook (see below), from programs offered by other SUNY campuses, and from programs conducted by other U.S. colleges and universities. Detailed program information may be obtained at the Office of International Programs.

Application, Admission, and Registration Procedures*

In order to plan for study abroad in a timely manner, students should bear in mind that March 15 is the deadline for applying for most fall semester, full academic year, and summer programs, and that October 15 is the deadline for most spring semester programs.

*See also p. 34, Study Abroad Expenses.

Application, admission, and registration procedures vary from program to program. The Office of International Programs maintains up-to-date information on specific program features and requirements.

Course Load, Credits, and Grading

Students typically earn between 12 and 18 credits during each semester of overseas study and six credits during summer programs. Students should ascertain prior to enrollment in overseas academic programs, through careful consultation with their academic department, the Center for Academic Advising, and the Office of International Programs, the applicability of courses and credits to Stony Brook degree and major requirements. For example, although students who enroll in Study Abroad programs are provisionally registered for 300-level courses, final determination of the credit level is made only after return to Stony Brook. In general, grades awarded through Study Abroad programs are recorded at Stony Brook as S or U and are subject to Stony Brook policies governing S/U grades.

SUNY Study Abroad programs of six credits or more (except in English-speaking Canada) and with no more than three credits in elementary foreign language satisfy the D.E.C. category I or J requirement, depending on their geographical location.

Stony Brook Programs

Stony Brook in Bolivia: Cochabamba

The program is conducted in collaboration with the Universidad Mayor de Simon in Cochabamba. A concerted effort is made to adapt a challenging foreign study experience to the interests and goals of individual students. All participants engage in Spanish language study appropriate to their level. Internships, consisting of volunteer part-time work in public and private agencies, may be arranged individually.
Prerequisites: Four semesters of Spanish
Fall and spring, 12 to 18 credits each semester

Stony Brook in England: Sussex

Students may pursue studies in a variety of fields at the University of Sussex, located in Brighton. Participation for a full academic year is required.
Prerequisite: Upper-division standing
Fall and spring, 12 to 18 credits each semester

Stony Brook in France: Paris

The program is conducted at the University of Paris IV (the Sorbonne) and Paris X (Nanterre). Course instruction is in French, and lectures are supplemented by tutorial assistance (in French and in English). The program also includes a yearlong series of cultural events, excursions, and discussions with French scholars. Students' programs of study are arranged and supervised individually.
Prerequisites: Four semesters of French
Fall and spring, 12 to 18 credits each semester

Stony Brook in Germany: Konstanz

Through an exchange agreement with the University of Konstanz, students are offered an extensive range of university courses. Students enroll for the academic year or the spring semester.
Prerequisites: Two semesters of German; three or four semesters recommended
Fall and spring, 12 to 18 credits each semester

Stony Brook in Germany: Tübingen

Through an exchange agreement with the Eberhart-Karls University of Tübingen, SUNY students are offered its full range of course offerings. Students are accepted for full academic year or semester participation.
Prerequisites: Four semesters of German
Fall and spring, 12 to 18 credits each semester

Stony Brook in Italy: Summer in Rome

Intensive study of Italian language and courses in Italian culture, civilization, and art during a summer period of four weeks. Completed coursework is recorded on official Stony Brook transcripts with assigned letter grades.
Summer, 6 credits

Stony Brook in Italy: University of Rome

All coursework in this program is offered at the University of Rome, beginning with a four-week intensive Italian language and culture program during the month of October. During the normal Italian academic year, which begins in November, students attend regular courses at the university. Students are assisted in selection of their courses by an advisor, and tutorial assistance is made available. Evaluation is carried out by the Italian oral examination system at the end of the academic year (June). Full academic year participation is required.
Prerequisites: Four semesters of Italian
Fall and spring, 12 to 18 credits each semester

Stony Brook in Jamaica: Kingston

Through an exchange agreement with the University of the West Indies-Mona campus, students are offered a full range of university courses. Students may enroll for either a semester or the academic year. Offered jointly with the State University College at Old Westbury.
Prerequisite: At least sophomore standing
Fall and spring, 12 to 18 credits each semester

Stony Brook in Korea: Seoul

Stony Brook students have the opportunity to study at Yonsei University or Ewha Women's University. Instruction in English with intensive Korean language study available. Students may enroll for either a semester or the academic year. Students are permitted to take regular university courses if their language proficiency is sufficient.
Prerequisite: At least sophomore standing
Fall and spring, 12 to 18 credits each semester

Stony Brook in Poland: Warsaw and Wroclaw

Programs in Poland include a fall semester program of Polish language and area studies at the University of Wroclaw and a spring semester program at Warsaw University that complements and continues the Wroclaw program. Full academic year participation is encouraged but not required. Lecture courses in Polish culture, history, and literature are offered in English, and students with advanced Polish language skills may take regular coursework at the Polish universities.
Prerequisite: Upper-division standing
Fall and spring, 12 to 18 credits each semester; summer, 6 credits

Stony Brook in Spain: León

Through an exchange agreement with the University of León, SUNY students are offered its full range of course offerings, including a course in intensive Spanish. Students are accepted for full academic year or semester participation.
Prerequisites: Four semesters of Spanish
Fall and spring, 12 to 18 credits each semester

URECA Program

The Undergraduate Research and Creative Activities Program (URECA) provides opportunities for undergraduates, including talented lower-division students, to work closely with Stony Brook faculty members on research and creative projects. Through the URECA Program, Stony Brook students can collaborate with Stony Brook's outstanding scientists, humanists, and artists.

By maintaining a registry of information about the research and creative project opportunities that exist in more than 30 departments on campus, the URECA Program is able to match motivated students with prospective faculty sponsors in their area of interest. In addition to its directory of on-campus opportunities, URECA maintains a registry of off-campus research opportunities available in government, industry, and nonprofit organizations in the Long Island and New York metropolitan areas. Whether working on campus or off campus, URECA students can earn academic credit, and they may qualify for some form of funding assistance from URECA for their projects.

All matriculated undergraduates, including incoming freshmen and transfer students, are eligible to participate in the URECA Program. Although there is no grade criterion for participation, it is inadvisable for students who are having difficulty maintaining good grades to pursue a URECA project. Students should consult with the URECA Program director prior to registering for a URECA course.

Students may earn credit for approved URECA projects through established research or independent project courses available in their own departments or, if this is not feasible, by registering for URE 287, 487 or 488. Credit in URECA courses (except URE 187) is included in the 30-credit limit on independent study that may be used toward degree requirements.

Faculty evaluations of student participants and the students' final reports are filed with the URECA Program. They are used to establish eligibility for award and scholarship nominations, and serve as a source of recommendations for graduate and professional schools.

Further information about the URECA Program is available in the Office of Undergraduate Studies.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. URE courses do not satisfy D.E.C. requirements.

URE 187 Women in the Laboratory: Introduction to Science, Engineering, and Mathematics Research
An introduction to and hands-on experience in doing research in mathematics, engineering, and several science disciplines within a group setting. The students rotate among four research environments: computer science, mathematics, social sciences, and natural sciences and engineering. Within each environment they are given background readings, instructed in the problem to be studied, jointly carry out a small experiment related to the problem, and discuss the social implications of the research problem. Students make presentations related to one of the projects in which they participate.
Prerequisite: Score of 600 or higher in quantitative SAT or mathematics or science College Entrance Examination Board achievement test, or 4 or 5 in mathematics or science AP examination; USB 101; permission of instructor
Spring, 3 credits

URE 287 Introductory Undergraduate Research and Creative Activity
A research or creative project for lower-division students under the sponsorship of an appropriate faculty member as part of URECA Program participation. The student must submit a URECA agreement form describing the planned project at the outset of the term and a research abstract summarizing the project at the end of the term to the URECA Program director in the Office of Undergraduate Studies. Request for approval of the URECA Program director must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits.
Prerequisite: Permission of URECA Program director
Fall, spring, and summer, 1 to 6 credits

URE 487 Advanced Undergraduate Research and Creative Activity
A research or creative project under the sponsorship of an appropriate faculty member as part of URECA Program participation. The student must submit a URECA agreement form describing the planned project at the outset of the term and a research abstract summarizing the project at the end of the term to the URECA Program director in the Office of Undergraduate Studies. Request for approval of the URECA Program director must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. May be repeated up to a limit of 12 credits.
Prerequisites: Permission of URECA Program director; upper-division standing
Fall and spring, 1 to 12 credits; summer, 1 to 8 credits

URE 488 Undergraduate Research Internship
Research participation in an off-campus industry, laboratory, or public agency under the sponsorship of an appropriate faculty member as part of URECA Program participation. The student must submit a URECA agreement form describing the planned project and the arrangements made for faculty sponsorship at the outset of the term and a research abstract summarizing the project at the end of the term to the URECA Program director in the Office of Undergraduate Studies. Request for approval of the URECA Program director must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. A written research report from the student must be submitted to the faculty sponsor at the end of each term. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits.
Prerequisites: Permission of faculty sponsor and URECA Program director
Fall and spring, 3 to 12 credits; summer, 3 to 8 credits

Internship Program

Under the university's Internship Program a student may spend a semester or summer working for academic credit under the supervision of both University faculty and professional staff at a cooperating agency or organization. Internships, which may be full or part time, require 40 hours on the job during the semester or summer for each credit earned. Three to 12 credits may be earned for semester internships during the academic year; three to six for each summer term.

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, and 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.

Students normally register for an internship through a departmental course established for this activity. If a departmental internship is inappropriate, students may qualify for one of the courses listed below.

Interested students may obtain information and advice about the Internship Program in the Office of Undergraduate Studies.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. EXT courses do not satisfy D.E.C. requirements.

EXT 488 Internship
Participation in public and private agencies and organizations under the supervision of a faculty sponsor. Students are required to submit progress reports and a final written report on their experience to the faculty sponsor. Request for approval of the internship coordinator must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits.
Prerequisites: Acceptance by faculty sponsor; approval of appropriate department and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

EXT 489 Washington or Albany Internship
Participation in the Washington Center as interns in private or public organizations and agencies or in Albany as interns in the New York State Assembly or Senate Program. Students are supervised by selected practitioners within the organization or agency. Students are required to submit journals of experience and observation. Request for approval of the internship coordinator must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. Satisfactory/Unsatisfactory grading only.
Prerequisites: Admission to the Washington Center or New York State Assembly or Senate Program; sponsorship of a faculty member; approval of appropriate department and Office of Undergraduate Studies
Corequisite: EXT 490
Fall and spring, 12 credits

EXT 490 Washington or Albany Seminar
Seminar offered in Washington, D.C. as part of the internship program of the Washington Center or in Albany as part of the New York State Assembly or Senate Program. The seminars are taught by people in public and pri-

vate organizations. Seminar topics include law and justice, policy studies, community urban service, and studies in government. Request for approval of the internship coordinator must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar.
Prerequisites: Admission to the Washington Center or the New York State Assembly or Senate Program; sponsorship of a faculty member; approval of appropriate department and Office of Undergraduate Studies
Corequisite: EXT 489
Fall and spring, 3 credits

Women in Science and Engineering (Project WISE)

Director: Wendy Katkin, Associate Dean, College of Arts and Sciences

Project WISE is a multifaceted program designed to engage women who have ability and interest in mathematics, science, or engineering in the excitement and challenge of research. Supported in part by the National Science Foundation, Project WISE offers a combination of curricular and extracurricular activities, such as hands-on research experience from the first year on, membership in small study groups led by advanced undergraduate women "junior mentors," individual academic advising and frequent interaction with faculty, and numerous social activities that range from guest lectures to field trips. Through participation in Project WISE, students become part of a community of women scientists that also includes women graduate students, faculty, and scientists from Brookhaven National Laboratory, Cold Spring Harbor Laboratory, and industry.

Acceptance*

In order to qualify for Project WISE, applicants must be women who are moving directly from high school to college and have a demonstrated aptitude and/or interest in science, mathematics, or engineering as evidenced by such factors as four years of mathematics and/or science courses in high school, above-average grades, research or other relevant experience, or above-average scores on the quantitative parts of the SAT or ACT examination or an SAT science or mathematics achievement test.

*See also pp. 42, Scholarships.

Academic Requirements

Project WISE participants take classes along with other Stony Brook women and men undergraduates; they must satisfy the undergraduate requirements of both the University and their major department. They are eligible for and encouraged to take honors courses, where appropriate. The project enhances their regular academic program by offering a wide variety of experiences aimed at enhancing performance and stimulating interest in science, mathematics, and engineering.

A. Each student must take at least one mathematics or science course each semester of the first year.
B. In the first semester each student must enroll in a special Project WISE section of USB 101 (1 credit) taught by an active scientist.
C. In the second semester each student must enroll in URE 187 Women in the Laboratory: Introduction to Science, Engineering, and Mathematics Research.
D. In the first and second year each student must participate in small study groups designed to supplement and enhance the student's mathematics and science courses and provide academic and social support.

Project WISE students are encouraged to live in the Whitman Residence Hall, which is the site of many Project WISE activities.The project has a special computer room in Whitman reserved for the exclusive use of Project WISE students and a small library in its office in the Physics Building.

Enrichment 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. They introduce students to the Stony Brook academic environment, provide advanced training in using the library, or offer the opportunity to explore a focused issue of general interest. 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. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. AIM, LBR, and USB courses do not satisfy any D.E.C. category.

AIM 102 Expository Writing
The fundamentals of grammar through investigating methods of interpreting various forms of literature with emphasis on the process of writing and rewriting. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used. Does not count toward graduation.
Prerequisites: Placement by English Placement Examination; open to AIM/EOP students only
Corequisite: EGC 100
Fall, 3 credits

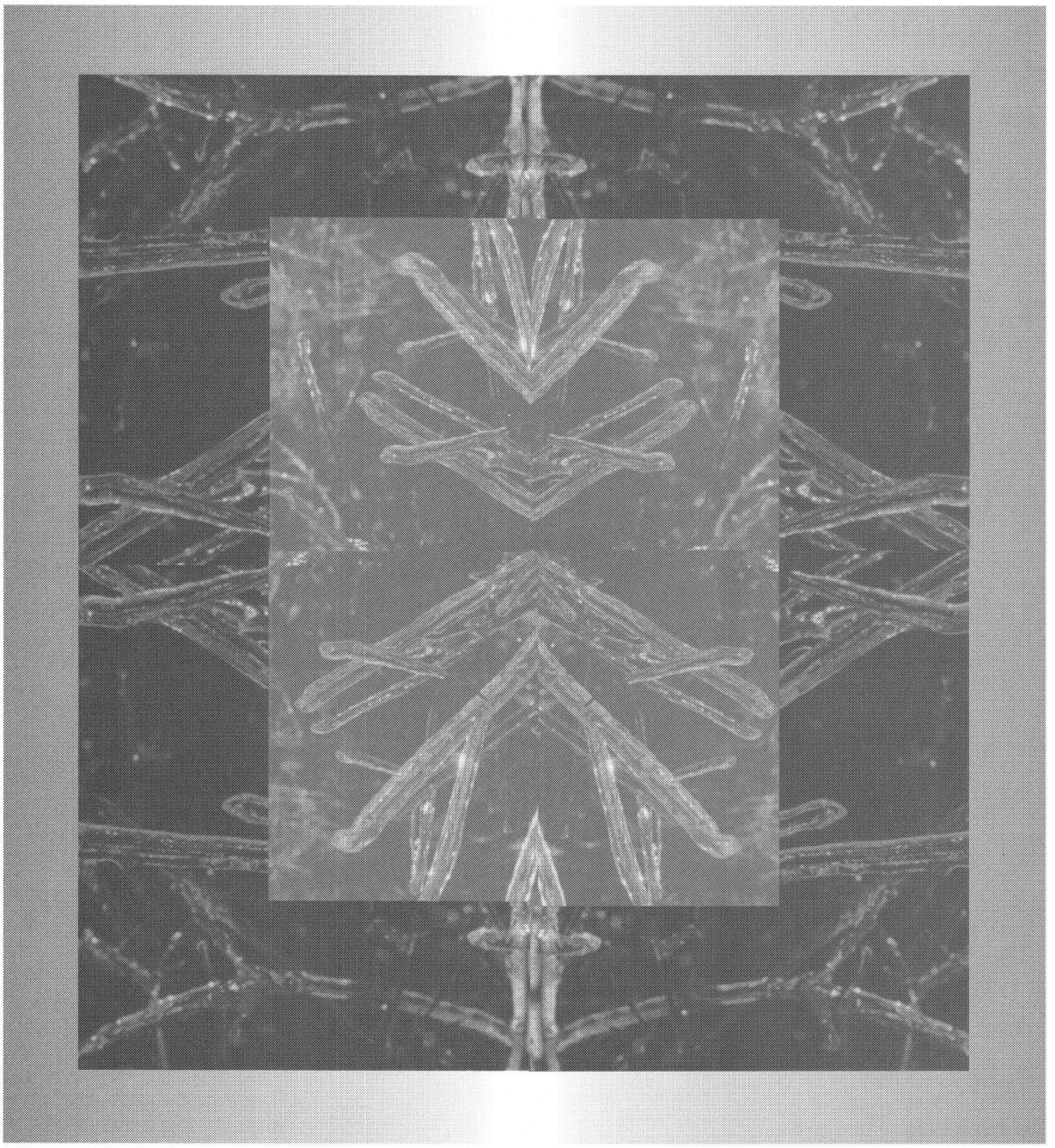
AIM 103 Analysis and Critical Reasoning
Development of skills in reasoning and writing and improvement of vocabulary through reading, analyzing, and writing about a variety of personal experiences and literary texts. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used. Does not count toward graduation.
Prerequisites: Placement by English Placement Examination; open to AIM/EOP students only
Corequisite: EGC 101
Fall and spring, 3 credits

LBR 150 Introduction to the Stony Brook Library
An introduction to basic library skills and bibliographic resources. Students attend workshops and practice library research methods described in a workbook designed specifically for the course. Topics covered include the use of the catalogs, periodical indexes and abstracting sources, newspaper indexes, government documents, and current affairs sources. Special emphasis is placed on the Stony Brook library system's organization and resources.
Prerequisite: Freshman or sophomore standing or upper-division transfer students with fewer than 30 Stony Brook credits
Fall and spring, 1 credit

USB 101 Stony Brook 101
A course intended to integrate first-semester Stony Brook freshmen and transfer students into the college community by providing information about the university and a forum for discussion of values, intellectual and social development, and personal as well as institutional expectations. Satisfactory/Unsatisfactory grading only.
Prerequisite: First-semester freshman or transfer student, according to section
Fall and spring, 1 credit

USB 402 University Capstone Seminar
An exploration of an intellectual issue that transcends disciplinary boundaries, such as "Simplicity and Complexity." This seminar gives seniors the opportunity to pursue with senior professors studies that call upon their academic accomplishments and developed ability to enjoy new intellectual challenges.
Prerequisites: Completion of 84 credits; permission of instructor
Fall or spring, 3 credits

College of Arts and Sciences



Degree Requirements

All candidates for the Bachelor of Arts or Bachelor of Science degree from the College of Arts and Sciences must satisfy all Diversified Education Curriculum and other university degree requirements. These are set forth in the University Studies chapter, pp. 61-68.

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 chapter of this bulletin.) Students wishing to explore possible majors should discuss their academic plans with their faculty advisor, an advisor in the Center for Academic Advising, or for those enrolled in USB 101, their section instructor. 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. It 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. (See also Prime Time, p. 49.)

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. (See also Prime Time, p. 49.)

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 students 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, four minors are described in the College of Engineering and Applied Sciences chapter and one each in the Harriman School, Health Sciences Center, and Marine Sciences Research Center chapters. These are offered primarily for Arts and Sciences students. For further information consult the minor coordinator or director 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 courses under departmental auspices or through the URECA Program. (See p. 77 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 URECA Program (see p. 72).

If the student wishes to use a URECA 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 D.E.C. University Skills requirements and two-thirds of the Disciplinary Diversity requirements before proposing independent study. For further information consult the appropriate department's director of undergraduate studies or the URECA Program director.

Teacher Preparation

The University offers several 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, chemistry, 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 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 members of the Honors College or as Honors Program students, Presidential Scholars, or Freshman Scholars receive preference in enrollment.

Undergraduate Teaching Assistantships

Recognizing that teaching is itself a valuable component of learning, the College of Arts and Sciences has established undergraduate teaching practica to permit qualified undergraduates to participate under faculty supervision in teaching courses. These teaching practica are intended first and foremost to enhance the liberal education of the participating students by introducing them, under the guidance of faculty, to some of the aspects of successful teaching. For the knowledge they acquire, the students enrolled in undergraduate

teaching practica receive academic credit.

Undergraduate teaching assistants must be upper-division students, preferably seniors. They must have demonstrated mastery of the subject matter, normally by having completed and excelled in the course being taught or in a similar but more advanced version of that course.

Undergraduate teaching assistants must not grade any work that contributes to the final course grade, although they may be assigned to read and criticize drafts or work that has already been graded. All evaluations of student performance that contribute to the final course grade are the exclusive responsibility of faculty and cannot be delegated to undergraduate teaching assistants. Undergraduate teaching assistants must not see any version of any quiz, test, or examination or proctor in the course in which they are assisting. Exceptions to this rule may be made only by special permission of the vice provost for undergraduate studies.

In order to receive credit for working as undergraduate teaching assistants, students enroll in a department's teaching practicum, numbered 475 or 476. These practica are designed to broaden the students' knowledge of the subject matter of the course and to instruct them in techniques of teaching and evaluation. Students may not be given credit for independent reading or research for teaching assistance nor may they register in the course in which they are assisting. (Upon discovery of the awarding of such credit—at any time—it will be removed from the student's record.) Only Satisfactory/Unsatisfactory grades are recorded in 475 and 476 courses. Limits on credit earned by serving as an undergraduate teaching assistant are described in "Course Credit and Prerequisites," below.

Faculty members with either graduate or 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 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 readings and research, Internship Program, and URECA Program courses, may be offered toward the degree requirement of 120 credits. These include arts and sciences courses numbered 273, 287, 444-449, and 484-489, similar courses in other units, and transferred independent study credit. In any given semester during the academic year a student may earn up to six credits for independent work in a single department (except for internships, which may be taken for up to 12 credits) or up to 12 credits in the URECA Program. During the summer a student may earn three credits in a single department in each term or eight credits in the URECA Program for the entire summer. (See "Independent Study," p. 76.)

   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 take graduate courses with the permission of the vice provost for graduate studies, or continuing education courses with the permission of the dean of the School of Professional Development and Continuing Studies (but not teaching practica, readings, research, or other independent study) for undergraduate credit. Permission to do so should be sought through the instructor, the chairperson of the department offering the course, and either the Graduate School or the School of Professional Development and Continuing Studies as appropriate. It is also strongly recommended that students discuss their plans to take graduate or continuing education courses with their advisors in order to assess whether the credits will be applicable to their degree requirements.

   A. Courses numbered 500 or higher cannot be used to fulfill D.E.C. requirements for undergraduates, although they may be used for certain major requirements. In the course of his or her academic career at Stony Brook a student may count no more than a total of six graduate (including continuing education) credits toward the bachelor's degree. (The University's bachelor's/master's degree programs, which are listed in "Undergraduate Courses of Study" on the inside front and back covers, are exceptions to the latter rule.)

   B. Undergraduates may request permission to register for graduate or continuing education courses by completing form SUSB 3065, which is available from the Graduate School or the School of Professional Development and Continuing Studies, and, after obtaining the necessary signatures, submitting that form together with a copy of their unofficial transcript to the same office for final approval. The approved form SUSB 3065 must then be presented to the Office of Records/Registrar when registering for the appropriate graduate or continuing education course.
6. *Activity-Related Courses.* AFS, PSY, and SSI 283; LHD 309 and 310; 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.

7. *Physical Education Courses.* In addition to the limit on 100-level PEC courses in item 6, no more than ten credits in all PEC courses may be offered toward the degree requirement of 120 credits.
8. *Remedial/Developmental Courses.* The following courses are designated as remedial/developmental: AIM 102, AIM 103, MAP 101, MAP 102, MAP 103. Credits from these courses count toward the minimum credit workload for each semester, but they do not count toward the 120 credits needed for graduation. Grades from these courses are not calculated in the cumulative G.P.A. and do not affect the quality standard for academic standing.
9. *Limits on Studio and Performance Courses.* The New York State Board of Regents requires that out of the 120 credits required for the bachelor's degree at least 90 credits must be in liberal arts and sciences courses. Certain studio and performance courses are excluded from those 90 credits; they are identified in the Art, Music, and Theatre Arts sections.

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. Students who have completed fewer than 45 credits when the revisions are first published must satisfy the new requirements, unless the major department specifies otherwise.

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 without delaying their graduation.

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 yearlong 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 University, college, or major requirement for which the present course would apply. However, the course may not be repeated for credit. The notation is published in the first edition of the *Bulletin* after the number has been changed but not in subsequent editions. The regulations pertaining to the renumbering, however, continue to apply.

Interdisciplinary Program in Africana Studies

Program Director: William McAdoo

Director of Undergraduate Studies: Leslie H. Owens

Faculty

Amiri Baraka, Professor: Playwriting; pan-Africanism; contemporary affairs; literature.

Floris Barnett Cash, Assistant Professor, Ph.D., State University of New York at Stony Brook: U.S. social and political history; African-American history; Latin American history.

William McAdoo, Associate Professor, Ph.D., University of Michigan: U.S. urban, social, and institutional history; immigration historiography; African-American history.

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

Olufemi O. Vaughan, Assistant Professor, Ph.D., University of Oxford: African politics and history; international relations.

Adjunct Faculty
Estimated number: 1

Teaching Assistants
Estimated number: 3

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 is 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.

Completion of the major requirements entails 42 credits.

A. Study within the Area of the Major
1. AFS 101, 102 Themes in the Black Experience
2. AFH 206 Great Books of the Black Experience *or* AFH 249 African-American Literature and Music in the 19th and 20th Centuries
3. AFS 283 Community Servlce
4. Two courses selected from AFS 200, 225, 239, 240, and 275 in consultation with a program advisor
5. Four upper-division courses other than AFH or AFS 447 and 487
6. AFH or AFS 447 Directed Readings *or* AFH or AFS 487 Directed Research to be taken in the junior or senior year

B. Courses in a Related Discipline
Nine credits in a related discipline (excluding courses crosslisted with an AFH or AFS course)

C. Upper-Division Writing Requirement
Students are required to submit a portfolio of graded essay or term paper assignments completed in two upper-division courses taken for a letter grade in Africana studies. Students must inform the instructor of the courses in advance of their plan to use the paper (or papers) in fulfillment of the writing requirement for the major. The portfolio must contain writing samples accompanied by an evaluation form submitted by a professor approving the samples as meeting writing proficiency necessary for the major. There is no requirement concerning the number of papers submitted, but the portfolio must consist of at least 15 pages of material.

Note: No more than 12 of the 33 Africana studies credits may be taken at another institution (exceptions are made in the case of planned foreign study).

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 24-credit 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.

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

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

AFS 101-F, 102-F Themes in the Black Experience I, II
An historical survey of the experience of people of African descent. This course examines 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 treats themes to 1865. The second semester treats themes from 1865 to the present.
Fall (101) and spring (102), 3 credits each semester

AFS 200-K American Attitudes Toward Race
An historical examination of the growth and development of racism in America. The focus is on African Americans and their relationships with the American system, its institutions, and culture. References are made to other ethnic groups in order to give balance to social conditions and attitudes shaping American society.
Prerequisites: One D.E.C. category F course; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

AFH 206-B 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 vary depending on each semester's emphasis.
Prerequisite: Sophomore standing
Fall or spring, 3 credits

AFH 212-J French Caribbean Literature (in Translation) *(Formerly AFH 282)*
A study of representative texts from the French Caribbean translated into English. This course focuses on literary manifestations of a search for a specific identity by writers from Martinique, Guadeloupe, French Guiana, and Haiti. Crosslisted with HUF 212.
Prerequisites: EGC 101 or placement 4 on English Placement Examination; one course in literature
Fall or spring, 3 credits

AFS 223-F The African Continuum
An examination of the persistence of African culture in the Americas. Exploration of some of the factors that have influenced these African-based cultural forms and their impact on other ethnic groups in the Americas. Crosslisted with ANT 223.
Prerequisite: AFS 101 or 102 or ANT 102
Spring, 3 credits

AFS 225-J The African Revolution
An exploration of those events that have been the basis of change in modern African, 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.
Prerequisite: One D.E.C. category F course
Fall, 3 credits

AFS 239-J 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.
Prerequisite: One D.E.C. category F course
Fall, 3 credits

AFS 240-J 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.
Prerequisite: AFS 101,102
Spring, 3 credits

AFH 249-K African-American Literature and Music in the 19th and 20th Centuries
A general and detailed look at African-American literature and music and their importance for literature and music generally in the 19th and 20th centuries. Topics 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.
Prerequisites: One D.E.C. category B or D course; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

AFS 275-J 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 are 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. Crosslisted with WNS 275.
Prerequisite: One D.E.C. category F course
Spring, 3 credits

AFS 277-K The Modern Color Line
Analysis of the key concepts defining the Black Experience in the United States, and the African diaspora, as formulated by 20th-century African-American intellectuals. Topics include forms of political organization and collective struggle; the social and psychic consequences of racist subjection; the relationship among race, racism, and culture; and the cultural politics of race and gender. Crosslisted with HIS 277.
Prerequisites: HIS 104 or AFS 101, 102; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1996-97)

AFS 283 Community Service
Through field experience, readings, research, and discussion, students focus on a social and educational problem relating primarily to the African-American experience. Specific programs may include working with children from low-income families, educational and cultural enrichment projects, tutoring in various institutional settings, and other projects to be announced. May be repeated once. Satisfactory/Unsatisfactory grading only.
Prerequisite: Permission of instructor
Fall or spring, 3 credits

AFS 300-K Blacks in the City
The urban experiences of blacks as a force in determining the character, culture, and social climate of the American city. A central theme is that blacks have greatly impacted on U.S. urban life and made important contributions to its sense of vitality and cultural diversity.
Prerequisites: Two D.E.C. category F courses; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

AFS 319-F 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 are identified and discussed: overt, covert, and reactive racism. Examples of these three forms and the groups involved with them are identified and discussed, showing the similarities and differences where they exist.
Prerequisites: Two D.E.C. category F courses
Fall or spring, 3 credits

AFS 325-K 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.
Prerequisites: HIS 104 or AFS 101 or 102; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits

AFH 329-J, 330-J Pan-African Literature I, II
An examination of the cultural themes of Pan-Africanism and negritude, drawing on a selection of writers from the United States, Africa, and the Caribbean. The course treats the development, diffusion, and significance of these themes. It involves intensive consideration of selected literary works of African and African-American expression.
Prerequisites: Two courses in literature
Fall (329) and spring (330), 3 credits each semester (not offered in 1996-97)

AFS 335-J Contemporary African Problems
An investigation into 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 is 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-J 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

AFH 339-G Arts of the African Diaspora
A study of the arts of the African Diaspora from the African continent to Brazil, Surinam, the Caribbean, and the United States. Emphasis is on the full range of art forms, including not only sculptural and performance traditions but also textiles, basketry, and other craft traditions. Cultural continuities, spiritual belief, and significant changes in context, meaning, style, and technology are examined. Crosslisted with ARH 329.
Prerequisite: ARH 201
Fall or spring, 3 credits

AFS 345-J Culture and Gender: Women in Africa and the Caribbean
Comparative analysis of the status and role of women in colonial and contemporary societies of Africa and the Caribbean. Exploration of the forces that shape women's lives and the ways in which women have contributed to the development of these societies are discussed.
Prerequisite: AFS 239 or 240
Fall or spring, 3 credits

AFS 360-K African-American Social Commentary
A study of African-American responses to the social order in America. The course concentrates on the various ways African Americans have conceptualized and described their condition. Particular attention is paid to the solutions proposed by African-American spokespersons during various historical eras.
Prerequisites: Two D.E.C. category F courses; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

AFS 366-K Race, Class, and Culture in the United States Since 1930
An analysis of the social and cultural reorganization of "race" in American life from the Great Depression to the present. Topics include migration and class formation, the legacies of antiracist radicalism, popular culture and the Second Reconstruction, and the imposition of racial hierarchies through spatial division and state policy. The course shows how "race" is a social and political category, its meaning determined by institutional forces and forms of political struggle. Cross-listed with HIS 366.
Prerequisites: AFS 101; AFS 102 or HIS 104; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1996-97)

AFS 370-K The African-American Family
The African-American family in historical perspective. The nature and structure of that family, the obstacles it has faced, and its interrelationships with the African-American community and the diversity of American society.
Prerequisites: Two D.E.C. category F courses; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1996-97)

AFS 372-K 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 is 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.).
Prerequisites: Two D.E.C. category F courses; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits

AFS 375-F 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.
Prerequisites: Two D.E.C. category F courses
Spring, 3 credits

AFS 390-F Legal Process and Social Structure *(Formerly AFS 490).*
A critical evaluation of the administration of justice, legal institutions, and the legal process in relation to prevailing social structure.
Prerequisites: Three AFS courses; upper-division standing
Spring, 3 credits

AFS 410 Computers and Third World Social Issues
A consideration of significant Third World issues using basic computing skills in a DOS environment. The use of computer concepts and word processing skills to evaluate current social issues and their impact. The course encourages utilization of the computer in problem solving, research, and decision making.
Prerequisites: Upper-division standing; two AFS courses; permission of instructor
Fall and spring, 4 credits

AFH, AFS 421, 422 Topics in Africana Studies
An examination of a selected topic in the Black Experience to be announced each term. The designator AFH is assigned to topics in the humanities area; AFS is assigned to topics in the social sciences area. May be repeated for different topics.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits each semester

AFH, AFS 447 Readings in Africana Studies
Individually supervised reading in selected topics in the Black Experience. The designator AFH is assigned to topics in the humanities area; AFS is assigned to topics in the social sciences area. May be repeated once.
Prerequisite: Permission of instructor and program director
Fall and spring, 1 to 3 credits

AFS 463, 464 The Media and Black America I, II
An 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 are studied. Students 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 (not offered in 1995-96)

AFH, AFS 475 Undergraduate Teaching Practicum I
Each student works with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes and meet with the faculty member at regularly scheduled times to discuss the academic matters and responsibilities relating to the course. Students may lead discussions of films and assigned reading and offer tutorial assistance in weekly laboratory sessions. Not for major or minor credit. Satisfactory/Unsatisfactory grading only.
Prerequisites: Africana studies major or minor; senior standing; permission of instructor
Fail and spring, 3 credits

AFH, AFS 476 Undergraduate Teaching Practicum II
The continuation on a more advanced level of training in the techniques of organization and management of Africana studies courses. Students assume greater responsibility in leading discussions and in analyzing results of tests that have already been graded. The course in which a student is permitted to work as a teaching assistant must be different from the course in which he or she previously served. Not for major or minor credit. Satisfactory/Unsatisfactory grading only.
Prerequisites: AFH or AFS 475; permission of instructor
Fall and spring, 3 credits

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 is assigned to projects in the humanities area; AFS is assigned to projects in the social sciences area. May be repeated once.
Prerequisite: Permission of instructor and program director
Fall and spring, 1 to 3 credits

AFS 488 Internship
Participation in public and private agencies and organizations under the supervision of a faculty sponsor. Students are 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, but no more than six credits count toward Africana studies major requirements.
Prerequisites: Africana studies major or minor; 15 credits in AFS courses; permission of instructor, program director. and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

Department of Anthropology

Chairperson: William Arens

Director of Undergraduate Studies: David Hicks

Faculty

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

David Bernstein, Assistant Professor and Director of the Institute for Long Island Archaeology, Ph.D., State University of New York at Binghamton: North American archaeology.

Diane Doran, Assistant Professor, Ph.D., State University of New York at Stony Brook: Behavior and ecology of African apes; primatology.

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

Frederick Grine, Associate Professor, Ph.D., University of Witwatersrand: Physical anthropology; human evolution.

Margaret Gwynne, Adjunct Associate Professor, Ph.D., State University of New York at Stony Brook: Caribbean area; women in development.

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

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

Curtis Marean, Assistant Professor, Ph.D., University of California, Berkeley: African prehistory; archaeozoology.

Lawrence Martin, Associate Professor, Ph.D., University of London: Ape and human evolution; dental anthropology.

Dolores Newton, Assistant Professor, Ph.D., Harvard University: South America; cultural anthropology; material culture.

John J. Shea, Assistant Professor, Ph.D., Harvard University: Lithic technology; Old World paleolithic; archaeology of northeastern North America.

June Starr, Associate Professor, Ph.D., University of California, Berkeley; J.D., Stanford University: Middle East; social anthropology; anthropology of law.

Elizabeth C. Stone, Associate Professor, Ph.D., University of Chicago: Near East; Old World archaeology.

Patricia Wright, Associate Professor, Ph.D., City University of New York: Primate ecology; primate behavior; primate conservation; Madagascar.

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 4

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, the humanities, and the natural sciences. The curriculum emphasizes the fields of cultural and social anthropology, archaeology, and physical anthropology, and includes offerings in legal and medical anthropology.

Requirements for the Major in Anthropology

The major in anthropology leads to the Bachelor of Arts degree. Students must include at least 18 credits of upper-division courses in the major. All courses used to meet the major requirements must be taken for a letter grade and passed with a grade of C or higher. No transfer credits with a grade lower than C may be applied toward the major requirements.

Completion of the major requirements entails at least 37 credits.

A. Study within the Area of the Major

1. Three introductory courses: ANT 102, 104, and ANP 120
2. One course in social and cultural anthropology at the 200 level or higher
3. One course in archaeology at the 200 level or higher
4. One course in physical anthropology at the 200 level or higher
5. Five additional anthropology courses (one course from another department may be substituted with the approval of the student's faculty advisor)
6. One 400-level seminar chosen from ANT 401, 402, 411, ANP 403, 404 (Note: ANT 447, 487, 488, 495, 496, and ANP 447, 487, 495, 496 may not be used to satisfy this requirement.)

B. Upper-Division Writing Requirement
Anthropology majors must achieve an evaluation of S (Satisfactory) for a paper written for a 300-level ANT or ANP course. This paper must be submitted to the director of undergraduate studies during the student's junior year and will be assessed by the department's upper-division writing requirement committee for advanced writing skills appropriate to anthropology majors. The writing assessment is in addition to the evaluation of the paper for the course.

Subfields of Study

Social and Cultural Anthropology

ANT 102, 160, 201, 203, 215, 219, 230, 240, 250, 255, 280, 310, 333, 351, 352, 354, 356, 361, 367, 391, 392, 401, 411.

Archaeology

ANT 104, 270, 290, 321, 353, 357, 358, 359, 360, 362, 364, 365, 393, 394, 402, 418, 419.

Physical Anthropology

ANP 120, 210, 320, 321, 325, 330, 340, 350, 360, 391, 403, 404.

Honors Program in Anthropology

The honors program is designed for students preparing to enter a graduate program in anthropology. It is open to anthropology majors in their junior or beginning senior year who have an excellent academic record (3.0 G.P.A. overall) and a G.P.A. of 3.5 or higher in anthropology courses. Qualified students are eligible to enroll in the anthropology honors program at, but preferably before, the beginning of their senior year.

The student, after asking a faculty member to be a sponsor, must submit a proposal indicating the topic and procedure of the planned research to the departmental honors committee through the director of undergraduate studies. The supervising faculty member must also submit a statement supporting the student's proposal and indicating the merit of the planned research. This must ordinarily be done in the semester prior to the beginning of the student's senior year.

Students register for ANT or ANP 495 in the first semester of their senior year and conduct research for the project. They register for ANT or ANP 496 during the last semester of their final year. These two courses must be taken in addition to the total credits required for the major. Students must submit a draft of their thesis to their faculty sponsor by April 1 for May graduation or November 1 for December graduation. They must submit an honors thesis of 20 pages or more of fully referenced material to the director of undergraduate studies no later than Monday of the penultimate week of classes (excluding final examination week). Each thesis is read by two anthropologists and a member of another department, as arranged by the director of undergraduate studies. If the paper is judged to be of sufficient merit and the student's record warrants such a determination, the department recommends honors. The program consists of:

1. Completion of all requirements for the major in anthropology with a G.P.A. of 3.5 or higher in anthropology courses
2. ANT 495 and 496, or ANP 495 and 496
3. The honors thesis

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. The student must choose one of the tracks listed below. At least nine credits must be in upper-division courses. All courses used to satisfy minor requirements must be taken for a letter grade and passed with a C or higher. No transfer credits with a grade lower than C may be applied to the minor requirements. No more than one

directed readings or research course may be used. The minor requires 21 or 22 credits.

General Anthropology
1. Two introductory courses chosen from ANT 102, 104, ANP 120
2. Two additional courses chosen from different subfields
3. Three anthropology elective courses

Social and Cultural Anthropology
1. ANT 102
2. Three ethnographic area courses in social and cultural anthropology chosen from ANT 201, 203, 219, 230, 240, 310
3. One topical course in social and cultural anthropology to be selected from ANT 160, 215, 250, 255, 280, 333, 351, 352, 354, 356, 361, 367, 411, and also 391 and 401 when the topic is applicable
4. Two elective courses in social and cultural anthropology

Archaeology and Cultural History
1. ANT 104
2. Six courses in archaeology, at least five of which must be ANT courses; one may be an HIS course with the approval of the director of undergraduate studies

Physical Anthropology
1. ANP 120
2. ANP 210 or 330
3. One course chosen from ANP 321, 340, 350
4. Three additional ANP courses (except 475 or 476)
5. One course chosen from BIO 305, 321, 344, 351, 354, 359, 385; GEO 302, 303; AMS 110; HBA 325/ARS 355

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

ANT 102-F Introduction to Cultural Anthropology
The analysis of social and cultural topics such as kinship, family, marriage, politics, and religious systems, with an emphasis on their particular expression in non-Western societies.
Fall and spring, 3 credits

ANT 104-F 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. Techniques used to detect and study past settlements are presented.
Fall and spring, 3 credits

ANT 160-F The Individual in Society
A study of the ways in which individuals form stable communities and societies. The course focuses on the socialization of sexuality and aggression, conflict and social order, and social control. These and other problems are explored from the perspective of the psychological and social sciences. The role of individual men and women in group dynamics is viewed in cross-cultural perspective.
Fall or spring, 3 credits

ANT 201-J Peoples of South America
A survey of the social, cultural, and historical aspects of South American native peoples. Attention is given to issues of demography and biology, ecology, and cultural evolution. In-depth study of selected cultures and comparative study in selected cultural topics form the core of the course. Particular emphasis is given to topics of culture contact, culture change, tribal cultures in a context of national development, and cultural pluralism.
Prerequisite: ANT 102
Fall or spring, 3 credits

ANT 203-J Native Peoples of North America
The various peoples and cultures of North America are studied with respect to their political, educational, linguistic, social, and cultural patterns. Selected societies are studied in depth.
Prerequisite: ANT 102
Fall or spring, 3 credits

ANT 215-F Anthropology of Law
The handling and resolution of disputes in simple and complex societies. Courts, mediation, and the alternatives to law courts are studied. Students are introduced to the prevailing theories about conflict and its resolution in modern societies.
Prerequisite: ANT 102
Fall or spring, 3 credits

ANT 219-J Peoples of the Caribbean
The study of the environment, history, and cultural and social institutions characteristic of the Caribbean area. Topics covered 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
Fall or spring, 3 credits

ANT 230-J 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 are also discussed. Readings are on selected peoples throughout the world.
Prerequisite: ANT 102
Fall or spring, 3 credits

ANT 240-J Immersion in Another Culture
A specific world area such as the highlands of New Guinea or the Nilotic Southern Sudan, or a particularly well-documented people such as the Trobriand Islanders is considered in detail. Lectures, texts, and films consider ecology, history, social change, language, cultural systems, and social arrangements. The aim is to provide students with a comprehensive understanding of another cultural system. May be repeated as the topic varies.
Prerequisite: ANT 102
Fall or spring, 3 credits

ANT 250-F Medical Anthropology
Concepts of health and illness in cross-cultural perspective. Topics include the achievement of health and harmony, disease causation, and methods of diagnosis and treatment. Physical and psychological states of health and illness are considered from both individual and community perspectives. Readings encompass studies of cultures from all parts of the world.
Prerequisite: ANT 102
Fall or spring, 3 credits

ANT 255-F 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 different cultures. Emphasis is 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
Fall or spring, 3 credits

ANT 270-F Great Archaeological Discoveries
A survey of great archaeological discoveries that have contributed to current knowledge of the human past. The discoveries at Olduvai, Jericho, Tutankhamen's tomb, Xian, Ebla, Tikal, etc. are discussed within the context of the ancient cultures that they have illuminated. Recent controversies about the origin of modern humans, "goddess cults," and the rise of ancient civilizations are also examined.
Prerequisite: One D.E.C. category F course
Fall, 3 credits

ANT 280-F Applied Anthropology
An examination of how anthropology is used in nonacademic settings, such as AIDS research, environmental impact and preservation, legal and advocacy issues, marketing, biomedical anthropology, and forensics. Case studies in sociocultural anthropology, archaeology, and physical anthropology are discussed .
Prerequisite: One D.E.C. category F course
Fall or spring, 3 credits

ANT 285-J Prehistoric Peoples of the Americas
Life in the Americas from first settlement at the end of the last ice age until the arrival of the Europeans in the 15th and 16th centuries. The culture history and evolution of prehistoric peoples of North, Central, and South America are treated. Specific topics covered include settlement by Native Americans, hunting-gathering lifeways, plant and animal domestication, the origins of village life, and state-level societies.
Prerequisite: ANT 104
Fall or spring, 3 credits (not offered in 1996-97)

ANT 290-H Science and Technology in Ancient Society
Examination of the role of advances in science and technology in societies ranging from the earliest humans to the archaic civilizations of the Old and New Worlds. The course focuses on such innovations as tool making, fire, metallurgy, writing, mathematics, complex architecture, etc., and relates these innovations to changes in sociopolitical organization.
Prerequisite: One D.E.C. category E course
Fall or spring, 3 credits (not offered in 1995-96)

ANT 310-J Ethnography
A particular cultural area of the world such as sub-Saharan Africa, Oceania, Mexico and Guatemala, Asia, or the Middle East is considered in terms of its history and ecology, with a comparative analysis of the cultural systems and social arrangements of representative ethnic groups. The aim of the course is to provide an overview of cultural diversity and uniformity in an area outside of Europe. May be repeated as the topic changes.
Prerequisites: ANT 102; one other ANT course
Fall or spring, 3 credits

ANT 321 Archaeological Field Methods
An opportunity to participate in all aspects of an archaeological research project. Students are trained in excavation, recording, artifact retrieval, surveying, field sorting techniques, and interpretation. This course is usually held in the summer and involves excavation of a prehistoric or early historic site on Long Island.
Prerequisites: ANT 104; at least one other archaeology course to be specified when the course is offered; permission of instructor
Fall, spring, or summer, 3 to 6 credits

ANT 333-F 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 considers 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.
Prerequisites: ANT 102; one other ANT course
Fall or spring, 3 credits

ANT 351-F 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.
Prerequisites: ANT 102; one other ANT course
Fall, 3 credits

ANT 352-F Personality and Culture
The role of culture as a factor in personality and character formation and how different cultures handle the basic human drives, especially aggression. The course also discusses cultural influences on gender role, violence and social control, and mental health. Case studies from South America, Oceania, Malaysia, and southern Europe are compared.
Prerequisites: ANT 102; one other ANT course or a social science course approved by the instructor
Fall or spring, 3 credits

ANT 353 Archaeological Analysis and Interpretation
Laboratory analysis of recently excavated materials from Long Island archaeological sites. Types of prehistoric material analyzed include lithic and ceramic artifacts, and the remains of shellfish and vertebrates.
Prerequisites: ANT 321 or 362; permission of instructor
Fall, 3 credits (not offered in 1995-96)

ANT 354-F Family, Kinship, and Marriage
Concepts of family, kinship, marriage, incest, exogamy: their source in nature and culture and their social implications. Major theories are discussed historically, demographically, and ecologically. Brief case studies are presented to illustrate theories of social anthropology.
Prerequisites: ANT 102; one other ANT course
Fall or spring, 3 credits (not offered in 1995-96)

ANT 356-K Urban Anthropology
A cross-cultural review of current anthropological research in urban societies with primary reference to the American context. Topics include family and kinship behavior, social status and role, rules and regulations, social stratification, mobility and upward mobility, assimilation and acculturation, and political relations.
Prerequisites: ANT 102; one other ANT course; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

ANT 357-F The Agricultural Revolution
An in-depth examination of a fundamental transformation in human history, the shift from hunting and gathering to farming, from reacting to the environment to controlling it, and from a nomadic way of life to permanent settlement. The course considers the archaeological evidence as to how this readaptation to the natural environment took place in different parts of the world.
Prerequisites: ANT 104; one other course in anthropology
Fall or spring, 3 credits (not offered in 1995-96)

ANT 358-J 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 is 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 104; one other anthropology course
Fall or spring, 3 credits (not offered in 1996-97)

ANT 359-F Prehistoric Hunter-Gatherers of the Old World
A survey of the archaeological record of foraging peoples in Africa, Europe, and Asia prior to the emergence of agriculture. The course emphasizes particular problems including the relationship between behavioral and biological change, different adaptive strategies in temperate and tropical zones, the origins of modern humans, and the emergence of complex hunter-gatherer societies.
Prerequisite: ANT 104
Fall or spring, 3 credits (not offered in 1996-97)

ANT 360-J Ancient Mesopotamia
The organization and development of the social, economic, political, and religious systems of ancient Mesopotamia through study of the archaeological and textual records. This course stresses the first two thousand years of this civilization, from 3500 B.C. to 1500 B.C.
Prerequisites: ANT 104; one other archaeology course
Fall, 3 credits (not offered in 1996-97)

ANT 361-F Peasants
The concept of peasantry from political, religious, cultural, and social-class perspectives, as well as from the more traditional economic viewpoint. These agricultural peoples are described and analyzed especially in relation to the national societies of which they form a part. Case studies from Latin America, Europe, and Asia are used as illustrations. Special attention is given to the agrarian political movements and revolutions in the Third World.
Prerequisites: ANT 102; one other ANT course
Fall or spring, 3 credits

ANT 362-J Long Island Archaeology
Life on Long Island from its first settlement by Native Americans 12,000 years ago until the end of the 17th century. Trends and changes in human behavior are studied in the context of environmental and cultural processes affecting all of northeastern North America.
Prerequisites: ANT 104; permission of instructor
Spring, 3 credits

ANT 364-J African Stone Age
An examination of the evidence for human behavioral and physical evolution on the African continent. The focus is on the way both early and modern hominids adapted to different habitats. Modern African environments and ecology, as well as modern hunter-gatherer peoples, are covered.
Prerequisites: ANT 104; one other archaeology course
Fall or spring, 3 credits (not offered in 1995-96)

ANT 365-I The Stone Age Foundations of Western Civilization
The prehistoric archaeological record of Europe and the Near East. Topics include the colonization by hominids, chronological and regional variation in Stone Age cultures, human ecology during the ice ages, the origins and spread of agriculture, and the rise of complex societies.
Prerequisites: ANT 104; one 200-level archaeology course
Fall or spring, 3 credits

ANT 367-F 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; one other ANT course
Fall or spring, 3 credits

ANT 391-F Topics in Social and Cultural Anthropology
Discussion of a topic of current interest in social and cultural anthropology such as symbolism, comparative religion, and patterns of empire. May be repeated as the topic changes.
Prerequisites: ANT 102; one other ANT course to be specified when the topic is announced
Schedule to be announced, 3 credits

ANT 392-K Topics in American Cultural Alternatives
Aspects of cultures within the United States that differ from the dominant American culture. For example, groups of Native Americans, African Americans, and American Gypsies may be considered. Difficulties arising from culture contact and problems concerning mutual cultural acceptance are discussed.
Prerequisites: ANT 102; one other ANT course at the 200 level or higher; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

ANT 393-F, 394-F Topics in Archaeology
A focused study of a specific topic in archaeology. Topics vary and might include ancient Mesopotamia, Mesoamerican archaeology, comparative empires, palaeolithic Europe, etc. May be repeated as the topic changes.
Prerequisites: ANT 104; one other anthropology course to be specified when the topic is announced
Schedule to be announced, 3 credits

ANT 401 Problems in Social and Cultural Anthropology
Research on and discussion of a selected topic in social and cultural anthropology that is announced in advance. Topics might include gender roles, religion and symbolism, politics, development of anthropological theory. May be repeated as the topic changes.
Prerequisites: ANT 102; two other ANT courses at the 200 level or higher
Fall or spring, 3 credits

ANT 402 Problems in Archaeology
Research on and discussion about selected topics in the prehistory of the Old and New Worlds. Specific problem areas vary and are announced in advance. May be repeated as the topic varies.
Prerequisites: ANT 104; two other archaeology courses to be specified when the topic is announced
Schedule to be announced, 3 credits

ANT 411 Law and Conflict Resolution: Socio-Legal Perspectives
Major theoretical issues in the study of law in society. Empirical data and research 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 321; two other courses in socio-legal studies minor; permission of instructor
Fall or spring, 3 credits (not offered in 1995-96)

ANT 418 Lithic Technology
An introduction to the practical skills needed to study lithics (stone tools) from archaeological sites. Topics include typology of prehistoric industries and technological, functional, and behavioral analysis of lithic variation. Students work with teaching collections, learning to draw, measure, and classify stone tools. Laboratory sessions teach students how to make and use replicas of prehistoric stone tools using aboriginal techniques.
Prerequisites: ANT 104; two 200-level anthropology courses in either archaeology or physical anthropology; permission of instructor
Fall, 4 credits (not offered in 1995-96)

ANT 419 Zooarchaeology
The study of animal bones from archaeological sites. Special emphasis is on the identification of fragmented bone and surface modification, calculation of indexes of abundance, and measurement and metrical analysis ot mammal bone. Computer analysis is stressed, and the class seeks a fusion of traditional zooarchaeology and actualistic studies.
Prerequisites: ANT 104; one other archaeology course or ANP 120; permission of instructor
Fall, 3 credits (not offered in 1996-97)

ANT 447 Readings in Anthropology
Individual advanced readings on selected topics in anthropology. May be repeated twice.
Prerequisites: ANT 102; two other ANT courses at the 200-level or higher; permission of instructor and department
Fall and spring, 3 credits

ANT 475 Undergraduate Teaching Practicum
Each student conducts a regular recitation or tutorial section to supplement a lecture course and receives 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 or minor status; permission of instructor
Fall and spring, 3 credits

ANT 476 Advanced Undergraduate Teaching Practicum
Advanced training in the techniques of organization and management in the teaching of anthropology courses. Students are expected to assume greater responsibility in such areas as leading discussions, designing homework, analyzing results of tests that have already been graded, and observing and helping new teaching assistants to develop new teaching techniques. Students may not serve as teaching assistants in the same course twice. Satisfactory/Unsatisfactory grading only.
Prerequisites: ANT 475; permission of instructor
Fall and spring, 3 credits

ANT 487 Independent Research in Anthropology
Independent research projects carried out by upper-division students. 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. 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 are 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 495-496 Senior Honors Project in Anthropology
A two-semester project for anthropology majors who are candidates for the degree with honors. Arranged in consultation with the department through the director of undergraduate studies, the project involves independent readings or research and the writing of a paper under the close supervision of an

appropriate faculty member on a suitable topic selected by the student. Students enrolled in ANT 495 are obliged to complete ANT 496 the following semester.
Prerequisite: Admission to the anthropology honors program
Fall and spring, 3 credits each semester

Physical Anthropology

ANP 120-E Introduction to Physical Anthropology
An introduction to the evolutionary study of humankind based on a survey of the diversity and evolutionary history of primates. The development of scientific and evolutionary thought and method. The biological basis of inheritance and variation. Human variations and adaptations in relation to the environment. Physical characteristics and behavior of living primates. Evolution of primates and current research on human origins. Three hours of lecture and one two-hour laboratory per week.
Fall and spring, 4 credits

ANP 210-E The Living Primates
The comparative study of the anatomy, ecology, and behavior of humankind's closest living relatives, the primates. The anatomy of apes, monkeys, and prosimians is used to classify these animals according to their evolutionary relationships. The course relates their anatomy to their ecology and behavior. Primate behavior is related to ecology, and this behavior, together with that of other animals not closely related to humans but ecologically similar, is used to explore behavioral and ecological models for human evolution.
Prerequisite: ANP 120 or BIO 151 or 171
Fall or spring, 3 credits (not offered in 1996-97)

ANP 320-E Primate Functional Morphology and Biomechanics
A broad review of methods employed in the interpretation of morphological adaptation of animals, with special focus on the order Primates. Topics include the development and application of biomechanical models, kinetics and kinematics, electromyography, and the statistical analysis of functional morphological data.
Prerequisites: ANP 210; satisfaction of entry skill in mathematics requirement
Fall or spring, 3 credits

ANP 321-E Primate Evolution
The evolution of the order Primates from its origins to the appearance of the human family. Primate origins; the first primates of modern aspect; origins and adaptive radiations of monkeys; appearance and adaptations of apes and humans. Relevant topics in geology such as geochronology, paleogeography, taphonomy, and paleoecology.
Prerequisite: ANP 210 or a BIO course acceptable to the Anthropology Department
Fall or spring, 3 credits (not offered in 1996-97)

ANP 325-E Primate Behavior
An introduction to primate social systems and the factors that influence their maintenance and evolution, including foraging strategy, demographic processes, mating and rearing strategies, conflicts and coalitions, and communication.
Prerequisite: ANP 120 or BIO 151 or 171
Fall, 3 credits

ANP 330-E Human Evolution
A comprehensive survey of the fossil record for human evolution from the appearance of the earliest hominids to the emergence of modern humans, with emphasis on morphological and behavioral evolution in the human lineage.
Prerequisite: ANP 120 or BIO 151 or 171
Fall or spring, 3 credits

ANP 340 Field Methods in Physical Anthropology
Methods, problems, and experience in field techniques. The course focuses on field methods such as fossil excavation, reconstruction of skeletal and dental remains, anthropometry, craniometry, and field behavioral ecology of primates.
Prerequisites: ANP 120 or BIO 151 or 171; permission of instructor
Fall, spring, or summer, 3 to 6 credits

ANP 350-E Primate Behavior and Ecology
Introduction to the behavior and ecology of nonhuman primates. Primate communities in Asia, Africa, South America, and Madagascar are compared. Reproductive behavior, communication, behavioral ecology, and conservation of primates are covered.
Prerequisite: ANP 210
Fall or spring, 3 credits

ANP 360-H Primate Conservation
Review of endangered species of primates and case histories of conservation programs in Asia, Africa, South America, and Madagascar, highlighting different problems and solutions.
Prerequisite: ANP 120 or BIO 151 or 171
Spring, 3 credits

ANP 391-E Topics in Physical Anthropology
Discussion of a topic of current interest in physical anthropology. Topics may include human biology, dental anthropology, primate locomotion, diet and evolution, functional morphology.
Prerequisites: ANP 120; one other ANP course to be specified when topic is announced
Fall or spring, 3 credits

ANP 403 Problems in Physical Anthropology
Research and discussion about selected topics in physical anthropology. Specific problem areas vary each year. May be repeated as the topic varies.
Prerequisites: ANP 120 or BIO 151 or 171; one other ANP course to be specified when the topic is announced
Fall or spring, 3 credits (not offered in 1995-96)

ANP 404 Human Osteology
A detailed study of the anatomy of the human skeleton with special emphasis on the interpretation of skeletal remains from archaeological contexts. Consideration is given to the growth, structure, and function of bones, and to forensic aspects such as the determination of age, sex, stature, and pathology from skeletal remains. Students conduct a research project on a human skeleton.
Prerequisites: ANP 330; permission of instructor
Fall or spring, 3 credits (not offered in 1996-97)

ANP 447 Readings in Physical Anthropology
Individual advanced readings on selected topics in physical anthropology. May be repeated twice.
Prerequisites: ANP 321 and 330; permission of instructor
Fall and spring, 3 credits

ANP 475 Undergraduate Teaching Practicum
Each student conducts a regular recitation or tutorial section to supplement a lecture course and receives 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: ANP 321 and 330; permission of instructor
Fall and spring, 3 credits

ANP 476 Advanced Undergraduate Teaching Practicum
Advanced training in the techniques of organization and management in the teaching of physical anthropology courses. Students are expected to assume greater responsibility in such areas as leading discussions, designing homework, analyzing results of tests that have already been graded, and observing and helping new teaching assistants to develop new teaching techniques. Students may not serve as teaching assistants in the same course twice. Satisfactory/Unsatisfactory grading only.
Prerequisites: ANP 475; permission of instructor
Fall and spring, 3 credits

ANP 487 Independent Research in Physical Anthropology
Independent research projects carried out by upper-division students. 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. May be repeated up to a limit of six credits.
Prerequisites: Two 200- or 300-level ANP courses; permission of instructor and department
Fall and spring, 3 to 6 credits

ANP 495-496 Senior Honors Project in Anthropology
A two-semester project for anthropology majors who are candidates for the degree with honors. Arranged in consultation with the department through the director of undergraduate studies, the project involves independent readings or research and the writing of a paper under the close supervision of an appropriate faculty member on a suitable topic selected by the student. Students enrolled in ANP 495 are obliged to complete ANP 496 the following semester.
Prerequisite: Admission to the anthropology honors program
Fall and spring, 3 credits each semester

Department of Art

Chairperson: James H. Rubin

Director of Undergraduate Studies: Toby Buonagurio

Faculty

Ilan Averbuch, Lecturer, M.F.A., Hunter College: Sculpture.

James Beatman, Adjunct Lecturer, M.F.A., University of Massachusetts-Amherst: Sculpture.

Michele H. Bogart, Associate Professor, Ph.D., University of Chicago: Art and architectural history; American and 20th-century art.

Toby Buonagurio, Professor, M.A., City College of New York: Ceramics; ceramic sculpture; drawing; painting.

Rhonda Cooper, Adjunct Lecturer, M.A., University of Hawaii: Oriental art; museum and gallery administration.

Michael Edelson, Associate Professor, B.A., State University of New York Empire State College: Photography; photographic criticism; film and television theory and criticism.

Barbara Frank, Assistant Professor, Ph.D., Indiana University: African art history.

Ann Gibson, Associate Professor, Ph.D., University of Delaware: 20th-century art history.

Jacques Guilmain, Professor, Ph.D., Columbia University: Art and architectural history; medieval art.

Helen Harrison, Adjunct Lecturer and Director, Pollock-Krasner House and Study Center, M.A., Case Western Reserve University: American art.

Deborah Johnson, Adjunct Lecturer, M.A., University of Minnesota-Minneapolis: History of American art.

Donald B. Kuspit, Professor, Ph.D., University of Michigan; D.Phil., University of Frankfurt: Art criticism; 20th-century and northern Renaissance art.

Stephen Larese, Adjunct Lecturer, M.F.A., University of Cincinnati: Painting and drawing.

Martin Levine, Visiting Assistant Professor, M.F.A., California College of Arts and Crafts: Printmaking.

Nina A. Mallory, Professor, Ph.D., Columbia University: Art and architectural history; Renaissance, baroque, and 18th-century art.

Daniel Monk, Assistant Professor, Ph.D., Princeton University: Architectural history and criticism.

Anita F. Moskowitz, Professor and Graduate Studies Director, Ph.D., New York University: Art and architectural history; medieval and Renaissance art.

Stephen Nash, Adjunct Associate Professor, M.A., Royal College of Art, London: Anatomical and biological illustration.

D. Terence Netter, Adjunct Associate Professor, M.F.A., George Washington University: Drawing; painting; art and philosophy.

Todd Olson, Lecturer, Ph.D., University of Michigan, Ann Arbor: Renaissance and baroque art history and criticism.

Melvin H. Pekarsky, Professor, M.A., Northwestern University: Drawing; painting; public art.

Howardena Pindell, Professor, M.F.A., Yale University: Drawing; painting.

James H. Rubin, Professor, Ph.D., Harvard University: Art and architectural history; 18th- and 19th-century European art and criticism.

Thomas Thompson, Adjunct Lecturer, M.F.A., Ohio University: Photography and printmaking.

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 20

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 with 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.

Completion of the major requirements entails 39 credits.

1. ARH 101, 102
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: ARH 300, 301
   b. Medieval art and architecture: ARH 303, 304
   c. Renaissance art and architecture: ARH 306, 307, 310, 337
   d. Baroque or 18th-century art and architecture: ARH 314, 315, 316, 320
   e. Modern art and architecture (19th or 20th century): ARH 322, 331, 332, 341, 342
   f. Far Eastern, African, Oceanic, Native American, or pre-Columbian art and architecture: ARH 201, 203, 318, 326, 327, 328, 329
   g. Architecture: ARH 205, 324
3. ARS 151 and ARS 152 *or*—especially for students planning graduate work in art history—a year of French or German in addition to the college entry skill in foreign language requirement
4. In consultation with the departmental advisor, six credits in humanities or social sciences, in addition to the courses taken for D.E.C. requirements and the recommended language year under item 3, above, and not including any course crosslisted with an art course
5. Upper-Division Writing Requirement: Students must demonstrate acceptable writing skills before they graduate. Before the end of the second semester of his or her junior year, each student majoring in art history and criticism must submit to the director of undergraduate studies three term papers for art history courses together with each instructor's satisfactory evaluation, confirming that the paper demonstrates advanced writing proficiency suitable for art history majors. At least two of the papers must have been written for upper-division courses and for different instructors. The student must notify the instructor before each paper is turned in that it is intended to satisfy this requirement in addition to the

course requirements. A student anticipating or experiencing difficulty in satisfying this requirement should seek the advice of the director of undergraduate studies as soon as possible.

Notes:

1. Of the total credits in art or related fields required for the major, only three may be taken for 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.

Completion of the major requirements entails 57 credits.

1. ARH 101, 102
2. ARS 151, 152, 153
3. ARH 342
4. At least six additional credits in art history/criticism, of which at least three must be in modern (i.e., one course from ARH 322, 324, 331, 332, or 341)
5. Thirty-three additional credits in studio art, of which 12 credits must be in upper-division courses
6. The courses in item 5 must be distributed to include at least one course in four of the following areas:
   a. Painting and drawing: ARS 250, 351, 352, 359, 452
   b. Printmaking: ARS 374, 375, 471, 472
   c. Ceramics: ARS 264, 364
   d. Sculpture: ARS 365, 366, 465, 466
   e. Design: ARS 395, 396
   f. Photography: ARS 281, 381
7. At least 12 credits of item 5 must be in studio/theory courses (see note 4, below)
8. Upper-Division Writing Requirement: Students must demonstrate acceptable writing skills before they graduate. Before the end of the second semester of his or her junior year, each student majoring in studio art must submit to the director of undergraduate studies three term papers for art history courses together with each instructor's satisfactory evaluation, confirming that the paper demonstrates advanced writing proficiency suitable for studio art majors. At least two of the papers must have been written for upper-division courses and for different instructors. The student must notify the instructor before each paper is turned in that it is intended to satisfy this requirement in addition to the course requirements. A student anticipating or experiencing difficulty in satisfying this requirement should seek the advice of the director of undergraduate studies as soon as possible

Notes:

1. Students are reminded that in the studio program only those courses designated as studio/theory courses (see note 4, below) may count toward the 90 liberal arts credits required for the B.A. degree (see p. 78).
2. Of the total credits required for the major, only one ARH course may be taken for 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. The following are studio/theory courses: ARS 351, 352, 359, 364, 365, 366, 374, 375, 381, 395, 396, 425, 452, 465, 466, 471, 472, 475, 487, 491, 492

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/criticism area, the student's research project is supervised by the honors advisor. In the studio art area, the student is 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 is 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.

If the honors program is completed with distinction, and the student achieves a 3.5 grade point average in all art courses taken in the senior year, honors are conferred.

Minor in Art History

The minor in art history requires 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:

1. ARH 101, 102
2. An ancient, medieval, Far Eastern, African, Oceanic, Native American, or pre-Columbian art course
3. A Renaissance, baroque, or modern art course
4. Six additional credits in the area of concentration
5. ARH 400, 401, 402, 403, 487, or 488 in the area of concentration

Minor in Studio Art

The minor in studio art requires 21 credits, distributed as follows:

1. Two of the following courses: ARS 151, 152, 153
2. Fifteen additional studio credits, of which at least nine must be upper division

Minor in Design

The minor in design requires 21 credits.

1. ARS 395
2. ARS 396
3. An additional ARS or ARH lower-division course chosen in consultation with minor advisor
4. ARH 205
5. ARH 324
6. Any six-credit combination of ARH 485, 487, 488 and ARS 487

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

Many courses in the Art Department require one or more trips to New York City museums and galleries.

Art History/Criticism

ARH 101-D 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 expressions of the needs, ideals, and aspirations of the particular society in which they were created.
Fall and spring, 3 credits

ARH 102-D Art in Culture from the Early Renaissance, ca.1400, to Postmodernism
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 expressions of the needs, ideals, and aspirations of the particular society in which they were created.
Fall and spring, 3 credits

ARH 201-D Native Arts of Africa, Oceania, and the Americas
An introduction to the native arts of Africa, Oceania, and the Americas. Following discussion of basic concepts in studying non-Western art, the course focuses on comparing and contrasting the arts of particular societies in each of these regions from ancient times to the present.
Fall, 3 credits (not offered in 1995-96)

ARH 203-J Survey of Far Eastern Art
A general course on Far Eastern art covering India, China, and Japan from its beginnings to the present. Emphasis is on the major arts of painting and sculpture, with some reference to architecture.
Prerequisite: ARH 101 or 102
Fall or spring, 3 credits (not offered in 1995-96)

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.
Prerequisite: ARH 102
Spring, 3 credits (not offered in 1996-97)

ARH 205-G Introduction to Architecture
An introduction to the discipline of architecture through various interpretations of its technological and cultural functions. Focusing on the history of architecture's engagement with engineering, anthropology, sociology, and politics, this course explores changing conceptions of the nature and the task of architecture.
Fall, 3 credits

ARH 299 Gallery Management Workshop
Development of practical skills in the business and managerial problems of an art gallery. Assigned readings focus on arts administration, arts conservation, and connoisseurship. May be repeated once.
Prerequisite: ARH 101 or 102
Fall or spring, 1 credit

ARH 300-I 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; two other courses from among D.E.C. categories B, G, and I
Fall or spring, 3 credits

ARH 301-I 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; two other courses from among D.E.C. categories B, G, and I
Fall or spring, 3 credits

ARH 303-I 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; two other courses from among D.E.C. categories F, G, and I
Fall or spring, 3 credits

ARH 304-I 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 is on the development in northern Europe.
Prerequisites: ARH 101; two other courses from among D.E.C. categories F, G, and I
Fall or spring, 3 credits

ARH 306-I 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.
Prerequisites: ARH 101; two other courses from among D.E.C. categories B, G, and I
Fall or spring, 3 credits

ARH 307-I 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 102; two other courses from among D.E.C. categories B, G, and I
Fall or spring, 3 credits

ARH 310-I Renaissance Art in Venice
Venetian painting of the 15th and 16th centuries studied through the works of such major figures as Bellini, Mantegna, Giorgione, Titian, Veronese, and Tintoretto, stressing the special character and continuity of the art of Venice.
Prerequisites: ARH 102; two other courses from among D.E.C. categories B, G, and I
Fall or spring, 3 credits (not offered in 1996-97)

ARH 314-I Baroque Painting in the Netherlands
The work of the major Flemish and Dutch painters of the 17th century with special emphasis on Rubens, Van Dyck, and Rembrandt. The various genres that flourished in Holland in the 17th century (portraiture, genre painting, landscape, etc.) are studied through the works of the major figures in each field, such as Hals, Vermeer, and van Ruisdael.
Prerequisites: ARH 102; two other courses from among D.E.C. categories B, G, and I
Fall or spring, 3 credits (not offered in 1995-96)

ARH 315-I Spanish Painting, 1560-1700
Painting in Spain from El Greco to Murillo. Special emphasis is given to the principal figures working during this golden age of the arts, among them Zurbaran, Ribera, and Velazquez.
Prerequisites: ARH 102; two other courses from among D E.C. categories B, G, and I
Fall or spring, 3 credits (not offered in 1995-96)

ARH 316-I Baroque Art in Italy and France
Italian and French painting and sculpture in the 17th century. The painting of Caravaggio, the Carracci, and their schools, and the sculpture of Bernini are studied in detail with special emphasis on Rome. The study of French art in both Italy and France focuses particularly on the painting of the French caravaggisti, on Poussin and Claude Lorrain, and on the sculptors of Versailles.
Prerequisites: ARH 102; two other courses from among D.E.C. categories B, G, and I
Fall or spring, 3 credits (not offered in 1996-97)

ARH 318-J 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; two other courses from D.E.C. category J; Chinese history or philosophy courses recommended.
Fall or spring, 3 credits (not offered in 1996-97)

ARH 320-I Art of the 18th Century
A study of the development of 18th-century European art from rococo to neoclassicism.
Prerequisites: ARH 102; two other courses from among D.E.C. categories B, G, and I
Fall or spring, 3 credits

ARH 322-G American Art Since 1947
A survey of painting and sculpture in New York, including abstract expressionism, "hard edge" painting, pop art, minimal art, earthworks, protest art, and postmodernism.
Prerequisites: ARH 102; two other courses from among D.E.C. categories B, D, and G
Fall or spring, 3 credits

ARH 324-G 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 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 postmodernism.
Prerequisites: ARH 101, 102; two other courses from among D.E.C. categories F, G, and I
Fall or spring, 3 credits

ARH 326-J Arts of Ancient Mesoamerica
A survey of the artistic and cultural achievements of the major civilizations of Central America prior to the European conquest. Emphasis is on architectural and sculptural art forms and the ritual, social, and political contexts within which they were created.
Prerequsite: ARH 201
Fall or spring, 3 credits (not offered in 1995-96)

ARH 327-J Arts of Central Africa
A study of the arts of Central Africa from ancient to contemporary civilizations. Emphasis is primarily on the history of sculptural traditions, especially figurative sculpture and masquerade. These arts are examined in their political, social, and cultural contexts, as objects of ritual and religious practices, and as evidence of aesthetic choices and achievements.
Prerequisite: ARH 201
Fall or spring, 3 credits (not offered in 1995-96)

ARH 328-J Arts of West Africa
A study of the arts of West Africa from ancient to contemporary civilizations. Emphasis is primarily on the history of sculptural traditions, especially figurative sculpture and masquerade. These arts are examined in their political, social, and cultural contexts, as objects of ritual and religious practices, and as evidence of aesthetic choices and achievements.
Prerequisite: ARH 201
Fall or spring, 3 credits (not offered in 1995-96)

ARH 329-G Arts of the African Diaspora
A study of the arts of the African Diaspora from the African continent to Brazil, Surinam, the Caribbean, and the United States. Emphasis is on the full range of art forms, including not only sculptural and performance traditions but also textiles, basketry, and other craft traditions. Cultural continuities, spiritual belief, and significant changes in context, meaning, style, and technology are examined. Crosslisted with AFH 339.
Prerequisite: ARH 201
Fall or spring, 3 credits (not offered in 1995-96)

ARH 331-K American Art to 1890
A chronological and thematic survey of painting, sculpture, and architecture from the colonial period to the post-Civil War period. The course explores the theme of American pluralism, addressing such areas as Hispanic and European influences in American architecture; the imaging of encounter and ideologies of westward expansion; the construction of gender in the arts; the image of the Native American and the African American; the woman and African American artist.
Prerequisites: ARH 101 or 102; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits

ARH 332-K Art of the United States, 1890-1930
American painting, sculpture, and architecture from the period spanning Progressivism and the rise of modern urban commercial culture to the end of World War II, emphasizing major events and various social, cultural, and ethnic influences. The course explores the theme of American pluralism, addressing such areas as the construction of race, gender, ethnicity, and class in the arts and the impact of immigration, urbanization, and commercial culture.
Prerequisites: ARH 101 or 102; ARH 331 recommended; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits

ARH 337-I Northern Renaissance Art
Painting and graphic art in the Netherlands and Germany in the 15th and 16th centuries are studied with special emphasis on the major figures of this period, from van Eyck and van der Weyden to Dürer, Holbein, and Bruegel.
Prerequisites: ARH 101 and 102
Fall or spring, 3 credits (not offered in 1995-96)

ARH 341-I Art of the 19th Century
A survey of European art from about 1780 to 1890. Emphasis is on individual artists, artistic attitudes, and progression of style. Art is examined in its historical and cultural contexts. Movements studied include neoclassicism, romanticism, realism, and impressionism.
Prerequisites: ARH 102; two other courses from among D.E.C. categories B, D, and G
Fall or spring, 3 credits

ARH 342-G Art of the 20th Century
The major movements and individual artists in 20th-century painting and sculpture, including reference to the broader sociocultural context of art.
Prerequisites: ARH 102; two other courses from among D.E.C. categories B, D, and G
Fall or spring, 3 credits

ARH 349-G The Creative Process in the Fine Arts
An examination of the creative process and its philosophical foundations in Western culture. Students 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 MUS 101 or 119 or THR 101 or 104 or 114
Fall or spring, 3 credits

ARH 350-G Film Genre as Popular Art
An examination of genre films, their origins, essences, manifestations, and the function of this popular art within contemporary society. The western, musical, gangster, and horror/science fiction genres are explored through such films as *Dracula* (1979), *Cabaret* (1972), *Invasion of the Body Snatchers* (1956), and *Blazing Saddles* (1974).
Prerequisite: THR 117 or HUM 201 or 202
Spring, 3 credits

ARH 351-G The Film Director as Artist
An examination of the film director as the primary creative force in filmmaking. The semester is devoted to works produced by an individual director from conception and production to final form. A contemporary director is chosen as the subject, such as Steven Spielberg, Woody Allen, Martin Scorsese, Bob Fosse, Ingmar Bergman, Frederico Fellini, or Mel Brooks. May be repeated once.
Prerequisite: One course chosen from ARH 350, CSL 335, HUF 211, HUG 221, HUI 231, HUM 201 or 202, HUR 145, or THR 117
Fall or spring, 3 credits

ARH 360-G Art and Eros
A study of erotic imagery in various cultures and its psychosocial significance. A typology of erotic images is developed. The approach is largely, but not exclusively, psychoanalytic, both Freudian and object relational. The social context is brought in through stylistic considerations.
Prerequisites: ARH 101 or 102; PSY 103 or 104 recommended
Fall, 3 credits

ARH 400-403 Topics in Art History and Criticism
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 topic varies.
Prerequisites: ARH 101 or 102; one other ARH course, varying with topic
Schedule to be announced. 3 credits each

ARH 404 Topics in Film Studies and Criticism
Advanced treatment of a topic relating to film studies and criticism. May be repeated as the topic varies.
Prerequisites: Two of the following: ARH 350, 351, CSL 335, HIS 267, HUM 201, 202, THR 117
Schedule to be announced, 3 credits

ARH 475 Undergraduate Teaching Practicum
Each student periodically conducts a recitation section that supplements a regular art course. The student receives 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 carries out an assignment including reading; examination of a single work or a group of works from a particular style or 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 department's director of undergraduate studies for the list of possible projects. May be repeated once.
Prerequisites: ARH 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 fieldwork in art history or criticism conducted under the supervision of a faculty member. The course may be repeated up to 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, arts agencies, and art historical societies. Students are 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 six credits may count toward the major in art history/criticism and no more than three credits may count toward the major in studio art. Satisfactory/Unsatisfactory grading only.
Prerequisites: Fifteen credits in the Art Department, of which at least six 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

In all studio courses a studio fee is assessed for the costs of equipment, certain materials, and models. In addition, students in all ARS courses are expected to purchase certain supplies. Each instructor provides a list of the supplies needed.

Only those courses designated as studio/theory courses (see "Notes" for the ARS major) may count toward the 90 liberal arts credits required for the B.A. degree.

ARS 150-D Fundamentals of Drawing
An introductory course intended for non-art majors. Emphasis is on drawing techniques.
Fall or spring, 3 credits

ARS 151-D Fundamentals of Composition, Still Life, Painting, and Drawing
An introduction to drawing and painting media and techniques, and to the study of color, perspective, and composition.
Fall and spring, 3 credits

ARS 152-D Fundamentals of 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.
Fall and spring, 3 credits

ARS 153-D Fundamentals of Sculpture and Three-Dimensional Design
An exploration of basic sculptural ideas and techniques including construction, modeling, carving, and casting, and the use of sculptural media such as wood, plaster, plastics, and clay. The elements of three-dimensional design and composition are also emphasized.
Fall and spring, 3 credits

ARS 174-D Beginning Printmaking
An introduction to printmaking. Demonstrations and lectures treat printmaking techniques and print shop procedures. Students are introduced to intaglio (etching, drypoint, engraving), relief (wood block, line block) monoprinting, and if time permits, lithography.
Fall and spring, 3 credits

ARS 208 Technology in the Arts
A multidisciplinary, hands-on introduction to the concepts and techniques of computer-influenced art, combining art, music, and theatre. Students explore computer creation and manipulation of sounds and images, as well as various ways of combining them. Current creative work using these techniques is studied. Crosslisted with MUS 208 and THR 208.
Prerequisites: MUS 222 or THR 216 or six credits of ARS courses; permission of instructor
Fall, 3 credits

ARS 250 Life Drawing and Painting
Drawing and painting of the human figure. May be repeated once.
Prerequisites: ARS 151, 152
Fall or spring, 3 credits

ARS 264-D Ceramics
Investigation of ceramic ware and ceramic sculpture utilizing a wide variety of technical approaches in earthenware and stoneware clay bodies. The course offers a technical and conceptual foundation for clay construction, low- and high-fire glazing, and multiple finishing techniques using gas and electric firing processes.
Prerequisite: ARS 153
Fall or spring, 3 credits

ARS 281-D Photography I
An intensive course with extensive practice and experimentation in the aesthetics, techniques, and materials of black-and-white photography. It is expected that the student's academic program or vocational objectives require a legitimate need for photographic training, and the course is structured accordingly. Students must provide their own 35mm camera equipped with a single focal length normal lens (no zoom lens) and the ability for full manual operation. They must expect to spend approximately $450 during the semester on materials.
Prerequisites: Sophomore standing; interview; permission of instructor
Fall, 3 credits

ARS 317 Interactive Performance, Media, and MIDI
Practical and theoretical issues related to interactive performance, combining elements of art, music, theatre, performance art, video, and computer science. Course topics include sound synthesis, sampling, video, lighting, alternative input, and MIDI. This hands-on course stresses small experimental-creative laboratory assignments and culminates in final small-group or individual projects. Crosslisted with MUS 317 and THR 317.
Prerequisites: At least one 200- or 300-level ARS, MUS, or THR studio or performance course
Spring, 3 credits

ARS 351 Intermediate Painting: Theory and Practice I
Painting and drawing studio; practice and theory stressing exploration of media and crafts, historical styles, and individual development.
Prerequisites: ARH 101, 102; ARS 151, 152
Fall, 3 credits

ARS 352 Intermediate Painting: Theory and Practice II
A continuation of ARS 351, stressing the individual development of the student as a maturing artist through critiques of the student's work and discussion of contemporary and historical issues in art.
Prerequisite: ARS 351
Spring, 3 credits

ARS 355 Anatomical and Biological Illustration
An introduction to human anatomy for the studio artist who is interested in biological illustration. The course provides an introduction to techniques of illustration utilizing as subject matter the skeleton, prosection, and cadaver dissection. Details of human anatomy are often discussed by comparison of humans with other vertebrates. Lectures precede each laboratory/studio class and involve proportion, topographic and surface anatomy, bone-muscle relationships and human movement, comparative forms of visceral organs, and the comparative anatomy of humans and higher primates. Crosslisted with HBA 325.
Prerequisite: ARS 152 or BIO 101 or 151 or 171
Fall or spring, 3 credits

ARS 359-G Theory and Practice of Conceptual Drawing
The further study of different processes and methods of generating drawings, encouraging individual expression. Slide presentations, assigned readings, and gallery visits are part of the student's experience.
Prerequisites: ARS 151, 152; ARH 102
Fall or spring, 3 credits

ARS 364 Advanced Theory and Practice of Ceramics
An advanced course in ceramics stressing sophisticated sculptural forms and techniques in earthenware, stoneware, porcelain, and raku clay bodies. Class work is based on individual projects stressing expression of ideas and image making. Additional techniques of mold making, slip casing, and raku firing enlarge the repertoire of construction and surface finishes.
Prerequisite: ARS 264
Fall or spring, 3 credits

ARS 365 Theory and Practice of Sculpture: Wood, Metal, and Mixed Media
Theory, techniques, and formal principles of wood sculpture, including carving and constructions; metal sculpture, including welding, forming, and finishing; and related concepts and techniques in mixed-media sculpture.
Prerequisite: ARS 153
Fall or spring, 3 credits

ARS 366 Theory and Practice of Sculpture: Modeling, Casting, and Carving
Theory, practice, techniques, and formal principles of clay modeling, plaster casting, carving, and related techniques.
Prerequisite: ARS 153
Fall or spring, 3 credits

ARS 374 Theory and Practice of Printmaking: Intaglio Processes
Further development of the craft of black-and-white intaglio printing, utilizing various methods including dry point, engraving, etching, soft ground, and aquatint, with an emphasis on the history of printmaking.
Prerequisites: ARS 151 or 152; ARS 174
Fall or spring, 3 credits

ARS 375 Theory and Practice of Printmaking: Lithography
Demonstrations and hands-on work in the basic techniques of direct lithographic printing from limestone, primarily in black and white, with an emphasis on the history of printmaking.
Prerequisites: ARS 151 or 152; ARS 174
Fall or spring, 3 credits

ARS 381 Theory and Practice of Photography
An advanced course in the theory and practice of black-and-white photography utilizing 35 mm or larger cameras, lenses, materials, and varied processes. Further exploration of photography as a means of personal visual expression along with a continued intensive examination and application of materials and refined techniques. Students must provide their own cameras and materials.
Prerequisites: ARS 281; permission of instructor after interview and review of portfolio
Fall or spring, 3 credits

ARS 395-G Theory and Practice of Two-Dimensional Design
The exploration, analysis, and interpretation of the formal organization of visual elements on two-dimensional surfaces. Elements of design such as line, shape, value, color, and space (including perspective studies) are analyzed and applied to projects according to principles that develop a unity in the total work of art. Relevant works from non-Western cultures are explored as well.
Prerequisite: ARS 151
Fall or spring, 3 credits

ARS 396-G Theory and Practice of Three-Dimensional Design
The exploration, analysis, and interpretation of the formal organization of the visual elements in three-dimensional space. Elements such as mass, volume, plane, shape, and line are analyzed and applied to projects in varied media according to principles that develop a unity in the total work of art. Relevant works from non-Western cultures are also discussed in each section of the course.
Prerequisite: ARS 153
Fall or spring, 3 credits

ARS 425 Computer Imaging Workshop
An exploration of computer imaging and its applications in the arts and sciences, intended for the student prepared to work independently in his or her discipline on computer imaging problems.
Prerequisites: Upper-division standing; ARS/MUS/THR 208; ARS 151 or 281 or 395 or 396; interview; permission of instructor
Fall or spring, 3 credits

ARS 452 Advanced Theory and Practice of Painting
Examination of ideas and techniques of painting through studio, lecture, critique, exhibition, and painting assignments. May be repeated once.
Prerequisites: ARS 351, 352; ARH 342
Spring, 3 credits

ARS 465 Advanced Theory and Practice of Sculpture: Welding, Construction, and Related Techniques
An advanced course in the theory, techniques, and formal principles of wood sculpture, including carving and constructions; metal sculpture, including welding, forming, and finishing; and related concepts and techniques in mixed media sculpture. May be repeated once.
Prerequisites: ARS 365; ARH 342
Fall or spring, 3 credits

ARS 466 Advanced Theory and Practice of Sculpture: Modeling, Carving, and Casting
A course in advanced sculpture utilizing clay and wax modeling. Representational sculptures, including work from a nude model, and more abstract works are developed. Advanced reproduction techniques (including plaster and flexible rubber molds) are used with subsequent castings in a variety of media such as plaster, polyester resin, and metal. May be repeated once.
Prerequisites: ARS 366; ARH 342
Fall or spring, 3 credits

ARS 471 Advanced Theory and Practice of Printmaking: Intaglio Processes
Continued development of intaglio techniques, emphasizing a variety of multi-plate and single-plate color printing processes, and tailored to the individual requirements of advanced students.
Prerequisite: ARS 374
Fall or spring, 3 credits

ARS 472 Advanced Theory and Practice of Printmaking: Lithography
Continued development of lithographic techniques, emphasizing methods of stone and plate lithography and leading to the production of printed single- and multi-colored editions.
Prerequisite: ARS 375
Fall or spring, 3 credits

ARS 475 Undergraduate Teaching Practicum: Theory and Practice
Each student assists in the instruction of a studio section. The student receives regularly scheduled supervision from the instructor. Responsibilities may include helping students to familiarize themselves with various studio and darkroom techniques and 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 487 Advanced Directed Projects in Studio Theory and Practice
Advanced projects for outstanding students in areas of their specific interest. Students work independently in their area of concentration under the guidance of a sponsor, with whom they meet periodically for critique and discussion of work. Specific assignments, reports, readings, and field trips may be required. May be repeated once.
Prerequisites: Advanced status in one of the studio areas; sponsorship of a faculty member; permission of department
Fall and spring, 1 to 3 credits

ARS 491, 492 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 semester

Center for Behavioral Neuroscience

Director: David G. Amaral

Director of Undergraduate Studies: Howard B. Eichenbaum

Faculty

David G. Amaral, Professor, Ph.D., University of Rochester: Anatomical organization of memory systems.

Howard E. Eichenbaum, Professor, Ph.D., University of Michigan, Ann Arbor: Behavioral physiology and neuropsychology of memory.

Peter R. Rapp, Assistant Professor, Ph.D., University of North Carolina at Chapel Hill: Neuropsychology and anatomy of aging and memory.

The Center for Behavioral Neuroscience is dedicated to research and both graduate and undergraduate education regarding the role of brain systems that underlie complex behaviors, with a particular emphasis on learning and memory. The undergraduate curriculum is designed to provide a survey of knowledge in this broad multidisciplinary area. The courses listed below are intended to complement and enhance electives toward the undergraduate majors in biology and psychology. Students preparing for graduate study in the area of behavioral neuroscience should design a program that includes behavioral neuroscience courses in consultation with the center's director of undergraduate studies.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

CBN 241-F Brain and Behavior: Introduction to Behavioral Neuroscience
Introduction to the neural basis of sensor processes, motor control, attention, emotion, and learning. Crosslisted with PSY 241.
Prerequisite: PSY 103 or 104 or BIO 101 or 151 or 171
Fall, 3 credits

CBN 340 Behavioral Neuroscience
An advanced survey of the neurobiological bases of complex behavior. A review of basic neurophysiology, neuroanatomy, and neurochemistry is followed by considerations of the circuitry and neural processing supporting perception, motion, emotion, sleep, attention, learning, language, and higher cognitive mechanisms. Crosslisted with PSY 340.
Prerequisite: BIO 152 or 172 or CBN/PSY 241
Spring, 3 credits

CBN 350 Neurobiology of Learning and Memory
A survey of research on the neural basis of learning and memory in humans and laboratory animal models. Topics include cellular mechanisms of neural plasticity, learning and memory in simple nervous systems, the organization of memory in the mammalian brain, and the neurobiology of memory decline during aging.
Prerequisite: CBN/PSY 340 or BIO 334
Spring, 3 credits

Division of Biological Sciences

Director of Undergraduate Studies (Biology Major): George J. Hechtel

Director of Undergraduate Studies (Biochemistry Major): Raghupathy Sarma

Divisional Teaching Assistants
Estimated number: 58

Department of Biochemistry and Cell Biology

Chairperson: William Lennarz

Faculty

Paul M. Bingham, Associate Professor, Ph.D., Harvard University: Regulation of transcription in and transposon biology of developing multicellular organisms.

Deborah Brown, Assistant Professor, Ph.D., Stanford University: Trafficking of membrane proteins in polarized epithelial cells.

David Bynum, Adjunct Associate Professor, Ph.D., Dartmouth College: Cell motility. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1988, and the President's Award for Excellence in Teaching, 1988.

Elof Axel Carlson, Distinguished Teaching Professor, Ph.D., Indiana University: Mutation and gene structure; history of genetics; human genetics.

Vincent P. Cirillo, Professor Emeritus, Ph.D., University of California, Los Angeles: Membrane transport processes in yeast and bacteria.

Vitaly Citovsky, Assistant Professor, Ph.D., Hebrew University: Nuclear targeting and intercellular communication in plants.

Neta Dean, Assistant Professor, Ph.D., University of California, Los Angeles: Molecular genetics and protein sorting in yeast.

Dale G. Deutsch, Associate Professor, Ph.D., Purdue University: Molecular biology of marijuana action.

Bernard S. Dudock, Professor, 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, 1974.

Martin Freundlich, Professor, Ph.D., University of Minnesota: Regulation of gene expression.

J. Peter Gergen, Associate Professor, Ph.D., Brandeis University: Molecular biology; genetics of embryonic development in *Drosophila.*

Robert Haltiwanger, Assistant Professor, Ph.D., Duke University: Glycosylation of nuclear and cytoplasmic proteins.

Bernadette Holdner, Assistant Professor, Ph.D., University of Illinois-Chicago: Development and genetic regulation of mouse gastrulation; genome organization.

Nancy Hollingsworth, Assistant Professor, Ph.D., University of Washington, Seattle: Analysis of meiotic chromosome recombination, synapsis, and segregation in yeast.

Abraham D. Krikorian, Professor, Ph.D., Cornell University: Plant growth and development.

William Lennarz, Professor, Ph.D., University of Illinois: The role of glycoproteins in cellular and developmental biology.

Erwin London, Associate Professor, Ph.D., Cornell University: Membrane biochemistry and biophysics.

Harvard Lyman, Associate Professor and Graduate Studies Director, Ph.D., Brandeis University: Photoregulation of chloroplast development and replication. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1991, and the President's Award for Excellence in Teaching, 1991.

Kenneth B. Marcu, Professor, Ph.D., State University of New York at Stony Brook: Organization, mechanisms of expression, and evolution of eukaryotic multigene systems.

Carl Moos, Associate Professor Emeritus, Ph.D., Columbia University: Molecular mechanisms of muscle contraction.

Glenn D. Prestwich, Professor, Ph.D., Stanford University: Bioorganic chemistry; biochemistry and structural biology; biotechnology.

Raghupathy Sarma, Associate Professor, Ph.D., Madras University: X-ray crystal structure analysis of molecules of biological interest.

Nisson Schechter, Professor, Ph.D., Western Michigan University: Molecular basis of nerve growth and regeneration.

Jakob Schmidt, Professor, Ph.D., University of California, Riverside; M.D., University of Munich: Neurochemistry.

Richard B. Setlow, Adjunct Professor, Ph.D., Yale University: DNA repair; biological effects of ultraviolet and ionizing radiation.

Sanford R. Simon, Associate Professor, Ph.D., Rockefeller University: Structure-function relationships in hemoglobin; membrane biochemistry.

Melvin V. Simpson, Professor Emeritus, Ph.D., University of California, Berkeley: Replication of mitochondrial DNA; conformational changes in ribosomes.

Rolf Sternglanz, Professor, Ph.D., Harvard University: DNA replication.

F. William Studier, Adjunct Professor, Ph.D., California Institute of Technology: Genetics and physiology of bacterial viruses.

William E. Theurkauf, Assistant Professor, Ph.D., Brandeis University: Microtubules and microfilaments in early development.

Gerald H. Thomsen, Assistant Professor, Ph.D., Rockefeller University: Vertebrate molecular embryology: cell-cell signaling and group factor function.

James S. Trimmer, Assistant Professor, Ph.D., University of California, San Diego: Molecular neurobiology; structure, function, and regulation of voltage-sensitive ion channels.

Department of Ecology and Evolution

Chairperson: Walter F. Eanes

Faculty

Edwin H. Battley, Associate Professor, Ph.D., Stanford University: Thermodynamics of microbial growth; ecological energetics; microbial ecology; nitrification and denitrification in aquatic systems.

Michael A. Bell, Associate Professor, Ph.D., University of California, Los Angeles: Evolutionary biology; population genetics; ichthyology; paleobiology and geographic variation.

Barbara L. Bentley, Professor, Ph.D., University of Kansas: Nitrogen fixation; plant-animal interactions; tropical ecology.

Daniel E. Dykhuizen, Professor, Ph.D., University of Chicago: Molecular evolution; population genetics; bacterial population biology.

Walter F. Eanes, Professor, Ph.D., State University of New York at Stony Brook: Population and biochemical genetics of *Drosophila;* molecular evolution.

Douglas J Futuyma, Professor and Graduate Studies Director, Ph.D., University of Michigan: Ecological genetics; coevolution of species, especially of plants and insects; effects of evolution on the structure of ecological communities. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974.

Lev R. Ginzburg, Professor, Ph.D., Agrophysical Institute, Leningrad: Evolutionary theory; mathematical population genetics; theoretical and applied ecology.

Jessica Gurevitch, Associate Professor, Ph.D., University of Arizona: Evolutionary ecology of plant populations and communities; plant physiological ecology.

George J. Hechtel, Associate Professor, Ph.D., Yale University: Systematics and zoogeography of marine demospongiae. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1982.

Charles H. Janson, Associate Professor, Ph.D., University of Washington, Seattle: Social ecology of vertebrates; plant dispersal strategies.

Manuel T. Lerdau, Assistant Professor, Ph.D., Stanford University: Plant ecology and physiology; global change.

Jeffrey S. Levinton, Professor, Ph.D., Yale University: Marine benthic ecology; population genetics of bivalve mollusks; paleoecology.

Axel Meyer, Associate Professor, Ph.D., University of California, Berkeley: Molecular evolution of behavior and morphology in fishes.

F. James Rohlf, Professor, Ph.D., University of Kansas: Multivariate data analysis applied to taxonomy and ecology; applied ecology.

Lawrence B. Slobodkin, Professor, Ph.D., Yale University: Evolutionary strategy and constraints; Hydra; ecotoxicology.

Robert R. Sokal, Distinguished Professor, Ph.D., University of Chicago: Numerical taxonomy; theory of systematics; geographic variation; spatial models.

James D. Thomson, Professor, Ph.D., University of Wisconsin: Pollination biology; plant reproductive systems; community ecology.

George C. Williams, Professor Emeritus, Ph.D., University of California, Los Angeles: Evolution of life-history strategies; ecology and population genetics of marine fishes.

Gregory A. Wray, Assistant Professor, Ph.D., Duke University: Evolution of development; life history strategies.

Department of Neurobiology and Behavior

Chairperson: Lome M. Mendell

Faculty

Paul R. Adams, Professor, Ph.D., London University: Cellular neurobiology; synaptic transmission.

Paul Brehm, Professor, Ph.D., University of California, Los Angeles: Cellular neurobiology; synaptic transmission.

John B. Cabot, Professor, Ph.D., University of Virginia: Autonomic system.

Albert D. Carlson, Professor, Ph.D., University of Iowa: Higher brain function; comparative neurobiology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1983.

William F. Collins III, Assistant Professor, Ph.D., University of Pennsylvania: Physiology; neurophysiology.

L. Craig Evinger, Professor, Ph.D., University of Washington: Sensorimotor integration.

Joseph Fetcho, Assistant Professor, Ph.D., University of Michigan: Motor systems.

James W. Gnadt, Assistant Professor and Graduate Studies Director, Ph.D., University of Alabama: Systems neurophysiology; sensorimotor integration.

Simon Halegoua, Professor, Ph.D., State University of New York at Stony Brook: Molecular neurobiology.

Maurice Kernan, Assistant Professor, Ph.D., University of Wisconsin-Madison: Molecular neurobiology.

Mary Kriker, Assistant Professor, Ph.D., Yale University: Neurobiology of cognition.

Joel M. Levine, Associate Professor, Ph.D., Washington University: Developmental neurobiology.

Gail Mandel, Professor, Ph.D., University of California, Los Angeles: Molecular neurobiology.

Gary G. Matthews, Professor, Ph.D., University of Pennsylvania: Cellular neurobiology; synaptic transmission.

David McKinnon, Assistant Professor, Ph.D., Australian National University: Molecular biology of learning.

Susan McLaughlin, Assistant Professor, Ph.D., University of Florida: Molecular neurobiology.

Lorne M. Mendell, Professor, Ph.D., Massachusetts Institute of Technology: Sensorimotor integration.

S.M. Sherman, Professor, Ph.D., University of Pennsylvania: Functional organization and plasticity of mammalian visual systems.

Benjamin Walcott, Associate Professor, Ph.D., University of Oregon: Physiology.

Stephen Yazulla, Professor, Ph.D., University of Delaware: Physiology.

Affiliated Faculty

Marian Evinger, Pediatrics
Edmund LaGamma, Pediatrics
Stuart S. McLaughlin, Physiology and Biophysics
Jeffrey White, Endocrinology

The Division of Biological Sciences sponsors three undergraduate majors: biochemistry (BCH), biology (BIO), and pharmacology (BCP) (see p. 175). All majors lead to the Bachelor of Science degree. The division encourages students in its majors to explore the exceptional opportunities available throughout the campus for biological research. The division also offers a minor in biology.

Students may not declare a double major among biology, biochemistry, and pharmacology.

The Biochemistry Program

The undergraduate program in biochemistry provides an introduction to the chemical basis of biological phenomena. The student is prepared for graduate study in biochemistry or other biological sciences, for professional study in the health sciences, or for employment in research or industry. The program is based on a core of courses in biology, chemistry, and biochemistry, with pertinent courses in mathematics and physics.

Students with documented AP biology scores of 4 or 5 receive a waiver of BIO 151, 152 Principles of Biology (requirement B.1 below).

Requirements for the Biochemistry Major

All courses offered for the major must be taken for a letter grade. In requirements B and C below, a minimum grade point average of 2.0 must be obtained for all courses numbered 300 or above.

Completion of the major requirements entails approximately 64 to 66 credits.

A. Courses in Related Fields

1. CHE 131, 132 General Chemistry *or* 141, 142 Honors Chemistry
2. CHE 133, 134 General Chemistry Laboratory *or* 143, 144 Honors Chemistry Laboratory
3. CHE 321, 322 Organic Chemistry *or* 331, 332 Honors Organic Chemistry
4. CHE 327 Organic Chemistry Laboratory A *or* CHE 333 Organic Chemistry Laboratory B
5. CHE 301 *or* 312 Physical Chemistry
6. Calculus through MAT 127 or 132 or 142 or level 9 on the Mathematics Placement Examination
7. PHY 121, 122 Physics for the Life Sciences *or* PHY 125, 126, 127 Classical Physics A, B, C *or* PHY 131, 132 Classical Physics I, II *or* PHY 141, 142 Classical Physics I, II: Honors

B. Courses in Biological Sciences

1. BIO 151, 152 Principles of Biology *or* BIO 171, 172 Honors Biology
2. BIO 220 General Genetics
3. BIO 310 Cell Biology
4. BIO 361, 362 Biochemistry I, II
5. BIO 365 Biochemistry Laboratory

C. Advanced Electives

Two additional courses, totaling at least five credits, chosen from the following list:

BIO 315 Microbiology
BIO 317 Principles of Cellular Signaling
BIO 322 Cellular and Molecular Biology of Development
BIO 323 Plant Cell and Developmental Biology
BIO 328 Mammalian Physiology
BIO 334 Principles of Neurobiology
BIO 347 Botany and Biotechnology
BIO 366 Protein Crystallography
BIO 374 Molecular Biology of Learning and Memory
BIO 379 Developmental Neurobiology
BIO 409 Selected Topics in Biochemistry, Cell Biology, and Developmental Biology
BIO 420 Developmental Genetics
BCP 401 Principles of Pharmacology
BCP 402 Advanced Pharmacology
BCP 403 Principles of Pharmacology Laboratory
BCP 404 Advanced Pharmacology Laboratory
CHE 345 Structure and Reactivity in Organic Chemistry
CHE 346 Biomolecular Structure and Reactivity
HBP 390 Basic Mechanisms in Pathology

Additional courses to meet requirement C may be allowed each semester; a complete list is available in the Biochemistry and Cell Biology Department Office. Research may not be used to satisfy major requirements; however, biochemistry majors are encouraged to do research in biochemistry or molecular biology (BIO 487 or similar course).

D. Upper-Division Writing Requirement

To fulfill the upper-division writing requirement in biochemistry, a sample of writing from an upper-division course in biological sciences must be submitted to the Biochemistry and Cell Biology Department for evaluation by the Biochemistry Writing Committee. This writing sample can be a laboratory report, a term paper, or a report for a readings or research course, and it must contain at least 750 words of text. It is to be accompanied by a form (available in the Biochemistry and Cell Biology Department Office) signed by the student and by the instructor of the course for which the material was written. The deadline for submission of the writing sample is December 1 for students graduating in the following May or August, and May 1 for students graduating in the following December.

If the writing in this sample is judged satisfactory by the writing committee, the requirement is fulfilled. If the writing is judged unsatisfactory, the student is advised to seek help in writing skills from the Writing Center and must pass a writing examination administered by the Biochemistry and Cell Biology Department at a scheduled time prior to graduation.

Honors Program in Biochemistry

Graduation with honors in biochemistry requires (1) a cumulative grade point average of 3.5 or higher in all courses in items A, B, and C above, and (2) presentation of an acceptable thesis based on a research project performed under BIO 487, written in the format of a paper in a scientific journal. A student interested in becoming a candidate for honors should submit an outline of the proposed thesis research project to the department's honors coordinator as

early as possible, but in any case *no later than* the second week of classes in the last semester. (Acceptance of a project for BIO 487 registration does not imply automatic acceptance of that project for honors). The honors coordinator and the research sponsor appoint a thesis committee consisting of the research sponsor and two additional faculty members. Two members of the thesis committee must be from the Biochemistry and Cell Biology Department and one must be from outside the department.

The student must present a copy of the finished thesis to each member of the thesis committee and the honors coordinator at least 28 days before the date of graduation.

The Biology Program

The undergraduate program in biology introduces the principles and methodology of the biological sciences and emphasizes the breadth of biological study. 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.

Students should contact the Biology Undergraduate Studies Office for information and brochures related to the biology major and minor and for the forms mentioned in requirements and some course descriptions. The office receives completed forms and petitions concerning the biology major and minor and all requests for evaluations of transferred biology courses. The office also coordinates advising and processes graduation clearances for major and minor requirements.

Requirements for the Biology Major

All courses offered for the major must be taken for a letter grade. Courses taken under the P/NC option may *not* be applied to the major. Requests for waivers of major requirements must be approved by the Biology Undergraduate Studies Committee.

Completion of the major requirements entails approximately 65 to 67 credits.

A. Study within Biology

Thirty credits in biology, which must include the following:

1. BIO 151, 152 Principles of Biology *or* BIO 171, 172 Honors Blology
2. BIO 220 General Genetics
3. Lecture Courses: At least one lecture course in four of the following five areas of inquiry. Students in the Biology Teacher Preparation Program must take a course in each of the five areas for a letter grade.

   Area I: Cell Biology and Biochemistry
   BIO 310, 314, 315, 317, 361, 362, 366

   Area II: Genetics and Development
   BIO 220 (required), 321, 322, 323

   Area III: Neurobiology and Physiology
   BIO 328, 330, 334, 374, 379

   Area IV: Organisms
   BIO 343, 344, 346, 347, 380

   Area V: Ecology and Evolution
   BIO 351, 353, 354, 355, 357, 359, 385
4. Advanced Laboratory Experiences:
   (a) Three area laboratory courses or area lecture courses that include a laboratory, chosen from at least two areas of the following list:

Area I	BIO 365
Area II	BIO 321
Area III	BIO 335
Area IV	BIO 343, 344, 346, 380
Area V	BIO 352

   (b) A fourth laboratory experience, to be met by any of the courses listed in 4(a) or biology internship (BIO 488) or biology research (BIO 486, 487, and 489, but *not* 484). Research in other departments (including those in the Health Sciences Center) may meet this requirement, but only if approved by the Biology Undergraduate Studies Committee.
5. Study in Depth:
   Every biology 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 four ways:
   (a) a second lecture course in one of the areas of inquiry listed in section A-3
   (b) any 400-level BIO course for majors
   (c) SCI 454
   (d) an upper-division research course in another department, if approved for the major by the Biology Undergraduate Studies Committee.
6. Electives:
   Additional courses, as needed, to complete the total of 30 required credits in biology courses offered for the major. Electives may be selected from any of the area courses listed under sections 3 and 4, and from non-area courses for majors (BIO 204, 305, 306, 401-405). A maximum of two credits of readings (BIO 444, 446, 447, 449) and a maximum of six credits from biology internship and research (BIO 484, 486, 487, 488, 489) can be applied to the 30-credit requirement. (Students should note the credit limits imposed on independent study by the College of Arts and Sciences.) Up to six credits of major electives may be chosen from a diverse list of courses offered by other departments. The current list is available from the Biology Undergraduate Studies Office.
7. Quality Requirement:
   At least 26 of the 30 credits must be passed with a grade of C or higher. A grade of Satisfactory in readings, internships, and research courses applies to the quality requirement, within the credit limitations listed in requirement A-6.

B. Courses Required in Related Fields

1. One year of general chemistry with laboratory: CHE 131, 132 *or* 141, 142 and CHE 133, 134 *or* 143,144.
2. One year of organic chemistry, with one semester of laboratory: CHE 321, 322 *or* 331, 332; and CHE 327 *or* 333.
3. One year of physics with laboratory: PHY 121, 122 *or* 125, 126, 127 *or* 131, 132 *or* 141, 142.
4. Calculus: MAT 125, 126 *or* 123, 124, 126 *or* 131, 132 *or* 141, 142 *or* level 8 or 9 on the Mathematics Placement Examination.
5. A semester of probability and statistics: BIO 305 *or* AMS 110 *or* AMS 310.
6. At least one semester of general chemistry lecture, organic chemistry lecture, physics, and calculus must be passed with a grade of C or higher.

C. Upper-Division Writing Requirement

The advanced writing component of the major in biology requires approval by the writing committee of either:

(a) a term paper written for an upper-division course in biological or health sciences at Stony Brook (including readings and research), *or*
(b) two laboratory reports from a single upper-division course in biological or health sciences at Stony Brook.

A list of currently participating courses is available in the Biology Undergraduate Studies Office. Students who wish to use material from a participating course should obtain the necessary form and present it to the course director prior to submission of the material. The course

director will provide a special evaluation of the writing (in addition to a grade), and send the completed form to the Biology Writing Committee. Materials from other biology courses may be used if they include a suitable writing component. They must be submitted to the writing committee (through the undergraduate office), together with the form signed by the instructor.

Students are urged to submit appropriate materials in their junior year, or by the end of their next-to-last term, in order to allow for evaluation and possible remedial effort. Later submissions are considered, but may delay graduation. If material is rejected, the student is urged to attend the Writing Center (or to take an appropriate course) before resubmitting the paper or material from another biology course.

Application of Advanced Placement and Transfer Credits to Biology Requirements

Students with documented AP biology scores of 4 or 5 receive a waiver of BIO 151, 152 Principles of Biology, and six transfer credits are applied to both the total required credits and the quality requirement (Section A-7).

Biology courses taken elsewhere apply to major requirements only if authorized by the biology transfer evaluator or if listed in the "major requirements" column of a Stony Brook transfer booklet. Transfer students must take at least 15 of the 30 required biology credits at Stony Brook. If transfer students (1) have to take BIO 151, BIO 152, or both or (2) take BIO 171, BIO 172, or both at Stony Brook, they may not use those credits toward the 15. At least 12 of the 15 credits must be in BIO-designator courses. Thirteen of the 26 quality credits (Section A-7) must be earned at Stony Brook. At least two of the advanced laboratory experiences (Section A-4), including one area laboratory, must be taken at Stony Brook. Transfer students may meet Section B requirements with transferred courses, if the courses are approved as being equivalent (even if the number of credits is different).

Biology Teacher Preparation Program

This program is designed for the biology major who is preparing to teach in junior or senior high school. Professional courses are provided through the Center for Science, Mathematics, and Technology Education (see alphabetical listing, Science, Mathematics, and Technology Education). Guidelines used by the teacher selection committee include a minimal overall G.P.A. of 2.7 (at Stony Brook and previous institutions). Students in the Biology Teacher Preparation Program must complete a lecture course in each of the five areas of inquiry (see Section A-3).

Honors Programs in Biology and in Biology and Society

Biology majors with a G.P.A. of at least 3.0 overall, and 3.5 or higher in courses taken for the major, are eligible to apply for candidacy in the honors program in biology or in biology and society. Students normally apply for honors prior to the beginning of their last semester, using a form available in the Biology Undergraduate Studies Office. The application includes a proposal or interim report, endorsed by the research sponsor. If the proposal is accepted, the Undergraduate Studies Committee appoints an honors thesis committee, consisting of the sponsor and two additional faculty members, one of them from a different department than that of the sponsor. The committee advises the student and evaluates the thesis. Completion of an honors program involves:

a) Maintenance of a cumulative G.P.A. of at least 3.0 overall and 3.5 or higher in all courses required for the major.

b) Participation in research, normally for two semesters, including enrollment in BIO 486, 487, 488, or 489 or approved equivalents (for honors in biology), or in BIO 484 (for honors in biology and society).

c) Preparation of a thesis, based on the research, in the format of a paper in a scientific journal. The thesis must be approved by the honors thesis committee, which should receive the thesis no later than two weeks before the end of classes.

Requirements for the Minor in Biology

The biology minor, which is for students in majors other than biology, biochemistry, or pharmacology, requires completion of at least 20 credits in those biology courses designed for the biology major, including:

A. BIO 151 Principles of Biology: From Organisms to Ecosystems *or* BIO 171 Honors Biology: Organisms to Ecosystems
B. BIO 152 Principles of Biology: From Molecules to Organisms *or* BIO 172 Honors Biology: Molecules to Organisms
C. Nine credits at the 300 level
D. A lecture course in at least two of the five areas of inquiry (I-V) listed under the biology major.

Up to two credits of biology internship and research (BIO 484, 486, 487, 488, 489) and one credit of tutorial readings (BIO 444, 446, 447, 449) may be applied toward the minor. The list of substitute electives for the major does not apply to the minor.

All courses for the minor must be taken for a letter grade. Nine credits at the upper-division level must be passed with a grade of C or higher. Seven additional credits must be passed with a grade of C or higher, or with a grade of Satisfactory in allowed readings, internship, and research courses.

All credits for the minor, except for those in requirements A and B (i.e., BIO 151 and 152) must be in BIO major courses at Stony Brook. Requests for waivers of minor requirements must be approved by the Biology Undergraduate Studies Committee.

The Pharmacology Program

The pharmacology major requirements and courses are described elsewhere in the alphabetical listing of Arts and Sciences programs (see p. 175). Further information is available in the Department of Pharmacological Sciences.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

BIO 101-E, 102-E 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. Not for major credit.
Prerequisite to BIO 102: BIO 101
Fall (101) and spring (102), 3 credits each semester

BIO 113-E 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 are analyzed. The mutual relation

between human activities and ecology is discussed. Mathematics is not a prerequisite but might prove helpful. Not for major credit.
Spring, 3 credits

BIO 114-E Dinosaur Evolution and Ecology
The study of the anatomy, ecology, behavior, physiology, and evolution of dinosaurs. The benefits of studying the history of extinct forms of life on earth are emphasized, particularly with regard to mass extinction and the need to maintain biodiversity. Not for major credit or for credit in addition to the discontinued GEO 109.
Spring, 3 credits

BIO 115-E 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 are considered. An introductory course in biology is not a prerequisite, but it would be helpful. Not for major credit.
Fall, 3 credits

BIO 151-E 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-E 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; CHE 111 or 131 or 141; satisfaction of entry skill in mathematics requirement
Spring, 4 credits

BIO 171-E Honors Biology: Organisms to Ecosystems
An enriched course following the topics of BIO 151, drawing more on the student's previous background in biology, chemistry, and mathematics. The material is presented in greater detail and with a more quantitative approach. The laboratory includes a research project. Three lectures, one discussion, and one three-hour laboratory per week. May not be taken in addition to BIO 151 or the discontinued BIO 161.
Prerequisites: High school biology; passing the Mathematics Placement Examination at level 4 or higher; permission of instructor
Fall, 5 credits

BIO 172-E Honors Biology: Molecules to Organisms
An enriched course following the topics of BIO 152, drawing more on the student's previous background in biology, chemistry, and mathematics. The material is presented in greater detail and with a more quantitative approach. The laboratory includes a research project. Three lectures and one three-hour laboratory per week. May not be taken in addition to BIO 152.
Prerequisites: High school biology; CHE 111 or 131 or 141; MAT 123 or passing the Mathematics Placement Examination at level 4 or higher; permission of instructor
Spring, 4 credits

BIO 204-H Ecology of Food Production
A survey of the ecology of agricultural systems and the natural limits of food production. Topics include the impact of environmental factors on agricultural systems, the biology of food production by major crop plants, and the role that human population growth and evolution may play in global patterns of feast or famine. May not be taken for credit after BIO 347.
Prerequisites: Sophomore standing; one D.E.C. category E course
Spring, 3 credits

BIO 208-H Cell, Brain, Mind
An introduction to the human brain and how it is the target of diseases, drugs, and psychological disturbances. The course explores these topics through a knowledge of basic cell neurobiology. The implications of brain science for human behavior in society are also considered. Not for major credit.
Prerequisites: High school chemistry or CHE 111; BIO 101 or 152 or 172
Spring, 3 credits

BIO 220-E 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 or 171, 172
Pre- or corequisite: CHE 131 or 141
Fall, 3 credits

BIO 231 Anatomy Laboratory for Pre-Nursing Students
Mammalian anatomy, including human material and an intensive dissection of the cat. One hour of recitation and one three-hour laboratory per week. Not for major credit.
Prerequisite: BIO 152 or 172
Fall, 2 credits

BIO 232 Physiology Laboratory for Pre-Nursing Students
Laboratory studies in mammalian physiology. One hour of lecture, one hour of recitation, and one three-hour laboratory per week. May not be taken for credit after BIO 335. Not for major credit.
Prerequisites: BIO 231 and 328
Spring, 3 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, 3 credits

BIO 306-H Ecological Risks and Environmental Decisions
The role of ecology in solving practical environmental problems in aquatic and terrestrial ecosystems. Topics include ecologically based technologies, methods of ecological risk analysis, releases of genetically engineered organisms, and response of ecosystems to pollution and overexploitation.
Prerequisites: One D.E.C. category E course; MAT 124 or 125 or 131 or 141
Spring, 3 credits (not offered in 1995-96)

BIO 310-E 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 or 172; CHE 321 or 331
Spring, 3 credits

BIO 314-E Biological Clocks
The temporal dimension of biological organization focusing on the cellular and molecular timekeeping mechanisms characteristic of living systems. Topics include a survey of circadian rhythms and their properties in eukaryotic microorganisms; cell cycle clocks; the quest for anatomical loci; dissection of clocks by chemical and molecular genetic techniques; entrainment and coupling pathways; biochemical and molecular models of circadian oscillators; pacemaker dysfunction; cellular aspects of chronopharmacology and chronotherapy; and cellular clocks in development and aging.
Prerequisite: BIO 310 or 322 or 361 or 374
Spring, 3 credits

BIO 315-E Microbiology
The organization, structure, energetics, and reproduction of microorganisms. Interactions of bacteria and viruses are discussed.
Prerequisites: BIO 151, 152 or 171, 172; CHE 322
Fall, 3 credits

BIO 317-E Principles of Cellular Signaling
Basic principles of cellular signaling and maintenance of cellular and organismic homeostasis through intra- and intercellular signaling mechanisms. Emphasis is on relationships between nuclear events and ongoing processes of the cell. The roles of membrane receptors and second-messenger pathways in mediating such diverse events as bacterial chemotaxis, protozoan locomotion, and secretion are discussed.
Prerequisites: BIO 152 or 172; CHE 321 or 331
Fall, 3 credits

BIO 321-E 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.
Prerequisite: BIO 151 or 152 or 171 or 172
Fall and spring, 4 credits

BIO 322-E Cellular and Molecular Biology of 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 323-E Plant Cell and Developmental Biology
Problems of plant growth, development, and morphogenesis with special reference to higher plants. Topics include cellular processes related to development, and cell-cell interactions during histogenesis and morphogenesis. Biotechnological implications are considered.
Prerequisites: BIO 151, 152 or 171, 172; CHE 321 or 331.
Fall, 3 credits (not offered in 1996-97)

BIO 328-E Mammalian Physiology
The basic principles of mammalian 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 152 or 172; CHE 111 or 131 or 141
Fall, 3 credits

BIO 330-E 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 328
Spring, 3 credits

BIO 334-E 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 are discussed.
Prerequisites: BIO 152 or 172; CHE 131 or 141
Fall, 3 credits

BIO 335 Animal Physiology Laboratory
Laboratory exercises designed to illustrate principles learned in BIO 328. Topics include muscles and hormones, physiological activities of nerves, circulation, respiration, excretion, digestion, sensory function, and central processes of coordination. One hour of lecture, one hour of recitation, and one three-hour laboratory per week.
Prerequisites: CHE 132, 133
Pre- or corequisite: BIO 328
Fall, 3 credits

BIO 343-E Invertebrate Zoology
Aspects of the diversity, comparative and functional morphology, natural history, evolution, and water-land transitions of invertebrates exclusive of arthropods. Three hours of lecture and one three-and-one-half-hour laboratory per week.
Prerequisite: BIO 151 or 171 or GEO 302
Fall, 4 credits

BIO 344-E 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 per week.
Prerequisite: BIO 151 or 171
Spring, 4 credits

BIO 346-E Aquatic Arthropods and Vertebrates
Aspects of the diversity, comparative and functional morphology, natural history, and evolution of arthropods and vertebrates. Water-land transitions are considered. Three hours of lecture and one three-and-one-half-hour laboratory per week. Not for credit in addition to BIO 344 or the discontinued BIO 341.
Prerequisite: BIO 151 or 171
Spring, 4 credits

BIO 347-H Botany and Biotechnology
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.
Prerequisites: BIO 151, 152 or 171, 172
Pre- or corequisite: CHE 321 or 331
Fall, 3 credits (not offered in 1995-96)

BIO 351-H 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 or 171; completion of biology major mathematics requirement
Spring, 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, and one hour of recitation per week. Three all-day Saturday field trips.
Pre- or corequisite: BIO 351
Fall, 3 credits

BIO 353-E 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 are discussed. Crosslisted with GEO 353.
Prerequisite: BIO 151 or 171 or MAR 104: BIO 343 recommended
Spring, 3 credits

BIO 354-E 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.
Prerequisite: BIO 220
Fall, 3 credits (not offered in 1995-96)

BIO 355 Computer Programming and Modeling Techniques in Biology
An introduction for advanced biology, mathematics, and physics majors to Pascal programming applications in ecology, population genetics, and taxonomy. Mathematical methods used in modeling of biological phenomena. Both analytical and simulation techniques are emphasized.
Prerequisites: A year of calculus; either BIO 151, 152 or 171, 172 or PHY 122 or 132 or 142 or 126, 127
Spring, 3 credits (not offered in 1996-97)

BIO 357-E General Microbial Ecology
An introduction to the study of the interaction of microorganisms with their natural or artificial environments. The course includes 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 modeling as applied to microbial ecology.
Prerequisites: BIO 151, 152 or 171, 172; CHE 322 or 332
Fall, 3 credits

BIO 359-E Behavioral Ecology
A consideration of the patterns of animal behavior in relation to ecological circumstances and evolutionary history. Vertebrate examples are emphasized.
Prerequisites: BIO 151, 152 or 171, 172
Spring, 3 credits

BIO 361-E, 362-E 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 peptide chain initiation, elongation, and termination.
Prerequisites for BIO 361: BIO 152 or 172; 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, recombinant DNA technology, photosynthesis, electrophoresis, and column chromatography. Four hours of laboratory and discussion per week.
Pre- or corequisite: BIO 310 or 361
Fall, 2 credits

BIO 366-E Protein Crystallography
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 (not offered in 1996-97)

BIO 374-E Molecular Biology of Learning and Memory
Cellular and molecular processes of nerve excitability, neurotransmission, and higher-order functions such as learning and memory. Molecular events underlying those aspects of neural development that contribute to the plasticity of the adult nervous system are emphasized. Invertebrate and vertebrate model systems are used to illustrate the relation of cellular processes to behavioral adaptation.
Prerequisite: BIO 310 or 328 or 334 or 361
Spring, 3 credits

BIO 379-E 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 310 or 334 or 361
Spring, 3 credits (not offered in 1996-97)

BIO 380-E Entomology
A survey of the anatomy, development, classification, biogeography, physiology, ecology, and evolution of the insects. The laboratory will stress a knowledge of insect diversity and morphology. Three hours of lecture and three hours of laboratory per week.
Prerequisites: BIO 151, 152 or 171, 172
Fall, 4 credits (not offered in 1996-97)

BIO 385-H Plant Ecology
Basic ecological principles as applied to the biology of individual plants, plant populations, communities, and ecosystems in relation to their environments. Examples from Long Island pine barrens, tropical rain forests, beaches, deserts. and other plant communities are studied. Examination of the connections between human societies and plant communities, which are rapidly being altered or destroyed worldwide.
Prerequisites: BI0 151, 152 or 171, 172; BIO 351 recommended
Fall, 3 credits (not offered in 1995-96)

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 Selected Topics in Biochemistry, Cell Biology, and Developmental Biology
Topics of interest in biochemistry, cell biology, and developmental biology, including current research on each topic. Topics are announced in the *Undergraduate Bulletin Supplement* prior to the beginning of the semester in which the course is offered. May be repeated as the topic differs.
Prerequisite: Varying with topic
Fall and spring, 2 credits

BIO 420 Developmental Genetics
The genetic analysis of developmental events in higher organisms.
Prerequisites: BIO 220 and 310; permission of instructor
Spring, 2 credits

BIO 444, 446, 447, 449 Readings in Biological Sciences
BIO 444 Readings in Biology and Society
BIO 446 Readings in Neurobiology and Physiology
BIO 447 Readings in Molecular. Cellular, and Developmental Biology
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 biology major requirements. Limit of one topic per semester. Satisfactory/Unsatisfactory grading only.
Prerequisites for BIO 444, 446, and 449: Written permission of instructor and undergraduate studies committee
Prerequisites for BIO 447: Permission of instructor and Department of Biochemistry and Cell Biology
Fall and spring, 1 or 2 credits each

BIO 475 Undergraduate 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. 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
Study of the literature, resources, and teaching strategies in a field of biology, coordinated with a teaching experience in a course other than the one used for BIO 475. Not for major credit. Satisfactory/Unsatisfactory grading only.
Prerequisites: BIO 475; permission of instructor and undergraduate studies committee
Fall and spring, 2 or 3 credits

BIO 484, 486, 487, 489 Research in Biological Sciences
BIO 484 Research in Biology and Society
BIO 486 Research in Neurobiology and Physiology
BIO 487 Research in Molecular, Cellular, and Developmental Biology
BIO 489 Research in Ecology and Evolution
In these courses the student works 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 prepares an appropriate report on the project. Any of the courses may be taken for more than two semesters, but no more than six credits of research and internship may be used for biology major requirements. Limit of one topic per semester. BIO 484 does *not* apply to the laboratory requirements of the biology major. 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. Satisfactory/Unsatisfactory grading only.
Prerequisites for BIO 484, 486, and 489: Written permission of instructor and undergraduate studies committee
Prerequisites for BIO 487: Permission of instructor and Department of Biochemistry and Cell Biology
Fall and spring, 1 to 4 credits each

BIO 488 Internship in Biological Sciences
Participation in public and private agencies and organizations under the supervision of a faculty sponsor. Students are required to submit progress reports and a final written

report on their experience to the faculty sponsor. May be repeated, but no more than six credits of research and internship may be counted toward the biology major. Satisfactory/Unsatisfactory grading only.
Prerequisites: BIO 151, 152 or 171, 172; CHE 132; permission of faculty sponsor, biology internship committee, and the Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

Department of Chemistry

Chairperson: William le Noble

Director of Undergraduate Studies: Joseph W. Lauher

Faculty

Mohammad J. Akhtar, Lecturer and Coordinator of General Chemistry Laboratories, Ph.D., University of the Pacific: Kinetics and mechanisms of inorganic reactions.

John M. Alexander, Professor, Ph.D., Massachusetts Institute of Technology: Nuclear chemistry.

Thomas W. Bell, Professor, Ph.D., University College, London: Synthetic methods; synthesis and study of new cation complexing agents; development of antiviral drugs.

Jacob Bigeleisen, Distinguished Professor Emeritus, Ph.D., University of California, Berkeley: Chemistry of isotopes.

Francis T. Bonner, Professor Emeritus, Ph.D., Yale University: Physical inorganic chemistry; nitrogen and nitrogen oxides.

Benjamin Chu, Distinguished Professor, Ph.D., Cornell University: Light-scattering spectroscopy; X-ray scattering; polymer physics; colloid science.

Frank W. Fowler, Professor, Ph.D., University of Colorado: Synthetic chemistry.

Harold L. Friedman, Professor Emeritus, Ph.D., University of Chicago: Theory of equilibrium; dynamic properties of solutions.

Theodore D. Goldfarb, Professor, Ph.D., University of California, Berkeley: Environmental chemistry; ethics in science. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1979.

Clare Grey, Assistant Professor, Ph.D., University of Oxford: Materials chemistry; solid-state NMR spectroscopy; catalysis.

Albert Haim, Professor, Ph.D., University of Southern California: Kinetics and mechanisms of inorganic reactions. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1981.

David M. Hanson, Professor, Ph.D., California Institute of Technology: Soft X-ray spectroscopy; photochemistry.

Takanobu Ishida, Professor, Ph.D., Massachusetts Institute of Technology: Chemistry of stable isotopes; isotope separation; electrochemistry.

Philip M. Johnson, Professor, Ph.D., Cornell University: Optical molecular spectroscopy.

Marjorie Kandel, Lecturer and Coordinator of Organic Chemistry Laboratories, M.S., Indiana University: Organic chemistry; laboratory curriculum development.

Robert C. Kerber, Professor, Ph.D., Purdue University: Organo-transition metal chemistry. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1986, and the President's Award for Excellence in Teaching, 1986.

Alexei Khokhlov, Adjunct Professor, Ph.D., Moscow State University: Physical chemistry of polyelectrolytes and ionomers; polymer physics.

Stephen A. Koch, Professor, Ph.D., Massachusetts Institute of Technology: Inorganic, bioinorganic, and solid-state chemistry.

Chirakkal V. Krishnan, Visiting Professor, part time, Ph.D., University of Bombay: Chemistry education.

Roy Lacey, Assistant Professor, Ph.D., State University of New York at Stony Brook: Nuclear chemistry.

Joseph W. Lauher, Professor, Ph.D., Northwestern University: Structural chemistry; crystallography. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1990, and the President's Award for Excellence in Teaching, 1990.

William J. le Noble, Professor, Ph.D., University of Chicago: Chemistry of highly compressed solutions; stereochemistry.

Andreas Mayr, Associate Professor, Ph.D., University of Munich: Synthesis, reactivity, and physical properties of transition metal compounds; metal-carbon multiple bonds; molecular materials.

Michelle M. Millar, Associate Professor, Ph.D., Massachusetts Institute of Technology: Transition metal chemistry; bioinorganic chemistry.

Marshall D. Newton, Adjunct Professor, Ph.D., Harvard University: Theoretical chemistry; prediction and analysis of molecular structure and energetics.

Iwao Ojima, Professor, Ph.D., University of Tokyo: Synthetic, organometallic, and medicinal chemistry.

Yoshi Okaya, Professor Emeritus, Ph.D., Osaka University: Crystallography; computer-controlled data acquisition.

Richard N. Porter, Professor, Ph.D., University of Illinois at Urbana-Champaign: Theoretical chemistry; quantum dynamics.

Glenn D. Prestwich, Professor, Ph.D., Stanford University: Bioorganic chemistry; biochemistry and structural biology; biotechnology.

Daniel P. Raleigh, Assistant Professor, Ph.D., Massachusetts Institute of Technology: Biological chemistry; protein structure and protein-ligand interactions using NMR.

Steven E. Rokita, Associate Professor, Ph.D., Massachusetts Institute of Technology: Bioorganic and enzyme chemistry.

Nicole S. Sampson, Assistant Professor, Ph.D., University of California, Berkeley: Bioorganic chemistry; mechanistic enzymology and molecular recognition; substrate analogs; protein-protein interactions.

Robert F. Schneider, Associate Professor, Ph.D., Columbia University: Nuclear quadrupole resonance.

Stanley Seltzer, Adjunct Professor, Ph.D., Harvard University: Elucidation of enzyme and organic reaction mechanisms.

Scott McN. Sieburth, Assistant Professor, Ph.D., Harvard University: Synthetic and bioorganic chemistry.

Richard Solo, Adjunct Associate Professor, Ph.D., University of California, Berkeley: Gas phase kinetics.

Charles S. Springer, Professor, Ph.D., Ohio State University: Nuclear magnetic resonance, with emphasis on living systems.

George Stell, Professor, Ph.D., New York University: Molecular theory of fluids; transport and thermodynamic properties of fluids.

Daniel R. Strongin, Assistant Professor, Ph.D., University of California, Berkeley: Surface science.

Hans Thomann, Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook: Magnetic resonance in disordered condensed matter.

Frank Webster, Assistant Professor, Ph.D., University of Chicago: Computational quantum dynamics in gases and liquids.

Arnold Wishnia, Associate Professor, Ph.D., New York University: Physical chemistry of proteins.

Affiliated Faculty

Patrick J. Herley, Materials Science and Engineering
Francis Johnson, Pharmacological Sciences

Franco P. Jona, Materials Science and Engineering
John B. Parise, Earth and Space Sciences

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. It includes options in biological chemistry, chemical physics, and environmental chemistry, in addition to the traditional chemical science option. 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, accommodating 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.

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.

Completion of the major requirements entails approximately 64 to 67 credits.

A. Core Requirements

1. CHE 131, 132 *or* 141, 142 General *or* Honors Chemistry
2. CHE 133, 134 *or* 143, 144 General *or* Honors Chemistry Laboratory
3. CHE 301, 302 Physical Chemistry I, II
4. CHE 303 Solution Chemistry Laboratory
5. CHE 321, 322 *or* 331, 332 Organic *or* Honors Organic Chemistry
6. CHE 333 Organic Chemistry Laboratory B
7. CHE 375 Inorganic Chemistry I
8. MAT 131, 132 Calculus I, II (See note 1 for possible substitutions)
9. MAT 211 Linear Algebra
10. PHY 131, 132 Classical Physics I, II (See note 2 for possible substitutions)

B. Area Requirements
One of the following options:

1. *Chemical Science Option*
   CHE 304 Chemical Instrumentation Laboratory
   CHE 334 Organic Chemistry Laboratory B
   CHE 357 Molecular Structure and Spectroscopy Laboratory
   CHE 377 Inorganic Chemistry Laboratory
   Two electives chosen from CHE 221, 305, 344, 345, 346, 376, PHY 251, or ESG 281
2. *Biological Chemistry Option*
   CHE 334 Organic Chemistry Laboratory B
   One organic *or* inorganic chemistry elective: CHE 344, 345, 346, 376, or 377
   BIO 152 Principles of Biology: From Molecules to Organisms
   BIO 361 Biochemistry I
   BIO 310 Cell Biology *or* BIO 362 Biochemistry II
3. *Chemical Physics Option*
   CHE 304 Chemical Instrumentation Laboratory
   CHE 305 Physical Chemistry III
   CHE 357 Molecular Structure and Spectroscopy Laboratory
   MAT 205 Calculus III (See note 1 for possible substitutions)
   PHY 251 Modern Physics
   One elective chosen from CHE 377, PHY 262, 301, 303, 306
4. *Environmental Chemistry Option*
   CHE 304 Chemical Instrumentation Laboratory
   CHE 310 Chemistry in Technology and the Environment
   CHE 334 Organic Chemistry Laboratory B
   CHE 357 Molecular Structure and Spectroscopy Laboratory
   BIO 151 Principles of Biology: From Organisms to Ecosystems *or* BIO 113 General Ecology *or* BIO 171 Honors Biology: Organisms to Ecosystems
   ATM/ESC 397 Air Pollution and Its Control

C. Upper-Division Writing Requirement
Each student majoring in chemistry must submit a portfolio of three to five papers from previous chemistry coursework, at least two of which should be full laboratory reports from chemistry courses. This portfolio is to be submitted to the director of undergraduate studies by the end of the junior year. It must be found acceptable in its clarity and precision of communication before the student can be cleared for graduation.

Notes:

1. *Alternate Mathematics Sequences*
   The following alternate sequences may be substituted for major requirements or prerequisites: MAT 124, 126, 127 *or* 125, 126, 127 *or* 141, 142 for 131, 132; MAT 203 or AMS 261 for MAT 205. Equivalency for MAT courses as indicated by earning the appropriate score on the Mathematics Placement Examination will be accepted as fulfillment of the requirement without the necessity of substituting other credits.
2. *Alternate Physics Sequences*
   The following alternate sequences may be substituted for physics requirements or prerequisites: PHY 121, 122 *or* 141, 142 *or* 125, 126, 127 for PHY 131, 132.
3. *Transfer Credit*
   At least 12 credits of upper-division work in chemistry must be taken at Stony Brook; these must be taken in at least two of the major subdisciplines (inorganic, physical, and organic chemistry).
4. The American Chemical Society's Committee on Professional Training has set nationally recognized standards for professional preparation in chemistry. The Chemistry faculty recommends that students intending to pursue careers in the chemical sciences secure ACS certification along with their Bachelor of Science degree.

   For ACS certification students electing the chemical science option must complete one additional elective in chemistry or a related field. Students electing the biological chemistry option must complete one additional elective in chemistry or a related field and the CHE 304, 357, and 377 laboratories. Students electing the chemical physics option must complete the CHE 334 and 377 laboratories. Students electing the environmental chemistry option must complete one additional chemistry elective and the CHE 304 and 377 laboratories.
5. *Additional Areas of Study*
   Because knowledge of computer programming is of great value to all chemists, a course in computer programming is recommended.

   For those students who plan to pursue post-college studies in chemistry, it is recommended that they attain a reading knowledge of German and of French or Russian.

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.

Completion of the major requirements entails approximately 52 credits.

A. Study Within the Area of Chemistry

1. CHE 131, 132 *or* 141, 142 General *or* Honors Chemistry
2. CHE 133, 134 *or* 143, 144 General *or* Honors Chemistry Laboratory
3. CHE 301, 302 Physical Chemistry I, II
4. CHE 303 Solution Chemistry Laboratory, and one additional laboratory course (304, 334, 357, or 377)
5. CHE 321, 322 *or* 331, 332 Organic *or* Honors Organic Chemistry
6. CHE 327 *or* 333 Organic Chemistry Laboratory
7. CHE 375 Inorganic Chemistry I

B. Courses in Related Fields

1. MAT 131, 132 Classical Physics I, II and MAT 211 Linear Algebra (See note 1)
2. PHY 131, 132 Classical Physics I, II (See note 2)

C. Upper-Division Writing Requirement

Same as for Bachelor of Science Program, requirement C.

Notes:

1. *Alternate Mathematics Sequences*
   The following alternate sequences may be substituted for major requirements or prerequisites: MAT 124, 126, 127 *or* 125, 126, 127 *or* 141, 142 for 131, 132. Equivalency for MAT courses as indicated by earning the appropriate score on the Mathematics Placement Examination will be accepted as fulfillment of the requirement without the necessity of substituting other credits.
2. *Alternate Physics Sequences*
   The following alternate sequences may be substituted for physics requirements or prerequisites: PHY 121, 122 *or* 125, 126, 127, *or* 141, 142 for PHY 131, 132.
3. *Transfer Credit*
   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).

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. If the student has also achieved a 3.4 cumulative grade point average in chemistry courses taken in the senior year, honors will be conferred.

Teacher Preparation Program in Chemistry

This program is designed for the student who is preparing to teach chemistry in secondary schools. Professional courses are provided through the Center for Science, Mathematics, and Technology Education. Consult the director of undergraduate studies for further details.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

CHE 111-E Elementary Chemistry I
An introduction to the concepts of chemical composition, structure, and reactions, illustrated with examples from the life sciences. Appropriate for students preparing for admission to nursing and some other undergraduate health professions programs, liberal arts students, and those lacking high school preparation for CHE 131. Except for pre-nursing students, any student who has completed high school chemistry or a college chemistry course needs permission to take this course.
Pre- or corequisite: MAP 102 or 103 or passing the Mathematics Placement Examination at level 3
Fall, 3 credits

CHE 112-E Elementary Chemistry II
A terminal course in fundamental organic and biological chemistry, appropriate for students preparing for admission to nursing and some other undergraduate health professions programs.
Prerequisite: CHE 111 or 131
Spring, 3 credits

CHE 113 Elementary Chemistry Laboratory
A one-semester laboratory course with emphasis on how problems in chemistry are solved. Exercises cover a broad range of subjects that show the impact of chemistry on daily life. The course is designed for students with weak or no high school chemistry laboratory experience and is especially helpful to those planning to continue in CHE 131 and 133.
Corequisite: CHE 111
Fall, 1 credit (not offered in 1995-96)

CHE 131-E, 132-E 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 sequence emphasizes basic concepts, problem solving, and factual material. It provides the necessary foundation for students who wish to pursue further coursework in chemistry. This sequence 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. CHE 131 may not be taken for credit in addition to CHE 141, and CHE 132 may not be taken for credit in addition to CHE 142 or 198.
Prerequisite to CHE 131: High school chemistry or CHE 111
Pre- or corequisite to CHE 131: MAT 123 or passing the Mathematics Placement Examination at level 4
Prerequisite to CHE 132: C or higher in CHE 131
Pre- or corequisite to CHE 132: MAT 124 or higher
Fall and spring (131), fall, 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. CHE 133 may not be taken for credit in addition to CHE 143, and CHE 134 may not be taken for credit in addition to CHE 144 or 199.
Pre- or corequisite to CHE 133: CHE 131 or 198
Prerequisite to CHE 134: CHE 133
Pre- or corequisite to CHE 134: CHE 132 or 198
Fall (133), spring and summer (134), 1 credit each semester

CHE 141-E, 142-E Honors Chemistry
The topics covered in this sequence are similar to those in CHE 131, 132, but the sequence 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. CHE 141 may not be taken for credit in addition to CHE 131, and CHE 142 may not be taken for credit in addition to CHE 132 or 198.
Prerequisite to CHE 141: High school chemistry; priority given to Honors College and Honors Program students, Presidential Scholars, and Freshman Scholars
Pre- or corequisite to CHE 141: MAT 125 or higher or passing the Mathematics Placement Examination at level 5 or higher
Prerequisite to CHE 142: C or higher in CHE 141
Pre- or corequisite to CHE 142: MAT 126 or higher
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. CHE 143 may not be taken for credit in addition to CHE 133, and CHE 144 may not be taken for credit in addition to CHE 134 or 199.
Prerequisite to CHE 143: Priority given to Honors College and Honors Program students, Presidential Scholars, and Freshman Scholars
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 198-E Chemistry for Engineers
A quantitative introduction to chemistry (stoichiometry, bonding, states of matter, equilibrium) with emphasis on topics of interest to students in engineering (metals and semiconductors; thermochemistry; electrochemistry and corrosion; polymers). May not be taken for credit in addition to CHE 132 or 142.
Prerequisite: High school chemistry
Corequisite: CHE 199
Pre- or corequisites: PHY 132 or 142 or 126, 127; MAT 127 or 132 or 142
Spring, 4 credits

CHE 199 General Chemistry Laboratory for Engineers
A laboratory course to accompany CHE 198, including an introduction to analytical techniques, electrochemistry, and chemical synthesis. Both quantitative and qualitative methods are emphasized. May not be taken for credit in addition to CHE 134 or 144.
Corequisite: CHE 198
Spring, 1 credit

CHE 221-E Introduction to Chemistry of Solids
Introduction to the synthesis, structure, properties, and applications of solid materials. Topics include preparation and characterization of solids (introduction to X-ray diffraction), thermal decomposition, crystal structure, crystal defects, and solid-state properties that influence chemical reactivity. Crosslisted with ESM 221.
Prerequisites: CHE 132 or 142 or 198; MAT 131 or 141 or 126
Fall, 3 credits

CHE 301-E Physical Chemistry I
The quantitative study of microscopic and macroscopic chemical systems, covering introductory quantum theory of atoms and molecules (energy levels and states), statistical thermodynamics, and fundamental thermodynamics with application to chemical reactions and simple systems.
Prerequisites: CHE 132 or 142 or 198; MAT 132 or 142 or 127
Pre- or corequisite: PHY 121 or 125 or 131 or 141
Fall, 4 credits

CHE 302-E Physical Chemistry II
Applications of thermodynamics to chemical equilibria, electrochemistry, and ideal solutions. Applications of quantum theory to chemical bonding, molecular structure, and spectroscopy.
Prerequisites: CHE 301; MAT 211 or 203 or 205 or AMS 261
Pre- or corequisite: PHY 122 or 132 or 142 or 126, 127
Spring, 4 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 is 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 305-E Physical Chemistry III
Application of the principles of physical chemistry to real-world systems, both microscopic and macroscopic. Among the topics to be addressed are chemical kinetics and dynamics, nonideal solutions and electrochemical systems, transport properties, and applications of statistical mechanics and quantum theory to chemical systems.
Prerequisite: CHE 302
Fall, 3 credits

CHE 310-H 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 or 198
Fall or spring, 3 credits

CHE 312-E 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. Not for major credit.
Prerequisites: CHE 132 or 142 or 198; MAT 127 or 132 or 134
Pre- or corequisite: PHY 121 or 125 or 131 or 141
Spring, 3 credits

CHE 321-E, 322-E 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, is emphasized. CHE 321 may not be taken for credit in addition to CHE 331, and CHE 322 may not be taken for credit in addition to CHE 332.
Prerequisites to CHE 321: CHE 132 or 142; CHE 134 or 144
Prerequisite to CHE 322: C or higher in CHE 321
Fall (321) and spring (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. Not for credit in addition to CHE 333.
Prerequisites: CHE 134 or 144; CHE 321 or 331; permission of department
Fall and spring, 2 credits

CHE 331-E, 332-E 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. CHE 331 may not be taken for credit in

addition to CHE 321, and CHE 332 may not be taken for credit in addition to CHE 322.
Prerequisites to CHE 331: CHE 132 or 142; CHE 134 or 144
Prerequisite to CHE 332: C or higher in 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 require substantial laboratory skills, such as those planning careers in research. Safety considerations make it necessary to prohibit wearing contact lenses in these laboratories. Not for credit in addition to CHE 327.
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 344-E Spectroscopy of Organic Compounds
Modern spectroscopic methods applied to organic compounds. Structural effects on spectroscopic properties are surveyed with dual emphasis on fundamental aspects and problem solving. The student learns how spectroscopic methods are used both to solve complex structural problems and to investigate bonding features in organic molecules.
Prerequisite: CHE 322 or 332
Spring, 3 credits

CHE 345-E Structure and Reactivity in Organic Chemistry
Electronic and stereochemical theories relating to organic structure and reactions. Topics such as bonding, strain, aromaticity, MO theory, molecular rearrangements, pericyclic reactions, and photochemistry are covered.
Prerequisite: CHE 322 or 332
Fall or spring, 3 credits

CHE 346-E Biomolecular Structure and Reactivity
The reactivity and physiological function of biological macromolecules and their monomeric constituents are described at the chemical level. The course reflects the most recent advances at the interface of organic chemistry and biochemistry. Specific topics include catalysis, biomimicry, protein and DNA modification, binding and target recognition, and correlation between three-dimensional structure and reactivity.
Pre- or corequisite: BIO 361
Spring, 3 credits

CHE 350-E Research Frontiers in Physical Chemistry
Selected topics of active research interest introduced at the advanced undergraduate level and developed to the level of the current research literature. The topics vary from year to year and are taken from areas such as spectroscopy, molecular kinetics and dynamics, polymer and biophysical chemistry, solid state and surface chemistry, and nuclear chemistry, and may include theoretical developments of interest to chemists. May be repeated as the topic varies.
Prerequisites: CHE 302; MAT 205
Schedule to be announced, 3 credits

CHE 351-E Quantum Chemistry
Concepts of quantum theory, Schrödinger wave mechanics, and related mathematical techniques illustrated by application to systems of chemical bonding, spectroscopy, molecular structure, and molecular collision phenomena.
Prerequisites: CHE 302; MAT 205
Fall, 3 credits

CHE 353-E Chemical Thermodynamics
A rigorous development of thermodynamics and its application to systems of interest to chemists, including electrochemical cells, gases, polymers, and homogeneous and heterogeneous equilibrium. An introduction to statistical mechanics is included.
Prerequisites: CHE 302; MAT 205
Spring, 3 credits

CHE 357 Molecular Structure and Spectroscopy Laboratory
Optical and magnetic resonance spectroscopy are used to investigate the structural, dynamic, and quantum mechancial properties of some basic chemical systems. Emphasis is on the quantitative measurement of molecular parameters and transformations.
Prerequisites: CHE 304 and 333
Corequisite: CHE 375
Fall, 2 credits

CHE 361-E Nuclear Chemistry
Properties of radioactive substances and their use in the study of chemical problems, nuclear stability and structure, nuclear reactions, radioactive decay, interactions of radiation with matter, nuclear medicine, isotope applications, and environmental control.
Prerequisites: Four semesters of chemistry; PHY 132 or 142 or 126, 127; MAT 127 or 132 or 142; permission of department through application by January 30
Corequisite: CHE 362
Summer, 3 credits

CHE 362 Nuclear Chemistry Laboratory
Detection and measurement of radiation, electronic instrumentation, radiation safety, and application of radioactivity to chemical problems.
Corequisite: CHE 361
Summer, 3 credits

CHE 375-E 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; CHE 321 or 331
Fall, 3 credits

CHE 376-E Inorganic Chemistry II
The chemistry of the elements with an emphasis on the transition metals. Reaction mechanisms, synthesis, and structure are covered. Specific areas of concern 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 377 Inorganic Chemistry Laboratory
Synthesis of inorganic and organometallic compounds and characterization by physical and chemical methods.
Prerequisites: CHE 303; CHE 327 or 333; CHE 375
Spring, 2 credits

CHE 461 Selected Topics in Chemistry
Topics of current interest in the chemical sciences. Topics are 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
Schedule to be announced, 1 to 3 credits, to be assigned when course is scheduled

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 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 are 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 is based on a brief outline jointly submitted by the student and faculty supervisor. A final report must be submitted by the student. May be repeated.
Prerequisites: Permission of instructor and department
Fall and spring, 1 to 3 credits

CHE 488 Internship
Research participation in off-campus laboratories. Students are 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 12 credits. Satisfactory/Unsatisfactory grading only.
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 is 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 is assigned.
Prerequisites: Senior standing; permission of instructor and department
Fall (491) and spring (492), 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, subject to University limits (see p. 77). 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 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 522 Quantum Chemistry II
CHE 524 Magnetic Resonance
CHE 525 Theoretical Chemistry
CHE 526 Chemical Kinetics
CHE 527 Chemical Dynamics
CHE 528 Statistical Mechanics
CHE 529 Nuclear Chemistry
CHE 530 Physical Chemistry of Macromolecules
CHE 542 Physical Methods in Chemistry
CHE 591 Chemistry in Society
CHE 592 Instrumental Methods
CHE 593 Chemical Demonstrations
CHE 623 Molecular Spectroscopy
CHE 625 Molecular Structure and Crystallography
CHE 641 Organometallic Chemistry

Child and Family Studies

Director: Barbara Baskin, Social Sciences Interdisciplinary

Affiliated Faculty

Joan F. Kuchner, Social Sciences Interdisciplinary

Requirements for the Minor in Child and Family Studies

The child and family studies minor (CFS) focuses on the child's development and its role in the family and in the wider society. Theoretical and practical issues are explored from an interdisciplinary perspective. Students complement coursework and observations with directed work in campus day care centers and other *approved* facilities. In order to fulfill the minor, students complete at least 24 credits of designated SSI courses, including three upper-division courses, one of them at the 400 level.

A. Required Courses
SSI 110 Human Development: The Family Context (PSY 211 may be substituted)
SSI 220 The Infant and Young Child
SSI 281 Seminar in Child Development
SSI 283 Practicum in Child Development

B. Four additional SSI courses (at least three of which must be upper division and one of these at the 400 level):
SSI 287 Supervised Research in Social Science
SSI 308 Abuse of Women and Children
SSI 320 The Special Child
SSI 321 Early Childhood Environments
SSI 327 Adolescent Growth and Development
SSI 339 Children's Play
SSI 345 Parental Roles in a Pluralistic Society
SSI 350 Foundations of Education
SSI 405 Seminar in Children, Law, and Social Policy
SSI 417 Senior Seminar in Child and Family Studies
SSI 447 Directed Readings in Social Science
SSI 487 Independent Project in the Social Sciences
SSI 488 Internship

One of the following courses may be substituted for an SSI course in requirement B (see individual course listings for prerequisites):

AFS 370 The African-American Family
EGL 396 Literature and Psychology of Adolescence
PSY 311 Topics in Advanced Developmental Psychology
PSY 312 Behavior Deviation in Children
SOC/WNS 304 Sociology of the Family
SOC 384 Sociology of the Life Course
SOC 387 Sociology of Education
WNS/PSY 377 Psychology of Women

Notes:
1. No more than one course may be taken for Pass/No Credit.
2. No more than six credits of independent work may be used toward fulfillment of the minor requirements.
3. SSI 287, 447, 487, and 488 may be used only if the topics concern child and family studies.
4. Students planning to work in the day care centers should make arrangements for an interview at the center of their choice prior to registering. Proof of having had a recent medical examination must be presented upon reporting to work.

Chinese Studies

Director: Shi Ming Hu, Social Sciences Interdisciplinary

Affiliated Faculty

Iona Man-Cheong, History
Eli Seifman, Social Sciences Interdisciplinary
Ban Wang, Comparative Studies

The Chinese studies minor (CNS) is designed for students interested in an interdisciplinary study of China that combines coursework in social and behavioral sciences with that in humanities and fine arts. Students design an individualized program of study with the approval of the director of the Chinese studies minor. Consultation with the director is encouraged for those students

considering special opportunities for overseas studies programs.

Requirements for the Minor in Chinese Studies

The minor requires 18 credits.

A. CHI 192
B. Two social and behavioral science courses of at least three credits each, chosen from among the following:
   CNS 249, 250, 447, 487
   ECO 339
   HIS 219, 341; appropriate topics of HIS 431, 432
C. Two humanities and fine arts courses of at least three credits each, chosen from among the following:
   ARH 203, 218
   CHI 221, 222, 487
   Appropriate topics of CSL 220, 361, 362
   CNH 447, 487
   PHI 111, 342
   RLS 240, 260
D. CNS/CNH 461 Senior Seminar in Chinese Studies

Notes:

1. At least nine credits must be taken in upper-division courses, of which three credits must be in requirement B and three credits in requirement C.
2. No more than one course may be taken for Pass/No Credit.
3. No more than six credits of independent work (CNH/CNS 447, 487, CHI 487) may be used toward fulfillment of the minor.
4. The humanities and fine arts courses, if they are numbered 300 or above, may be used to satisfy the social sciences interdisciplinary program (SSI) major's "related courses" option with permission of the director of the Chinese studies minor.
5. Students who have proficiency in Chinese through the level of CHI 192 must substitute three credits from other courses acceptable for the minor.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

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-J, 192-J Intermediate Chinese I, II
An intermediate course in Chinese Mandarin to develop audiolingual skills and reading and writing ability. Selected texts serve as the basis for practice in reading comprehension and composition. Intensive exercises in character writing will be required to develop writing technique.
Prerequisite to CHI 191: CHI 112
Prerequisite to CHI 192: CHI 191
Fall (191) and spring (192), 3 credits each semester

CHI 221-J, 222-J 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 to CHI 221: CHI 192
Prerequisite to CHI 222: CHI 221
Fall (221) and spring (222), 3 credits each semester

CHI 475 Undergraduate Teaching Practicum
Each student conducts a weekly recitation section that supplements a lecture course. The student receives 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 and director of social sciences interdisciplinary program
Fall and spring, 3 credits

CNS 249-J Chinese Culture and Society: Traditional China
An interdisciplinary consideration of those cultural and social elements in traditional China that have had a lasting impact and given unique shape to Chinese civilization. Topics include land and resources; religion and philosophy; art and architecture; science and technology; language and literature; and socioeconomic development.
Prerequisites: One D.E.C. category F course; one D.E.C. category B, D, or G course
Fall, 3 credits

CNS 250-J Chinese Culture and Society: Modern China
An interdisciplinary consideration of themes that dominate the development of modern China. Topics include history and geography; ideology and organization; the individual and the state; the family and society; conflict in society; the economy; literature and the arts; science and technology; and future prospects.
Prerequisite: CNS 249
Spring, 3 credits

CNH, CNS 447 Readings in Chinese Studies
Individually supervised reading in selected topics in Chinese studies. The designator CNH is assigned to topics in the humanities area; CNS is assigned to topics in the social and behavioral sciences. May be repeated for different topics.
Prerequisites: Permission of instructor and director of social sciences interdisciplinary program
Fall and spring, 3 credits

CNH, CNS 461 Senior Seminar in Chinese Studies
A seminar exploring in depth a single theme in Chinese studies, e.g., ideological and political campaigns, art and literature, educational policies and practices, foreign trade and tourism, etc. The designator CNH is assigned to topics in the humanities area; CNS is assigned to topics in the social and behavioral sciences. May be repeated once as topic differs.
Prerequisites: Upper-division standing; Chinese studies or Korean studies or Japanese studies minor; permission of instructor
Fall and spring, 3 credits

CNH, CNS 487 Research in Chinese Studies
Individual research projects in Chinese studies carried out under the direct supervision of a faculty member. The designator CNH is assigned to topics in the humanities area; CNS is assigned to topics in the social and behavioral sciences. May be repeated once.
Prerequisites: Permission of instructor and director of social sciences interdisciplinary program
Fall and spring, 1 to 3 credits

Classics and Classical Languages

Minor Coordinator: Aaron Godfrey, Comparative Studies

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, for a total of 21 credits. 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.

Group IA: GRK 111, 112, 251, 252, 447
Group IB: LAT 111, 112, 251, 252, 353, 354, 355, 356, 447
Group II: CLS/CSL 113
Group III: CLS 215, EGL 260
Group IV: CLS 320, ARH 300, 301
Group V: HIS/JDS 225
Group VI: PHI 200, 300

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

Classics

CLS 113-B Greek and Latin Literature in Translation
Historical and analytical study of the development of classical Greek and Latin literature. Extensive readings in translation include works illustrating epic, lyric, drama, history, oration, and literary criticism. Crosslisted with CSL 113.
Fall, 3 credits (not offered in 1995-96)

CLS 215-I Classical Mythology
A study of the Greek myths and an introduction to ancient Greek religion, literature, and art. Discussion of the mythology of the Romans, the relationship between Greek and Roman myths, and the influence of classical mythology on later literature, art, and philosophy.
Prerequisite: One course in literature
Fall or spring, 3 credits

CLS 320-I Topics in Classical Civilization
Selected topics in classical studies investigated in an interdisciplinary fashion, combining Greek or Roman literature, philosophy, religion, art, and archaeology with contemporary scholarship, methodologies, and concerns. May be repeated for credit as the topic differs.
Prerequisites: Two courses in ancient Greek or Latin language, literature, mythology, religion, art, or history
Spring, 3 credits (not offered in 1996-97)

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 Comparative Studies chairperson
Fall and spring, 1 to 4 credits

Greek

GRK 111 Elementary Ancient Greek I
An introduction to the language and culture of ancient Greece. The course focuses on grammar, syntax, and techniques of translation. Development of reading skills is stressed.
Prerequisite: Permission of instructor
Fall, 3 credits (not offered in 1995-96)

GRK 112 Elementary Ancient Greek II
A continuation of GRK 111: the grammar and syntax of ancient Greek, with emphasis on reading comprehension.
Prerequisite: GRK 111
Spring, 3 credits (not offered in 1995-96)

GRK 447 Directed Readings in Ancient 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 Comparative Studies chairperson
Fall and spring, 1 to 4 credits

Latin

LAT 111, 112 Elementary Latin I, II
An intensive course 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.
Prerequisite to LAT 112: LAT 111
Fall (111) and spring (112), 3 credits each semester

LAT 251-I, 252-I Readings in Latin Literature I, II
Readings in classical Latin literature of the Republic. The course includes a brief intensive review of grammar and the sampling of a number of authors including Catullus, Cicero, Virgil, and Livy.
Prerequisite to LAT 251: LAT 112
Prerequisite to LAT 252: LAT 251
Fall (251) and spring (252), 3 credits each semester

LAT 353-I Literature of the Roman Republic
Selected works of Plautus, Terence, Cicero, Lucretius, and Catullus are translated and examined in their social and historical context. The reading of critical works in English is also required.
Prerequisite: Permission of instructor
Fall, 3 credits (not offered in 1996-97)

LAT 354-I Literature of the Roman Empire
Selected works of Virgil, Horace, Livy, Petronius, Martial, Tacitus, and Juvenal are translated and examined in their social and historical context. The reading of critical works in English is also required.
Prerequisite: Permission of instructor
Spring, 3 credits (not offered in 1996-97)

LAT 355-I Early Medieval Latin
Translation and discussion of Christian and secular Latin literature from the 4th to the 12th century. The course includes 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 are read.
Prerequisite: Permission of instructor
Fall, 3 credits (not offered in 1995-96)

LAT 356-I Late Medieval Latin
Translation and discussion of Latin literature from the 12th to the 16th century. Authors include the Archpoet, Thomas Aquinas, Petrarch, Erasmus, and Thomas More.
Prerequisite: Permission of instructor
Spring, 3 credits (not offered in 1995-96)

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 Comparative Studies chairperson
Fall and spring, 1 to 4 credits

Department of Comparative Studies

Chairperson: Sandy Petrey

Director of Undergraduate Studies: Peter Manchester

Faculty

Thomas J.J. Altizer, Professor, Ph.D., University of Chicago: Religion and literature; theology.

Ruth S. Bottigheimer, Adjunct Associate Professor, D.A., State University of New York at Stony Brook: German literature; fairy tales.

William Chittick, Associate Professor, Ph.D., Teheran University: Islamic studies; comparative mysticism.

Krin Gabbard, Associate Professor, Ph.D., Indiana University: The arts and their interrelations; film; drama.

Aaron W. Godfrey, Lecturer, M.A., Hunter College: Latin; medieval studies.

Robert Goldenberg, Associate Professor, Ph.D., Brown University: Jewish thought; history of Judaism; Talmudic literature.

Robert Hoberman, Associate Professor, Ph.D., University of Chicago: Linguistic theory; Hebrew; Arabic; Aramaic.

Carole Kessner, Assistant Professor, part time, Ph.D., State University of New York at Stony Brook: Modern Jewish literature and culture; multicultural literature; Bible as literature.

Peter B. Manchester, Associate Professor, Ph.D., Graduate Theological Union: Christian origins; philosophical theology.

Sachiko Murata, Assistant Professor, Ph.D., Teheran University: Islam; Japanese religions.

Sung-Bae Park, Professor, Ph.D., University of California, Berkeley: Buddhist studies; Indian, Chinese, Japanese, and Korean religious thought.

Sandy Petrey, Professor, Ph.D., Yale University: 19th-century French literature.

Ilona Rashkow, Assistant Professor, Ph.D., University of Maryland at College Park: Literature and politics; Hebrew Bible and literary theory.

Mark Setton, Assistant Professor, Ph.D., University of Oxford: East Asian intellectual history; Korean Confucianism.

Michael Sprinker, Professor, Ph.D., Princeton University: Literary crticism; 19th- and 20th-century British and American literature.

Louise O. Vasvari, Professor, 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, 1976.

Ban Wang, Assistant Professor, Ph.D., University of California, Los Angeles: Chinese and English literature; cultural studies; literary theory; aesthetics.

Affiliated Faculty

Russell E. Brown, German
Román de la Campa, Spanish
Thomas A. Kerth, German
Thomas Kranidas, English
Mary C. Rawlinson, Philosophy
Nicholas Rzhevsky, Slavic Languages
Hugh J. Silverman, Philosophy
Eléonore Zimmermann, French

Adjunct Faculty
Estimated number: 3

Teaching Assistants
Estimated number: 10

The Department of Comparative Studies integrates the efforts of a number of humanities programs centering on comparative studies in literature, language, and culture. In addition to the major in comparative studies in literature, described below, the department offers major programs in humanities and religious studies and minor programs in classical civilization, Japanese studies, Judaic studies, Korean studies, and religious studies. Requirements for these programs appear under each program title elsewhere in the alphabetical listings of Arts and Sciences programs. Further information is available in the Comparative Studies Office.

Requirements for the Major in Comparative Studies in Literature

The comparative studies in literature major (CSL) brings the historical and intercultural resources of the department together in a broadly based program for the student interested in comparative studies and general literature. It stresses the comparative study of world literatures from all historical periods, including the ability to read at least one literature in a language other than English, and emphasizes the relationship between literature and other disciplines. Individual programs can be adjusted to the special interests of the student through consultation with the director of undergraduate studies.

The interdisciplinary major in comparative studies in literature leads to the Bachelor of Arts degree. The following courses are required and must be taken for a letter grade. All upper-division courses offered to satisfy major requirements must be passed with a grade of C or higher.

Completion of the major requirements entails 36 credits.

A. *Introduction:* Two courses that survey a literary theme historically and cross-culturally, selected from the following: CLS/CSL 113, HUM 107, 121, 122, 123, RLS 103, 104
B. *Background:* Three 200-level courses, at least two of which must be in literature (group 1) and one of which may be in a related discipline (group 2):

   Group 1: CLS 215, CSL 211, 212, 220, 266, or one course per designator from EGL 200-level, FRN 295, 296, ITL 295, 296, GER 204, HUR 241, 242, JDH 261, or one of the following classical language courses: GRK 112, LAT 112, SKT 112

   Group 2: JDH/RLS 230, JDS/HIS 225, 226, PHI 200, 204, 206, 208, 264, RLS 240, 246, 260, 270, 280

   Note: Requirement B can also be fulfilled by completion of any minor in the department: classics, Japanese, Judaic, Korean, or religious studies.

C. *Literature in the Original Language:* At least one course in literature in its original language (other than English)
D. *Theory:* CSL 301 Theory of Literature
E. *Advanced Study:* Four upper-division courses, at least one from each of groups 1 and 2:

   Group 1:
   CSL 331 Literary Genres: Poetry
   CSL 332 Literary Genres: Drama
   CSL 333 Literary Genres: Novel
   CSL 334 Other Literary Genres

   Group 2:
   CSL 335 Interdisciplinary Study of Films
   CSL 361 Literature and Society
   CSL 362 Literature and Ideas
   CSL 363 Literature and the Arts
F. *Senior Project:* A directed study project (CSL 487 or, for students in the honors program, CSL 495) for graduating majors, to be arranged with the major advisor and an instructor of the student's choice no later than the end of the first semester of senior standing.
G. *Upper-Division Writing Requirement:* For all majors, the term paper for required course CSL 301 is evaluated by the instructor for its quality of writing. Students whose writing is satisfactory fulfill this requirement with that paper. Students who do not fulfill the requirement in CSL 301 must submit to the major advisor a portfolio of papers written for subsequent upper-division courses taken for the major, no later than the first semester of senior standing, and must achieve an evaluation of S (Satisfactory) on the portfolio. For further details consult the director of undergraduate studies or the major advisor.

Honors Program in Comparative Studies in Literature

Students who have maintained a grade point average of 3.5 in the major and 3.0 overall may attempt the degree in comparative studies in literature with honors.

The honors program requires one of the following options in addition to the requirements of the major:

A. A second course in literature in its original language used for requirement C.
B. Study of a language other than that used for requirement C through the 192 level.
C. Fulfillment of the requirements for the minor in a cognate discipline (to be approved by the major advisor; minors in language or literature recommended).

In addition, students seeking the honors major must use CSL 495 to fulfill major requirement F.

Requirements for the Minor in Comparative Studies in Literature

The minor in comparative studies in literature is designed especially to interest students majoring in a foreign language, English, and other humanities fields. It provides a broad overview of the theory and techniques of comparative study, and an opportunity for the student to bring comparative breadth to his or her major field of study. The minor requires 21 credits, in the following categories:

A. *Introduction:* One course that surveys a literary theme historically and cross-culturally, selected from the following: CLS/CSL 113, HUM 107, 121, 122, 123, RLS 103, 104
B. *Background:* Two 200-level courses, at least one of which must be in literature (group 1) and one of which may be in a related discipline (group 2):

   Group 1: CLS 215, CSL 211, 212, 220, 266, or one course per designator from EGL 200-level, FRN 295, 296, ITL 295, 296, GER 204, HUR 241, 242, JDH 261, or one of the following classical language courses: GRK 112, LAT 112, SKT 112

   Group 2: JDH/RLS 230, JDS/HIS 225, 226, PHI 200, 204, 206, 208, 264, RLS 240, 246, 260, 270, 280
C. *Literature in the Original Language:* At least one course in literature in its original language (other than English)
D. *Theory:* CSL 301 Theory of Literature
E. *Advanced Study:* Two upper-division courses, at least one from each of groups 1 and 2:

   Group 1:
   CSL 331 Literary Genres: Poetry
   CSL 332 Literary Genres: Drama
   CSL 333 Literary Genres: Novel
   CSL 334 Other Literary Genres

   Group 2:
   CSL 335 Interdisciplinary Study of Film
   CSL 361 Literature and Society
   CSL 362 Literature and Ideas
   CSL 363 Literature and the Arts

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

CSL 113-B Greek and Latin Literature in Translation
Historical and analytical study of the development of classical Greek and Latin literature. Extensive readings in translation include works illustrating epic, lyric, drama, history, oration, and literary criticism. Crosslisted with CLS 113.
Fall, 3 credits (not offered in 1995-96)

CSL 211-I 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, 3 credits (not offered in 1995-96)

CSL 212-I Literary Survey: Enlightenment through Modern
Historical and analytical study of literature from the late 17th century, the neoclassic era, the romantic revolution, and the 19th century (realism, naturalism, symbolism), leading to the culmination of modernism.
Prerequisite: One course in literature
Spring, 3 credits (not offered in 1995-96)

CSL 220-J Non-Western Literature
A survey of the major themes and forms of non-Western literature, such as Oriental, Indian, and African. Topics vary. May be repeated.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall, 3 credits

CSL 235-K American Pluralism in Film and Literature
An exploration of the diversity of American culture as expressed in literary and cinematic texts from a variety of traditions within the American fabric. Topics may include representations of the immigrant experience, fictional accounts of African-American or Latino music, and intensive examination of novels and films from a specific American ethnic tradition.
Prerequisite: Completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits (not offered in 1995-96)

CSL 266-G The 20th-Century Novel
A study of major works and developments in the modern and contemporary novel. Crosslisted with EGL 266.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

CSL 301-G Theory of Literature
An introduction to the different modes of analyzing literature by periods, ideas, traditions, genres, and aesthetic theories. Stress is placed on classical theory and on developments in the 20th century.
Prerequisites: Two courses in comparative studies in literature
Fall or spring, 3 credits (not offered in 1995-96)

CSL 320-K Multicultural Experience in American Literature
An exploration of the roles of ethnicity and race in American culture through the fiction and poetry of three or more of the following ethnic groups: Native American, African American, Italian, Irish, Jewish, Greek, Latino, and Asian.
Prerequisites: One 200-level course in literature; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1995-96)

Genre, Theme, and Interdisciplinary Courses

Detailed information on the content of CSL 331-363 is published by the Comparative Studies Department before registration each semester. Reading lists are also available in advance. These courses may be repeated once only as the topic differs.

CSL 331-G Literary Genres: Poetry
Analysis of poetic form as illustrated by various kinds of poetry, e.g., epic and lyric. Works selected from different national literatures and literary movements.
Prerequisites: Two courses in literature
Schedule to be announced, 3 credits

CSL 332-G 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

CSL 333-G 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

CSL 334-G 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

CSL 335-G The Interdisciplinary Study of Film
An inquiry into the aesthetics, history, and theory of film as it relates principally to literature but also to disciplines such as art, music, psychology, and cultural history.
Prerequisites: One course in literature; HUM 201 or 202 or THR 117
Fall or spring, 3 credits (not offered in 1995-96)

CSL 361-G 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

CSL 362-G 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

CSL 363-G 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

CSL 475 Undergraduate Teaching Practicum I
Each student receives regularly scheduled supervision from the instructor of the course specified as the forum for the practicum. Responsibilities include regular attendance in the specified course and may include conducting practice or discussion sessions that supplement regular class meetings, preparing material for practice or discussion, and helping students with course problems. Satisfactory/Unsatisfactory grading only.
Prerequisites: Senior standing; permission of instructor and chairperson
Fall and spring, 3 credits

CSL 476 Undergraduate Teaching Practicum II
The continuation of training begun in CSL 475. Students may participate only in courses in which they have excelled. Either increased or different responsibilities are assigned, adding to the quality of academic experience already gained in CSL 475. Satisfactory/Unsatisfactory grading only.
Prerequisites: CSL 475; permission of instructor and chairperson
Fall and spring, 3 credits

CSL 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 department
Fall and spring, 3 credits

CSL 495 Comparative Studies in Literature Honors Project
A one-semester project for comparative studies in literature majors who are candidates for the degree with departmental honors. Arranged during the first semester of senior standing, to begin the following semester, the project involves independent study under close supervision of an appropriate faculty member, and the writing and oral presentation to the department faculty colloquium of an honors thesis.
Prerequisites: Permission of instructor and department
Fall and spring, 3 credits

Dance

Minor Coordinator: Amy Sullivan, Theatre Arts

The minor in dance (DAN) provides an approach to the educational experience of dance that integrates movement, thought, sensation, and feeling. The minor, which requires 21 credits, offers a foundation for further study in choreography, performance, education, and criticism.

Requirements for the Dance Minor

A. Courses required of all students:

1. One of the following:
   THR 161 Modern Dance Technique and History
   THR 162 Ballet Technique and History
   THR 163 Jazz Dance Technique and History
2. One of the following:
   THR 261 Modern Dance Technique and Composition
   THR 262 Ballet Technique and Composition
   THR 263 Jazz Dance Technique and Composition
3. One of the following:
   THR 361 Modern Dance Technique and Performance
   THR 363 Jazz Dance Technique and Performance
4. THR 364 Choreography
5. THR 400 Performance Dance Ensemble

B. Six credits to be chosen from:
ARH 101 Art in Culture from Prehistoric Times to the Age of the Cathedrals, ca. 1400 A.D.
ARH 102 Art in Culture from the Early Renaissance, ca. 1400 to Postmodernism
MUS 101 Introduction to Music
MUS 119 The Elements of Music
PEC 136 Basic Social Dance
PEC 137 Intermediate Social Dance
PHI 264 Philosophy and the Arts
PHI 381 Aesthetics
THR 105 Acting I
THR 110 Public Speaking
THR 246 Stage Lighting
THR 332 Improvisation
THR 353 Special Topics in Performance
THR 354 Topics in Dramaturgy (appropriate topic only)
THR 487 Projects in Theatre Arts (appropriate topic only)

Notes:

1. All courses for the minor must be taken for a letter grade. No grade lower than a C may be applied to the minor. At least 12 of the 21 credits must be taken at Stony Brook.
2. No more than three credits from THR 354 or 487 may be applied to the minor.

Department of Earth and Space Sciences

Chairperson: James M. Lattimer

Associate Chairperson for Geosciences: Donald H. Lindsley

Directors of Undergraduate Studies: Teng-fong Wong (GEO and ESS Majors)
Michal Simon (AST Major)

Faculty

Peter W. Bretsky, Professor Emeritus, Ph.D., Yale University: Paleontology.

Daniel M. Davis, Associate Professor, Ph.D., Massachusetts Institute of Technology: Geophysics.

Robert T. Dodd, Jr., Professor, Ph.D., Princeton University: Geochemistry.

Gilbert N. Hanson, Professor, Ph.D., University of Minnesota: Geochemistry.

William E. Holt, Assistant Professor, Ph.D., University of Arizona: Geophysics.

Kenneth M. Lanzetta, Assistant Professor, Ph.D., University of Pittsburgh: Astronomy.

James M. Lattimer, Professor, Ph.D., University of Texas at Austin: Astronomy.

Robert C. Liebermann, Professor, Ph.D., Columbia University: Geophysics.

Donald H. Lindsley, Professor, Ph.D., The Johns Hopkins University: Geochemistry; petrology.

Jack J. Lissauer, Associate Professor, Ph.D., University of California, Berkeley: Astronomy.

Scott M. McLennan, Professor, Ph.D., Australian National University: Geochemistry.

William J. Meyers, Professor, Ph.D., Rice University: Sedimentology.

Hanna Nekvasil, Associate Professor, Ph.D., Pennsylvania State University: Geochemistry; petrology.

John B. Parise, Associate Professor, Ph.D., James Cook University: Crystallography; mineral physics.

Deane M. Peterson, Associate Professor, Ph.D., Harvard University: Astronomy.

Richard J. Reeder, Professor, Ph.D., University of California, Berkeley: Geochemistry; sedimentology.

Martin A.A. Schoonen, Assistant Professor, Ph.D., Pennsylvania State University: Geochemistry.

Michal Simon, Professor, Ph.D., Cornell University: Astronomy.

Philip M. Solomon, Professor, Ph.D., University of Wisconsin: Astronomy.

Frederick M. Walter, Associate Professor, Ph.D., University of California, Berkeley: Astronomy.

Donald J. Weidner, Professor, Ph.D., Massachusetts Institute of Technology: Geophysics.

Teng-fong Wong, Professor, Ph.D., Massachusetts Institute of Technology: Geophysics.

Amos Yahil, Professor, Ph.D., California Institute of Technology: Astronomy.

Curator
Steven C. Englebright, M.S., State University of New York at Stony Brook: Geology.

Affiliated Faculty

Robert C. Aller, Marine Sciences Research Center
Henry J. Bokuniewicz, Marine Sciences Research Center
J. Kirk Cochran, Marine Sciences Research Center
Marvin Geller, Marine Sciences Research Center
David W. Krause, Anatomical Sciences
Charles Nittrouer, Marine Sciences Research Center

Teaching Assistants
Estimated number: 17

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. program in geology (GEO), which includes tracks in environmental geoscience and engineering geology, and the B.S. program in astronomy/planetary sciences (AST) aim at giving the student maximum preparation to carry out graduate and professional 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 prepare students to choose careers in teaching, law, environmental science, 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.

Requirements for the Major in Geology

The geology major has three distinct tracks, geology, environmental geoscience, and engineering geology. All courses taken to meet requirements for the geology major must be taken for a letter grade. In addition, a 2.0 G.P.A. must be achieved in all upper-division courses used to meet the requirements.

Completion of the major requirements entails approximately 65 to 67 credits.

Geology and Environmental Geosciences Tracks

A. Required departmental courses

Geology Track
GEO 103 The Earth Through Time
GEO 113 Historical Geology Laboratory
GEO 122 Physical Geology *or* GEO 102 The Earth and GEO 112 Physical Geology Laboratory
GEO 303 Stratigraphy
GEO 305 Field Geology
GEO 306 Mineralogy and Petrology I
GEO 307 Mineralogy and Petrology II
GEO 309 Structural Geology
GEO 310 Introduction to Geophysics

Environmental Geoscience Track
GEO 101 Environmental Geology
GEO 111 Environmental Geology Laboratory
GEO 122 Physical Geology *or* GEO 102 The Earth and GEO 112 Physical Geology Laboratory
GEO 303 Stratigraphy
GEO 306 Mineralogy and Petrology I
GEO 315 Groundwater Hydrology
GEO 316 Geochemistry of Surficial Processes
Any two of the following: GEO 305, 307, 309, 310, ATM/ESC 397, AMS 210, 226

B. Required courses in the related sciences:
MAT 131, 132 (See note 1 below)
CHE 131, 132 *or* 141, 142
PHY 131, 132 (See note 2 below)

C. Related science electives:
A coherent set of science courses, totaling 12 credits, acceptable to the department

D. Upper-Division Writing Requirement
All students majoring in geology must submit two papers (term papers, laboratory reports, or independent research papers) to the director of undergraduate studies for department evaluation by the end of the junior year. If this evaluation is satisfactory, the student will have fulfilled the upper-division writing requirement. If it is not, the student must fulfill the requirement before graduation.

Engineering Geology Track

A. Required courses
GEO 101 Environmental Geology
GEO 111 Environmental Geology Laboratory
GEO 122 Physical Geology *or* GEO 102 The Earth and GEO 112 Physical Geology Laboratory
GEO 303 Stratigraphy
GEO 306 Mineralogy and Petrology I
GEO 309 Structural Geology
GEO 315 Groundwater Hydrology
GEO/MAR 318 Engineering Geology and Coastal Processes
ESC 260 Engineering Statics
ESC 363 Mechanics of Solids

B. Required courses in the related sciences:
MAT 131, 132 (See note 1 below)
MAT 203 or AMS 261
CHE 131, 132 *or* 141, 142
PHY 131, 132 (See note 2 below)

C. Related science and engineering electives:
A coherent set of science and engineering courses, totaling six credits, acceptable to the department

D. Upper-Division Writing Requirement
See D under "Geology and Environmental Geosciences Tracks," above

Notes:
1. The following alternate beginning calculus sequences may be substituted for MAT 131, 132 in major requirements or prerequisites: MAT 124, 126, 127 *or* 125, 126, 127 *or* 141, 142. Equivalency for MAT courses achieved by earning the appropriate score on the Mathematics Placement Examination will be accepted as fulfillment of the requirement without the necessity of substituting other credits. For detailed information about the various calculus sequences, see alphabetical listing, Mathematics, p. 160, especially "Beginning Mathematics Courses" and the course descriptions.
2. The following physics courses are alternatives to PHY 131, 132: PHY 121, 122 *or* 125, 126, 127 *or* 141, 142.

Geological Oceanography

Students interested in geological oceanography should complete two of the following biological sciences courses: BIO 220, 343, 344, 353, or 354. In the senior year, qualified students may enroll in approved graduate courses at the Marine Sciences Research Center (MSRC), subject to University limits (see p. 77), 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.

Honors Program in Geology

Students in the geology major 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 by applying to the department. Candidates for honors in geology must include GEO 302 in their program.

In addition to the academic program, the student must complete an honors thesis, which is evaluated by a committee composed of the student's advisor and two other science faculty members including one from outside of the department. If the honors program is completed with distinction and the student has maintained a minimum 3.5 grade point average in all coursework in natural sciences and mathematics, honors are conferred.

Requirements for the Major in Astronomy/Planetary Sciences

All courses taken to meet requirements for the astronomy/planetary sciences major must be taken for a letter grade. In addition, a 2.0 G.P.A. must be achieved in all upper-division courses used to meet the requirements.

Completion of the major requirements entails approximately 57 credits.

A. Required departmental courses:
AST 203 Astronomy
AST 341, 342 Astrophysics I, II
At least six credits from additional AST or GEO courses numbered 200 or higher (except AST 248)

B. Required physics courses:
PHY 131, 132 (See note 1 below)
PHY 251
PHY 306
At least 12 credits from approved PHY courses numbered 300 or higher, except PHY 306 (PHY 301, 302, 303, 308, and 352 recommended)

C. Required mathematics courses:
MAT 131, 132 (See note 2 below)
MAT 203 or 205 or 211 or AMS 261
MAT 303 or 305 or AMS 361

D. Upper-Division Writing Requirement:
All students majoring in astronomy/planetary sciences must submit two papers (term papers, laboratory reports, or independent research papers) to the director of undergraduate studies for department evaluation by the end of the junior year. If this evaluation is satisfactory, the student will have fulfilled the upper-division writing requirement. If it is not, the student must fulfill the requirement before graduation.

Notes:

1. The following physics courses are alternatives to PHY 131, 132: PHY 125, 126, 127 *or* 141, 142.
2. The following alternate beginning calculus sequences may be substituted for MAT 131, 132 in major requirements or prerequisites: MAT 124, 126, 127 *or* 125, 126, 127 *or* 141, 142. Equivalency for MAT courses achieved by earning the appropriate score on the Mathematics Placement Examination will be accepted as fulfillment of the requirement without the necessity of substituting other credits. For detailed information about the various calculus sequences, see alphabetical listing, Mathematics, p. 160, especially "Beginning Mathematics Courses" and the course descriptions.

Honors Program in Astronomy/Planetary Sciences

Students in the astronomy/planetary sciences major who have maintained a cumulative grade point average of 3.3 through the junior year in courses required for the major may become candidates for departmental honors in astronomy/planetary sciences, by applying to the department. Candidates for honors in astronomy/planetary sciences 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 while enrolled in AST 447 or 487. The thesis is evaluated by a committee composed of the student's advisor and two other science faculty members including one from outside of the department. If the honors program is completed with distinction and the student has maintained a minimum 3.3 grade point average in all coursework in natural sciences and mathematics, honors are conferred.

Requirements for the Major in Earth and Space Sciences

The major in earth and space sciences leads to the Bachelor of Arts degree. It is a diversified program in the natural sciences and mathematics aimed at fostering a basic understanding of the earth and space sciences; it includes concentrated study in one of the natural sciences or mathematics or interdisciplinary studies in environmental geoscience. Intended for those seeking a science-related career, the program allows flexible course selection for students who may or may not be planning on graduate studies.

All courses taken to meet major requirements must be taken for a letter grade. In addition, a 2.0 G.P.A. must be achieved in all upper-division courses used to meet the requirements.

Completion of the major requirements entails approximately 58 to 64 credits.

A. Introductory earth and space sciences courses:
GEO 122 Physical Geology *or* GEO 102 The Earth and GEO 112 Physical Geology Laboratory
AST 203 Astronomy
ATM 205 Introduction to Atmospheric Sciences

B. Upper-division earth and space sciences courses:
At least four upper-division GEO, AST, ATM courses; at least one should include a laboratory

C. Introductory related science courses:
1. MAT 131, 132 (See note 1 below)
2. PHY 121 *or* 125 *or* 131 *or* 141
3. Any two of the following groups:
   a. PHY 122 *or* 132 *or* 142 *or* 126, 127
   b. CHE 111, 112 *or* 131, 132 *or* 141, 142
   c. BIO 151, 152 *or* 171, 172

D. Specific science concentration:
At least 12 credits in courses acceptable for one of the following concentrations: astronomy, atmospheric sciences, biology, chemistry, geology, environmental geoscience, marine sciences, mathematics, or physics

E. Upper-Division Writing Requirement:
All students majoring in earth and space sciences must submit two papers (term papers, laboratory reports, or independent research papers) to the director of undergraduate studies for department evaluation by the end

of the junior year. If this evaluation is satisfactory, the student will have fulfilled the upper-division writing requirement. If it is not, the student must fulfill the requirement before graduation.

Notes:

1. The following alternate beginning calculus sequences may be substituted for MAT 131, 132 in major requirements or prerequisites: MAT 124, 126, 127 *or* 125, 126, 127 *or* 141, 142. Equivalency for MAT courses indicated by earning the appropriate score on the Mathematics Placement Examination will be accepted as fulfillment of the requirement without the necessity of substituting other credits. For detailed information about the various calculus sequences, see alphabetical listing, Mathematics, p. 160, especially "Beginning Mathematics Courses" and the course descriptions.
2. For biology, chemistry, geology, and marine sciences concentrations, MAT 132 may be waived under requirement C.1.
3. Students must obtain departmental approval of courses chosen to satisfy the specific science concentration.
4. For concentration in chemistry, CHE 111, 112 are not acceptable under requirement C.3.
5. For astronomy, atmospheric sciences, mathematics, and physics concentrations, PHY 121, 122 are not acceptable under requirements C.2 and C.3.
6. For concentration in physics, MAT 205 or 203 or AMS 261 and MAT 305 or 303 or AMS 361 are required, and two semesters under requirement C.3 may be waived.

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. Professional courses are provided through the Center for Science, Mathematics, and Technology Education (see alphabetical listing, Science, Mathematics, and Technology Education).

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 with two distinct tracks—geology and environmental geoscience—is available. The geology track acquaints students with earth materials, the origin and evolution of life on earth, and physical processes that have shaped the earth through time. The environmental geoscience track acquaints students with the fundamental environmental problems that are dealt with by geoscientists. 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. The minor requires 20 credits.

Geology Track

GEO 103 The Earth Through Time
GEO 113 Historical Geology Laboratory
GEO 122 Physical Geology *or* GEO 102 The Earth and GEO 112 Physical Geology Laboratory
Twelve additional credits from among GEO courses numbered 300 or higher

Environmental Geoscience Track

GEO 101 Environmental Geology
GEO 111 Environmental Geology Laboratory
GEO 122 Physical Geology *or* GEO 102 The Earth and GEO 112 Physical Geology Laboratory
GEO 315 Groundwater Hydrology
Nine additional credits chosen from GEO 303, 304, 306, 307, 309, 310, 311, 316, 318

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

Geology

GEO 100-E History of Life
An introductory course in paleontology tracing the sometimes unexpected pathways of evolutionary change over the last 3.5 billion years. Topics include the origin of life, molecular evolution and the fossil record, the evolution of sex, the first land animals, dinosaur paleobiology, the earliest birds, why flowers are beautiful, and the appearance of the genus *Homo*.
Spring, 3 credits

GEO 101-E Environmental Geology
A survey of humankind's interaction with the natural environment. Fundamental earth science concepts are used to assess the impact of human activities on the land surface and the natural waters, as well as the influence of natural processes on development and land utilization. Topics include water usage and pollution, acid rain, soil erosion, radioactive and solid waste disposal, landslides, stream flooding, coastal erosion, volcanic activity, and earthquakes. Consideration is also given to the environmental consequences of energy and mineral resource utilization.
Fall and spring, 3 credits

GEO 102-E 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 and spring, 3 credits

GEO 103-E The Earth Through Time
The history of the earth from its formation 4.5 billion years ago to the present. Major issues to be addressed include formation and early history of the earth and moon; evolution of continents, oceans, and atmosphere within the framework of plate tectonics; origin of life; and evidence of past climates.
Spring, 3 credits

GEO 107-E Natural Hazards
An introduction to the concepts, techniques, and scientific methods used in the earth sciences. The natural hazards posed by earthquakes and volcanic eruptions are used as a focus for such studies. These phenomena are examined in the context of the theory of plate tectonics to determine their cause, destructive potential, and the possibility of predicting and controlling their occurrence. Elementary probability methods are introduced in the treatment of approaches to prediction. Societal responses to forecasts are also considered.
Fall and spring, 3 credits

GEO 111 Environmental Geology Laboratory
Examination of materials from on and near the surface of the earth, including sampling techniques and introductory analysis. Use of maps and field data in study of drainage, contamination, waste disposal, and flow problems.
Pre- or corequisite: GEO 101
Fall and spring, 1 credit

GEO 112 Physical Geology Laboratory
Rock and mineral identification, introduction to topographic and geologic maps.
Pre- or corequisite: GEO 102
Fall, 1 credit

GEO 113 Historical Geology Laboratory
An introduction to basic techniques used for interpreting geological history. Topics include interpretation of topographic and geological maps and cross sections, introduction to fossils, and basic stratigraphic techniques. One three-hour laboratory.
Pre- or corequisite: GEO 103
Spring, 1 credit

GEO 122-E 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. Laboratory includes 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 one three-hour laboratory and recitation per week. GEO 102/112 and GEO 122 may not both be taken for credit.
Prerequisite: High school chemistry
Fall, 4 credits (not offered in 1995-96)

GEO 287 Introductory Research in Geology
Under the supervision of a faculty member, a student may conduct research for academic credit. A research proposal must be prepared by the student, approved by the sponsoring faculty member, and submitted to the department's URECA coordinator for approval by the end of the first week of the semester in which credit is to be given. A written report of the completed project must be submitted to the URECA coordinator before the end of classes.
Prerequisites: Lower-division standing; one GEO course; permission of instructor and URECA coordinator
Fall and spring, 1 to 3 credits

GEO 302-E 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 per week.
Prerequisites: GEO 103/113
Spring, 4 credits (not offered in 1996-97)

GEO 303-E 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 emphasizes practical techniques in stratigraphy.
Prerequisite: GEO 306
Fall, 4 credits

GEO 304-H Energy, Mineral Resources, and the Environment
A survey of the origin, distribution, and importance to modern civilization of the fuels and minerals won from the earth. Geology of mineral resources and problems of finding, extracting, and supplying fossil fuels, metallic ores, water, and nonmetallic commodities to industry and community as well as the ultimate limits of their abundances. Environmental concerns related to the exploitation of mineral resources with review of legislation and other steps being taken to minimize environmental damage.
Prerequisites: GEO 102; CHE 111 or high school chemistry
Fall or spring, 3 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-E Mineralogy and Petrology I
An introduction to mineralogy and petrology. Topics in mineralogy include basic crystallography, crystal chemistry, and identification of the important rock-forming and ore minerals. Topics in petrology focus on the processes that govern the formation and distribution of igneous and metamorphic rocks. Laboratory exercises include crystallography, mineral and rock identification, and interpretation of igneous and metamorphic histories of selected rock suites. Two hours of lecture and two three-hour laboratories per week.
Prerequisite: GEO 122 or 102/112
Pre- or corequisite: CHE 132 or 142
Spring, 4 credits

GEO 307-E Mineralogy and Petrology II
Topics in mineralogy include advanced crystallography, crystal chemistry, optical mineralogy, and X-ray analytical techniques. Topics in petrology focus on the use of thin sections to interpret evolutionary histories of igneous and metamorphic rocks, integrating petrography, phase equilibria, and the physical properties of magma and rocks. Two hours of lecture and two three-hour laboratories per week.
Prerequisite: GEO 306
Fall, 4 credits (not offered in 1995-96)

GEO 309-E 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 visits classical structural localities in the East.
Prerequisite: GEO 122 or GEO 102/112
Spring, 4 credits

GEO 310-E 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 102/112; PHY 122 or 132 or 142 or 126, 127
Fall, 3 credits

GEO 311-H Geoscience and Global Concerns
An exploration of how technologically based problems facing the United States and the world are related to the basic scientific principles that explain the properties of the lithosphere, hydrosphere, and atmosphere. The set of issues include such geoscience-based topics as global waming, fossil fuel resources, nuclear waste disposal, and earthquake prediction and preparedness. Not for credit in addition to the discontinued GEO 308.
Prerequisite: GEO 101 or 102 or 107
Fall, 3 credits

GEO 315-E Groundwater Hydrology
Physical and chemical principles of geohydrology. Concepts of groundwater geology. Introduction to quantitative models of regional fluid flow and groundwater contamination. Groundwater and geologic processes, with examples from tectonics, petroleum geology, geothermics, and economic mineralization.
Prerequisites: GEO 102; MAT 127 or 132 or 142
Spring, 3 credits

GEO 316-E Geochemistry of Surficial Processes
Chemical principles used in the study of surface and near-surface water, rocks, and soils. Application of equilibrium concepts and reaction rates to reactions involving gases, fluids, and minerals in nature. Consideration of soil properties and processes.
Prerequisites: GEO 122 or 102/112; CHE 132 or 142
Fall, 4 credits

GEO 318-E Engineering Geology and Coastal Processes
Fundamental concepts of soil, sediment, and rock mechanics and the physics of surficial processes. Application is made to problems of geotechnical and coastal engineering. Topics include consolidation, loose boundary hydraulics, slope stability, underground excavations and beach and tidal inlet stability, and channel sedimentation. Crosslisted with MAR 318.
Prerequisites: GEO 122 or 102/112; MAT 127 or 132 or 142
Fall, 3 credits

GEO 352-E 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 303 or 305 or AMS 361; PHY 132 or 142 or 126, 127
Spring, 3 credits (not offered in 1996-97)

GEO 353-E 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 are discussed. Crosslisted with BIO 353.
Prerequisite: BIO 151 or 171 or MAR 104; BIO 343 recommended
Spring, 3 credits

GEO 447 Senior Tutorial in Geology
Independent readings in advanced topics to be arranged prior to the beginning of the semester. Weekly conferences are held with a faculty member. May be repeated once.
Prerequisite: Permission of instructor and chairperson
Fall and spring, 1 to 3 credits

GEO 475 Teaching Practicum in Geology
Supervision of laboratory or recitation sections 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

GEO 476 Advanced Teaching Practicum
The continuation of training in the teaching of geosciences courses. Either increased or different responsiblities are assigned, adding to the quality of academic experience already gained in GEO 475. Satisfactory/Unsatisfactory grading only.
Prerequisite: GEO 475; previous preparation in subject field; interview; permission of instructor and department
Fall and spring, 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

GEO 488 Internship
Participation in local, state, or national private enterprises, public agencies, or nonprofit institutions. Students are required to submit a proposal to the department at the time of registration and a research report at the end of the semester. May be repeated up to a limit of 12 credits. Satisfactory/Unsatisfactory grading only.
Prerequisites: Permission of instructor, department, and Office of Undergraduate Studies
Fall and spring, 3 to 6 credits

Astronomy/Planetary Sciences

AST 101, 105, and 248 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 a D.E.C. requirement.

AST 101-E 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. Not for credit in addition to AST 203.
Fall and spring, 4 credits

AST 105-E 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.
Fall and spring, 3 credits

AST 203-E 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. May not be taken for credit in addition to AST 101. An optional observing session is held one evening per week.
Prerequisite: PHY 125 or 131 or 141
Spring, 4 credits

AST 248-H The Search for Life in the Universe
A study of the role of science in modern society through investigation of the question: Does life exist elsewhere in the universe? Topics include a review of the astronomical and biological settings; the origin of life on the earth and possibly elsewhere; the evolution of life and the development of intelligence and technology. Also discussed are the ramifications of the development of life and intelligence for the atmosphere and the biosphere.
Prerequisite: One D.E.C. category E course
Fall and spring, 3 credits

AST 287 Introductory Research in Astronomy
Under the supervision of a faculty member, a student may conduct research for academic credit. A research proposal must be prepared by the student, approved by the sponsoring faculty member, and submitted to the department's URECA coordinator for approval by the end of the first week of the semester in which credit is to be given. A written report of the completed project must be submitted to the URECA coordinator before the end of classes.
Prerequisites: Lower-division standing; one AST course; permission of instructor and URECA coordinator
Fall and spring, 1 to 3 credits

AST 341-E, 342-E Astrophysics I, II
An introduction to, and development of, a firm physical understanding of the observed properties of the stars and our galaxy. Topics include the structure of the interior and atmosphere of stars evolution of stars, dynamics of multiple star systems, physics of the interstellar medium, and the structure of our galaxy.
Prerequisites to AST 341: AST 203; PHY 132 or 142 or 126, 127; MAT 127 or 132 or 142
Corequisites to AST 341: PHY 251; MAT 203 or 205 or 211 or AMS 261
Prerequisite to AST 342: AST 341
Fall (341) and spring (342), 3 credits each semester (not offered in 1995-96)

AST 343 Extragalactic Astronomy
An introduction to the properties of normal and active galaxies, the structure of the local universe, and cosmology with an emphasis on the physical processes responsible for the observed phenomena.
Prerequisites: AST 203; PHY 132 or 142 or 126, 127; MAT 127 or 132 or 142
Corequisites: PHY 251; MAT 203 or 205 or 211 or AMS 261
Fall, 3 credits (not offered in 1996-97)

AST 344-E Black Holes, Quasars, and Cosmology
A discussion of some of the most exciting astronomical discoveries of the past 30 years. Topics are selected from the evolution of objects leading to pulsars, black holes, supernovae, active galactic nuclei, starbursts, the Big Bang, and dark matter.
Prerequisites: PHY 132 or 142 or 126, 127; MAT 127 or 132 or 142
Corequisites: PHY 251; MAT 203 or 205 or 211 or AMS 261
Spring, 3 credits (not offered in 1996-97)

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 351-E Introduction to Planetary Physics
Overview of the solar system for science majors. Topics include orbits and bulk properties of the planets, moons, asteroids, and comets; composition, structure, and origin of planetary atmospheres; cratering and other surface processes; tidal heating; planetary rings; the origin of the solar system and formation of other planetary systems.
Prerequisites: AST 203; PHY 132 or 142 or 126, 127; MAT 127 or 132 or 142
Corequisites: PHY 251; MAT 203 or 205 or 211 or AMS 261
Fall, 4 credits (not offered in 1996-97)

AST 443 Observational Techniques in Optical Astronomy
An introduction to modern astronomical instrumentation and data handling and to the use of telescopes. Emphasis is 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, 4 credits (not offered in 1995-96)

AST 447 Senior Tutorial in Astronomy
Independent readings in advanced topics to be arranged prior to the beginning of the semester. Weekly conferences are held with a faculty member. May be repeated once.
Prerequisite: Permission of instructor and chairperson
Fall and spring, 1 to 3 credits

AST 475 Teaching Practicum in Astronomy
Supervision of laboratory or recitation sections 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

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

Graduate Courses

Qualified seniors may take 500-level courses with the permission of the department chairperson and the Graduate School, subject to University limits (see p. 77). See the current *Graduate Bulletin* for course descriptions.

Department of Economics

Chairperson: Thomas Muench

Director of Undergraduate Studies: William Dawes

Faculty

Reiko Aoki, Assistant Professor, Ph.D., Stanford University: Industrial organization; game theory.

Robert J. Aumann, Professor, Ph.D., Massachusetts Institute of Technology: Game theory; mathematical economics. Member, Institute for Decision Sciences.

Steven Cassou, Assistant Professor, Ph.D., University of Minnesota: Macroeconomics; monetary economics.

William Dawes, Lecturer, Ph.D., Purdue University: Econometrics; economic history. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974.

Pradeep Dubey, Professor, Ph.D., Cornell University: Game theory; mathematical economics. Member, Institute for Decision Sciences.

John Hause, Professor, Ph.D., University of Chicago: Theory of measurement and econometric estimation in human capital; industrial organization; applied microeconomics.

John Hillas, Assistant Professor, Ph.D., Stanford University: Game theory; microeconomic theory. Member, Institute for Decision Sciences.

Bryce Hool, Professor, Ph.D., University of California, Berkeley: Macroeconomics; general equilibrium theory; monetary theory. Member, Institute for Decision Sciences.

Michael Hurd, Professor, Ph.D., University of California, Berkeley: Econometrics; labor; macroeconomics.

Estelle James, Professor Emerita, Ph.D., Massachusetts Institute of Technology: Welfare economics; human resources.

Takashi Kamihigashi, Assistant Professor, Ph.D., University of Wisconsin: Macroeconomics; international economics; economic theory.

Stefan Mittnik, Associate Professor, Ph.D., Washington University: Econometrics; macroeconomics.

Mark Montgomery, Associate Professor, Ph.D., University of Michigan: Economic demography; development economics.

Thomas Muench, Professor, Ph.D., Purdue University: Mathematical economics; econometrics; urban economics.

Egon Neuberger, Professor, Ph.D., Harvard University: Comparative systems; Soviet and East European economics.

Abraham Neyman, Professor, Ph.D., Hebrew University: Game theory; mathematical economics. Member, Institute for Decision Sciences.

Thomas Prusa, Associate Professor, Ph.D., Stanford University: International economics; industrial organization.

Warren Sanderson, Professor and Graduate Studies Director, Ph.D., Stanford University: Economic history; economic demography.

James Schmitz, Assistant Professor, Ph.D., University of Minnesota: Industrial organization; macroeconomics.

Charles Staley, Associate Professor Emeritus, Ph.D., Massachusetts Institute of Technology: History of economic thought; international trade.

Yair Tauman, Professor, Ph.D., Hebrew University: Industrial organization; game theory. Member, Institute for Decision Sciences.

Dieter Zschock, Professor, Ph.D., Tufts University: Development economics; labor economics.

Michael Zweig, Professor, Ph.D., University of Michigan: Political economy; labor economics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1991, and the President's Award for Excellence in Teaching, 1991.

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 20

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 in 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.

Completion of the major requirements entails 39 to 46 credits.

A. A minimum of 11 courses in economics (including not more than two 100-

level courses) distributed as follows:
   1. ECO 101 Introduction to Economic Analysis
   2. ECO 303 Intermediate Microeconomic Theory
   3. ECO 305 Intermediate Macroeconomic Theory
   4. Six economics courses numbered 310 and above
   5. Two additional economics courses

B. One semester of calculus (MAT 123 or higher or a score of level 6 on the Mathematics Placement Examination)

C. Upper-Division Writing Requirement: Students should meet the upper-division writing requirement before the end of the junior year, demonstrating their competence in writing for the discipline by obtaining a satisfactory evaluation of their writing from the faculty instructor of any upper-division ECO course except ECO 320. Where a term paper or other major writing assignment is a required part of the course, this work will form the basis of evaluation. When the course involves no major writing assignment, the instructor will assign a special paper for those students in the class seeking to satisfy the writing proficiency requirement. In these cases, the number of students who will be permitted to seek evaluation may be limited. Students must request permission from the instructor at the beginning of the semester to use the course for this evaluation. Only students with a declared major in economics or with an economics concentration in either the multidisciplinary studies major or the social sciences major may apply to have their writing evaluated. Students who fail to fulfill the requirement on their first effort must do so in a subsequent semester before graduation.

Note: No course used to satisfy requirements for the major may be taken Pass/No Credit. The grade point average for the six economics courses numbered 310 and above (requirement A.4.) must be at least 2.0. The calculus course must be taken for a letter grade and must be passed with a grade of C or higher. No transfer course with a grade lower than C may be applied toward requirement A.4.

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 303, 305, and one economics 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 is usually written in the first half of the senior year in ECO 495. Each student writing a thesis also enrolls in ECO 496 Senior Seminar, where work will be presented and critically evaluated by the students in the program.

The thesis is evaluated by the student's faculty supervisor, the faculty member in charge of the senior seminar, and a faculty member from another department. If the honors project is completed with distinction, and the student has achieved a 3.5 grade point average in all economics courses taken in the senior year, honors will be conferred.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

ECO 101-F 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).
Fall and 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. Crosslisted with BUS 114.
Fall and spring, 3 credits

ECO 203-F 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
Fall or spring, 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. Crosslisted with BUS 214.
Prerequisite: ECO/BUS 114
Fall and spring, 3 credits

ECO 237-F Economics of Industrial and Labor Relations
Evolution of labor unions and collective bargaining, with an emphasis on current labor problems, union and nonunion; changing composition of the labor force; wage differentials; the theory of wage determination; labor legislation; and unemployment.
Prerequisite: ECO 101
Fall or spring, 3 credits

ECO 243-F 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
Fall or spring, 3 credits

ECO 301-F The Theory of the Firm and Markets
A development of those aspects of microeconomic analysis appropriate for understanding the behavior of individual firms and the characteristics of various market structures. Topics include supply and demand, the determinants of optimal output levels, perfect competition, monopoly, imperfect competition, and factor markets. Not for major credit. May not be taken for credit after ECO 303.
Prerequisite: ECO 101
Pre- or corequisite: MAT 123 or higher
Fall and spring, 4 credits

ECO 303-F 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: A grade of C or higher in one semester of calculus; ECO 101
Fall and spring, 4 credits

ECO 305-F 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: A grade of C or higher in one semester of calculus; ECO 101
Fall and spring, 4 credits

ECO 310 Basic Computational Methods in Economics
A first course in the computational and graphical techniques for finding numerical solutions to the economic models presented in undergraduate courses. Includes the foundations of programming (using BASIC), data management, Newton's method for solving nonlinear equations, exploring and fitting functions graphically, and finding maxima of functions.
Pre- or corequisite: ECO 303
Fall or spring, 4 credits

ECO 317-F Marxist Political Economy
A Marxian analysis of capitalism, including some of the writings of Marx, Lenin, and Mao Zé Dōng. 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.
Prerequisite: ECO 101
Fall or spring, 3 credits

ECO 318-F 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
Fall or 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, and 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; one semester of calculus
Fall, 4 credits

ECO 321-F 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-F International Economics
Economic theory of international trade, protection, commercial policy, customs unions, capital movements, and international finance.
Prerequisite: ECO 303
Fall or spring, 3 credits

ECO 326-F 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 303
Fall or spring, 3 credits

ECO 333-F Demographic Economics
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 303 and 305
Pre- or corequisite: ECO 321
Fall or spring, 3 credits

ECO 335-F 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 are presented in the light of the actual experience of developing countries.
Prerequisite: ECO 305
Fall or spring, 3 credits

ECO 337-F 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 303
Fall or spring, 3 credits

ECO 339-J China's Economy Since 1949
Economic development policies in the People's Republic of China from the revolution in 1949 to the present. Topics include agricultural and industrial organization, population policies, sectoral balances, foreign trade, and attempts to reconcile planning with market forces.
Prerequisite: ECO 303
Fall or spring, 3 credits

ECO 345-F 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 303
Fall or spring, 3 credits

ECO 348-F 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 makes decisions on large-scale and detailed cases in realistic managerial situations and is introduced to the use of the computer. Not for credit in addition to BUS 349.
Prerequisite: ECO 303
Fall or spring, 4 credits

ECO 351-F, 352-F, 353-F, 354-F Special Topics in Economics
Courses covering a specific area of economics, to be announced when each course is offered. Examples of semester topics are applied econometrics, human resources in health care, urban economics, economics of exhaustible resources, and American economic history. May be repeated as the topic differs.
Prerequisites: ECO 101; at least one other course to be specified when the topic is announced
Schedule to be announced, 3 credits

ECO 355 Game Theory
Introduction to game theory fundamentals with special emphasis on problems from economics and political science. Topics include strategic game and Nash equilibrium, games in coalitional form and the core, bargaining theory, measuring power in voting systems, problems of fair division, and optimal and stable matching. Crosslisted with AMS 335.
Prerequisite: MAT 126 or 131 or 141
Fall, 3 credits

ECO 360-F Money and Banking
An introduction to modern monetary institutions and mechanisms, their relationship to the economy, and governmental policies in this area.
Prerequisite: ECO 305
Fall or spring, 3 credits

ECO 368-F Modern Portfolio Theory
The economics of uncertainty and modern portfolio theory. Topics include expected utility theory, measurement of risk, the capital asset pricing model, and efficient markets. Students maintain a portfolio of common stocks and evaluate its performance.
Prerequisites: ECO 303 and 320
Pre- or corequisite: ECO 321
Fall or spring, 3 credits

ECO 370-F Theory of Financial Markets
The study of financial markets. The course reviews net present value as an investment criterion. Capital asset pricing models and market efficiency are covered briefly. Pricing of stocks, bonds, options, and futures, together with hedging strategies using options and futures, are covered in more detail.
Prerequisites: ECO 303 and 320
Fall or spring, 3 credits

ECO 383-F 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 303 and 305
Fall or spring, 3 credits

ECO 385-F 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 303 and 305
Fall or spring, 3 credits

ECO 387-F 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 are investigated. Topics also include specification of demand and supply equations in the analysis of single-product markets. Students are expected to estimate and manipulate actual models.
Prerequisites: ECO 303, 305, and 321
Fall or spring, 3 credits

ECO 389-F 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 303 and 305
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 writes several papers, which are evaluated critically in the seminar. Particular subject matter varies. Enrollment is limited to 15 students.
Prerequisite: Admission to honors program in economics
Fall or spring, 3 credits

ECO 400 Topics in Economic Theory
Topics in economic theory are offered as student demand and faculty time and interest coincide. Some of the possible topics are optimization theory, growth theory, investment determination, and advanced microeconomic theory. Students should check with the department for information about the topic to be offered in any particular semester. May be repeated for different topics.
Prerequisites: ECO 101; at least one other course specified when the topic is announced
Schedule to be announced, 3 credits

ECO 402 Topics in Quantitative Economics
Topics in quantitative economics are offered as student demand and faculty time and interest coincide. Some of the possible topics are forecasting with econometric models, time series and spectral analysis, decision theory, game theory. Students should check with the department for information about the topic to be offered in any particular semester. May be repeated for different topics.
Prerequisites: ECO 101; at least one other course specified when the topic is announced
Schedule to be announced, 3 credits

ECO 404 Topics in Development and Comparative Systems
Topics in development and comparative systems are offered as student demand and faculty time and interest coincide. Some of the possible topics are economic development in modern Europe or China, Eastern European economies, and economic development in the Middle East or Latin America. Students should check with the department for information about the topic to be offered in any particular semester. May be repeated for different topics.
Prerequisites: ECO 101; at least one other course specified when the topic is announced
Schedule to be announced, 3 credits

ECO 406 Topics in Political Economy
Topics in political economy are offered as student demand and faculty time and interest coincide. Some of the possible topics are imperialism, political economy of Latin America, and property relations. Students should check with the department for information about the topic to be offered in any particular semester. May be repeated for different topics.
Prerequisites: ECO 101; at least one other course specified when the topic is announced
Schedule to be announced, 3 credits

ECO 408 Topics in Applied Economics
Topics in applied economics are offered as student demand and faculty time and interest coincide. Some of the possible topics are advanced topics in economics of education, capital and financial markets, and medical economics. Students should check with the department for information about the topic to be offered in any particular semester. May be repeated for different topics.
Prerequisites: ECO 101; at least one other course specified when the topic is announced
Schedule to be announced, 3 credits

ECO 475 Undergraduate Teaching Practicum in Economics I
Each student conducts a regular recitation or problem section that supplements a regular economics course. The student receives regularly scheduled supervision from the instructor. Responsibilities may include preparing material for discussion 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
The continuation, on a more advanced level, of training in the techniques of organization and management in the teaching of economics courses. Students are expected to assume greater responsibility in such areas as designing practice homework, analyzing results of tests that have already been graded, and observing and helping new teaching assistants to develop teaching techniques. Students may not serve as teaching assistants in the same course twice. 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 are 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, but no more than six credits count toward economics major requirements.
Prerequisites: ECO 303 and 305; permission of instructor, department, and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

ECO 495 Senior Thesis
The student writes 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 is required to make periodic and final presentations of the senior thesis. Students are 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
Joseph W. Lauher: 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 helps the student to prepare for work or advanced study in areas such as electronic materials, interfacial phenomena, solid-state science and technology, polymers, ceramics, 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 and 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 p. 246.

Diversified Education Curriculum Requirements

Students majoring in engineering chemistry must meet the D.E.C. requirements of the College of Arts and Sciences, with the following exceptions:

A. An elementary foreign language course numbered 101 or 112, if taken to fulfill the entry skill in foreign language requirement, may also be used for one of the two courses needed to fulfill the D.E.C. category G requirement.
B. Only one course need be taken from D.E.C. category F.

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. At least six credits each of upper-division work in chemistry and in materials science and engineering must be taken at Stony Brook.

Completion of the major requirements entails approximately 65 to 67 credits.

A. Mathematics and Basic Science Requirements

1. MAT 131 Calculus I and MAT 132 Calculus II (see note, below)
2. One of the following pairs of courses: AMS 261 and 361 Engineering Mathematics I and II; *or* MAT 205 and 305 Calculus III and IV; *or* MAT 203 and 303 Calculus III and IV with Applications
3. CSE 111 Computer Science for Engineers
4. CHE 131, 132 General Chemistry *or* CHE 141, 142 Honors Chemistry (CHE 198 Chemistry for Engineers acceptable with permission)
5. CHE 133, 134 General Chemistry Laboratory *or* CHE 143, 144 Honors Chemistry Laboratory (CHE 199 General Chemistry Laboratory for Engineers acceptable with permission)
6. PHY 131, 132 Classical Physics I, II *or* PHY 141, 142 Classical Physics I, II: Honors *or* PHY 125, 126, 127 Classical Physics A, B, C; PHY 251 Modern Physics *or* ESG 281 An Engineering Introduction to the Solid State

Note: The following alternate calculus sequences may be substituted: MAT 141, 142 *or* 125, 126, 127 *or* 124, 126, 127 for 131, 132.

B. Core Program

1. CHE/ESM 221 Introduction to Chemistry of Solids
2. CHE 301, 302 Physical Chemistry I, II
3. CHE 303 Solution Chemistry Laboratory
4. CHE 304 Chemical Instrumentation Laboratory
5. CHE 321 or 331 Organic Chemistry
6. ESG 332 Materials Science I: Structure and Properties of Materials
7. ESG 333 Materials Science II: Electronic Properties
8. ESM 302 Introduction to the Crystalline State

C. Upper-Division Writing Requirement

Each student majoring in engineering chemistry must submit a portfolio of three to five papers from previous coursework, at least two of which should be full laboratory reports from chemistry courses. This portfolio is to be submitted by the end of the junior year. It must be found acceptable in its clarity and precision of communication before the student can be cleared for graduation.

Electives

Selection of technical and open electives to give a total of 120 credits. 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 375 (inorganic).

Department of English

Chairperson: Thomas E. Maresca

Director of Undergraduate Studies: Timothy A. Brennan

Director of Writing Programs: Alice B. Robertson

Faculty

Ursula Appelt, Assistant Professor, Ph.D., University of Virginia: Renaissance.

Bruce W. Bashford, Assistant Professor, Ph.D., Northwestern University: Literary criticism; rhetoric and composition.

Patricia A. Belanoff, Associate Professor, Ph.D., New York University: Composition; Old English; Middle English; rhetoric.

Timothy Brennan, Associate Professor, Ph.D., Columbia University: Cross-cultural literary studies; history and theory of criticism.

Dennis A. Clarke, Lecturer and Director of the Writing Center, M.A., Louisiana State University: Composition; rhetoric.

Helen Cooper, Associate Professor, Ph.D., Rutgers University: Victorian literature; creative writing; women's studies.

Paul J. Dolan, Associate Professor, Ph.D., New York University: Modern British and American literature; Yeats; literature and politics.

Cornelius Eady, Associate Professor and Director of the Poetry Center: Poetry; creative writing.

Elsa Emenheiser, Lecturer, Ph.D., State University of New York at Stony Brook: Modern British and American literature; secondary education.

Thomas B. Flanagan, Distinguished Professor Emeritus, Ph.D., Columbia University: Irish literature; modern British literature; Joyce; Yeats.

Diane Fortuna, Associate Professor, Ph.D., The Johns Hopkins University: 20th-century British and American literature; 19th-century American literature.

Clare A. Frost, Lecturer, M.A., State University of New York at Stony Brook: Composition; creative writing.

Leonard Gardner, Lecturer Emeritus, Ph.D., University of Chicago: Secondary education.

Eric Haralson, Assistant Professor, Ph.D., Columbia University: American studies.

James Harvey, Associate Professor Emeritus, A.M., University of Michigan: The novel; drama; film.

Laura Henigman, Assistant Professor, Ph.D., Columbia University: Early American literature.

Clifford C. Huffman, Professor, Ph.D., Columbia University: Renaissance literature; Shakespeare. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1993, and the President's Award for Excellence in Teaching, 1993.

E. Ann Kaplan, Professor and Director of the Humanities Institute, Ph.D., Rutgers University: 19th- and 20th-century British and American literature; women's studies; film.

Shirley Strum Kenny, Professor, Ph.D., University of Chicago: Restoration and 18th-century British drama.

Thomas Kranidas, Professor, Ph.D., University of Washington: 17th-century literature; Milton.

Richard L. Levin, Professor Emeritus, Ph.D., University of Chicago: Renaissance drama; literary criticism.

Richard A. Levine, Professor, Ph.D., Indiana University: Victorian literature; the novel; literature and society.

Aaron Lipton, Associate Professor and Coordinator of English Teacher Preparation, Ed.D., New York University: The teaching of reading, composition, and literature; the psychology of literature.

Ira Livingston, Assistant Professor, Ph.D., Stanford University: Romanticism; literary theory.

Jack Ludwig, Professor Emeritus, Ph.D., University of California, Los Angeles: 20th-century literature; Joyce; Yeats; creative writing.

Thomas E. Maresca, Professor, Ph.D., The Johns Hopkins University: Restoration and 18th-century literature; the epic; satire.

Joaquin Martinez-Pizarro, Associate Professor, Ph.D., Harvard University: Old English; Middle English.

Carolyn McGrath, Lecturer, M.A., State University of New York at Stony Brook: Creative writing; composition.

Adrienne Munich, Associate Professor, Ph.D., City University of New York: Victorian literature; women's studies.

Gerald B. Nelson, Associate Professor, Ph.D., Columbia University: 20th-century British and American literature; poetry.

Paul A. Newlin, Associate Professor Emeritus, Ph.D., University of California, Los Angeles: 19th-century American literature; creative writing. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1985, and the President's Award for Excellence in Teaching, 1985.

Stacey Olster, Associate Professor, Ph.D., University of Michigan: 20th-century British and American literature; the novel. Recipient of the President's Award for Excellence in Teaching, 1986, and the Chancellor's Award for Excellence in Teaching, 1987.

Ron Overton, Lecturer, M.A., State University of New York at Stony Brook: Composition and rhetoric; contemporary poetry.

Joseph Pequigney, Professor Emeritus, Ph.D., Harvard University: 17th-century literature; Shakespeare.

William Reynolds, Lecturer, M.A., Syracuse University: Composition.

Alice B. Robertson, Assistant Professor and Director of Writing Programs, Ph.D., Arizona State University: Composition theory and practice; 19th- and 20th-century American literature.

Carol Rosen, Associate Professor, Ph.D., Columbia University: Theory; criticism; modern drama.

Walter Scheps, Associate Professor, Ph.D., University of Oregon: Old English; Middle English; the history of the English language.

Sallie Sears, Associate Professor, Ph.D., Brandeis University: The novel; Henry James; literary criticism; women's studies.

David Sheehan, Associate Professor, Ph.D., University of Wisconsin: Restoration and 18th-century literature; Native American literature.

Louis Simpson, Distinguished Professor Emeritus, Ph.D., Columbia University: 19th- and 20th-century British and American literature; poetry; creative writing; literary criticism.

Clifford H. Siskin, Associate Professor, Ph.D., University of Virginia: British romanticism; critical theory.

Stephen J. Spector, Professor and Graduate Studies Director, Ph.D., Yale University: Old English; Middle English; the history of the English language.

Judah L. Stampfer, Professor Emeritus, Ph.D., Harvard University: Renaissance and 17th-century literature; Shakespeare; literature and psychology.

Frances Zak, Lecturer, Ph.D., State University of New York at Stony Brook: Composition and rhetoric; 20th-century American literature.

Adjunct Faculty
Estimated number: 12

Teaching Assistants
Estimated number: 50

Courses offered by the Department of English seek to develop students' understanding of important works of literature written in English, 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. In addition, the department regularly offers courses in creative writing (EGL 285, 286, 385), journalism (JRN 287, 288, 289, 387, 388, 394, 395; see Journalism elsewhere in the alphabetical listing of Arts and Sciences programs), and secondary education leading to provisional New York State certification (EGL 396, 398, 450, 454).

The English Department's Writing Center offers individual tutoring to all members of the Stony Brook community, including undergraduate and graduate students and faculty.

Requirements for the Major in English

The major in English leads to the Bachelor of Arts degree. The following courses are required.

Completion of the major requirements entails 54 credits.

A. Study within the Area of the Major
(Courses must be taken for a letter grade, i.e., the Pass/No Credit option is excluded. Only two courses

with grades in the D range may be counted.)

1. EGL 204 Literary Analysis and Argumentation, which should be taken as an introduction to the major
2. EGL 205 Survey of British Literature I, which should be taken in the sophomore year
3. One of the following courses:
   EGL 206 Survey of British Literature II
   EGL 217 American Literature I
   EGL 218 American Literature II
4. One of the following courses:
   EGL 224 20th-Century Literature in English
   EGL 226 Contemporary American Literature: 1945 to the Present
5. One of the following Shakespeare courses: EGL 243 or 345 or 346
6. Two period courses from the sequence numbered EGL 300-320
7. Four additional courses numbered EGL 200-400, three of which must be numbered 300 or higher, exclusive of those courses listed in note 1 below.
8. EGL 380 History and Structure of the English Language

Notes on Section A:

1. No English course 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 202, 285, 286, 385, 398, 450, 454, 488, or any JRN course.
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 unless they are also to be used to satisfy D.E.C. requirements.)

1. One year (or its six-credit equivalent) of college study of a foreign language at the intermediate level or beyond
2. Six credits of study of British, American, medieval, or Renaissance history
3. Six credits of study in the Humanities and Fine Arts Division (excluding English courses) in addition to the foreign language requirement above

C. Upper-Division Writing Requirement

In the semester preceding the semester in which the student expects to graduate, he or she shall submit to the director of undergraduate studies two papers, each written for a different instructor in an upper-division English course, together with the instructor's written confirmation that the paper demonstrates suitably advanced writing proficiency. The departmental course descriptions for the forthcoming semester regularly specifies those courses in which students may satisfy this requirement. The student must notify the instructor before the paper is turned in to him or her that it is intended to satisfy this requirement in addition to the course requirements. A student anticipating or experiencing difficulty in satisfying this requirement should seek the advice and assistance of the director of undergraduate studies no later than the beginning of the semester before the one in which the student expects to graduate.

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 coordinator of English teacher preparation 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 grade point average
C. A writing sample
D. Professional educational requirements:
   1. EGL 396 Literature and Psychology of Adolescence
   2. EGL 398 Methods of Instruction in Literature and Composition
   3. EGL 450 Supervised Secondary School Student Teaching
   4. EGL 454 Student Teaching Seminar
   5. SSI 350 Foundations of Education

Note: Courses taken for Pass/No Credit may not be used to satisfy the preparation in professional education component of the teacher preparation program.

The Honors Program in English

To be awarded honors a department major must (1) attain 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 EGL 490; (3) write a senior thesis judged worthy of honors. Completion of EGL 490 is a prerequisite 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 496. The thesis topic must be approved by the undergraduate program committee before the last week of the semester prior to taking EGL 496. 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, allows students to pursue within a framework of general requirements their specific interests in one of three areas: British literature, American literature, or 20th-century literature. Each student's particular choice of courses within these three options *must* be determined in consultation with the director of undergraduate studies.

All courses must be taken for a letter grade, i.e., the Pass/No Credit option is excluded.

A. Courses required of all minors:

EGL 204 Literary Analysis and Argumentation
Shakespeare: EGL 243 or 345 or 346
One elective from EGL 300-496, exclusive of 385, 450, 454, and JRN courses

B. One of the following options:

1. *Emphasis on British literature:*
   One survey course appropriate to the student's interest: EGL 205 or 206 or 224
   One course in a period of British literature: EGL 300-314
   One course in a genre or major author in British literature: EGL 340-349, 352, 361-364
2. *Emphasis on American literature:*
   One survey course appropriate to the student's interest: EGL 217 or 218 or 226
   One course in a period of American literature: EGL 316 or 318
   One course in a genre or major author in American literature: EGL 350 or 352, or 361-364
3. *Emphasis on 20th-century literature:*
   One survey course appropriate to the student's interest: EGL 224 or 226
   One course in the study of 20th-century literature: EGL 320 or 352
   One course in the study of a genre treating 20th-century writers: EGL 361-364

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

Details of staffing and specific course descriptions should be obtained from brochures published by the English Department before registration each semester. Reading lists are also available in advance.

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 is emphasized. There is less emphasis on expository writing and formal revision than in EGC 101. Satisfactory/Unsatisfactory grading only. May be repeated once.
Prerequisite: Placement by English Placement Examination or by ESL instructor
Fall and spring, 3 credits

EGC 101-A Writing Workshop
Intensive practice in writing frequent short papers. Emphasis on strategies for drafting and revising. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used. (This course does not satisfy D.E.C. category A for students with placement 4 on the English Placement Examination.)
Prerequisite: Placement by English Placement Examination or by EGC 100 or ESL instructor.
Fall and spring, 3 credits

EGC 102-A Writing Workshop II
A continuation of EGC 101. Emphasis on the development of expository and argumentative writing skills. Frequent papers. May satisfy D.E.C. category A for students who do not satisfy it through EGC 101 and who earn a C or higher in the course.
Prerequisite: EGC 101 or recommendation of EGC 101 instructor
Fall and spring, 3 credits

EGL 191-B 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 placement 4 on the English Placement Examination
Fall and spring, 3 credits

EGL 192-B Introduction to Fiction
An analysis of fictional prose in terms of each section's specific theme. A goal of each section is to interpret various pieces of literature in relation to a political or historical view, or a particular literary technique. (Not for English major credit.)
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall and spring, 3 credits

EGL 193-B 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 placement 4 on the English Placement Examination
Fall and spring, 3 credits

EGL 199-G 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. (Not for English major credit.)
Prerequisites: Permission of department; EGC 101 or placement 4 on the English Placement Examination or acceptance as an Honors College or Honors Program student or as a Presidential Scholar or Freshman Scholar
Fall or spring, 3 credits

EGL 202-A Intermediate Writing Workshops
Intensive work on more complex problems in writing. Different sections may have different emphases (e.g., argument, personal reflection, research methods), but all concentrate on nonfictional prose. Descriptions of current offerings are available before registration each semester. Satisfies D.E.C. category A for students with placement 4 on the English Placement Examination and who earn a C or higher in the course. May be repeated once with permission of the director of writing programs.
Prerequisites: EGC 101 and sophomore standing, or placement 4 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 includes frequent demanding writing assignments and is designed for students beginning their major study in English.
Prerequisites: EGC 101 or placement 4 on the English Placement Examination; permission of department
Fall and spring, 3 credits

EGL 205-I Survey of British Literature I
The study of British literature from the Old English period to Milton.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall and spring, 3 credits

EGL 206-I Survey of British Literature II
The study of British literature from Dryden to the end of the 19th century.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall and spring, 3 credits

EGL 217-K American Literature I
The study of American literature from 1607 to 1865.
Prerequisites: EGC 101 or placement 4 on the English Placement Examination; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

EGL 218-K American Literature II
The study of American literature from 1865 to 1945.
Prerequisites: EGC 101 or placement 4 on the English Placement Examination; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

EGL 224-G 20th-Century Literature in English
The study of literature in English in the 20th century from Great Britain, Africa, the Caribbean, Canada, Australia, Ireland, New Zealand, and other countries and areas that produce material written in the English language.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

EGL 226-K Contemporary American Literature: 1945 to the Present
A survey of major works reflecting the regional, ethnic, and traditional interests of contemporary American writers.
Prerequisites: EGC 101 or placement 4 on the English Placement Examination; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

EGL 243-I Shakespeare: The Major Works
A study of major works in several genres. Designed for students who want a one-semester survey of Shakespeare.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall and spring, 3 credits

EGL 260-G Mythology in Literature
The analysis of myth in literature from antiquity to the present. The course explores 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.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

EGL 261-B The Bible as Literature
A literary approach to the Bible that explores the characteristic principles of the Bible's narrative and poetic art. Crosslisted with JDH 261.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

EGL 266-G The 20th-Century Novel
The study of major works and developments in the modern and contemporary novel. Crosslisted with CSL 266.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

EGL 274-K Black American Literature
A survey of 19th- and 20th-century Black American literature.
Prerequisites: EGC 101 or placement 4 on the English Placement Examination; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

EGL 276-B Feminism: Literature and Cultural Contexts
An examination of works written by or about women reflecting conceptions of women in drama, poetry, and fiction. The course focuses on literature seen in relation to women's sociocultural and historical position. Cross-listed with WNH 276.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

EGL 285 Writing Workshop: Fiction
A workshop in the development of skills in writing fiction through practice supplemented by readings.
Prerequisites: Permission of instructor; EGC 101 or placement 4 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.
Prerequisites: Permission of instructor; EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

EGL 300-G Old English Literature
The study of Old English language and the literature written in it from its beginnings to the 11th century.
Prerequisites: EGL 204 and 205
Fall or spring, 3 credits

EGL 302-G Medieval Literature in English
Major authors, themes, and forms of British literature from the 13th to the early 16th century, usually excluding Chaucer.
Prerequisites: EGL 204 and 205
Fall or spring, 3 credits

EGL 304-G 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-G 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-G The Age of Dryden
The study of English literature of the Restoration period.
Prerequisites: EGL 204; EGL 205 or 206
Fall or spring, 3 credits

EGL 310-G Neoclassical Literature in English
The study of English literature from about 1700 to 1790.
Prerequisites: EGL 204; EGL 205 or 206
Fall or spring, 3 credits

EGL 312-G 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-G 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-G Early American Literature
The study of American literature from its beginnings to about 1800.
Prerequisites: EGL 204 and 217
Fall or spring, 3 credits

EGL 318-G 19th-Century American Literature
Themes and trends in American literature from 1800 to 1900.
Prerequisites: EGL 204; EGL 217 or 218
Fall or spring, 3 credits

EGL 320-G Literature of the 20th Century
The study of representative works in English from 1900 to the present.
Prerequisites: EGL 204; EGL 224 or 226
Fall or spring, 3 credits

EGL 340-G Chaucer
Prerequisites: EGL 204 and 205
Fall or spring, 3 credits

EGL 342-G Milton
Prerequisites: EGL 204 and 205
Fall or spring, 3 credits

EGL 344-G Major Writers of the Renaissance Period in England
May be repeated for credit as the topic differs.
Prerequisites: EGL 204 and 205
Fall or spring, 3 credits

EGL 345-G Shakespeare I
A study of the comedies and the history plays. Designed to complement EGL 346.
Prerequisites: EGL 204 and 205
Fall, 3 credits

EGL 346-G Shakespeare II
A study of the tragedies and the romances. Designed to complement EGL 345.
Prerequisites: EGL 204 and 205
Spring, 3 credits

EGL 347-G Major Writers of the Neoclassical Period in England
May be repeated for credit as the topic differs.
Prerequisites: EGL 204 and 205
Fall or spring, 3 credits

EGL 348-G Major Writers of the Romantic Period in England
May be repeated for credit as the topic differs.
Prerequisites: EGL 204 and 205; EGL 206 recommended
Fall or spring, 3 credits

EGL 349-G Major Writers of the Victorian Period in England
May be repeated for credit as the topic differs.
Prerequisites: EGL 204 and 205; EGL 206 recommended
Fall or spring, 3 credits

EGL 350-G Major Writers of American Literature, Colonial Period to 1900
May be repeated for credit as the topic differs.
Prerequisites: EGL 204; EGL 217 or 218
Fall or spring, 3 credits

EGL 352-G Major Writers of 20th-Century Literature in English
May be repeated for credit as the topic differs.
Prerequisites: EGL 204; EGL 224 or 226
Fall or spring, 3 credits

EGL 354-G Major Writers of Contemporary British and American Literature
May be repeated for credit as the topic differs.
Prerequisites: EGL 204 and 226
Fall or spring, 3 credits

EGL 361-G Poetry in English
The study of the development of form, theme, and language of poetry in English. May be repeated for credit as the topic differs.
Prerequisite: A literature course at the 200 level or higher
Schedule to be announced, 3 credits

EGL 362-G Drama in English
The study of the development of plot, structure, character, theme, and language of drama in English. May be repeated for credit as the topic differs.
Prerequisite: A literature course at the 200 level or higher
Schedule to be announced, 3 credits

EGL 363-G Fiction in English
The study of the development of plot, structure, character, theme, and language of fiction in English. May be repeated for credit as the topic differs.
Prerequisite: A literature course at the 200 level or higher
Schedule to be announced, 3 credits

EGL 364-G Prose in English
The study of the various forms of prose such as the essay, utopia, memoir, autobiography, biography, and nonfictional narrative. May be repeated for credit as the topic differs.
Prerequisite: A literature course at the 200 level or higher
Schedule to be announced, 3 credits

EGL 365-G Literary Criticism and Theory
A survey of major texts and perspectives in literary criticism and theory.
Prerequisite: EGL 204
Fall or spring, 3 credits

EGL 366-G Topics in Literary Criticism and Theory
An inquiry into selected issues in literary criticism and theory. May be repeated for credit as the topic differs.
Prerequisite: EGL 204
Schedule to be announced, 3 credits

EGL 367-G Contemporary African-American Literature
The study of contemporary African-American literature focused in varying ways, including literary and cultural traditions, and relations to other writers and traditions in American literature.
Prerequisite: A literature course at the 200 level or higher
Schedule to be announced, 3 credits

EGL 368-J Contemporary Native American Literature
The study of works by contemporary Native American writers with particular attention to the ways these writers draw upon traditional culture, history, and concepts of storytelling to develop imaginative perspectives on contemporary culture and values.
Prerequisite: A literature course at the 200 level or higher
Fall or spring, 3 credits

EGL 369-K Topics in Ethnic Studies
The study of literary works with special attention to ethnic and cultural traditions. The course focuses on comparisons of works from ethnic contexts, such as works by African-American, Chicano, Hispanic, ethnically specific Euro-American, Jewish, Asian-American, and Native American writers. May be repeated for credit as the topic differs.
Prerequisites: A literature course at the 200 level or higher; completion of D.E.C. categories I and J strongly recommended
Schedule to be announced, 3 credits

EGL 371-G Topics in Gender Studies
Examination of the degree and manner in which the gender of writers shapes and determines the structure and content of their writing. May be repeated for credit as the topic differs.
Prerequisite: A literature course at the 200 level or higher
Schedule to be announced, 3 credits

EGL 372-G Topics in Women and Literature
The study of texts written by and about women and on issues they raise relating to gender and literature. May be repeated for credit as the topic differs.
Prerequisite: A literature course at the 200 level or higher
Schedule to be announced, 3 credits

EGL 374-G Literature in English in Relation to Other Literatures
The study of literature in English as it affects and is affected by other literatures. May be repeated for credit as the topic differs.
Prerequisite: A literature course at the 200 level or higher
Schedule to be announced, 3 credits

EGL 375-G Literature in English in Relation 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. May be repeated for credit as the topic differs.
Prerequisite: A literature course at the 200 level or higher
Schedule to be announced, 3 credits

EGL 376-G The Literature of Imperialism
A course in the history and culture of European imperialism as it is evidenced primarily in the literary texts produced both by Europeans and by the indigenous populations they colonized. The course presents the colonial-imperial experience from three different perspectives: the imperial ideology; the liberal reaction by colonizers to the injustice of imperialism; the response of colonial and formerly colonial peoples to their experience as the colonized. May be repeated for credit as the topic differs.
Prerequisite: A literature course at the 200 level or higher
Fall or spring, 3 credits

EGL 380-G The English Language
The history and development of the English language from its Indo-European roots to the present, with particular emphasis on modern prescriptive grammar and usage, and topics including Black English.
Prerequisite: EGL 205
Fall or spring, 3 credits

EGL 381, 382 Advanced Analytic and Argumentative Writing
An intensive writing course, refining skills appropriate to upper-division work. Content varies: focus may be on analysis of various intellectual issues, rhetorical strategies, and compositional problems within or across disciplines, but frequent substantial writing projects are central to every version of the course.
Prerequisites: Upper-division standing; permission of instructor
Schedule to be announced, 3 credits

EGL 385 Advanced Creative Writing
A creative writing workshop. Students receive detailed criticism of their work. May be repeated with permission of the director of undergraduate studies.
Prerequisites: EGL 285 or 286; permission of instructor
Fall and spring, 3 credits

EGL 396-G Literature and Psychology of Adolescence
The study of literary texts dealing with the subject of adolescence. Readings are mostly 20th-century novels written about adolescents, and are studied from various theoretical perspectives (e.g., Freudian, Eriksonian, family systems).
Prerequisites: One 200-level literature course; permission of instructor
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; permission of instructor
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. Among the topics to be discussed is an instructional unit on drug and alcohol education, which is designed to meet the New York State requirement for instruction in drug and alcohol education. The seminar also includes a unit on identifying and reporting child abuse and maltreatment. Students in this course are required to pay a fee; it is used to secure the New York State Certificate in Identifying and Reporting Child Abuse and Maltreatment.
Corequisite: EGL 450
Fall and spring, 3 credits

EGL 475 Undergraduate Teaching Practicum I
Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and 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 English; permission of instructor and director of undergraduate studies
Fall and spring, 3 credits

EGL 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 English courses. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which a student is permitted to work as a teaching assistant must not be the same course in

which he or she previously served. Satisfactory/Unsatisfactory grading only.
Prerequisites: EGL 475; permission of instructor and director of undergraduate studies
Fall and spring, 3 credits

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 are 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. Not for major credit.
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 Honors Seminar
Advanced work in periods, genres, and authors of English and American literature is offered in small classes. One or more seminars are given each semester. The subject matter and its treatment as well as specific prerequisites for each section are published in the department's brochure of course descriptions before advance registration for the next semester. May be repeated for credit with the permission of the director of undergraduate studies as the topic differs.
Prerequisite: Permission of instructor
Fall or spring, 3 credits

EGL 496 Senior Honors
See description of the Honors Program in English above.
Prerequisites: EGL 490; permission of department
Fall and spring, 3 credits

---

* Request for approval of the undergraduate studies committee for EGL 487 and 488 must be submitted no later than the last week of classes of the prior semester.

English as a Second Language

Director: Kamal K. Sridhar

Teaching Assistants
Estimated number: 7

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. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. ESL courses do not satisfy D.E.C. requirements.

ESL 191 Oral/Aural Skills
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: Departmental diagnostic test
Fall and spring, 3 credits

ESL 192 Intermediate Composition
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
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 the 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 194 Oral/Aural Skills for U.S. Residents
The study of spoken English for students who are graduates of American high schools but are nonnative speakers of English. The focus of the course is on helping students to speak and understand English in academic contexts. Particular attention is paid to verbal skills necessary for academic success, such as understanding lectures, increasing vocabulary, and improving pronunciation.
Prerequisites: Permission of ESL director; priority given to Language Enhancement Program students
Fall, 3 credits

ESL 197 Advanced Grammar
Review of complex grammar of English, both oral and written. Material reinforces the work done in ESL 193 and 198 and is intended to supplement those courses. Topics include all modals, indirect speech, the conditional and subjunctive, sequence of tenses, and more, depending on the needs of the class.
Prerequisite: Departmental diagnostic test
Corequisite: ESL 193 or 198
Spring, 3 credits

ESL 198 Advanced Oral/Aural Skills and Accent Improvement
An advanced course in speaking and listening skills for nonnative 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 nonnative 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 graduate students with teaching assistantships.
Prerequisite: Permission of instructor
Fall and spring, 3 credits

ESL 199 English Structure and Paragraph Development
A course for students who are nonnative speakers of English and graduates of American high schools. The focus of the course is on paragraph and essay development. Students work on different types of paragraph writing (e.g., descriptive, narrative, enumerative, etc.). They are also trained in proofreading and editing their own essays.
Prerequisites: U.S. high school diploma; ESL placement test
Spring, 3 credits

Environmental Studies

Director and Minor Coordinator: James E. Mackin, Marine Sciences Research Center

The Environmental Studies Living/Learning Center, housed in Gershwin College, offers an environmental science minor (ENS) as well as activities that emphasize both scientific and social issues encompassed by the broad field of environmental studies. Through this program, motivated natural science and social science students are able to apply their majors specifically to the study of the environment. In addition, participation in the program adds an academic component to each student's residential experience.

The minor in environmental science is designed to give residents of Gershwin College enhanced exposure to one subfield of environmental studies—the natural science of the environment.

Requirements for the Minor in Environmental Science

No more than one three-credit course in the minor may be taken for Pass/No Credit. All upper-division courses in the minor must be passed with a grade of C or higher. The minor requires approximately 19 credits.

1. One introductory course chosen from among:
   ATM/EST 102 Weather and Climate
   BIO 113 General Ecology
   BIO 151 Principles of Biology: From Organisms to Ecosystems
   GEO 101 Environmental Geology
   MAR 101 Long Island Sound: Science and Use
   MAR 104 Oceanography
2. ENS 101 Prospects for Planet Earth
3. ENS 102 Opportunities in Environmental Studies
4. ENS 301 Seminar in Environmental Studies
5. Two advanced courses chosen from among:
   ATM/ESC 397 Air Pollution and Its Control
   BIO 306 Ecological Risks and Environmental Decisions
   BIO 351 Ecology
   BIO/GEO 353 Marine Ecology
   CHE 310 Chemistry in Technology and the Environment
   GEO 304 Energy, Mineral Resources, and the Environment
   GEO 315 Groundwater Hydrology
   MAR 333 Coastal Oceanography
   MAR 340 Environmental Problems and Solutions
6. At least three credits of independent study or research in any department, approved by the minor coordinator.

Note: Students participating in the minor are encouraged to take ENS 190 Forum in Environmental Issues.

Declaration of the Minor

Students must declare the environmental science minor no later than the middle of their junior year, at which time they must consult with the minor coordinator and plan their course of study for fulfillment of the requirements.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

ENS 101 Prospects for Planet Earth
An introduction for non-science majors to the prospects for planet earth. The course begins by describing the global environment, follows with an exploration and assessment of how humans are agents of change in the global environment, and concludes with a discussion and evaluation of strategies for humans to live in greater harmony with planet earth. Global issues will be related to the particular issues of the United States, the Northeast, and the greater metropolitan New York City-Long Island area.
Spring, 3 credits

ENS 102 Opportunities in Environmental Studies
An introduction to the nature of environmental studies in college and careers. Topics covered include the use of environmental libraries, environmental courses and programs offered in college, careers in environmental fields, and individualized advising. May not be taken for credit in addition to USB 101. Safisfactory/Unsatisfactory grading only.
Prerequisites: Freshman standing; residence in Gershwin College (nonresident or more advanced students with permission of minor coordinator)
Fall, 1 credit

ENS 190 Forum in Environmental Issues
(Formerly USB 190)
Consideration of selected environmental issues based on lectures by distinguished experts, who may include scientists, politicians, environmentalists, and social scientists. Lectures are preceded by a preparatory discussion and readings and followed by interactive discussion with the speaker.
Fall and spring, 1 credit

ENS 301-H Seminar in Environmental Studies
An examination of the scientific and socioeconomic aspects of the environment. Students are required to conduct library research on five different environmental topics and then make oral and written presentations to the class and to invited experts in the field. Possible topics include environmental implications of population growth, socioeconomics of emerging technologies, environmental racism, conflicting uses of the coastal ocean, and uncertainties in global climate forcasting.
Prerequisites: ENS 101 and 102; residence in Gershwin College
Spring, 3 credits

Foreign Languages Secondary Teacher Preparation Program

Program Coordinator: Paul Ferrotti, French and Italian

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 New York State provisional certification:

A. SSI 327 Adolescent Growth and Development
B. SSI 350 Foundations of Education
C. FLA 339 Methods and Materials in the Teaching of Foreign Languages
D. FLA 340 Curriculum Development and Micro-Teaching
E. FLA 450 Supervised Student Teaching
F. FLA 454 Student Teaching Seminar

Note: Courses taken for Pass/No Credit may not be used to satisfy the preparation in professional education component of the teacher preparation program.

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 coordinator.

Courses

See p. 77 Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. FLA courses do not satisfy D.E.C. requirements.

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 is 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, 3 credits

FLA 340 Curriculum Development and Micro-Teaching
A course designed to train future language teachers in the development of well-articulated programs in secondary schools. Through mini- and micro-teaching, students have the opportunity to enjoy clinical experiences in the actual classroom each week for at least two hours. Clinical experiences are 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 for the Foreign Languages 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. The course includes a unit on identifying and reporting child abuse and maltreatment. Students in this course are required to pay a fee; it is used to secure the New York State Certificate in Identifying and Reporting Child Abuse and Maltreatment.
Prerequisites: FLA 339 and 340
Corequisite: FLA 450
Fall and spring, 3 credits

Foreign Literature and Culture Courses Offered in English

The main objective of the courses listed in this section is to make the literary and cultural heritage offered in Stony Brook's foreign language and literature departments accessible to students who do not read or speak these languages. All courses listed in this section are taught in English by the faculty of the foreign language departments. They are listed according to the D.E.C. category they satisfy (if any).

See also Classics, Comparative Studies, Humanities, Japanese Studies, Judaic Studies, Korean Studies, and Medieval Studies in the alphabetical listing of Arts and Sciences programs for other foreign literature and culture courses in translation.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

Category B

HUF 111-B French Masterpieces in Translation *(Formerly FRN 141)*
An introduction to the world of French literature through study, in translation, of a text (or texts) of well-known French authors such as Rabelais's *Gargantua*, Montaigne's *Essays*, Molière's *Tartuffe* and *School for Wives*, Rousseau's *Confessions*, Stendhal's *The Red and the Black*, and Camus's *The Plague*. These are read within the sociocultural contexts of their times as an introduction to literary and philosophical interpretation.
Fall or spring, 3 credits

HUG 121-B German Literature in Translation *(Formerly GER 141)*
A representative selection of literary texts from major German authors in translation. Emphasis is placed on analysis of personal and cultural values encoded in complex literary forms.
Fall or spring, 3 credits

HUI 131-B Italian Masterpieces in Translation *(Formerly ITL 141)*
An introduction to the world of Italian literature through study, in translation, of a text (or texts) of well-known Italian authors such as Dante's *Divine Comedy*, Boccaccio's *Decameron*, Petrarch's poetry, Machiavelli's writings, and Pirandello's plays. These are read within the sociocultural contexts of their times as an introduction to literary and philosophical interpretation.
Fall or spring, 3 credits

HUR 141-B, 142-B Introduction to Russian Literature (in English) I, II
(Formerly RUS 141, 142)
A survey in English of major Russian writers of the 19th and 20th centuries, including Pushkin, Dostoevsky, and Solzhenitsyn. The course offers a brief history of Russian literary masterpieces in the context of world literature and of major cultural movements such as the Renaissance, the Enlightenment, and 20th-century totalitarianism.
Fall (141) and spring (142), 3 credits each semester

Category D

HUR 145-D Russian Film and Culture (in English) *(Formerly RUS 295, then RUS 151)*
Advanced study of Russian films from the 1920s to the present viewed in terms of their interaction with Russian culture.
Fall or spring, 3 credits

HUF 211-D French Cinema (in English)
(Formerly FRN 281)
Introduction to French films as representative of cinematic art. Films are selected to provide a broad historical perspective and range of the director's concerns. Students are taught methods of reading and analyzing filmic works. All films have English subtitles.
Fall, 3 credits (not offered in 1995-96)

HUG 221-D German Cinema Since 1945 (in English) *(Formerly GER 281)*
The theory and history of German film as an art form from filmmakers such as Alexander Kluge, Bernhard Wicki, and the "new filmmakers" Rainer Werner Fassbinder, Volker Schlöndorff, Margarete von Trotta, Werner Herzog, and Wim Wenders. Topics include silent film; New German Cinema, 1962-1985; national cinema and national identity; film as literature and from literary models; problems of authors and their audiences; women's film, film in the former German Democratic Republic; and the influence of American filmmakers, subject matter, and settings.
Fall or spring, 3 credits

HUI 231-D Italian Film (in English)
(Formerly ITL 281)
Introduction to Italian films as representative of the cinematic art form. Films are selected to provide a broad historical perspective and a range of the director's concerns. Students are taught methods of reading and analyzing filmic works. All films have English subtitles.
Spring, 3 credits

Category G

HUF 213-G Caribbean and American Connections in Literature (in English)
An exploration of the connections between writers from the French-speaking and English-speaking Caribbean and from the African-American community, who share a similar cultural heritage, historical heritage, and historical experience, but differ in geopolitical situations. Special attention is paid to spirituality, gender, and identity motifs in the literature.
Prerequisite: Completion of D.E.C. category B
Fall or spring, 3 credits (not offered in 1996-97)

HUF 311-G French Literature in Translation *(Formerly FRN 381)*
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. French majors are admitted by special permission of their advisors, and do the reading and term papers in French.
Prerequisites: Two literature courses
Schedule to be announced, 3 credits

HUI 331-G Italian Literature in Translation
(Formerly ITL 381)
A course given in English 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. Italian majors are admitted by special permission of their advisors, and do the reading and term papers in Italian.
Prerequisites: Two literature courses
Schedule to be announced, 3 credits

Category I

HUE 269-I Topics in Contemporary Slavic Culture (in English) *(Formerly EEL 293)*
Analysis and discussion of contemporary literary and social topics dealing with Russia or Eastern Europe. May be repeated, but counts toward fulfillment of Russian major requirements only once.
Fall or spring, 3 credits

HUF 219-I Modern France (in English)
(Formerly FRN 299)
A survey of contemporary France and its political, social, and economic structure, as well as the study of cultural life and institutions. Special attention is given to other French-speaking countries and their relations to France.
Fall or spring, 3 credits

HUG 229-I Germany Today (in English)
(Formerly GER 299)
A survey of contemporary Germany and its political, social, and economic structure, as well as the study of cultural life and institutions with comparisons to American models and standards.
Fall, 3 credits

HUI 239-I Modern Italy (in English)
(Formerly ITL 299)
A survey of contemporary Italy and its political, social, and economic structure, as well as the study of cultural life and institutions with comparisons to American models and standards.
Fall or spring, 3 credits

HUR 241-I Special Russian Author in Translation *(Formerly RUS 291)*
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 counts toward fulfillment of Russian major requirements only once.
Schedule to be announced, 3 credits

HUR 242-I Special Genre or Period of Russian Literature in Translation
(Formerly RUS 292)
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 counts toward fulfillment of Russian major requirements only once.
Schedule to be announced, 3 credits

HUR 249-I Russia Today (in English)
(Formerly RUS 299)
Contemporary cultural trends viewed in terms of the social and political context. Recent responses to historical change such as the breakup of the Soviet Union, the new economic order, and the search for Russian national identity are explored in literature, the arts, and media.
Fall or spring, 3 credits

HUS 255-I Modern Spain (in English)
(Formerly SPN 295)
An examination of major cultural and social developments in Spain during the 20th century, with special emphasis on the Spanish Civil War, the Franco era, and the transition to democracy. Presented in English, the course seeks to enhance understanding of Spain through analysis of such issues as national character, change and continuity, and regional diversity.
Fall or spring, 3 credits

Category J

HUF 212-J French Caribbean Literature (in Translation) *(Formerly FRN/AFH 282)*
A study of representative texts from the French Caribbean translated into English. This course focuses on literary manifestations of a search for a specific identity by writers from Martinique, Guadeloupe, French Guiana, and Haiti. Crosslisted with AFH 212.
Prerequisites: EGC 101 or placement 4 on English Placement Examination; one course in literature
Fall or spring, 3 credits

HUS 254-J Latin America Today (in English) *(Formerly SPN 294)*
An introduction to a continental perspective of 20th-century Latin American culture. Latin America's political, historical, and cultural developments of this century are studied.
Fall or spring, 3 credits

Category K

HUI 333-K The Italian-American Experience in Literature (in English)
(Formerly ITL 383)
Literary and historical perspectives on the experience of Italians in America and their contribution to American culture. Course is given in English.
Prerequisites: A literature course at the 200 level or higher; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits

HUI 336-K Italian-Americans and Ethnic Relations (in English) *(Formerly ITL 386)*
An historical and sociological examination from colonial America to the present with the major focus on the period from 1870 to today. Comparative experience with other ethnic and minority groups within the U.S., including formation, migration, and conflict.
Prerequisites: Upper-division standing; one D.E.C. category I course; one D.E.C. category F course; completion of D.E.C. category J strongly recommended
Fall, 3 credits

Romance Linguistics

HUL 384 The Linguistics of Romance Languages (in English)
(Formerly ROM 384)
The linguistic evolution of the Romance languages is studied, along with their synchronic grammars. The course is conducted in English.
Prerequisite: FRN 222 or ITL 222 or POR 222 or SPN 222 or LAT 112 or LIN 201 and 211
Fall, 3 credits (not offered in 1995-96)

Department of French and Italian

Chairperson: Mario B. Mignone

Director of Undergraduate Studies: Charles Franco

Faculty

Harriet Allentuch, Professor and Undergraduate Coordinator in French, Ph.D., Columbia University: 17th-century French literature; French women writers. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1990, and the President's Award for Excellence in Teaching, 1990.

Carol Blum, Research Professor of Humanities, Ph.D., Columbia University: 18th-century French literature; literature of the French Revolution.

Frederick Brown, Professor, Ph.D., Yale University: 19th- and 20th-century French literature.

Andrea Fedi, Assistant Professor, Dottore in Lettere e Filosofia, University of Florence; Ph.D., University of Toronto: Italian Renaissance literature; historiography.

Paul Ferrotti, Lecturer, M.A., Rutgers University: Pedagogy; teaching certification.

Luigi Fontanella, Associate Professor and Graduate Coordinator in Italian, Ph.D., Harvard University: Modern Italian literature.

Angelica Forti-Lewis, Associate Professor Emerita, Ph.D., University of Pennsylvania: 18th- and 19th-century Italian literature; history of genres; comparative literature.

Charles Franco, Associate Professor, Ph.D., Rutgers University: Medieval Italian literature.

Gabriel Haddad, Assistant Professor, Ph.D., Columbia University: French medieval and Renaissance studies.

Robert Harvey, Associate Professor, Ph.D., University of California, Berkeley: Contemporary French literature.

E. Anthony Hurley, Assistant Professor, Ph.D., Rutgers University: Francophone literature of the Caribbean and Africa; French poetry; 19th-century French literature.

Mikle Ledgerwood, Assistant Professor and Director of Language Learning Center, Ph.D., University of North Carolina-Chapel Hill: Education and technology; semiotics; French civilization; Quebec.

Mario B. Mignone, Professor, Ph.D., Rutgers University: Contemporary Italian literature.

Sandy Petrey, Professor, Ph.D., Yale University: 19th-century French literature; comparative literature; literary theory.

Lori Repetti, Assistant Professor, Ph.D., University of California, Los Angeles: Romance linguistics; Italian dialectology; history of the Italian language.

Anthony Rizzuto, Associate Professor, Ph.D., Columbia University: 19th- and 20th-century French literature.

Joseph A. Tursi, Professor Emeritus, Ph.D., New York University: 18th-century Italian literature. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1975.

Mark Whitney, Professor Emeritus, Ph.D., University of Pennsylvania: 16th-century French literature.

Eléonore M. Zimmermann, Professor and Graduate Studies Director, Ph.D., Yale University: 17th-, 19th-, and 20th-century French literature; comparative literature.

Adjunct Faculty
Estimated number: 3

Teaching Assistants
Estimated number: 11

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 Foreign Literature and Culture Courses Offered in English in the alphabetical listing g of Arts and Sciences programs), some in the original language.

Requirements for the Majors

A student wishing to major in either French language and literature or Italian language and literature 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 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); or whether they wish to prepare for work in law, government, international relations, business, banking, hotel management, or translation and interpretation (Concentration A or B).

All courses for the major in French or Italian must be taken for a letter grade (except that S is acceptable for courses completed through Challenge credit). All upper-division courses offered for the major must be passed with a grade of C or higher.

Transfer students who wish to graduate with a major in French or Italian must take at least 12 credits of the major language in residence at Stony Brook.

Note: All students should consult with the appropriate departmental advisors. Students opting for Concentration B must obtain departmental approval for their program by submitting it in advance, after consultation with the advisor, to the director of undergraduate studies. In order to complement the major in French or Italian, students are encouraged to take upper-division courses in related fields: English, history, art, music, etc.

French Language and Literature

The major in French language and literature leads to the Bachelor of Arts degree. The following courses are required.

Completion of the major requirements entails 36 credits (Concentration A) or 42 credits (Concentration B).

A. Concentration in Language and Literature

1. Required courses for a total of 18 credits:
   a. Language courses:
      FRN 221 Conversation and Composition
      FRN 222 Introduction to Stylistics
      FRN 321 Phonetics and Diction
      FRN 322 Stylistics
   b. Literature courses: FRN 295, 296 Readings in French Literature: Analysis and Interpretation
2. Elective courses:
   18 additional credits in FRN courses beyond FRN 295, 296, of which 12 credits must be in literature (HUL 384 is also acceptable)
3. Upper-division writing requirement: See C below

B. Concentration in French and a Second Discipline

1. Required courses for a total of 30 credits:
   FRN 221 Conversation and Composition
   FRN 222 Introduction to Stylistics
   FRN 295, 296 Readings in French Literature: Analysis and Interpretation
   FRN 320 Business French
   FRN 321 Phonetics and Diction
   FRN 322 Stylistics
   One course in French literature numbered 300 or above
   FRN 390 French Civilization
   FRN 447 Directed Readings in French in the student's second discipline (to be undertaken after completion of FRN 322 and 390)
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 normally choose a sequence of four courses in a department or program other than French and Italian.

C. Upper-Division Writing Requirement

In order to demonstrate proficiency in writing English, students majoring in French must present a dossier of a minimum of two papers of at least three to five pages each. The dossier must be submitted before the end of the second semester of the junior year to the designated faculty advisor for French. The dossier consists of papers previously composed for upper-division courses in the department. Since these were originally written in French, they must be rewritten in English. The papers are judged by a faculty committee for clarity, accuracy, and appropriateness of

style. If the dossier is found to be unsatisfactory, the student is asked to rewrite and resubmit the work in the senior year.

Notes:
Students whose language proficiency is such that they can be exempted from FRN 221, 222 may, and are strongly urged to, apply to have courses in art, music, history, or another language count for major credit.

Students who wish to offer their native language as the main area of concentration are asked to replace FRN 221, 222, 320, and 321 by English courses appropriate to their level of proficiency in that language.

Italian Language and Literature

The major in Italian language and literature leads to the Bachelor of Arts degree. The following courses are required. If a student wishes to concentrate in Italian and another literature, concentration A is strongly recommended. For individual questions, the student should not hesitate to consult the undergraduate advisor.

Completion of the major requirements entails 36 credits (Concentration A) or 42 credits (Concentration B).

A. Concentration in Language and Literature

1. Required courses for a total of 18 credits:
   a. Language courses: ITL 221, 222 Conversation and Composition I, II
      ITL 321, 322 Advanced Conversation and Composition I, II
   b. Literature courses: ITL 295, 296 Introduction to Italian Literature I, II
2. Elective courses:
   18 additional credits in ITL courses beyond ITL 295, 296, of which 12 credits must be in literature (HUL 384 is also acceptable)
3. Upper-division writing requirement: See C below

B. Concentration in Italian and a Second Discipline

1. Required courses for a total of 30 credits:
   ITL 221, 222 Conversation and Composition I, II
   ITL 295, 296 Introduction to Italian Literature I, II
   ITL 320 Business Italian
   ITL 321, 322 Advanced Conversation and Composition I, II
   One course in Italian literature numbered 300 or above
   ITL 390 The Italian Scene
   ITL 447 Directed Readings in Italian in the student's second discipline (to be undertaken after completion of ITL 322 and 390)
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 normally choose a sequence of four courses in a department or program other than French and Italian

C. Upper-Division Writing Requirement
In order to demonstrate proficiency in writing English, students majoring in Italian must present a dossier of a minimum of two papers of at least three to five pages each. The dossier must be submitted before the end of the second semester of the junior year to the designated faculty advisor for Italian. The dossier consists of papers previously composed for upper-division courses in the department. Since these papers were originally written in Italian, they must be rewritten in English. The papers are judged by a faculty committee for clarity, accuracy, and appropriateness of style. If the dossier is found to be unsatisfactory, the student is asked to rewrite and resubmit the work in the senior year.

Notes:
Credits for ITL 321 and 322 *cannot be transferred* from any other institution without *prior* permission of the department.

Students whose language proficiency is such that they can be exempted from ITL 221, 222 may, and are strongly urged to, apply to have a course in art, music, history, or another language count for major credit.

Students who wish to offer their native language as the main area of concentration are asked to replace ITL 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 are 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 is 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 is 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 each: one in language and one in literature. Each minor requires 24 credits.

All courses for the minor in French or Italian must be taken for a letter grade (except that S is acceptable for Challenge credit). All upper-division courses intended to fulfill minor requirements must be passed with a grade of C or higher.

Transfer students who wish to graduate with a minor in French or Italian must take at least six credits of upper-division French or Italian courses in residence at Stony Brook.

Minor in French

A. Emphasis on Language
Required courses: FRN 192, 221, 222, 295 *or* 296, 320, 321, 322, 390
Note: A French literature course or HUL 384 may be substituted for FRN 320

or

B. Emphasis on Literature
Required courses: FRN 192, 221, 222, 295, 296
Electives: Three literature courses at the 300 level

Minor in Italian

A. Emphasis on Language

Required courses: ITL 192, 221, 222, 295 *or* 296, 320, 321, 322, 390

Note: Literature courses in Italian or HUL 384 may be substituted for ITL 222 or 320 or both.

or

B. Emphasis on Literature

Required courses: ITL 192, 221, 222, 295, 296

Electives: Three literature courses at the 300 level

Note: Credits for ITL 321 and 322 *cannot be transferred* from any other institution without *prior* permission of the department.

Study Abroad

The Department of French and Italian sponsors Study Abroad programs in Paris, France and Rome, Italy during the academic year and the summer. In 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.

The Department requires that students enrolling in programs abroad sponsored by other colleges and universities (either for a summer, an academic year, or any portion thereof) clear such plans through the departmental undergraduate advisor *at least one semester* before departure if they wish to offer the courses taken abroad for major or minor credit.

See also Study Abroad, p. 71.

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 choose the appropriate course.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

For courses in English offered by the department faculty, see HUF, HUI, and HUL courses in Foreign Literature and Culture Courses Offered in English, elsewhere in the alphabetical listing of Arts and Sciences programs.

French Language and Literature

FRN 101 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 any other course in French.
Spring, 6 credits

FRN 111, 112 Elementary French I, II
An introduction to spoken and written French, stressing pronunciation, speaking, comprehension, reading, and writing. Language laboratory supplements 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. May not be taken for credit in addition to FRN 101.
Prerequisite to FRN 112: FRN 111
Fall and spring, 4 credits each semester

FRN 191-I, 192-I Intermediate French I, II
An intermediate course in conversation, composition, and the interpretation of French texts.
Prerequisite to FRN 191: FRN 101 or 112
Prerequisite to FRN 192: FRN 191
Fall (191) and spring (192), 3 credits each semester

FRN 195-I Intermediate French (An Intensive Course)
Review of grammar and discussion of simple French texts through reading, writing, and discussion. Language laboratory supplements class work.
Prerequisite: FRN 101 or 112
Fall, 6 credits

FRN 221-I Conversation and Composition
A course in the active use of spoken and written French. Language laboratory supplements class work.
Prerequisite: FRN 192 or 195
Fall, 3 credits

FRN 222-I 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 223 Vocabulary Through Music
A course designed to increase the vocabulary and oral comprehension of students of French, and to enrich their understanding of the poetry and culture of France. It is divided among poetry of recognized poets (Ronsard, Baudelaire, Verlaine, Prévert) put to music, folk songs, and "chansons."
Prerequisite: FRN 221
Fall or spring, 1 credit

FRN 295-G, 296-G Readings in French Literature: Analysis and Interpretation
These courses teach literary analysis and its application to representative texts chosen from various periods of French literature. All readings are done in French. Discussions are in French.
Prerequisite: FRN 222
Fall (295) and spring (296), 3 credits each semester

FRN 301-G 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-G The French Comedy from Molière to Ionesco
The study of the comic tradition from Molière to the contemporary theatre.
Prerequisite: FRN 222 or 295
Fall or spring, 3 credits

FRN 319-J Caribbean and African Literature in French
A study of representative texts (tales, novels, poems, plays, etc.) from the French-speaking world outside continental France, with special emphasis on the literature of the Caribbean and Africa.
Prerequisites: FRN 222; FRN 295 or 296
Fall or spring, 3 credits (not offered in 1996-97)

FRN 320 Business French
A course designed for students who wish to become more proficient in reading, writing, and translating French. Students also are trained in the use of French in business, in administration, and in everyday professional life. Emphasis is 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 learn to express themselves in the current idiom with fluency and accuracy. At least one hour of laboratory is 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, 373, and 393 appear in the class

schedule and a description of the specific contents is available in the department each semester. These courses may be repeated for credit with permission of the department as the topic varies.
Prerequisites for these courses: FRN 222; 295 or 296

FRN 333-G Studies in Renaissance Literature
Schedule to be announced, 3 credits

FRN 343-G Studies in 17th-Century Literature
Schedule to be announced, 3 credits

FRN 351-G Studies in 18th-Century Literature
Schedule to be announced, 3 credits

FRN 361-G Studies in 19th-Century Literature
Schedule to be announced, 3 credits

FRN 373-G Studies in 20th-Century Literature
Schedule to be announced, 3 credits

FRN 390-I 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 serves as a point of departure; the institutions and life in France are considered, along with the development of art, architecture, music, and literature. The emphasis is on discussion (in French) and individual projects. Visiting lecturers contribute to the variety of topics and points of view.
Prerequisites: FRN 222; FRN 295 or 296
Fall or spring, 3 credits

FRN 393-G Free Seminar
A seminar 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 for each semester it is offered. 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 conducts a regular problem or tutorial section that supplements a regular language course under the guidance of a master teacher. Responsibilities may include preparing material for discussion and helping students with problems. Not for major or minor credit. Satisfactory/Unsatisfactory grading only.
Prerequisites: Fluency in French; permission of instructor and department
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 writing a paper, under the close supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors take this course.
Prerequisite: Permission of department
Fall and spring, 3 credits

Italian Language and Literature

ITL 101 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 any other course in Italian.
Fall and spring, 6 credits

ITL 111, 112 Elementary Italian I, II
An introduction to spoken and written Italian, stressing pronunciation, speaking, comprehension, reading, and writing. Selected texts are 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. May not be taken for credit in addition to ITL 101.
Prerequisite to ITL 112: ITL 111
Fall and spring, 4 credits each semester

ITL 191-I, 192-I Intermediate Italian I, II
An intermediate course in the reading and discussion of selected Italian texts. An intensive grammar review offers an opportunity to develop conversational ability.
Prerequisite to ITL 191: ITL 101 or 112
Prerequisite to ITL 192: ITL 191
Fall (191) and spring (192), 3 credits each semester

ITL 195-I Intensive Intermediate Italian
An intensive course covering the intermediate Italian program (ITL 191, 192) in one semester.
Prerequisite: ITL 101 or 112
Fall and spring, 6 credits

ITL 221-I 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-I 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 223 Italian Vocabulary
A course designed to increase the vocabulary and oral comprehension of students of Italian through a medium such as television commercials, popular music, folk songs, etc. The particular theme changes each semester. May be repeated twice for credit as the topic differs.
Prerequisite: ITL 222
Fall or spring, 1 credit

ITL 295-G 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-G 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 Business Italian
A course designed for students who wish to become more proficient in reading, writing, and translating Italian. Students are also trained in the use of Italian in business, in administration, and in everyday professional life. Emphasis is 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
A course designed 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 study of the history of the Italian language from Latin to its present form.
Prerequisite: ITL 222
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, 373, and 393 appear in the class schedule, and a description of the specific contents is available in the department each semester. These courses may be repeated for credit with permission of the department as the topic varies.
Prerequisites for these courses: ITL 222; ITL 295 or 296

ITL 329-G, 330-G Studies in 13th- and 14th-Century Literature
Schedule to be announced, 3 credits

ITL 331-G Studies in 15th-and 16th-Century Literature
Schedule to be announced, 3 credits

ITL 351-G Studies in 17th- and 18th-Century Literature
Schedule to be announced, 3 credits

ITL 361-G Studies in 19th-Century Literature
Schedule to be announced, 3 credits

ITL 373-G Studies in Contemporary Literature
Schedule to be announced, 3 credits

ITL 390-I 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.
Prerequisite: ITL 222 or 295 or 296
Fall or spring, 3 credits

ITL 393-G Free Seminar
A seminar built around a theme such as "Cities in Italian Literature," "Women in Italian Literature," "Death and Resurrection in Contemporary Italian Literature," or "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. May be repeated as the topic varies.
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 conducts a regular problem or tutorial section that supplements a regular language course under the guidance of a master teacher. Responsibilities may include preparing material for discussion and helping students with problems. Not for major or minor credit. Satisfactory/Unsatisfactory grading only.
Prerequisites: Fluency in Italian; permission of instructor and department
Fall and spring, 3 credits

ITL 488 Italian Internship
Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce language skills and knowledge of social and cultural institutions. Satisfactory/Unsatisfactory grading only.
Prerequisites: ITL 320; permission of instructor, department, and Office of Undergraduate Studies
Fall or 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 writing a paper, under the close supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors take this course.
Prerequisite: Permission of department
Fall and spring, 3 credits

Department of Germanic and Slavic Languages and Literatures

Chairperson: Christina Y. Bethin

Director of Undergraduate Studies: Robert K. Bloomer

Faculty

John F. Bailyn, Assistant Professor, Ph.D., Cornell University: Slavic linguistics; Russian language and linguistics; syntax.

Christina Y. Bethin, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign: Slavic linguistics; Russian, Polish, and Ukrainian languages. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1983.

Robert K. Bloomer, Assistant Professor, Ph.D., University of Michigan: Germanic linguistics; morphology; etymology.

Russell E. Brown, Professor, Ph.D., Harvard University: Modern German literature; expressionist poetry; Trakl; Brecht; Jahn.

Edward J. Czerwinski, Professor Emeritus, 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, 1974.

Stana Dolezal, Lecturer, D.A., State University of New York at Stony Brook: East European literature and culture; Czech language.

Kathryn R. Edmunds, Assistant Professor, Ph.D., Princeton University: 18th- and 19th-century German literature; German women writers; autobiography.

Barbara Elling, Distinguished Teaching Professor and Graduate Studies Director, 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, 1973.

Thomas A. Kerth, Associate Professor, Ph.D., Yale University: Medieval literature; Middle High German; philology; German poetry. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1992, and the President's Award for Excellence in Teaching, 1992.

Anita Lekic-Trbojevic, Lecturer, Ph.D., University of Illinois at Chicago: Serbo-Croatian language, literature, and culture.

Ferdinand A. Ruplin, Associate Professor Emeritus, Ph.D., University of Minnesota: Applied linguistics; Middle High German; computer-assisted instruction.

John R. Russell, Associate Professor Emeritus, Ph.D., Princeton University: Rococo; novella; computer-assisted instruction.

Nicholas Rzhevsky, Associate Professor, Ph.D., Princeton University: Russian and Soviet literature; Russian theatre; Russian intellectual history.

Leif Sjöberg, Professor Emeritus, Ph.D., Uppsala University: Scandinavian literature; Ibsen; Strindberg; Lagerkvist; Ekelöf; Old Norse.

Birgit Grosse-Middeldorf Viola, Lecturer, D.A., State University of New York at Stony Brook: Business German.

Lucy E. Vogel, Associate Professor Emerita, Ph.D., New York University: Slavic cultures; Russian poetry; Russian literature of the 19th and 20th centuries.

Timothy Westphalen, Assistant Professor, Ph.D., Harvard University: Russian poetry; Russian symbolism; Russian literature of the 19th century; Bakhtin.

Affiliated Faculty

Mikle Ledgerwood, French and Italian

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 9

Requirements for the Major in Germanic Languages and Literature

The major in Germanic languages and literature leads to the Bachelor of Arts degree. The following courses are required.

Completion of the major requirements entails 36 credits.

1. HUG 229 Germany Today (in English)
2. GER 201 Contrastive Structures of German and English
3. GER 203 Introduction to Germanic Studies
4. GER 204 Survey of German Literature
5. GER 221, 222 German Conversation and Composition
6. GER 300 German Civilization
7. GER 301 German Drama
8. GER 302 German Prose
9. GER 303 German Poetry
10. GER 304 *Goethezeit*
11. GER 338 History of the German Language
12. Upper-division writing requirement: In order to demonstrate proficiency in writing in English, German majors must present a dossier consisting of a minimum of two papers of at least five pages each. This dossier must be submitted before the end of the second semester of the junior year to the director of undergraduate studies. The papers are essays previously composed for upper-division courses in the department. Those originally in a foreign language must be rewritten in English. A faculty committee judges the papers for clarity, accuracy, and appropriateness of style. If the dossier is judged to be unsatisfactory, the student is asked to rewrite and resubmit the work in the senior year. Students must demonstrate acceptable writing skills before they graduate.

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. Transfer students must complete at least 18 credits toward the major at Stony Brook.

The ascending numbers of the required courses for the major are simply intended to suggest the sequence in which they might be studied most favorably; GER 201-204 and HUG 229 are to be regarded as pre- or corequisites to the other required courses.

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. At least nine of the upper-division minor credits must be earned at Stony Brook. The minor requires 24 credits.

A. Emphasis on German Language
1. HUG 229 Germany Today (in English)
2. GER 201 Contrastive Structures of German and English
3. GER 221, 222 German Conversation and Composition
4. GER 300 German Civilization
5. GER 323, 324 Advanced German Conversation and Composition *or* GER 321, 322 Business German
6. GER 338 History of the German Language

B. Emphasis on German Language and Literature
1. HUG 229 Germany Today (in English)
2. GER 203 Introduction to Germanic Studies
3. GER 204 Survey of German Literature
4. GER 221, 222 German Conversation and Composition
5. GER 301 German Drama
6. GER 302 German Prose
7. GER 303 German Poetry

C. Emphasis on German Language and Area Studies
1. HUG 229 Germany Today (in English)
2. GER 201 Contrastive Structures of German and English
3. GER 221, 222 German Conversation and Composition
4. GER 300 German Civilization
5. GER 338 History of the German Language
6. HIS 311 The Rise of Imperial Germany, 1806-1890
7. HIS 312 From Empire to Third Reich: Germany, 1890-1945

D. Emphasis on German for Business
1. HUG 229 Germany Today (in English)
2. GER 221, 222 German Conversation and Composition I, II
3. GER 300 German Civilization
4. GER 321, 322 Business German I, II
5. One course in business from among:
   BUS 340 Management Information Systems
   BUS 348 Principles of Marketing
   BUS 440 International Management
6. ECO 325 International Economics

Requirements for the Major in Russian Language and Literature

The major in Russian language and literature leads to the Bachelor of Arts degree. The following courses are required.

Completion of the major requirements entails 33 credits.

1. HUR 141, 142 Introduction to Russian Literature (in English) I, II
2. RUS 221, 222 Russian Conversation and Composition
3. One additional course chosen from among:
   HUR 241 Special Russian Author in Translation
   HUR 242 Special Genre or Period of Russian Literature in Translation
   HUR 249 Russia Today (in English)
   HUE 269 Topics in Contemporary Slavic Culture (in English)
4. RUS 321, 322 Advanced Russian Conversation and Composition
5. RUS 323 Russian Literary Texts
6. RUS 302 History of the Russian Language *or* RUS 339 Structure of Russian
7. RUS 490 Senior Seminar
8. One additional upper-division course in Russian literature chosen in consultation with the departmental advisor
9. Upper-division writing requirement: In order to demonstrate proficiency in writing in English, Russian majors must present a dossier consisting of a minimum of two papers of at least five pages each. This dossier must be submitted before the end of the second semester of the junior year to the director of undergraduate studies. The papers are essays previously composed for upper-division courses in the department. Those originally in a foreign language must be rewritten in English. A faculty committee judges the papers for clarity, accuracy, and appropriateness of style. If the dossier is judged to be unsatisfactory, the student is asked to rewrite and resubmit the work in the senior year. Students must demonstrate acceptable writing skills before they graduate.

Notes:
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. The minor requires 24 credits.

A. Emphasis on Russian Literature

1. HUR 141, 142 Introduction to Russian Literature (in English) I, II
2. RUS 221, 222 Russian Conversation and Composition
3. RUS 321 Advanced Russian Conversation and Composition
4. RUS 323 Russian Literary Texts
5. Two additional upper-division literature courses chosen in consultation with the departmental advisor

B. Emphasis on Russian Language

1. HUR 141 or 142 Introduction to Russian Literature (in English) I or II
2. RUS 221, 222 Russian Conversation and Composition
3. RUS 321, 322 Advanced Russian Conversation and Composition
4. RUS 302 History of the Russian Language
5. RUS 339 Structure of Russian
6. One additional upper-division course chosen in consultation with the departmental advisor

Honors Program in German and Russian

To be eligible to participate in the honors program, junior or senior departmental majors must have an overall average of 3.0 and an average of 3.5 in German or Russian. An eligible student wishing to write an honors project must find a faculty member of the department to act as project advisor. The student, with the approval of this advisor, must submit a proposal of a project in writing to the department. The honors project is usually in the form of a thesis, but may include creative work or another form of research activity. The deadline for submission of the proposal for fall semester is the preceding April 30 and for spring semester is November 30. Final selection of candidates and topics is determined by an honors committee of the Department of Germanic and Slavic Languages and Literatures. Students selected for the program must enroll in GER 447 or RUS 447 for the semester in which the project is to be written. The project is evaluated by the project advisor, another member of the German or Russian faculty, and a third qualified reviewer from outside the department. The student earning departmental honors must also maintain a G.P.A. of 3.5 in all courses in his or her major program once the honors program has been commenced. For further information consult the director of undergraduate studies.

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 Germany (Tübingen, Würzburg), Austria (Graz), Poland (Kraków, Poznań, Warsaw, Wroclaw), and Russia (Moscow).

See also Study Abroad, p. 71.

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 GER 323 and 324 in addition to the courses required for the major and certification. 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. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

For courses in English offered by the department faculty, see HUE, HUG, and HUR courses in Foreign Literature and Culture Courses Offered in English, elsewhere in the alphabetical listing of Arts and Sciences programs.

A brochure with extended descriptions of Germanic and Slavic courses is published by the department before registration each semester.

German Language and Literature

GER 101 Elementary German (Intensive)
An intensive course covering the elementary German program (GER 111, 112) in one semester. 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 this course without written permission from the supervisor of the course. May not be taken for credit after GER 111 or any other course in German.
Fall or spring, 6 credits

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 four 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.
Prerequisite to GER 112: GER 111
Fall (111) and spring (112), 4 credits each semester

GER 191-I, 192-I 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 further develops audiolingual skills.
Prerequisite to GER 191: GER 101 or 112
Prerequisite to GER 192: GER 191
Fall (191) and spring (192), 3 credits each semester

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.
Prerequisites: GER 221, 222 or fluency in German
Fall or spring, 3 credits

GER 203-G 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
Fall, 3 credits

GER 204-G 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 are in German.
Prerequisite: GER 203
Spring, 3 credits

GER 221-I, 222-I German Conversation and Composition
This course consists of the active use of spoken and written German.
Prerequisite: GER 192
Fall (221) and spring (222), 3 credits each semester

GER 300-I German Civilization
Cultural and physical geography of Central Europe with emphasis on the German-speaking areas. Particular emphasis is placed on the evolution of the cultural, political, social, and economic issues that have shaped German civilization. All work is done in German. May not be taken for credit in addition to the discontinued GER 200.
Prerequisites: GER 221; HUG 229
Spring, 3 credits

GER 301-G German Drama
A survey of German drama and its subgenres. All work is done in German.
Prerequisite: GER 204
Fall or spring, 3 credits

GER 302-G German Prose
A survey of German prose and its subgenres. All work is done in German.
Prerequisite: GER 204
Fall or spring, 3 credits

GER 303-G German Poetry
A survey of German poetry and its subgenres. All work is done in German.
Prerequisite: GER 204
Fall or spring, 3 credits

GER 304-G *Goethezeit*
An intensive study of German literature in the period 1750-1832. All work is done in German.
Prerequisite: GER 204
Fall or spring, 3 credits

GER 321, 322 Business German I, II
A course designed to broaden knowledge of German by emphasizing business terminology and conversational skills. Students practice expressing themselves idiomatically and fluently in a style appropriate to the world of commerce. Materials covered should prepare the student for the "Certificate Wirtschaftsprufung Deutsch International" examination.
Prerequisites: GER 221, 222
Fall (321) and spring (322), 3 credits each semester (not offered in 1995-96)

GER 323, 324 Advanced German Conversation and Composition
A course designed to develop fluency in spoken and written German. Students practice expressing themselves idiomatically and fluently and become acquainted with the subtleties of German grammar and style.
Prerequisites: GER 221, 222
Fall (323) and spring (324), 3 credits each semester (not offered in 1996-97)

GER 338 History of the German Language
The development of the German language from Indo-European to modern High German. While special emphasis is placed on western Germanic languages, specifically German, some attention is given to the Scandinavian languages and Gothic. Conducted as a seminar.
Prerequisite: GER 192
Fall or 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 is done in German. May be repeated as the topic varies.
Prerequisites: GER 321, 322
Schedule to be announced, 3 credits

GER 447 Directed Readings in German
Independently supervised readings in selected topics in German language and literature, which may focus on a specific German language author or the literature of a specific period or genre. May be repeated.
Prerequisite: Permission of instructor and department
Fall and spring, 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. Satisfactory/Unsatisfactory grading only.
Prerequisites: GER 221, 222; permission of instructor, department, and Office of Undergraduate Studies; specific placement examinations where applicable
Fall and spring, 3 to 12 credits

Slavic Languages and Literatures

Russian

RUS 111, 112 Elementary Russian I, II
An introduction to Russian. Class work is 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.
Prerequisite to RUS 112: RUS 111
Fall (111) and spring (112), 4 credits each semester

RUS 191-I, 192-I Intermediate Russian I, II
An intermediate course in Russian stressing an active command of the language. May not be taken for credit in addition to RUS 193.
Prerequisite to RUS 191: RUS 112
Prerequisite to RUS 192: RUS 191
Fall (191) and spring (192), 3 credits each semester

RUS 193-I Intermediate Russian for Students of Russian-Speaking Background
A course intended for students who speak Russian and who need training in writing, reading, and grammar. May not be taken for credit in addition to RUS 191 or 192. Not intended for students who have the equivalent of a Russian high school education.
Prerequisite: Native speaking proficiency in Russian
Fall or spring, 3 credits

RUS 221-I, 222-I Russian Conversation and Composition
A course in the active use of spoken and written Russian. Particular emphasis is placed on contemporary idiom.
Prerequisite: RUS 192 or 193; permission of instructor required for students of Russian-speaking background
Fall (221) and spring (222), 3 credits each semester

RUS 302 History of the Russian Language
The development of the Russian literary language from its beginnings to the present day.
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 learn to express themselves idiomatically and to translate advanced texts.
Prerequisite: RUS 222 or equivalent proficiency in Russian
Fall (321) and spring (322), 3 credits each semester

RUS 323-G Russian Literary Texts
A survey of representative texts chosen from various periods of Russian literature. Intended to improve the students' command of the literary language; readings and discussions will be in Russian.
Prerequisite: RUS 321 or equivalent proficiency in Russian
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 prospective teachers of Russian.
Prerequisite: RUS 192 or equivalent proficiency in Russian; permission of instructor
Spring, 3 credits

RUS 391-G Special Author
A detailed study of the works of a major 19th- or 20th-century author, such as Pushkin, Gogol, Turgenev, or Blok. Readings are in Russian, and classes are conducted largely in Russian. May be repeated as the topic varies.
Prerequisites: HUR 141, 142; RUS 222 or equivalent proficiency in Russian
Schedule to be announced, 3 credits

RUS 392-G 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 topic varies.
Prerequisites: HUR 141, 142; RUS 222 or equivalent proficiency in Russian
Schedule to be announced, 3 credits

RUS 447 Directed Readings in Russian
A program of independent advanced study for qualified juniors and seniors under the supervision of a faculty member.
Prerequisites: RUS 221, 222 or equivalent proficiency in Russian; 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 topic varies.
Prerequisites: HUR 141, 142; RUS 222 or equivalent proficiency in Russian
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.
Prerequisite to PSH 112: PSH 111
Fall (111) and spring (112), 3 credits each semester (not offered in 1995-96)

PSH 447 Directed Readings in Polish
Independently supervised readings in selected topics in Polish language and literature, which may focus on specialized study in language, culture, or area. May be repeated.
Prerequisites: Reading fluency in Polish; permission of department
Fall and spring, 1 to 3 credits

Selected East European Languages

EEL 111, 112 Elementary Selected East European Language I, II
An introduction to spoken and written selected East European languages (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.
Prerequisite to EEL 112: EEL 111
Schedule to be announced, 3 credits each semester

Department of Hispanic Languages and Literature

Chairperson: Malcolm K. Read

Director of Undergraduate Studies: Kathleen Vernon

Faculty

Román de la Campa, Associate Professor, Ph.D., University of Minnesota: Latin American and Caribbean literature; contemporary critical theory.

Lou Charnon-Deutsch, Associate Professor, Ph.D., University of Chicago: 18th- and 19th-century Peninsular literature; feminist theory. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1990, and the President's Award for Excellence in Teaching, 1990.

Flora Klein-Andreu, Associate Professor, Ph.D., Columbia University: Linguistic meaning; language evolution and variation; standardization; research methods.

Pedro Lastra, Professor Emeritus, University of Chile; (University Professor, University of Chile, 1960-1973): Colonial, modern, and contemporary Spanish-American literature.

James B. McKenna, Associate Professor, Ph.D., Harvard University: 20th-century Hispanic culture and literature.

Elizabeth Monasterios, Assistant Professor, Ph.D., University of Toronto: Modern and contemporary Spanish-American literature; Latin American poetry.

Maria Luisa Nunes, Professor Emerita, Ph.D., City University of New York: 19th- and 20th-century Luso-Brazilian literatures; women's studies.

Malcolm K. Read, Professor, Ph.D., University of Wales: Spanish Golden Age literature and linguistics; Marxist and psychoanalytic literary criticism.

Joan Ramón Resina, Associate Professor, Ph.D., University of California, Berkeley: Modern Spanish culture and literature; Catalonian culture and literature.

Elias L. Rivers, Professor Emeritus, Ph.D., Yale University: 16th- and 17th-century literature of Spain; sociolinguistic theory of literature.

Victoriano Roncero-López, Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign; 16th- and 17th-century literature of Spain.

Georgina Sabat-Rivers, Professor Emerita, Ph.D., The Johns Hopkins University: Spanish Golden Age and Spanish-American colonial literature.

Antonio Vera-León, Assistant Professor, Ph.D., Princeton University: 19th- and 20th-century Caribbean literatures; literary theory; interdisciplinary study of narrative.

Kathleen Vernon, Assistant Professor, Ph.D., University of Chicago: 20th-century Spanish narrative and film.

Affiliated Faculty

Temma Kaplan, History and Women's Studies
Mikle Ledgerwood, French and Italian
Louise Vasvari, Comparative Studies

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 24

The department offers a major program leading to the Bachelor of Arts degree in Spanish language and literature, 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 Language and Literature

The major in Spanish language and literature leads to the Bachelor of Arts degree.

Completion of the major requirements entails 36 credits.

A. Required Basic Courses

1. a. Either SPN 221 Spanish Conversation and Composition *or* SPN 220 Spanish Grammar and Composition for Students of Hispanic-American Background

   b. SPN 222 Introduction to Literary Studies
   (*Note:* Challenge examinations are given in SPN 221 and 222, but not in SPN 220. See notes 1 and 2, below)
2. SPN 301 Advanced Spanish Grammar and Composition
3. Either SPN 391 or 392
4. Two courses chosen from SPN 396, 397, 398
5. One course chosen from SPN 462, 463, 465

B. Advanced Courses in Hispanic Linguistics, Literature, and Culture

Fifteen additional credits in upper-division SPN courses chosen in consultation with the departmental advisor. (HUL 384 is also acceptable. A maximum of three credits of SPN 447 is applicable toward this requirement.)

C. Upper-Division Writing Requirement

In order to demonstrate their proficiency in writing English, Spanish majors must present a dossier consisting of a minimum of two papers of at least three to five pages each. This dossier must be submitted before the end of the second semester of their junior year to the direc-

tor of undergraduate studies. The papers consist of translations of essays submitted as part of the work for upper-division courses. Papers are judged for clarity, accuracy, and appropriateness of style by a faculty committee. Students may resubmit in their senior year.

Notes:

1. All courses offered to fulfill major requirements must be taken for a letter grade (except that S is acceptable for SPN 221 and 222 completed through Challenge examinations).
2. Students of Spanish-speaking background may take the Challenge examination for SPN 221.
3. All upper-division courses in Spanish must be passed with a grade of C or higher.
4. 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 choose SPN 462 or 463 in satisfying major requirement A.5. 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 department 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 is 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. Application to the honors program must be made during Prime Time the semester prior to registering for the program.

Minor in Spanish Language, Culture, and Literature

The minor requires 24 credits.

A. Basic Language

1. SPN 221 Spanish Conversation and Composition *or* SPN 220 Spanish Grammar and Composition for Students of Hispanic-American Background
2. SPN 222 Introduction to Literary Studies

B. Advanced Courses

1. SPN 301 Advanced Spanish Grammar and Composition
2. Five other upper-division SPN courses, two of which must be at the 400 level and one of which may be HUL 384

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 prior to going abroad. See also Study Abroad, p. 71.

Placement

Entering students who wish to continue the study of Spanish started in high school should consult a departmental advisor to help them choose the appropriate course.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

For courses in English offered by the department faculty, see HUS courses in Foreign Literature and Culture Courses Offered in English, elsewhere in the alphabetical listing of Arts and Sciences programs.

Portuguese Language and Literature

POR 111, 112 Elementary Portuguese I, II
An introduction to spoken and written Portuguese, stressing pronunciation, speaking, comprehension, reading, and writing. No student who has had two or more years of Portuguese in high school (or who has otherwise acquired an equivalent proficiency) is permitted to register for POR 111 without written permission from the supervisor of the course.
Prerequisite to POR 112: POR 111
Fall (111) and spring (112), 4 credits each semester

POR 191-I Intermediate Portuguese I
An intermediate course in Portuguese featuring a review of grammar and intensification of reading, writing, and speaking skills.
Prerequisite: POR 112
Fall, 3 credits

POR 192-I Intermediate Portuguese II
An intermediate course in Portuguese intended to develop competence in reading, writing, and speaking Portuguese through the study of grammar and the interpretation of selected literary texts.
Prerequisite: POR 191
Spring, 3 credits

POR 442 Readings in Portugese and Brazilian Literature
A topics course designed to meet the interests of native speakers of Portuguese or students highly trained in this language. Themes in Portuguese or Brazilian literature are discussed, such as the exploitation of the land, the disintegration of the extended family, authoritarian dictatorship, and the plight of the young in a society bereft of its values.
Prerequisites: Fluency in Portuguese; permission of instructor
Schedule to be announced, 3 credits

POR 447 Directed Individual Study
Individually supervised studies in selected topics of Luso-Brazilian language, literature, and culture. May be repeated.
Prerequisite: Permission of instructor and department
Fall and spring, 1 to 3 credits

Spanish Language and Literature

SPN 111, 112 Elementary Spanish I, II
An introduction to spoken and written Spanish, stressing pronunciation, speaking, comprehension, reading, and writing. Language laboratory supplements class work. No student who has had two or more years of Spanish in high school (or who has otherwise acquired an equivalent proficiency) is permitted to register for SPN 111 without written permission from the supervisor of the course.
Prerequisite to SPN 112: SPN 111
Fall and spring, 4 credits each semester

SPN 190-I Intermediate Spanish I (Emphasis on Spain)
A comprehensive review of the Spanish language as it is spoken in Spain. The course is intended to develop competence in reading, writing, and speaking Spanish through the study of grammar and interpretation of selected literary texts. May not be taken for credit in addition to SPN 191 or 193. Not intended for students of Spanish-speaking background.
Prerequisite: SPN 112
Fall and spring, 3 credits

SPN 191-J Intermediate Spanish I (Emphasis on Latin America)
A comprehensive review of the Spanish language as it is spoken in Latin America. The course is intended to develop competence in reading, writing, and speaking Spanish through the study of grammar and interpretation of selected literary texts. May not be taken for credit in addition to SPN 190 or 193. Not intended for students of Spanish-speaking background.
Prerequisite: SPN 112
Fall and spring, 3 credits each semester

SPN 192-I Intermediate Spanish II
A comprehensive study of the Spanish language, taking into account its regional variations. The course is intended to develop greater competence in reading, writing, and speaking Spanish through continued study of grammar and interpretation of more advanced literary texts. Not intended for students of Spanish-speaking background. May not be taken for credit in addition to SPN 193.
Prerequisite: SPN 190 or 191
Fall and spring, 3 credits

SPN 193-J Intermediate Spanish for Speakers of Spanish
A course intended for students of Spanish-speaking background whose formal training in the language has been limited to a year or less. It is designed to improve competence in Spanish as it is spoken and written in the Americas. May not be taken for credit in addition to SPN 190, 191, or 192.
Prerequisite: Native speaking proficiency in Spanish
Fall and spring, 3 credits

SPN 220-J Spanish Grammar and Composition for Students of Hispanic-American Background
A course designed to improve writing through the study of Hispanic-American literature and culture. May not be taken for credit in addition to SPN 221.
Prerequisite: SPN 193 or equivalent fluency in Spanish
Fall or spring, 3 credits

SPN 221-I Spanish Conversation and Composition
A thorough review of Spanish grammar and of the active use of spoken and written forms. May not be taken for credit in addition to SPN 220.
Prerequisite: SPN 192
Fall and spring, 3 credits

SPN 222-G 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 303 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 is 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-I 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-G 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-J 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-I Introduction to Spanish Literature I
Readings in Peninsular literature from its origins through the 17th century.
Prerequisite: SPN 222
Fall, 3 credits

SPN 398-I 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 405, 410, 415, 420, 435, 444, 445, and 465 appear in the class schedule, and a description of the specific contents is available one semester in advance from the department.

SPN 405 Issues in Hispanic Cultural Studies
Readings, viewings, and theoretical discussion of Spanish or Latin American culture with special focus on one or more issues (colonialism, imperialism, national identity, indigenism, subjectivity) as manifested in a specific cultural form or forms (testimonial literature, popular culture, cinema, novel, short story, poetry, television). May be repeated as the topic varies.
Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
Schedule to be announced, 3 credits

SPN 410 Theory in Contexts
The critical analysis of texts as they relate to Spanish or Latin American political, social, and gender relations and institutions. Sample topics include gender and representation, Marxism and Freudianism, the body, carnival, orality, the picaresque. May be repeated as the topic varies.
Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
Schedule to be announced, 3 credits

SPN 415 Hispanic Cultures in Contact
Contemporary perspectives on Hispanic cultures in contact with each other and with non-Hispanic cultures. Sample topics include the literature of exile, border literature, ethnicity and culture, Latino/Latina literature, Spanish and Latin American cultural contacts. May be repeated as the topic varies.
Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
Schedule to be announced, 3 credits

SPN 420 Topics in Spanish and Latin American Cinema
A contextual approach to the study of the cinema of Spain or Latin America. Students develop their analytic skills in reading film narrative as they examine its function within Hispanic society and culture, as well as the relationship between film and other art forms. May be repeated as the topic varies.
Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
Schedule to be announced, 3 credits

SPN 435 Topics in Latin American Literature from the Colonial Period to the Present
Readings and discussion of selected literary works of a specific era of Latin American literature with special emphasis on the evolution

of forms and ideas and the historical and social contexts of local literary forms. May be repeated as the topic varies.
Prerequisite: SPN 392 or 396
Schedule to be announced, 3 credits

SPN 445 Topics in Spanish Literature from the Middle Ages to the Present
Readings and discussion of selected literary works of a specific era of Spanish literature with special emphasis on the evolution of forms and ideas and the historical and social contexts of local literary forms. May be repeated as the topic varies.
Prerequisite: SPN 392 or 397 or 398
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 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.
Prerequisite: SPN 301 or LIN 101
Fall or spring, 3 credits

SPN 463 Contrastive Spanish-English Grammar
In-depth investigation of particular areas of Spanish and English grammar for purposes of language teaching.
Prerequisite: SPN 301 or LIN 101
Fall or spring, 3 credits

SPN 465 Topics in Hispanic Linguistics
Investigation of selected topics in Hispanic linguistics. The topic, which is announced before each semester, may be drawn from such subjects as the development of Spanish, Spanish for teachers, or analysis of meaning in the Spanish language. May be repeated as the topic varies.
Prerequisite: SPN 301 or LIN 101
Schedule to be announced, 3 credits

SPN 475 Undergraduate Teaching Practicum in Spanish
An opportunity for selected upper-division students to collaborate with the faculty in teaching a language class. Responsibilities may include preparing material for practice sessions and helping students with problems. Application for approval must be submitted to the director of undergraduate studies the previous semester. Satisfactory/Unsatisfactory grading only.
Prerequisites: Upper-division Spanish major; preferably senior standing; permission of director of undergraduate studies
Fall, 3 credits

SPN 495 Spanish Senior Honors
See description and prerequisites of the honors program in Spanish, p. 140.
Fall and spring, 3 credits

Department of History

Chairperson: Wilbur R. Miller

Director of Undergraduate Studies: Helen Lemay

Faculty

Per A. Ålin, Associate Professor Emeritus, Ph.D., University of Vienna: Ancient; pre-classical archaeology.

Michael Barnhart, Associate Professor, Ph.D., Harvard University: U.S. foreign policy; 20th-century U.S. and modern Japan. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1985, and the President's Award for Excellence in Teaching, 1985.

Karl S. Bottigheimer, Professor, Ph.D., University of California, Berkeley: England and Ireland.

David B. Burner, Professor, Ph.D., Columbia University: 20th-century U.S. political and social.

Paul W. Chase, Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook: Modern Germany.

Ruth Schwartz Cowan, Professor, Ph.D., The Johns Hopkins University: History of biology and technology; women in modern society.

Tilden G. Edelstein, Professor, Ph.D., The Johns Hopkins University: 19th-century U.S.; Civil War and reconstruction.

Elizabeth Garber, Associate Professor, Ph.D., Case Western Reserve University: History of physics and thermodynamics; European intellectual and social.

Paul Gootenberg, Associate Professor, Ph.D., University of Chicago: 19th-century Latin America; Andean; Mexican; economic.

Young Sun Hong, Assistant Professor, Ph.D., University of Michigan, Ann Arbor: Modern Germany.

Matthew Jacobson, Assistant Professor, Ph.D., Brown University: U.S. immigration; political institutions.

Temma Kaplan, Professor, Ph.D., Harvard University: Spain; comparative women's history; popular culture.

Richard F. Kuisel, Professor, Ph.D., University of California, Berkeley: Modern Europe; France.

Eric E. Lampard, Professor Emeritus, Ph.D., University of Wisconsin-Madison: Economic and urban.

Ned Landsman, Associate Professor, Ph.D., University of Pennsylvania: U.S. colonial.

Brooke Larson, Associate Professor, Ph.D., Columbia University: Andean history; colonial and modern Latin America.

Herman E. Lebovics, Professor, Ph.D., Yale University: Modern European intellectual and social.

Helen Rodnite Lemay, Associate Professor, Ph.D., Columbia University: Medieval and Renaissance intellectual; paleography. Recipient of the President's Award for Excellence in Teaching, 1984.

Iona Man-cheong, Assistant Professor, Ph.D, Yale University: Modern China and Japan; modern Chinese women.

Gary Marker, Associate Professor, Ph.D., University of California, Berkeley: 18th- and 19th-century Russian social.

Wilbur R. Miller, Professor, Ph.D., Columbia University: 19th-century U.S.

John W. Pratt, Associate Professor Emeritus, Ph.D., Harvard University: U.S. constitutional and legal; New York State.

Donna J. Rilling, Assistant Professor, Ph.D., University of Pennsylvania: U.S. early national; legal; economic; urban; labor.

Joel T. Rosenthal, Professor, Ph.D., University of Chicago: Medieval Europe; England.

Wolf Schafer, Professor, Ph.D., University of Bremen: Social history of the sciences and science policy.

Nikhil P. Singh, Assistant Professor, Ph.D., Yale University: U.S. cultural history; race and gender studies.

Nancy Tomes, Associate Professor, Ph.D., University of Pennsylvania: U.S. social, medical, and women's history.

Barbara Weinstein, Associate Professor, Ph.D., Yale University: Brazil; colonial and modern Latin America; slave societies.

Fred Weinstein, Professor, Ph.D., University of California, Berkeley: Psychohistory; Russia.

John A. Williams, Associate Professor, Ph.D., University of Wisconsin-Madison: British Empire; Africa; the Commonwealth; expansion of Europe.

Kathleen Wilson, Assistant Professor, Ph.D., Yale University: Modern British social and intellectual.

Roger Wunderlich, Research Associate Professor, Ph.D., State University of New York at Stony Brook: Long Island history.

Affiliated Faculty

Floris Cash, Africana Studies
Leslie Owens, Africana Studies
Ian Roxborough, Sociology
Eli Seifman, Social Sciences Interdisciplinary
Judith Wishnia, Social Sciences Interdisciplinary

Adjunct Faculty
Estimated number: 3

Teaching Assistants
Estimated number: 5

The department's offerings range over many eras, regions, and topics, concentrating on the United States, Europe, Latin America, East Asia, and the history of science. Surveys of these fields are offered at the 100 level for the United States and Europe and the 200 level for other areas. Students interested in the study of history should take these survey courses first, since they serve as prerequisites for more advanced coursework. American and European courses at the 200 level customarily examine a specific period in these regions' pasts, while 300-level courses typically examine specific topics (such as social or political history) or countries (such as Germany, Brazil, or China). History colloquia at the 400 level are small classes offering intensive reading and discussion on closely focused themes. The study of history emphasizes the mastery of large amounts of information and the ability to demonstrate that mastery through skillful writing.

Each semester the department issues a booklet with detailed descriptions of its offerings. Students interested in history, whether as a major, a minor, a social science course related to their major, 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

The major in history leads to the Bachelor of Arts degree.

Completion of the major requirements entails 36 credits.

A. Study within the Area of the Major
A minimum of ten courses (30 credits) distributed as follows:
1. Two courses at the 100 level
2. A primary field of five courses to be selected from one of the following: United States, 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, excluding HIS 281, 282, 285, 289
   Two courses at the 300 level
   One course at the 400 level, excluding HIS 447, 487, 488
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.

B. Courses in a Related Discipline
Two upper-division courses in *one* discipline, the discipline to be selected *with department approval* no later than the end of the first semester after declaring the major. Courses that are crosslisted with a history course do not satisfy this requirement.

C. Upper-Division Writing Requirement
Students are required to complete one upper-division course from Group A (study within the area of the major) by the end of their junior year. They must inform the instructor of the course in advance of their plan to use the term paper (or papers) in fulfillment of the writing requirement for the major. In addition to the grade for the course, the instructor makes a second evaluation of writing competency in the field of history. If the second evaluation is favorable, the student will have fulfilled this requirement.

Notes
1. All courses taken to meet requirements A and B must be taken for a letter grade.
2. No grade lower than C in an upper-division course may be applied toward the major requirements.
3. At least 12 credits in requirement 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 requirement A.
5. No more than six credits of HIS 447, 487, 488 may be applied toward requirement 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 is 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 recommends 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 18 credits must be taken at Stony Brook, with three of the courses 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:

A. One two-semester survey course in the period of the student's interest (100 or 200 level)
B. One (additional) course at the 200 level
C. Three courses at the 300 or 400 level, at least one of which must be at the 400 level

Note: HIS 447, 487, 488 may *not* be used to satisfy minor requirements.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

HIS 101-F Early Modern European History: From Renaissance to Revolution
A study of European ideas and institutions from the Renaissance to the French Revolution, including the heritage of the Middle Ages; Renaissance art, politics, and thought; the Reformation and Counter-Reformation; the rise of the modern state; the new science; the Enlightenment; and the course of the French Revolution to 1815.
Fall, 3 credits

HIS 102-F Modern European History from 1789 to 1945
An introduction to the revolutionary events in politics and the economy, principally the industrialization of society, and the national, class, ethnic, and gender conflicts that dominated the period, including their cultural and ideological aspects. The course begins with the French Revolution, characterized by high hopes for the rational mastery of nature and society, and ends with the Second World War, a period of mass destruction and total war.
Spring, 3 credits

HIS 103-F American History to 1877
A survey of American history from the Age of Discovery to the end of Reconstruction. Topics to be treated include 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, 3 credits

HIS 104-F United States Since 1877
A survey of modern American history from the end of Reconstruction to the present. The course focuses 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.
Spring, 3 credits

HIS 208-I 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.
Prerequisite: One 100-level HIS course
Spring, 3 credits (not offered in 1995-96)

HIS 209-I 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.
Prerequisite: HIS 101 or 102
Fall, 3 credits

HIS 210-I 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.
Prerequisite: HIS 101 or 102
Spring, 3 credits

HIS 213-J Colonial Latin America
From conquest to independence: Spanish and Portuguese colonialism in the New World and the forging of Latin American societies.
Prerequisite: One 100-level HIS course
Fall, 3 credits

HIS 214-J 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. Crosslisted with POL 214.
Prerequisite: One 100-level HIS course
Spring, 3 credits

HIS 216-J 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 considers changes in American policy toward Latin America, as well as the varying responses of Latin American nations to U.S. intervention and influence. Crosslisted with POL 216.
Prerequisite: One 100-level HIS course
Fall, 3 credits (not offered in 1995-96)

HIS 219-J Introduction to Chinese History and Civilization
Introductory survey examining key concepts and significant themes in Chinese history. Topics include Confucianism, popular religion, government, foreign policy, the economy, Western influence, Chinese revolution, and modernization.
Prerequisite: One 100-level HIS course
Fall, 3 credits (not offered in 1996-97)

HIS 220-J Introduction to Japanese History and Civilization
An introduction to the history of the Japanese people from antiquity to the present, including the origins of the emperor system, early cultural influences from the Asian mainland, Japanese permutations of Buddhism such as Zen, the civil wars and the rise of the shogunate and samurai, and the Meiji Restoration and Japan's subsequent interaction with the West.
Prerequisite: One 100-level HIS course
Spring, 3 credits (not offered in 1995-96)

HIS 225-J The Formation of the Judaic Heritage
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.
Prerequisite: RLS 103 or 110 or one 100-level HIS course
Fall, 3 credits

HIS 226-F The Shaping of Modern Judaism
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.
Prerequisite: RLS 103 or 110 or one 100-level HIS course
Spring, 3 credits

HIS 234-I Medieval Europe: A Survey
A survey of medieval Europe, 400-1400. The emphasis is on social and cultural as well as political history, using selected medieval sources to recreate a world of change, experimentation and exploration, and an ongoing dialogue regarding self and society.
Prerequisite: One 100-level HIS course
Fall, 3 credits (not offered in 1995-96)

HIS 237-H, 238-H 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 begins with a discussion of the 20th century and then covers the period from the ancient Greek civilization to the scientific revolution of the 17th century. The second semester covers the 18th, 19th, and 20th centuries.
Prerequisite: One D.E.C. category E course
Fall (237) and spring (238), 3 credits each semester (not offered in 1995-96)

HIS 241-I 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 or HIS 101 or 102
Spring, 3 credits (not offered in 1995-96)

HIS 248-I Europe, 1815-1914
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.
Prerequisite: HIS 101 or 102
Fall, 3 credits (not offered in 1995-96)

HIS 249-I Modern Europe, 1914-1945
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.
Prerequisite: HIS 101 or 102
Spring, 3 credits

HIS 250-F 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.
Prerequisite: One 100-level HIS course
Fall, 3 credits

HIS 251-I Europe Since 1945
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 such as existentialism and Marxist humanism.
Prerequisite: HIS 102
Spring, 3 credits (not offered in 1996-97)

HIS 262-K American Colonial Society
Political, economic, social, and cultural characteristics of the American colonies from their founding until their separation from Great Britain. Particular attention is devoted to the interaction of cultures and peoples in the making of colonial societies as reflected in the institution of slavery and ethnic, racial, and provincial identities.
Prerequisites: HIS 103; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits (not offered in 1996-97)

HIS 263-K 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.
Prerequisites: HIS 103; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1996-97)

HIS 264-K 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 the 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.
Prerequisites: HIS 103; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1996-97)

HIS 265-K Civil War and Reconstruction
An examination of the political and social roots of the conflict between the slave South and free-labor North, which led to the Civil War. Major themes include how two very different societies fought the war; the political battles over the nature of the reunited nation; the Black Experience during slavery, wartime, and Reconstruction; and changing white racial attitudes throughout this era.
Prerequisites: HIS 103; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1995-96)

HIS 266-K Jefferson's America
Political, economic, and cultural developments from the beginning of the national government to the age of Jackson and Tocqueville.
Prerequisites: HIS 103; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1995-96)

HIS 267-K American History/American Film
A study of classic American films as a reflection on their times and an influence upon style and belief. The course tries to teach students to view film as a product of history and a reflection of the social and ideological tone and culture of America.
Prerequisites: HIS 104; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1995-96)

HIS 268-K 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, and the 1960s and after.
Prerequisites: HIS 104; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1996-97)

HIS 272-K America in the 1960s
A study of the 1960s, emphasizing conflicts within American liberalism between cold warriors and antiwar activists, advocates of the bureaucratic welfare state versus those favoring small-scale community operations, and technocratic liberalism versus a politics of immediacy and moral witness. Special attention is given to the paradigmatic qualities of the civil rights movement, the domestic side of the Vietnam War, and the relationship of liberalism to radicalism. May not be taken for credit in addition to the discontinued HIS 107.
Prerequisites: HIS 104; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

HIS 277-K The Modern Color Line
An analysis of the key concepts defining the Black Experience in the United States, and the African diaspora, as formulated by 20th-century African-American intellectuals. Topics include forms of political organization and collective struggle; the social and psychic consequences of racist subjection; the relationship among race, racism, and culture; and the cultural politics of race and gender. Crosslisted with AFS 277.
Prerequisites: HIS 104 or AFS 101, 102; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1996-97)

HIS 301-I Early Modern Europe
An investigation of European society and culture from the middle of the 15th century to the end of the 18th. Prominent subjects include the Renaissance; the Protestant Reformation; the Counter (or Catholic) Reformation; state formation, diplomacy, and conflict; the Enlightenment; and the nature of Europe's *anciens régimes.*
Prerequisite: HIS 101
Fall, 3 credits (not offered in 1996-97)

HIS 302-I The Medieval Imagination
Medieval European civilization and society as revealed through the literature—mostly creative and in the vernacular—of the times. The course bridges traditional historical interests in social structure, women, class relations, and economic life with the aesthetic problems posed by medieval literature: a sense of self and the deep sexism and repression of the official culture as against expressions of individuality and resistance.
Prerequisite: HIS 101 or 234 or one other course in European history or medieval studies
Spring, 3 credits (not offered in 1996-97)

HIS 303-I 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.
Prerequisite: One 100-level HIS course
Fall or spring, 3 credits (not offered in 1995-96)

HIS 304-I 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: HIS 101 or 102
Fall, 3 credits (not offered in 1995-96)

HIS 305-I 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 are examined along with representative contemporary documents.
Prerequisite: HIS 101 or 102
Fall, 3 credits (not offered in 1995-96)

HIS 307-I European Radicalism from the Protestant Reformation to the Russian Revolution
An examination of radical movements in Europe that have required people to choose between the rights of the individual and the rights of the community, between personal autonomy and equality of condition. The course focuses on the ideological debates over these opposed principles, and the outcome of the struggles that followed from them.
Prerequisite: HIS 101, 102
Fall, 3 credits

HIS 309-I 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, 3 credits (not offered in 1995-96)

HIS 310-I 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, 3 credits (not offered in 1995-96)

HIS 311-I 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 versus liberalism and socialism in an age of drastic economic transformation.
Prerequisite: HIS 102
Fall, 3 credits (not offered in 1996-97)

HIS 312-I 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.
Prerequisite: HIS 102
Spring, 3 credits (not offered in 1996-97)

HIS 313-I 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.
Prerequisite: HIS 102
Fall, 3 credits (not offered in 1995-96)

HIS 314-I 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.
Prerequisite: HIS 102
Fall, 3 credits (not offered in 1995-96)

HIS 315-I 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.
Prerequisite: HIS 102
Spring, 3 credits (not offered in 1995-96)

HIS 316-F 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 also treats the development of organized medicine and its impact upon female healers and patients. Crosslisted with WNS 316.
Prerequisite: One 100-level HIS course or any WNS course or WNH 103
Fall or spring, 3 credits (not offered in 1995-96)

HIS 317-F 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 are studied. The course emphasizes comparisons and original documents.
Prerequisite: One 200-level course on modern Europe
Fall, 3 credits (not offered in 1996-97)

HIS 318-I 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.
Prerequisite: HIS 101 or 102
Fall, 3 credits (not offered in 1996-97)

HIS 319-F 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 and 104
Fall, 3 credits (not offered in 1995-96)

HIS 321-F Long Island History
An exploration of Long Island's rich but neglected history, from colonial times to the present. Topics include the island's Native Americans; colonial settlement, towns and counties, the Revolution, slavery, whaling, farming, the Long Island Rail Road, social reform, art and literature, the Civil War, "gold coast" estates, suburban growth, "roaring twenties," the Great Depression, Robert Moses, post-World-War II expansion, aviation and aerospace, the turbulent sixties, the "post-suburban" era, and problems of the 21st century.
Prerequisite: HIS 103 or 104
Fall, 3 credits

HIS 325-K 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.
Prerequisites: HIS 104 or AFS 101 or 102; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits

HIS 333-K 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 is placed on topics of special interest to women, i.e., the cult of domesticity, the birth control movement, feminism, women and reform, and changing attitudes toward female sexuality. Crosslisted with WNS 333.
Prerequisites: HIS 103 or 104 or WNS/SSI 102 or WNH 103; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

HIS 336-I 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 is 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 are domestic work, prostitution, sexual attitudes and mores, child-rearing practices, women and revolutionary movements, and the growth of feminism. Crosslisted with WNS 334.
Prerequisite: HIS 102 or WNS/SSI 102 or WNH 103
Fall, 3 credits (not offered in 1995-96)

HIS 338-I Modern Russian Intellectual History
The development of modern Russian thought from the Enlightenment of the late 18th century until the revolution of 1917. Emphasis is 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) are given primary consideration, but aesthetic and literary concepts receive attention as well.
Prerequisite: One course in modern European history
Fall, 3 credits (not offered in 1995-96)

HIS 339-I Russian Social History, 1825-1929
An in-depth review of the transformation of Russian society "from the bottom up." The course examines 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 then proceeds to the revolutionary years of 1905-1917 and to the postrevolutionary era to examine how the turmoil and the new society affected the lives of common people in Russia.
Prerequisite: One course in modern European history
Spring, 3 credits (not offered in 1996-97)

HIS 341-J 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 is given to the theory and practice of Chinese communism.
Prerequisite: HIS 219
Fall, 3 credits (not offered in 1995-96)

HIS 343-J Roots of Modern Japan
The history of Japan from prehistory to the 20th century. Emphasis is on those aspects of history and culture that are still shaping Japanese society today.
Prerequisite: HIS 220
Spring, 3 credits (not offered in 1995-96)

HIS 344-J 20th-Century Japan
The history of Japan from the beginning of its imperialistic expansion in 1895 to World War II and postwar reconstruction, including such contemporary topics as educational issues, economic policies, and foreign relations.
Prerequisite: HIS 220
Spring, 3 credits (not offered in 1995-96)

HIS 352-H 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 include science and government, science in

warfare, industrial research, and the professionalization of science.
Prerequisites: HIS 237 or 238; one D.E.C. category E course
Fall, 3 credits

HIS 360-I Women in Premodern Europe
An examination of the position of women in European society from ancient Greece through the Italian Renaissance. The course emphasizes 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. Crosslisted with WNS 360.
Prerequisite: HIS 101 or any WNS course or WNH 103
Spring, 3 credits (not offered in 1996-97)

HIS 366-K Race, Class, and Culture in the United States Since 1930
An analysis of the social and cultural reorganization of "race" in American life from the Great Depression to the present. Topics include migration and class formation, the legacies of antiracist radicalism, popular culture and the Second Reconstruction, and the imposition of racial hierarchies through spatial division and state policy. The course shows how "race" is a social and political category, its meaning determined by institutional forces and forms of political struggle. Crosslisted with AFS 366.
Prerequisites: AFS 101; AFS 102 or HIS 104; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1996-97)

HIS 367-K Change and Reform in the United States, 1877-1919
The growth of industrialism, class conflict, and ethnic diversity in America and the rise of social reform movements to address resulting problems. Emphasis on modern liberalism as a response to major changes in American society.
Prerequisites: HIS 104; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1995-96)

HIS 369-K American Social History to 1860
The development of American society from the 17th century to the beginning of industrialization, with emphasis on changing concepts of class and community relations, work, and family and gender roles. Special attention to how the diversity of the American people shaped the evolution from a traditional world view to the more modern, competitive society of the 19th century.
Prerequisites: HIS 103; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1995-96)

HIS 370-K U.S. Social History, 1860-1930
The evolution of American society from the mid-19th century to the Great Depression. An examination of the impact of the Industrial Revolution, urbanization, and mass immigration on concepts of class, community, family, and gender roles. Special emphasis on how increasing class conflict and changing expectations of family life forced the evolution of new, modern social values and institutions.
Prerequisites: HIS 103 or 104; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits

HIS 371-K American Roots
The roots of Americans through the immigration or migration experiences of WASPs, blacks, Irish, Germans, Slavs, Jews, Italians, Asians, and Latinos 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 form the main themes.
Prerequisites: HIS 103 or 104; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1996-97)

HIS 372-K Assimilation and Pluralism in American Social Thought
Twentieth-century American social thought on the issues of cultural diversity and accommodation. This is examined against the backdrop of a growing central government, the imperatives of national unity during world wars and the Cold War, the rise of mass media, and the adjustments of social and political protest in response to these historical developments. Writings by commentators of a variety of ethnic groups and backgrounds are considered.
Prerequisites: HIS 104 or 268 or AFS 102; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1995-96)

HIS 375-K History of U.S. Foreign Relations to 1920
The rise of the United States from first Atlantic settlements to world power status after the First World War. Special emphasis is placed on the role of domestic politics in foreign policy formulation, from ethnic divisions over mid-19th-century expansionism to the role of race in determining U.S. relations with Latin America and Asia. The importance of ideological factors from debates over the significance of the French Revolution to the principles of the Versailles settlement is considered.
Prerequisites: HIS 103 or 104; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits (not offered in 1996-97)

HIS 376-F History of U.S. Foreign Relations Since 1920
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.
Prerequisite: HIS 104
Spring, 3 credits (not offered in 1996-97)

HIS 380-K Origins of American Society
An inquiry into the origins of a distinctive American social order. The aspects of economics and class; slavery and race; and ethnic, provincial, and national identities as they evolved in America between the founding of the American colonies and the era of Jackson and Tocqueville.
Prerequisites: HIS 103; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits (not offered in 1995-96)

HIS 382-J Politics and Political Change in Latin America
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. Crosslisted with POL 382.
Prerequisite: HIS 213 or HIS/POL 214 or 216
Fall, 3 credits (not offered in 1995-96)

HIS 385-J History of Aztec and Inca Societies
An inquiry into the history of native peoples of Mexico and Peru before and after the European invasion. The course considers the nature and dynamics of Aztec and Inca civilizations before Columbus, the significance of Indian-European cultural contact from the perspective of native societies, and the biological and cultural consequences of Spanish colonial rule for native peasantries in Mexico and Peru.
Prerequisite: HIS 213 or HIS/POL 214
Fall, 3 credits (not offered in 1995-96)

HIS 386-J 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.
Prerequisite: HIS/POL 214 or upper-division standing
Spring, 3 credits (not offered in 1996-97)

HIS 387-J 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 is on women in political protest and revolution. Crosslisted with WNS 387.
Prerequisite: HIS 213 or HIS/POL 214 or any WNS course or WNH 103
Fall or spring, 3 credits (not offered in 1996-97)

HIS 389-J Modern Mexico
The history of Mexico from independence in 1810 to the present crisis. The course explores the relationships among agrarian development, social movements, and state building in Mexican history. Topics include 19th-century instability and liberal reform, and the 20th-century revolution and its legacy for modern Mexican politics.
Prerequisite: HIS 213 or HIS/POL 214 or 216
Fall or spring, 3 credits (not offered in 1995-96)

HIS 391-F Global History
The origins and structure of global history. Topics include the transition from world history to global history, multinational corporations and international trade, global electronic networks, and the politicization of ecology and biotechnology. The focus of the course is on the range of transnational possibilities and problems that have emerged since World War II.
Prerequisite: One course in 20th-century history
Fall or spring, 3 credits

HIS 393-F History of American Technology
The development of American technology from the 17th century to the present, focusing particularly on the social determinants and impact of technological change and the role of technology in American culture
Prerequisites: HIS 103 or 104; HIS 237 or 238
Spring, 3 credits (not offered in 1995-96)

HIS 394-H Human Reproduction in Western Civilization
Examination of human reproduction in the history of the West using three perspectives: scientific and medical theories, social policy and demography, and cultural representation.
Prerequisites: One 100-level course in history; ANP 120 or BIO 101 or 151 or 152 or 171 or 172
Spring, 3 credits

HIS 395-J 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 101 or 102
Spring, 3 credits

HIS 396-J 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. Religious change, tradition and westernization, social reform, nationalism, revolution, and concepts of political power are analyzed through examination of intellectuals from Islamic, Indian, and African societies, with briefer consideration of how these themes and theories might fit East Asian or Latin American cases.
Prerequisite: One course in history, politics, or religions of Latin America, Africa, Asia, or Russia
Fall, 3 credits (not offered in 1995-96)

HIS 401, 402, 403 Colloquia in European History
Subjects and periods, which vary with student demand and faculty interest, 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 as the topic varies.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits each

HIS 404 Colloquium in the History of the Social and Behavioral Sciences
A seminar in the history of the social and behavioral sciences, including sociology, anthropology, and psychoanalysis, the precise subjects varying with faculty interest and student expectations. The focus of the course is on the great impact that social and behavioral science theories have had historically in social practice. Topics might include the origins of social theory, the impact of Marxism on the social sciences, or the history of psychoanalysis in the 20th century. May be repeated as the topic varies.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits

HIS 411-414 Colloquia in American History
Subjects and periods, which vary with student demand and faculty interest, 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 the topic varies.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits each

HIS 421, 422 Colloquia in Latin American History
Subjects and periods, which vary with student demand and faculty interest, include such topics as slavery and race relations, culture and ideology, peasant movements and popular rebellion, and 20th-century revolutions. May be repeated as the topic varies.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits each

HIS 431, 432 Colloquia in Asian History
Subjects and periods, which vary with student demand and faculty interest, include such topics as Japanese nationalism and expansion, Far Eastern diplomatic history, and nationalism in Southeast Asia. May be repeated as the topic varies.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits each

HIS 441 Colloquium in World History
Subjects and periods, which vary with student demand and faculty interest, include such topics as the expansion of Europe, theories of imperialism, revolutionary and religious movements, the psychoanalytical interpretation of history, and slavery. May be repeated as the topic varies.
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.
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 are studied with attention to primary sources and current historiographic controversies and developments. May be repeated as the topic varies.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits

HIS 461 Colloquium in the History of Science
Topics, which vary with student demand and faculty interest, 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 the topic varies.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits

HIS 487 Supervised Research
Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.
Prerequisite: Permission of instructor and either department or departmental URECA coordinator
Fall and spring, 1 to 3 credits

HIS 488 Internship
Participation in local, state, and national public and private agencies and organizations. Students are 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 writing 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

Human Sexual and Gender Development

Director: Roberta Karant, Sociology

The minor in human sexual and gender development (LHD) is designed primarily for the residents of Langmuir College who wish to add an academic dimension to their residential experience. The minor in this living/learning center brings an interdisciplinary perspective to the

examination of evolving concepts of a gendered, sexual self. Small group seminars focus on sex, gender, and the human life course, while students broaden their understanding with relevant courses in the arts, sciences, and social sciences.

Requirements for the Minor

The minor consists of 24 credits to be taken in the following manner:

1. Six three-credit courses from the approved list (available from the director of the minor), including:
   a. at least one three-credit course in one phase of the life course and one other in gender studies
   b. at least one three-credit course in each of the following divisions: Biological Sciences, Humanities and Fine Arts, Social and Behavioral Sciences
   c. any other three-credit courses from the list to achieve a total of 18 credits.
2. Three one-credit courses in human sexual and gender development:
   a. LHD 101 or 301, to be taken during the first semester of the program
   b. any two of the following: LHD 302, 309, 310, 401
3. One three-credit independent study course, either:
   a. LHD 487 or 488 under the supervision of the director of the minor
   or
   b. an independent study course in any department approved by the director of the minor

Note: No more than one three-credit course in the minor may be taken P/NC. At least 12 credits for the minor must be in upper-division courses.

Declaration of the Minor

Students must declare the human sexual and gender development minor no later than the middle of their third year, at which time they consult with the director of the minor and plan their course of study for fulfillment of the requirements.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. LHD courses do not satisfy D.E.C. requirements.

LHD 101 Human Development Seminar for First-Year Students
An introduction to human sexual and gender development issues. The course focuses on topics relevant to the campus experience—e.g., male and female roles in the classroom, college students and the crisis of AIDS and sexually transmitted diseases, sexual orientation. These issues are examined from an interdisciplinary perspective.
Prerequisite: Permission of director; priority given to residents of Langmuir College
Fall, 1 credit

LHD 301 Human Sexual and Gender Development Issues
An examination of the human life cycle—infancy and childhood, youth and adolescence, midlife and aging—with regard to gender and sexual self-concepts. May be repeated once as the topic varies.
Prerequisite: Permission of director; priority given to residents of Langmuir College
Fall and spring, 1 credit

LHD 302 Colloquium in Human Sexual and Gender Development
Sexual and gender development issues such as sexual orientation, gender development in children, and the childbirth experience. May be repeated once as the topic varies.
Prerequisite: Permission of director; priority given to residents of Langmuir College
Fall and spring, 1 credit

LHD 309, 310 AIDS Peer Education Training
Examination and practice of the various ways to educate and modify behavior regarding HIV risk reduction.
Prerequisite for LHD 309: Permission of instructor
Prerequisites for LHD 310: LHD 309; permission of instructor
Fall (309) and spring (310), 1 credit each semester

LHD 401 Advanced Seminar in Human Sexual and Gender Development
Consideration of human sexual and gender development issues through examination of primary source material. Topics may include "the family in film," " sexual orientation in literature," or "male and female roles in history." May be repeated once as the topic varies.
Prerequisite: Permission of director; priority given to residents of Langmuir College
Fall and spring, 1 credit

LHD 475 Undergraduate Teaching Practicum I
Students aid instructors and students in LHD courses in one or several of the following ways: leading discussion sections, helping students improve research skills, assisting with the educational program presented as part of coursework. Students meet regularly with the supervising instructor. Satisfactory/ Unsatisfactory grading only.
Prerequisites: Minor in human sexual and gender development; LHD 487; upper-division standing; permission of instructor and director
Fall and spring, 3 credits

LHD 476 Undergraduate Teaching Practicum II
A practicum in the techniques of teaching human sexual and gender development issues. Each student assists a faculty member in a regularly scheduled class. The student may be required to attend all the classes and meets with the faculty member at regularly scheduled times. Students may lead discussion sections or class meetings, help students improve research and presentation skills, and assist with educational programs. Satisfactory/ Unsatisfactory grading only.
Prerequisites: LHD 475; upper-division standing; permission of instructor and director
Fall and spring, 3 credits

LHD 487 Independent Study in Human Sexual and Gender Development
The completion of an individual project by one or a group of students on human sexual and gender development and the life course. Projects must include both library and field research, or literary or artistic endeavor. Each project must result in an individual or group production, including a written report, approved in advance by the director of the minor. May be repeated once.
Prerequisites: LHD 101 or 301; LHD 302; permission of instructor and director
Fall and spring, 3 credits

LHD 488 Internship
Participation in public and private agencies and organizations. Students are required to submit written reports on their experience to the faculty sponsor and the Langmuir program in human sexual and gender development. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of six credits.
Prerequisites: Permission of instructor, director of the minor, and Office of Undergraduate Studies
Fall and spring, 3 to 6 credits

Interdisciplinary Program in the Humanities

Director of Undergraduate Studies: Peter Manchester, Comparative Studies

The interdisciplinary program in the humanities, which is housed in the Department of Comparative Studies, 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 A, B, and D, the student should be careful to consider the relevant prerequisites for the clusters chosen for requirement C.

Completion of the major requirements entails 42 to 47 credits.

A. Two elementary courses in a foreign language not offered for college admission *or* one course above the elementary level

B. One course from *each* group numbered 1-3 below. The student's choice of courses to satisfy this requirement influences the choice of clusters for requirement C below. Those clusters most directly related to the following introductory courses are listed in parentheses following the course number.

Group 1: Literature

HUM 107,121-123
CLS/CSL 113 (Cluster 1, requirement C)
EGL 204 (All EGL courses, requirement C)
Any survey course on foreign literature in the original language (foreign literature courses in requirement C)

Group 2: The Arts

ARH 101 (ARH courses in clusters 1 and 2, requirement C)
ARH 102 (ARH courses in clusters 3-6, requirement C)
MUS 101 (All MUS courses, requirement C)

Group 3: History and Philosophy

PHI 200 (PHI courses in clusters 1-3, requirement C)
PHI 204 (PHI courses in clusters 2 and 3, requirement C)
PHI 206 (PHI courses in clusters 4-6, requirement C)
PHI 208 (PHI courses in clusters 5 and 6, requirement C)
RLS 103 (RLS courses in requirement C)
RLS 104 (RLS courses in requirement C)

C. From any *two* of clusters 1-6 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, a number of additional courses are available that cover the chronological period of two adjacent clusters (especially of clusters 5 and 6).

Cluster 1: The Ancient World

ARH 300 Greek Art and Architecture
ARH 301 Roman Art and Architecture
CLS/CSL 113 Greek and Latin Literature in Translation
CLS 215 Classical Mythology
EGL/JDH 261 The Bible as Literature
JDS/HIS 225 The Formation of the Judaic Heritage
LAT 251, 252 Readings in Latin Literature
LAT 353 Literature of the Roman Republic
LAT 354 Literature of the Roman Empire
PHI 111 Introduction to Eastern Philosophy
PHI 200 Introduction to Ancient Philosophy
PHI 300 Ancient Philosophy
RLS 240 Confucianism and Taoism
RLS 260 Buddhism
RLS 270 Christianity

Cluster 2: 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 234 Medieval Europe: A Survey
HIS 302 The Medieval Imagination
HIS 303 Medieval Culture and Society
LAT 355 Early Medieval Latin
LAT 356 Late Medieval Latin
PHI 204 Introduction to Medieval Philosophy
PHI 304 Medieval Philosophy
RLS 280 Islam
RLS 321 Christian Classics
Any course on medieval literature in a foreign language

Cluster 3: The Renaissance

ARH 306 The Early Renaissance in Italy
ARH 307 High Renaissance and Mannerism in Central Italy
ARH 310 Renaissance Art in Venice
ARH 337 Northern Renaissance Art
CSL 211 Literary Survey: Medieval through Late Renaissance
EGL 243 Shakespeare: The Major Works
EGL 304 Renaissance Literature in English
EGL 344 Major Writers of the Renaissance Period in England
EGL 345 Shakespeare I
EGL 346 Shakespeare II
THR 344 The Shakespearean Tradition
Any course on Renaissance literature in a foreign language

Cluster 4: Classicism and Enlightenment

CSL 212 Literary Survey: Enlightenment through Modern
ARH 315 Spanish Painting, 1560-1700
ARH 320 Art of the 18th Century
EGL 306 English Literature of the 17th Century
EGL 308 The Age of Dryden
EGL 310 Neoclassical Literature in English
EGL 316 Early American Literature
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
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 5: Romanticism and Realism

ARH 331 American Art to 1890
ARH 341 Art of the 19th 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 The Birth of Modern America
HIS 309 Modern France, 1815-1900
HIS 338 Modern Russian Intellectual History
HIS 369 American Social History to 1860
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 6: Modern Society

ARH 322 American Art Since 1947
ARH 324 Architecture and Design of the 19th and 20th Centuries

ARH 332 Art of the United States, 1890-1930
ARH 342 Art of the 20th Century
CNS 250 Chinese Culture and Society: Modern China
CSL/EGL 266 The 20th-Century Novel
EGL 226 Contemporary American Literature: 1945 to the Present
EGL 352 Major Writers of 20th-Century Literature in English
EGL 353 Major Writers of Contemporary British and American Literature
HIS 210 Soviet Russia
HIS 250 The Second World War, 1939-1945
HIS 251 Europe Since 1945
HIS 267 American History/American Film
HIS 272 America in the 1960s
HIS 310 Modern France, 1900 to the Present
HIS 315 20th-Century Britain
HIS 339 Russian Social History, 1825-1929
HIS 341 20th-Century China
HIS 344 20th-Century Japan
HIS 386 Modern Brazil
HIS 389 Modern Mexico
HUM 201 Film and Television Studies I
HUM 202 Film and Television Studies II
JDH/RLS 230 Judaism
JDH/RLS 465 Judaic Responses to Catastrophe
JDS/HIS 241 The Holocaust: The Destruction of European Jewry—Causes and Consequences
MUS 109 Rock Music
MUS 308 History of Jazz
MUS 309 Music of the 20th Century
MUS 310 Music and Culture in the 1960s
PHI 247 Existentialism
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
Any course in 20th-century literature in a foreign language

D. Any four additional courses from any department in the humanities division, of which at least two must be numbered 300 or above.

E. *Upper-Division Writing Requirement*
In order to satisfy this requirement, students majoring in humanities must submit a portfolio of their writing pertaining to the major to the director of undergraduate studies no later than seven weeks after the start of the second semester of their junior year. They must achieve an evaluation of S (Satisfactory) on the portfolio. Further details are available from the department chairperson or from the director of undergraduate studies.

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 are 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 for the project in writing to the director of undergraduate studies by the last day of classes of the first semester of the senior year. Students who have obtained permission from the chairperson to pursue the project must enroll in HUM 495 while writing the thesis.

The thesis is 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. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

HUM 107-B 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 or spring, 3 credits

HUM 121-B Death and Afterlife in Literature
Through discussion of representative contemporary and classical texts, this course addresses the topic of how human beings have chosen to live with the one certainty of their existence, its eventual conclusion in death, and how various images of afterlife or denial of its possibility have shaped those choices.
Fall or spring, 3 credits

HUM 122-B Images of Women in Literature
An historical and intercultural examination of selected representations of women in world literature ranging from classical literature to modern evocations of women's changing social roles and the rise of feminine self-consciousness.
Fall or spring, 3 credits

HUM 123-B Sexuality in Literature
An exploration of the expression and interpretation of sexual experience in literature and culture, through discussion of selections from world literature and art, both classic and contemporary. Themes include temptation and gratification, desire and fulfillment, and how societies shape gender roles and deviance and set limits on sexual representation in literature and art.
Fall or spring, 3 credits

HUM 201-D Film and Television Studies I
An introduction to the study of film and television through the concept of genre. Special attention is given to how film and television deal with issues of race and gender.
Prerequisite: One D.E.C. category B course
Spring, 3 credits

HUM 202-D Film and Television Studies II
An introduction to the theory and criticism of film and television from the "primitive" era to the present. Weekly film and video showings are accompanied by readings in both contemporary and classical film theory. Special attention is given to mainstream Hollywood cinema as well as to experimental traditions originating in the Soviet Union, France, and Germany.
Prerequisite: One D.E.C. category B course
Fall, 3 credits

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 director of undergraduate studies
Fall and spring, 3 credits

International Studies

Director: Dieter K. Zschock, Economics

The interdisciplinary minor in international studies (KIS) is open to all undergraduates—with preference given to residents of Keller International College—who wish to add an academic dimen-

sion to their residential experience. Keller, a living/learning center, provides an integrated view of institutions, ideas, historical traditions, and aspirations of peoples of other countries or regions. Completion of the minor requirements entails 24 credits.

Requirements for the Minor in International Studies

A. Students must select a world region for specialization from among the following: western Europe, eastern Europe (including the former Soviet Union), southern Europe, the Middle East, east Asia, south Asia, Africa, or Latin America.
B. One of the following courses:
   ANT 102 Introduction to Cultural Anthropology
   ANT 230 Peoples of the World
   ECO 243 Comparative Economic Systems
   EGL 224 20th-Century Literature in English
   PHI 105 Politics and Society
   POL 101 World Politics
   POL 103 Introduction to Comparative Politics
C. Fifteen credits selected from courses in the social and behavioral sciences and humanities and fine arts that relate to the world region chosen:
   Three courses dealing with the region's history, sociology, economic or political institutions, or general culture.
   One course dealing with the region's philosophic ideas, religious institutions, literature, painting, or music.
   One course from either of the above two sets of topics.
D. KIS 301 Introductory Seminar in International Studies
E. KIS 302 Colloquium in International Studies
F. KIS 401 Advanced Seminar in International Studies
G. One KIS 487 Independent Study for three credits *or* an independent study course in any department approved by the director

Notes:

1. With the approval of the director, up to 15 credits may be taken as part of the Study Abroad program. See Study Abroad, p. 71.
2. No more than one three-credit course in the minor may be taken P/NC. All other courses must be passed with a grade of C or higher.
3. At least 12 elective credits for the minor must be in upper-division courses.
4. Students are urged to spend at least one semester studying abroad. Upon returning, students are required to present a talk in one of the seminars or colloquia offered in the minor.

Declaration of the Minor

Students should declare the international studies minor during their sophomore year or the beginning of the junior year, at which time they consult the director and plan their course of study.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. KIS courses do not satisfy D.E.C. requirements.

KIS 301 Introductory Seminar in International Studies
An introductory seminar dealing with global issues. Topics focus on general subjects such as the international order and global political economy; the United Nations system, its structure, history, and evolving roles; multilateral economic, political, and security organizations such as the World Bank, North Atlantic Treaty Organization, and the Organization of African Unity; "North-South" issues; the role of power and ideology in the evolving post-Cold War order.
Prerequisite: Permission of director; priority given to Keller residents
Fall, 1 credit

KIS 302 Colloquium in International Studies
A colloquium on international studies involving guest experts who discuss particular world topics or regional specialties. Students also contribute class discussions, oral presentations, and a substantial essay on themes drawn from various topics and regions. May be repeated twice as the topic differs.
Prerequisites: KIS 301; permission of director; priority given to Keller residents
Spring, 1 credit

KIS 401 Advanced Seminar in International Studies
An advanced seminar focusing on a particular topic or region of the world. Students demonstrate a close familiarity with the region of their specialty and with the minor themes of significance to that region, as for example population control, industrialization, and political changes in China. They also compare how such themes relate to the regional studies of other students in the seminar. May be repeated twice.
Prerequisites: KIS 302; permission of director; priority given to Keller residents
Fall, 1 credit

KIS 487 Independent Study in International Studies
Independent research projects on international studies by upper-division students in the minor under the supervision of an instructor. May be repeated twice.
Prerequisites: KIS 401; permission of director; priority given to Keller residents
Fall and spring, 1 to 3 credits

Japanese Studies

Director: Sachiko Murata, Comparative Studies

In the Japanese studies minor (JNH) students take a series of courses centering on the history and civilization of Japan while keeping in view Japan's close ties with China and Korea. Students design their own program with the approval of the director of the minor. The minor requires 18 credits that must be taken for a letter grade and passed with a C or higher.

Requirements for the Minor in Japanese Studies

1. JPN 191
2. Five of the following: HIS 220, 343, 344, 431 (appropriate topic only), JNH 240, 251, 351, JNH/JNS 331, 332, 447, JPN 221, 222, KRH 346, PHI 344, RLS 246, 361

Notes:

1. Students excused from JPN 191 because of previous Japanese language proficiency are required to take an extra course from requirement 2.
2. Independent study may fulfill only three credits.

Courses

See p. 77, Course Credit and Prerequisites; and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category. JNH and JNS courses are taught in English; they do not satisfy the entry skill in foreign language requirement.

JPN 111, 112 Elementary Japanese I, II
An introduction to spoken and written Japanese with equal attention to speaking, reading, and writing. Linguistic analysis of the characters provides cultural and historical background of the language. No student who has had two or more years of Japanese in high school (or has otherwise acquired an equivalent proficiency) is permitted to enroll in JPN 111 or 112 without written permission from the supervisor of the course.
Prerequisite to JPN 112: JPN 111
Fall (111) and spring (112), 3 credits each semester

JPN 191-J, 192-J Intermediate Japanese I, II
An intermediate course in Japanese language to develop audiolingual skills and reading and writing ability. Selected literary texts serve as the basis for practice in reading comprehension and composition. No student who has had three or more years of Japanese in high school (or has otherwise acquired an equivalent proficiency) is permitted to enroll in JPN 191 or 192 without written permission from the supervisor of the course.
Prerequisite to JPN 191: JPN 112
Prerequisite to JPN 192: JPN 191
Fall (191) and spring (192), 3 credits each semester

JPN 221-J, 222-J Advanced Japanese I, II
An advanced course designed to strengthen students' ability to understand and speak the Japanese language. Students are required to prepare selected texts and to read and translate them in class. They also write essays based on the texts as well as on Japanese videos.
Prerequisite to JPN 221: JPN 192
Prerequisite to JPN 222: JPN 221
Fall (221) and spring (222), 3 credits each semester (not offered in 1995-96)

JPN 475 Undergraduate Teaching Practicum I
An opportunity for qualified seniors to assist faculty in instruction in Japanese language. Responsibilities may include holding office hours for drill and review, preparing material for practice sessions, and helping students with problems in grammar, pronunciation, and character recognition. Satisfactory/Unsatisfactory grading only.
Prerequisites: Fluency in Japanese; senior standing; permission of instructor
Fall and spring, 3 credits

JPN 476 Undergraduate Teaching Practicum II
A continuation on a more advanced level of training in the techniques of organization and management in the teaching of Japanese. Students assume greater responsibilites in such areas as drill and review of reading and writing characters, pronunciation, and conversation. The course in which a student is permitted to work as a teaching assistant may not be the same course in which he or she previously served. Satisfactory/Unsatisfactory grading only.
Prerequisites: JPN 475; permission of instructor
Fall and spring, 3 credits

JNH 240-J Introduction to Japanese Studies
An introduction to Japanese culture as a foundation for a realistic understanding of Japan. The changing historical experiences of the Japanese people are examined, challenging stereotypes and exposing students to the diversity of backgrounds, values, and opinions in Japan. Japanese history and culture are also explored in relation to other countries and peoples, especially Korea and China.
Prerequisite: One D.E.C. category B course
Fall or spring, 3 credits (not offered in 1996-97)

JNH 251-J Japanese Literature in Translation
An introduction in English to the literary tradition of Japan. Representative texts chosen from various periods are studied with attention to their historical background and the aesthetic and cultural values that informed them.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

JNH/JNS 331-J, 332-J Topics in Japanese Studies
An investigation of a specific area of Japanese studies that varies from semester to semester. Possible topics are Shinto myth, history of the Japanese language, Japanese folktales, Nisei literature, and Japanese views of World War II. The designator JNH is assigned when topics are in the humanities area; JNS is assigned when topics are in the social sciences area.
Prerequisite: JPN 191 or any course listed in minor requirement 2
Schedule to be announced, 3 credits each semester

JNH 351-J Studies in Japanese Literature (in English)
A study in translation of a particular author, period, genre, or theme in Japanese literature, such as Matsuo Basho, the Tokugawa period, haiku, or the spirit world. May be repeated as the topic changes.
Prerequisite: JNH 251
Schedule to be announced, 3 credits

JNH/JNS 447 Independent Study
Directed reading and research in Japanese studies. Limited to Japanese studies minors or upper-division students working on advanced problems in Japanese studies. The designator JNH is assigned when topics are in the humanities area; JNS is assigned when topics are in the social sciences area. May be repeated as the topic varies.
Prerequisite: Permission of instructor and director of the minor
Fall and spring, 1 to 4 credits

Journalism

Minor Coordinator: Robert W. Greene

Faculty

Alan Eysen, Lecturer, M.A., University of California, Los Angeles: Political writing.

Robert W. Greene, Lecturer, Fordham University: Advanced reporting and writing; investigative reporting; media ethics.

David Kahn, Lecturer, Ph.D., University of Oxford: Editorial writing; viewpoints.

Paul Schreiber, Lecturer, B.A., University of Miami: Editorial writing; editing; feature writing.

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 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. The minor requires 18 credits.

Requirements for the Minor in Journalism

A. Courses required of all students:
JRN 287 Basic News Reporting and Writing
JRN 288 Feature Writing
JRN 387 Advanced News Reporting and Writing
JRN 388 Advanced Feature and Magazine Writing
JRN 395 News Editing

B. One course to be chosen from:
JRN 389 Investigative Reporting
JRN 394 Journalism Practicum
JRN 488 Internship

Note: All courses for the minor must be taken for a letter grade. Students interested in minoring in journalism should consult the minor coordinator.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. Courses with the JRN designator do not satisfy D.E.C. requirements.

JRN 286 History and Ethics of American Journalism
A survey of the origins and evolution of the American free press and an examination of such ethical problems as fair trials, free press, fairness, privacy, concentration of power, equal time, and confidential sources.
Prerequisites: EGC 101 and sophomore standing, or placement 4 on the English Placement Examination
Fall, 3 credits

JRN 287 Basic News Reporting and Writing *(Formerly EGL 287)*
In this course, divided into practical and philosophical parts, students work toward a definition of what is newsworthy. The practical part deals with the basic aspects of reporting and newswriting. The philosophical part focuses on the role of the press in a free society.
Prerequisites: EGC 101 or placement 4 on the English Placement Examination; typing speed of at least 25 words per minute
Fall, 3 credits

JRN 288 Feature Writing *(Formerly EGL 288)*
Consideration of feature stories as the human side of the news, offering insight as well as information. Students examine articles in

newspapers and magazines as well as conduct interviews and write feature stories of their own.
Prerequisites: EGC 101 or placement 4 on the English Placement Examination; typing speed of at least 25 words per minute; JRN 287 recommended
Fall or spring, 3 credits

JRN 387 Advanced News Reporting and Writing *(Formerly EGL 387)*
A continuation of JRN 287. Reporting the story; dynamics of interviewing; using the Freedom of Information Act and finding sources; writing with delayed and focus leads; covering police, courts, public meetings, and government.
Prerequisite: JRN 287
Spring, 3 credits

JRN 388 Advanced Feature and Magazine Writing *(Formerly EGL 388)*
A continuation of JRN 288. The emphasis is on writing for publication in newspapers or magazines. Students do extensive research and write and rewrite long features.
Prerequisites: JRN 287 and 288
Fall or spring, 3 credits

JRN 389 Investigative Reporting *(Formerly EGL 389)*
An advanced course in the reporting and writing of investigative and complex stories. Emphasis is placed on independent field research, types of proof, confrontational interviews, and the organization and writing of longer stories and story series for publication. The course deals with ethical problems, libel, and invasion of privacy.
Prerequisite: JRN 387
Fall, 3 credits

JRN 394 Journalism Practicum *(Formerly EGL 394)*
Classroom practice in selecting and laying out stories for a front page. The course also covers such media topics as typography, the operation of editorial boards, op-ed articles, wire services, TV news, books, the music business, the history of journalism, and the foreign press.
Prerequisite: JRN 287 or 288
Spring, 3 credits

JRN 395 News Editing *(Formerly EGL 395)*
Editing copy for grammatical correctness, consistency, accuracy, tightness, and brightness; writing headlines. The course also considers the broader aspects of editing, such as assigning stories and handling writers sensitive about their copy.
Prerequisite: JRN 287 or 288
Fall, 3 credits

JRN 488 Internship
Students work at local, state, and national newspapers and magazines. The work must involve journalistic skills related to the educational goals of the department. Students are 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.
Prerequisites: 12 credits of journalism courses; 2.5 G.P.A.; permission of instructor, minor coordinator, and Office of Undergraduate Studies
Fall and spring, 3 credits

Judaic Studies

Director: Robert Goldenberg, Comparative Studies

Minor Coordinator: Ilona Rashkow, Comparative Studies

Affiliated Faculty

Stephen Spector, English

Adjunct Faculty
Estimated number: 1

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 helps to assure that the student's program has a curricular focus; courses from other departments suiting that focus may be included.

Requirements for the Minor in Judaic Studies

1. One year of a Jewish language (Hebrew or Yiddish) at a level appropriate to the student's previous background
2. Two of the following: JDS/HIS 225, JDS/HIS 226, JDH/RLS 230
3. Three courses numbered 300 or higher approved in advance by the minor advisor.

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 402 Problems in Archaeology
RLS 301 Sources and Methods
RLS 302 Contemporary Theology
RLS 350 Philosophical Theology

Appropriate topics from any directed readings course and the following:
ANT 310 Ethnography
EGL 375 Literature in English in 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 Judaic studies program faculty.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

HBW 111, 112 Elementary Hebrew I, II
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.
Prerequisite to HBW 112: HBW 111
Fall (111) and spring (112), 3 credits each semester

HBW 191-J, 192-J Intermediate Hebrew I, II
An intermediate course in conversation, composition, and the reading of texts in modern Hebrew.
Prerequisite to HBW 191: HBW 112
Prerequisite to HBW 192: HBW 191
Fall (191) and spring (192), 3 credits

HBW 221-J 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, 3 credits (not offered in 1995-96)

HBW 222-J Advanced Hebrew II
Readings in modern Hebrew authors. Oral and written reports. Discussion is conducted mainly in Hebrew.
Prerequisite: HBW 192
Fall, 3 credits (not offered in 1996-97)

HBW 305-G Studies in Hebrew Literature
A detailed study of a particular author, period, genre, or topic in Hebrew literature, such as Agnon, the contemporary Israeli short story, *midrash,* or love poetry. The readings, class discussion, and students' written assignments are in Hebrew. May be repeated as the topic varies.
Prerequisite: HBW 221 or 222
Spring, 3 credits (not offered in 1996-97)

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, 3 credits (not offered in 1995-96)

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-J The Formation of the Judaic Heritage
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 that then arose, and ends with the consolidation of rabbinic Judaism on one hand and of Christianity on the other. Crosslisted with HIS 225.
Prerequisite: RLS 103 or 110 or one 100-level HIS course
Fall, 3 credits

JDS 226-F The Shaping of Modern Judaism
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.
Prerequisite: RLS 103 or 110 or one 100-level HIS course
Spring, 3 credits

JDH 230-G Judaism
A survey of the great texts of the Judaic heritage, with the aim of learning the contribution of each to the Jewish tradition. The course includes an examination of characteristic Jewish beliefs, practices, and attitudes. Crosslisted with RLS 230.
Fall, 3 credits (not offered in 1995-96)

JDS 241-I 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 or HIS 101 or 102
Spring, 3 credits (not offered in 1995-96)

JDH 261-B The Bible as Literature
A literary approach to the Bible that explores the characteristic principles of the Bible's narrative and poetic art. Crosslisted with EGL 261.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

JDH 320-G 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, 3 credits (not offered in 1995-96)

JDS 327-F Women in Judaism
A survey of women in Judaism and in Jewish life from the Biblical period to the present, focusing on such topics as the representation of women in the Bible, Jewish law concerning women, the role of women in the Enlightenment in Germany and America, immigrant women in America, women in the Holocaust, and women in Israel. Crosslisted with WNS 320.
Prerequisite: One JDS or WNH or WNS course
Fall or spring, 3 credits (not offered in 1996-97)

JDH 366-G The American Jewish Experience in Fiction
A study of the American Jewish experience as it is revealed in the fiction of the Jewish writers in the period of 1917 through the present. The course explores the long-range effect on the second, third, and fourth generations of immigration; acculturation; the impact of the Depression; World War II and the Holocaust; the emergence of the State of Israel; suburbanization; the entry of the Jewish writer into the center of the literary world; and the new search for Jewish identity.
Prerequisite: One literature course at the 200 level or higher
Fall or spring, 3 credits (not offered in 1995-96)

JDH 369-G Topics in Biblical Interpretation
A study of some of the ways a selected book in the Hebrew Bible, such as Genesis, Ruth, Esther, the Song of Songs, a selection from the prophets, or another book, has been understood through history. The course examines traditional Christian interpretations in contrast with Rabbinic interpretations. Higher Biblical Criticism is discussed as a reflection of 19th-century historicism and science. Modern interpretations include psychoanalytic, structuralist, anthropological, and literary. May be repeated as the topic varies.
Prerequisite: One literature course at the 200 level or higher or JDH 230
Spring, 3 credits (not offered in 1996-97)

JDH 390-G 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-F 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 JDS and JDH; permission of 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 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 is 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, 3 credits (not offered in 1996-97)

Korean Studies

Director: Sung Bae Park, Comparative Studies

Teaching Assistants
Estimated number: 2

Students who undertake the Korean studies minor (KRH) design an individual program that combines coursework in Korean history, literature, art, religion, and philosophy. The director of the Korean studies program advises and oversees each student's program. For those considering overseas exchange programs with Korean universities, consultation with the director is encouraged. The minor requires 21 credits (18 for those who fulfill requirement 1 by examination).

Requirements for the Minor in Korean Studies

1. KOR 191 or higher (or equivalent by examination)
2. One course chosen from among KRH 240, 251, or RLS 246
3. Three courses chosen from among KRH, KRS 331, 332, 447; KRH 346; KOR 351
4. One course chosen from among the following: ARH 203, 318; HIS 219, 220, 341, 344; PHI 342, 344; RLS 240, 260, 270, 341
5. KRH 400

Appropriate special topics from these or other departments may also be offered to fulfill minor requirements with permisson of the program director.

Notes:

1. Students of advanced proficiency in Korean are urged to take courses in an additional Asian language.
2. Only one course counted toward the minor may be taken for Pass/No Credit.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category. KRH and KRS courses are taught in English; they do not satisfy the entry skill in foreign language requirement.

KOR 111, 112 Elementary Korean I, II
An introduction to spoken and written Korean with equal attention to speaking, reading, and writing. Fundamental communication skills are acquired through intensive study of basic grammar and pronunciation. No student who has had two or more years of Korean in high school (or who has otherwise acquired an equivalent proficiency) is permitted to enroll in KOR 111 or 112 without written permission from the supervisor of the course.
Prerequisite to KOR 112: KOR 111
Fall (111) and spring (112), 3 credits each semester

KOR 191-J, 192-J Intermediate Korean I, II
An intermediate course in Korean language to develop audiolingual skills and reading and writing ability. Through the introduction of complex grammatical structures and idioms, speaking, reading, and writing ability in Korean language is further developed.
Prerequisite to KOR 191: KOR 112 or placement test
Prerequisite to KOR 192: KOR 191 or placement test
Fall (191) and spring (192), 3 credits each semester

KOR 221-J Advanced Korean
An advanced course designed for students who wish to enhance reading comprehension and writing ability in Korean. Reading materials are selected from modern Korean literature, journals, and newspapers. Students are trained in samples of various writing styles. Emphasis is also placed on the idiomatic usage of Korean language and the relation of Korean to Chinese characters.
Prerequisite: KOR 192 or placement test
Spring, 3 credits (not offered in 1996-97)

KOR 351-J Studies in Korean Literature
A detailed study of a particular author, genre, period, or topic in Korean literature, such as Han Yong-un, the *sijo*, the popular literature of the Yi dynasty, or women writers. The readings, class discussions, and students' written assignments are in Korean. May be repeated as the topic varies.
Prerequisites: KOR 221; KRH 240 or 251 or RLS 246
Fall or spring, 3 credits (not offered in 1995-96)

KOR 475 Undergraduate Teaching Practicum in Korean
A practicum in the techniques of teaching Korean language. Each student assists a faculty member in a regularly scheduled class. The student may be required to attend all the classes and meets with the faculty member at regularly scheduled times. Students may also, under faculty supervision, prepare course materials, conduct review sessions and drills, and tutor individual students. Not for Korean studies minor credit. Satisfactory/Unsatisfactory grading only.
Prerequisites: Fluency in Korean; upper-division standing; permission of instructor and director
Fall and spring, 3 credits

KRH 240-J Introduction to Korean Culture
A general survey of Korean culture from the earliest recorded periods to the 20th century, including painting, music, dance, ceramic art, sculpture, architecture, literature, and folklore. These are discussed in relation to the intellectual, philosophical, and religious movements of their time.
Fall or spring, 3 credits

KRH 251-J Korean Literature in Translation
An introduction in English to the literary tradition of Korea. Representative literary texts chosen from various periods are studied with attention to their historical background and the aesthetic and cultural values that inform them.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits (not offered in 1995-96)

KRH, KRS 331-J, 332-J Topics in Korean Studies
Investigation of a specific area of Korean studies. Examples of topics include linguistics, literature, folklore, aesthetics, economy, politics, philosophy, society, archaeology, and religious syncretism. May be repeated with permission of the program director.
Prerequisites: KRH 240 or 251 or RLS 246; one other course specified when the topic is announced
Schedule to be announced, 3 credits each semester

KRH 346-J Philosophy of Education in Korea and Japan
An examination of the philosophical and religious principles of traditional education in Korea and Japan and the way in which these are reflected in actual practice. Since Confucius provides the basic framework for the discussion, special attention is paid to his teachings and the way in which they were adapted and modified by his followers over the centuries.
Prerequisite: One 200-level course in Asian religion or philosophy
Spring, 3 credits (not offered in 1995-96)

KRH 400 Seminar in Korean Studies
A seminar for upper-division students in the Korean studies minor, exploring in depth a single theme chosen to illustrate the relations among literary, religious, philosophical, historical, and cultural aspects of Korean life. Use of original texts and other materials is emphasized. May be repeated once for credit as topic varies.
Prerequisites: Upper-division standing; religious studies major or minor or Korean studies, Japanese studies, or Chinese studies minor; one 200-level course in Korean studies
Spring, 3 credits

KRH, KRS 447 Directed Readings in Korean Studies
Individually supervised readings in selected topics in Korean studies The designator KRH is assigned to topics in the humanities area, KRS to topics in the social and behavioral sciences area. May be repeated.
Prerequisites: Korean studies minor or upper-division standing with six credits in Korean studies; permission of instructor, program director, and Comparative Studies undergraduate director
Fall and spring, 1 to 3 credits

Latin American and Caribbean Studies

Director: Brooke Larson, History

Affiliated Faculty

Barbara Bentley, Ecology and Evolution
Timothy Brennan, English
Jonathan Cohen, Surgery
Helen Cooper, English
Román de la Campa, Hispanic Languages and Literature
Georges Fouron, Social Sciences Interdisciplinary
Barbara Frank, Art
Paul Gootenberg, History
Anthony E. Hurley, French
Temma Kaplan, Women's Studies and History
Elizabeth Monasterios, Hispanic Languages and Literature
Dolores Newton, Anthropology
Malcolm Read, Hispanic Languages and Literature
Ian Roxborough, Sociology

Antonio Vera-León, Hispanic Languages and Literature
Kathleen Vernon, Hispanic Languages and Literature
Barbara Weinstein, History
Dieter Zschock, Economics

The minor in Latin American and Caribbean studies (LAC) allows students to pursue an interdisciplinary course of study that provides them with a broad overview of the region. Students are introduced to the principal historical, social, and cultural themes in the region, and through their electives, they are also able to develop more detailed knowledge of specific subjects in the LAC area, such as the history of a particular country or the literature of a particular period. The minor requires 24 credits.

Requirements for the Minor in Latin American and Caribbean Studies

1. LAC 200 Latin American Society and Culture
2. SPN 191 (or SPN 190 or POR 191)
3. One literature or culture course, to be chosen from those listed in Group A
4. Two history or social science courses, to be chosen from those listed in Group B
5. Two additional upper-division courses to be chosen from Groups A and B
6. One 400-level seminar or three-credit upper-division independent study course in any department, approved by the director
7. All eight courses must be taken for a letter grade, with a cumulative G.P.A. of 2.0 or higher required

Notes:
1. Relevant special topics given in any department are acceptable for the minor with the approval of the director.
2. An expanded list of acceptable courses for groups A and B is available in the program office.

Group A: Literature and Culture

HUS 294	Latin America Today (in English)
SPN 392	The Culture and Civilization of Spanish America
SPN 396	Introduction to Spanish-American Literature
SPN 405	Issues in Hispanic Cultural Studies (appropriate topic only)
SPN 420	Topics in Spanish and Latin American Cinema (appropriate topic only)
SPN 435	Topics in Latin American Literature from the Colonial Period to the Present
POR 442	Readings in Portuguese and Brazilian Literature (appropriate topic only)
ARH 326	Arts of Ancient Meso-America
ARH 329	Arts of the African Diaspora
EGL 376	The Literature of Imperialism
HUF/AFH 212	French Caribbean Literature (in Translation)

Group B: Social Sciences

HIS 213	Colonial Latin America
HIS/POL 214	Modern Latin America
HIS/POL 216	History of U.S.-Latin American Relations
HIS/POL 382	Politics and Political Change in Latin America
HIS 385	The History of Aztec and Inca Societies
HIS 386	Modern Brazil
HIS 387	Women, Development, and Revolution in Latin America
HIS 389	Modern Mexico
HIS 421, 422	Colloquia in Latin American History
SOC 364	Sociology of Latin America
AFS 240	Issues in Caribbean Society
AFS 223	The African Continuum
AFS 239	Introduction to the Caribbean Experience
AFS 275	Black Women and Social Change
AFH 329, 330	Pan-African Literature I, II
ANT 201	Peoples of South America
ANT 219	Peoples of the Caribbean
ANT 361	Peasants
ECO 335	Economic Development
POL 371	Politics in the Third World

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on the course number indicates which D.E.C. category the course satisfies.

LAC 200-J Introduction to Latin American and Caribbean Societies
Social science, historical, and cultural perspectives on Latin America and the Caribbean, as well as on Latino communities in the United States. The goal is to develop a critical understanding of Latin America's social and historical problems and challenges and an appreciation of the region's economic and cultural contributions to the world.
Prerequisites: One D.E.C. category F course; one D.E.C. category B or G course
Spring, 3 credits

LAC 488 Internships
Participation in local, state, and national public and private agencies and organizations related to Latin America and the Caribbean, or to Latinos in the United States. Students are required to submit a written proposal, written progress reports, and a final written report on their work experience to the faculty sponsor or director of the LAC program. Satisfactory/Unsatisfactory grading only.
Prerequisites: 15 credits in LAC studies; permission of instructor, director, and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

Department of Linguistics

Chairperson: Ellen Broselow

Director of Undergraduate Studies: Mark Aronoff

Faculty

Frank Anshen, Associate Professor and Graduate Studies Director, Ph.D., New York University: Sociolinguistics.

Mark Aronoff, Professor, Ph.D., Massachusetts Institute of Technology: Phonology; morphology.

Ellen Broselow, Professor, Ph.D., University of Massachusetts-Amherst: Phonetics, phonology, applied linguistics.

Aaron S. Carton, Professor Emeritus, Ph.D., Harvard University: Psycholinguistics; teaching English to speakers of other languages.

Daniel L. Finer, Associate Professor, Ph.D., University of Massachusetts-Amherst: Syntax; semantics; language acquisition.

Marie Huffman, Assistant Professor, Ph.D., University of California, Los Angeles: Phonetics; phonology.

Dorit Kaufman, Visiting Assistant Professor, Ph.D., State University of New York at Stony Brook: TESOL; language attrition.

Richard Larson, Associate Professor, Ph.D., University of Wisconsin-Madison: Syntax; semantics.

Kamal K. Sridhar, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign: Teaching English to speakers of other languages; bilingualism; English around the world.

S.N. Sridhar, Professor, Ph.D., University of Illinois at Urbana-Champaign: Psycholinguistics; sociolinguistics; second language acquisition; Indian linguistics.

Affiliated Faculty

Mikle Ledgerwood, French and Italian

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 6

The Department of Linguistics is concerned with the study of language 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.

Completion of the major requirements entails 45 credits.

1. LIN 201 Phonetics
2. LIN 211 Syntax
3. LIN 301 Phonology
4. LIN 431 The Structure of an Uncommonly Taught Language
5. Seven additional linguistics courses, of which at least six must be upper division
6. One year of a modern foreign language beyond the entry skill in foreign language requirement
7. Upper-Division Writing Requirement: By the end of the junior year, linguistics majors must submit two papers for evaluation by the department. The papers may be any combination of (i) a term paper from any LIN course, (ii) a revision of a term paper from any LIN course, and (iii) an analysis and discussion of a body of linguistic data from a course for which no term papers are assigned. The papers should be submitted to the director of undergraduate studies, who will then distribute each of them to two faculty members for evaluation, according to the topics of the papers and the areas of interest of the faculty. Papers that are rejected must be revised and resubmitted.

Notes:
1. All linguistics courses must be taken for a letter grade.
2. LIN 121 may not be counted toward the major.
3. The attention of students majoring in linguistics is directed to the following courses of interest to them in other departments:
   ANT 102, 203, 354
   CSE 110, 113, 114
   EEL 111, 112
   EGL 300, 302, 380
   FLA 339
   GER 201, 338
   HBW 315
   HUL 384
   PHI 220, 325
   PSY 370
   RUS 302, 339
   SPN 462, 463, 465

Requirements for the Minor in Linguistics

The minor requires 18 credits.
LIN 201 Phonetics
LIN 211 Syntax
Four additional linguistics courses, of which at least three must be upper division.

Notes:
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, psychology, English, foreign languages, philosophy, and computer science.

Students must consult with the director of undergraduate studies in linguistics to enroll in the minor.

Honors Program

The honors program is open to seniors majoring in linguistics who have maintained a G.P.A. of 3.5 in the major and a 3.0 overall. Students should apply to the honors program before the beginning of their senior year. With the approval of a sponsoring faculty member, the student must submit a written proposal for a major paper or research project to be completed during the senior year. Acceptance into the honors program depends on approval of the proposal by the department.

Students enroll in LIN 495 in the first semester of their senior year and in LIN 496 in the following semester, for a total of six credits. These courses must be taken in addition to the total credits required for the major. The student's project paper or research report must be completed and submitted no later than April 1 for May graduation and November 1 for December graduation. The paper or report is read and evaluated by a committee consisting of the student's sponsor, one other Linguistics Department member, and one faculty member from another department.

If the honors program is completed with distinction and the student retains a 3.5 for all linguistics courses taken in the senior year, honors are conferred.

Teacher Preparation (TESOL)

The program outlined below, which is restricted to students majoring in linguistics, leads to provisional certification in Teaching English to Speakers of Other Languages (TESOL), from kindergarten to grade 12. Students in the TESOL program must file their applications for student teaching in the academic year preceding that in which they plan to take LIN 450.

Requirements
A. Courses in linguistics and social and anthropological aspects of language: LIN 101, 201, and 307 and one course from a list of applicable courses available from the director of undergraduate studies in linguistics
B. Language study: 12 college-level credits (or entry-skill-level proficiency plus six credits) of a modern foreign language (e.g., French, German, Italian, Japanese, Chinese) or American Sign Language; and LIN 431
C. Courses in professional education: SSI 327 Adolescent Growth and Development, SSI 350 Foundations of Education, LIN 375, 450 (student teaching), and 454 (student teaching seminar)
D. English Proficiency. In addition to meeting the D.E.C. and major writing requirements, candidates for TESOL certification are required to pass a test of standard spoken English.

Note: Courses taken for Pass/No Credit may not be used to satisfy the preparation in professional education component of the teacher preparation program.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

Linguistics

LIN 101-F Introduction to Linguistics
An introduction to the fundamental areas and concepts of modern linguistics. Sounds and their structure, word structure, and sentence structure are 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 gain some understanding of such areas of linguistics as morphology, semantics, and historical linguistics as well as increase their English vocabulary. Not for major credit.
Fall or spring, 3 credits

LIN 200-K Language in the United States
Survey of the languages and language-related issues in the United States. Topics include native American languages; immigrant languages; dialectal variations (e.g., Black English); the domains in which these languages were and are used; maintenance and loss of minority languages; language contact and its effects; evolution of American English from colonial times to its present world-wide status; the use and impact of Spanish; language attitudes and politics including bilingual education; and official language movements.
Prerequisites: Completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1995-96)

LIN 201-F Phonetics
Introduction to the sounds used in human language, with discussion of the structure of the vocal tract, the sound structure of English, the acoustic properties of sounds, and the principles of speech synthesis and speech perception. Includes work in the phonetics laboratory on computer analysis of speech.
Fall, 3 credits

LIN 211-F Syntax
An introduction to transformational-generative grammar: the formal theory of sentence structure.
Fall and spring, 3 credits

LIN 301-F Phonology
The theory of sound systems of languages and the interaction of sounds in language.
Prerequisite: LIN 201
Spring, 3 credits

LIN 307-K Sociolinguistics
An examination of the interaction between language and society, focusing on diversity in American English as it relates to differences in gender, geography, social class, ethnicity, and national origin. May not be taken for credit in addition to the discontinued LIN 305.
Prerequisites: One 200-level linguistics course; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits

LIN 330-F 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 201 and 211
Spring, 3 credits (not offered in 1996-97)

LIN 340-F Historical Linguistics
The application of linguistic theory to the comparative reconstruction of language systems.
Prerequisites: LIN 211 and 301
Fall, 3 credits (not offered in 1996-97)

LIN 345-J Writing Systems of the World
A survey of the major types of writing and their history. Special attention is given to the decipherment of ancient writing.
Prerequisites: LIN 101; one year of a foreign language
Fall, 3 credits (not offered in 1996-97)

LIN 346-F Language and Meaning
An exploration of semantics, the study of linguistic meaning. The course examines fundamental issues including the nature of meaning, its relation to word and sentence form (morphology and syntax), its relation to systems of mental representation (cognition), and the interaction between meaning and use (pragmatics). Recent research into the way that linguistic meaning is acquired and how it is deployed in speech and understanding is discussed.
Prerequisites: LIN 101; completion of D.E.C. category B
Fall or spring, 3 credits (not offered in 1996-97)

LIN 355-J Language and Life in a Selected Area of the World
Study of the languages of a selected country or region outside of Europe in relation to its society, culture, history, and politics. Topics include language family, social varieties, status and attitudes, language policies, and cultural patterns reflected in language use. May be repeated once as the topic varies.
Prerequisite: LIN 101
Fall or spring, 3 credits (not offered in 1996-97)

LIN 375 Methods and Materials of Teaching English as a Second Language
The application of linguistic methodology to teaching English to nonnative speakers. The course involves current review of ESL teaching materials applicable to all levels. Students are given an opportunity to observe ESL classes on campus.
Prerequisites: One 200-level linguistics course; two years of a modern foreign language
Spring, 3 credits

LIN 385-K Language and Science: A Multicultural Perspective
In-depth study of the linguistically diverse population in American schools and its unique linguistic, social, and cultural needs. The development of effective classroom environments for language acquisition is explored with a focus on using hands-on projects in science and mathematics. Supervised field work experience in K-8 classroom settings is included. Crosslisted with SCI 385.
Prerequisites: Two D.E.C. category E courses; one D.E.C. category C course; LIN 101; upper-division standing; permission of instructor; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1995-96)

LIN 425, 426, 427 Special Topics in Linguistics
Seminars for advanced linguistics students, the topics of which vary with student demand and faculty interest. Topics may include advanced syntax, semantics, morphology, phonetics and phonology, psycholinguistics, mathematical aspects of linguistics, development of linguistics in the 20th century, principles of language testing, language and thought, language and the sexes. Topics are announced each semester. May be repeated as the topics varies.
Prerequisite: Varies 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 a language or a family of languages. May be repeated if a different language is covered.
Prerequisites: LIN 211 and 301
Fall or spring, 3 credits (not offered in 1995-96)

LIN 447 Directed Readings in Linguistics
Qualified juniors and seniors in linguistics are 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 academic year 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, 12 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. The course includes a unit on identifying and reporting child abuse and maltreatment. Students in this course are required to pay a fee; it is used to secure the New York State Certificate in Identifying and Reporting Child Abuse and Maltreatment.
Corequisite: LIN 450
Fall or spring, 3 credits

LIN 464 Morphology and Word Formation
The internal structure of words. A variety of analytical methods is introduced.
Prerequisites: LIN 211 and 301
Spring, 3 credits (not offered in 1995-96)

LIN 475 Practicum in Teaching English as a Second Language—Oral/Aural Skills
Students have the opportunity to apply the methodology learned in LIN 375 in small tutorial sections under the direction of a master teacher. They work with students in the oral/aural skills ESL courses, emphasizing communicative competency. There is a seminar component to the course, meeting weekly. Satisfactory/Unsatisfactory grading only.
Prerequisites: LIN 375; permission of instructor
Fall and spring, 3 credits

LIN 476 Practicum in Teaching English as a Second Language—Reading/Composition Skills
Students have the opportunity to apply the methodology learned in LIN 375 in small tutorial sections under the direction of a master teacher. They 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
Fall and spring, 3 credits

LIN 495-496 Senior Honors Project in Linguistics
A two-semester project for linguistics majors who are candidates for the degree with honors, arranged in consultation with the department and a departmental supervisor. The project involves independent readings or research and the writing of a thesis under the supervision of a faculty member on a suitable topic selected by the student. Students enrolled in LIN 495 are obliged to complete LIN 496 the next semester.
Prerequisite: Admission to the Linguistics Honors Program
Fall and spring, 3 credits each semester

Uncommonly Taught Languages

LAN 111, 112 Uncommonly Taught Language (Elementary) I, II
An introduction to a language not offered elsewhere in the University; speaking, comprehension, reading, and writing. Selected texts are 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 offered language in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for LAN 111 in that language 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 Uncommonly Taught Language (Intermediate) I, II
Continued study of a language not offered elsewhere in the University; advanced speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work. May be repeated for different languages. No student who has had four years of the offered language in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for LAN 191, 192 in that language 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

SLN 111, 112 Elementary American Sign Language I, II
An introduction to American Sign Language, the visual-gestural language of the deaf. It incorporates nonverbal communication techniques, basic vocabulary, basic grammar principles, and basic conversational skills. No student who has had two or more years of American Sign Language in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for SLN 111 without written permission from the supervisor of the course.
Prerequisite to SLN 112: SLN 111
Summer, 3 credits each term

SLN 191 Intermediate American Sign Language I
Further development of manual fluency and comprehension in American Sign Language. Emphasis is placed on conversational regulators, conversation-facilitating behaviors, receptive and expressive-conversational skills, historical sign fluidity, casual vs. citation sign formations, facial expressions, and creative use of visual vernacular.
Prerequisite: SLN 112
Summer, 3 credits

SLN 192 Intermediate American Sign Language II
Continued development of receptive and expressive sign skills and conversational sign language proficiency. Information on the deaf community, language and culture, heritage and literature, attitudes and values, and sign variations and selections is provided.
Prerequisite: SLN 191
Summer, 3 credits

LAN 475, 476 Practicum in Language Teaching I, II
Proficient speakers of selected languages have an opportunity to learn techniques of language teaching or linguistic analysis by assisting a master teacher in small tutorial sections. Students meet at least weekly with their faculty supervisors to discuss teaching strategies and problems encountered. Satisfactory/Unsatisfactory grading only.
Prerequisites to LAN 475: LIN 101; fluency in the language being taught; upper-division standing; permission of instructor and department
Prerequisites to LAN 476: LAN 475; fluency in the language being taught; permission of instructor and department
Fall and spring, 3 credits each semester

Department of Mathematics

Chairperson: Bernard Maskit

Director of Undergraduate Studies: Paul Kumpel

Faculty

Alfred Adler, Professor Emeritus, Ph.D., University of California, Los Angeles: Differential geometry and mathematical economics.

Michael T. Anderson, Professor, Ph.D., University of California, Berkeley: Differential geometry.

William Barcus, Professor, D.Phil., University of Oxford: Algebraic topology.

Emili Bifet, Associate Professor, Ph.D., University of Chicago: Algebraic geometry.

Christopher Bishop, Associate Professor, Ph.D., University of Chicago: Analysis.

Philip Boyland, Assistant Professor, Ph.D., University of Iowa: Dynamical systems.

Ronald Douglas, Professor, Ph.D., Louisiana State University: Operator theory; functional analysis.

David Ebin, Professor, Ph.D., Massachusetts Institute of Technology: Global analysis.

Albert Fisher, Assistant Professor, Ph.D., University of Washington, Seattle: Dynamical systems.

William Fox, Associate Professor, Ph.D., University of Michigan: Complex analysis.

Lenore Frank, Lecturer, M.S., Yeshiva University: Mathematics education. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1993, and the President's Award for Exellence in Teaching, 1993.

Daryl Geller, Professor, Ph.D., Princeton University: Analysis.

James Glimm, Distinguished Professor, Ph.D., Columbia University: Applied mathematics; numerical analysis.

Detlef Gromoll, Professor, Ph.D., Bonn University: Differential geometry.

C. Denson Hill, Professor, Ph.D., New York University: Partial differential equations; several complex variables.

Lowell Jones, Professor, Ph.D., Yale University: Topology.

Anthony Knapp, Professor, Ph.D., Princeton University: Lie groups.

Irwin Kra, Professor, Ph.D., Columbia University: Complex analysis; Kleinian groups.

Paul G. Kumpel, Professor, Ph.D., Brown University: Algebraic topology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1990, and the President's Award for Excellence in Teaching, 1990.

H. Blaine Lawson, Jr., Distinguished Professor, Ph.D., Stanford University: Differential geometry; topology.

Claude Le Brun, Professor, D.Phil., University of Oxford: Complex analysis; mathematical physics.

William Lister, Professor Emeritus, Ph.D., Yale University: Algebra.

Mikhail Lyubich, Associate Professor, Ph.D., Tashkent State University: Dynamical systems.

Marco Martens, Assistant Professor, Ph.D., Technical University of Delft: Dynamical systems.

Bernard Maskit, Professor, Ph.D., New York University: Riemann surfaces; Kleinian groups.

Hisayosi Matumoto, Assistant Professor, Ph.D., Massachusetts Institute of Technology: Lie groups.

Dusa McDuff, Professor, Ph.D., Cambridge University: Symplectic topology.

Marie-Louise Michelsohn, Professor, Ph.D., University of Chicago: Differential geometry.

John W. Milnor, Distinguished Professor, Ph.D., Princeton University: Dynamical systems.

Yair Minsky, Assistant Professor, Ph.D., Princeton University: Low-dimensional geometry and topology.

Anthony Phillips, Professor, Ph.D., Princeton University: Differential topology.

Joel Pincus, Professor, Ph.D., New York University: Operator theory and integral equations.

Bradley James Plohr, Professor, Ph.D., Princeton University: Applied mathematics; partial differential equations.

Chih-Han Sah, Professor, Ph.D., Princeton University: Elementary mathematics and applications.

Vadim V. Schechtman, Professor, Ph.D., Moscow State University: Algebraic geometry; representation theory.

E. Rapaport Strasser, Professor Emerita, Ph.D., New York University: Combinatorial group theory.

Scott Sutherland, Assistant Professor, Ph.D., Boston University: Dynamical systems.

Peter Szüsz, Professor Emeritus, Ph.D., University of Budapest: Analytic number theory.

Leon Takhtajan, Professor, Ph.D., Leningrad Branch of the Steklov Mathematical Institute: Mathematical physics.

Nicholas Teleman, Professor, Ph.D., Massachusetts Institute of Technology: Global analysis; noncommutative geometry.

Serge Troubetzkoy, Assistant Professor, Ph.D., Stanford University: Dynamical systems.

Frederick Wilhelm, Jr., Assistant Professor, Ph.D., University of Maryland: Differential geometry.

Eugene Zaustinsky, Professor, Ph.D., University of Southern California: Differential geometry.

Affiliated Faculty

Abraham Neyman, Applied Mathematics and Statistics

Michael Taksar, Applied Mathematics and Statistics

Teaching Assistants
Estimated number: 41

Mathematics is an essential element in a wide range of human activities. It is the language of the physical sciences, and as such is an indispensable tool in the formulation of the laws of nature. In the social and biological sciences it plays an increasingly important role in modeling complicated, large-scale phenomena. In addition, mathematics has an aesthetic side; awareness of the possibility of elegance and beauty in mathematical arguments has been a significant feature of human culture throughout history. Today more mathematics is being done, and more needs to be done, than ever before.

The faculty of the Department of Mathematics enjoys an outstanding international reputation. The department offers courses at many levels, meeting the diverse needs of Stony Brook students. Courses range from those at the freshman level, which are offered in several sequences running at different paces, to advanced courses suitable for graduate students studying at a major research university.

The undergraduate course offerings in mathematics allow students to set up individualized programs of study consistent with their academic interests and career plans. Students should consider majoring in mathematics even if they do not plan to become mathematicians or teachers of mathematics. The training in abstract reasoning and problem solving is an excellent foundation for many different careers, such as law, graduate health professions, and business. Completion of a major in mathematics points to a thinking person.

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 career options. Mathematics majors can use their training as the foundation for advanced professional study, leading to research and teaching in universities or research in industrial research laboratories; they can use it also in secondary school teaching. In industry, undergraduate training in mathematics is excellent preparation for the important task of liaison work between the technological arm of a company and its marketing arm. A major in mathematics is particularly appropriate for work in computer applications, operations research, and actuarial science. Double majors in mathematics and another field, such as physics, computer science, applied mathematics and statistics, or economics, are common and are encouraged.

The *secondary teacher preparation option* is designed for students planning a career teaching mathematics in a secondary school. This option is described in detail in the section "Mathematics Secondary Teacher Preparation Program."

The *honors program* is designed for students with a high standard of achievement who wish to study mathematics at an advanced level. This option is described in detail in the subsection "Honors Program in Mathematics." Any student interested in graduate studies in mathematics, or in mathematics-intensive sciences such as theoretical physics, should consider participating in the honors program.

The Department of Mathematics offers tutorial help to all undergraduate students in its 100-level courses. The Mathematics Learning Center focuses on precalculus mathematics, and the

Calculus Resource Room focuses on calculus courses.

The department encourages students to seek information and advice on appropriate mathematics courses, programs, and career goals. Professors in mathematics are available as advisors in the Undergraduate Mathematics Office to help with these matters. 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. Every student majoring in mathematics is expected to complete some form of a one-variable calculus sequence, which is a prerequisite for some of the courses listed below. Appropriate sequences at Stony Brook total 8 to 12 credits.

Completion of the major requirements entails 33 to 37 credits.

A. Mathematics and Mathematics-Related Courses

1. One course in multivariate calculus: MAT 203 or AMS 261 or MAT 205
2. One course in differential equations: MAT 303 or AMS 361 or MAT 305
3. One course in computer literacy: MAT 251 or 331 or CSE 111 or 114. MAT 331 may be used both here and in requirement 6
4. Two courses in algebra: MAT 310 and either MAT 312 or 313
5. Two courses in analysis: MAT 320 and either MAT 341 or 342
6. Five mathematics-related courses beyond those taken to satisfy requirements 4 and 5 (four will suffice if all of them are MAT courses), to be chosen from the following:
   MAE 301
   MAT courses numbered 310 or above except 475
   AMS courses numbered 301 or above except 475
   CSE courses numbered 301 or above except 475
   Selected upper-division courses in chemistry, economics, philosophy, and physics from a list of acceptable courses, available in the Undergraduate Mathematics Office

B. Upper-Division Writing Requirement

In order to satisfy the departmental writing requirement, each student majoring in mathematics, including double majors, must submit an acceptable portfolio of three pieces of writing from upper-division MAT or MAE coursework. Students should aim for completion of the portfolio early in their next-to-last semester to allow time to resolve any difficulties. Late completion may delay graduation. Each portfolio must be submitted no later than the beginning of the final semester, and each piece in it must have been approved by a Mathematics faculty member as being mathematically correct and well written.

Notes:

1. Under special circumstances a student may request the director of undergraduate studies to allow substitution of an equivalent program for some or all of these requirements.
2. 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.
3. Students whose scores on the College Entrance Examination Board (CEEB) Advanced Placement Examination are documented earn credits as follows:
   4 or 5 on BC examination: credit for MAT 131, 132 (8 credits)
   4 or 5 on AB examination: credit for MAT 131 (4 credits)
   3 on either examination: 3 credits applicable to graduation but not the major.
4. Students who learned some linear algebra or multivariate calculus before entering Stony Brook should see an advisor in the Undergraduate Mathematics Office. For a student who has had some linear algebra, it may be appropriate to skip MAT 211 and to enroll directly in MAT 310.
5. Six credits of the graduate MAT courses listed at the end of the undergraduate course descriptions may be used in place of undergraduate courses in requirement A.6.

Honors Program in Mathematics

The honors program is open to junior and senior mathematics majors who have completed at least two upper-division MAT courses with grades of B or higher and who have maintained a 3.0 overall grade point average. A prospective honors major must declare to the director of undergraduate studies an intention to participate in the program.

The program consists of a set of six courses, five representing fields of mathematics and the sixth in exposition. The allowable courses are MAT 311 or 314 or 315 for algebra, MAT 322 or 324 for real analysis, MAT 335 for complex analysis, MAT 360 or 361 or 362 for geometry, MAT 365 for topology, and MAT 491 Honors Seminar or 495 Honors Thesis for exposition. MAT 342 may be used in place of MAT 335 if MAT 342 is not also used toward major requirement A.5. Substitution of appropriate graduate courses is permitted.

Other variations must be approved by the director of undergraduate studies in mathematics. Any variation on the exposition requirement (not necessarily a formal course) must include at least two lectures given by the student to an audience that includes at least two mathematics faculty members. Conferral of honors is contingent upon:

1. Completion of the set of six designated courses with a grade point average of at least 3.5.
2. Active participation in the expository component of the program. A student using MAT 491 must give at least two lectures on a topic or topics chosen by the faculty member in charge of the course.
3. Approval for honors by the faculty member or members who supervise the expository component of the program.

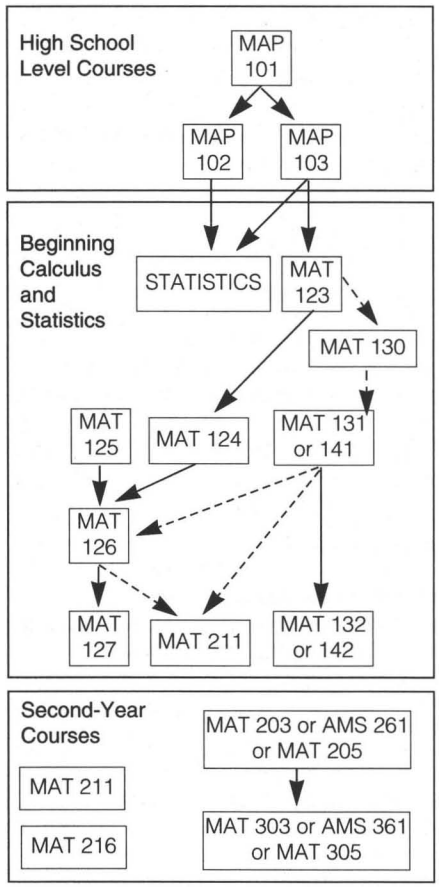
Requirements for the Minor in Mathematics

The minor in mathematics is available for those students who want their formal university records to emphasize a serious amount of upper-division work in mathematics. Although a one-variable calculus sequence is not a requirement, it is a prerequisite for some of the courses listed below. The minor requires 21 to 23 credits.

1. MAT 203 or AMS 261 or MAT 205
2. MAT 303 or AMS 361 or MAT 305
3. MAT 310 or 312 or 313
4. MAT 320 or 341 or 342
5. Three additional MAT courses numbered 310 or above (excluding 475)

All courses used to fulfill the requirements for the minor must be taken for a letter grade and must be completed with a grade of C or higher.

Beginning Mathematics Courses



The MAT curriculum begins with a choice of calculus sequences, some including preparatory material from 12th-year mathematics in high school and some not. The three first-term calculus courses that assume knowledge of 12th-year mathematics are MAT 125, MAT 131, and MAT 141. A student may start any of these with the same background.

The three-semester sequence of one-variable calculus, MAT 125, 126, 127, is academically equivalent to the two-semester sequence MAT 131, 132. Engineering students normally take the faster-paced MAT 131, 132 rather than MAT 125, 126, 127 because of the many requirements they must meet. MAT 141, 142 is an enriched version of MAT 131, 132.

The sequence of courses MAT 123, 124 combines precalculus and calculus for students who have not had 12th-year mathematics in high school. A student who completes MAT 123 will have learned some precalculus material and will have a good idea of what calculus is and how it is used. For people who are continuing, MAT 124 may be followed by MAT 126. Students with an interest in engineering or physical sciences who begin with MAT 123 may follow that course with MAT 131 and then MAT 132 if they take the one-credit course MAT 130 in the same semester as MAT 131.

For students whose high school preparation is insufficient to begin the MAT curriculum, or to enroll in another course applicable to the D.E.C. category C requirement (Mathematical and Statistical Reasoning), there are three review courses numbered MAP 101, 102, and 103. These courses do not carry graduation credit. MAP 102 and 103 are at the same level and begin with a review of some high school algebra. MAP 102 is for students who have not met the entry skill in mathematics requirement, who will not take calculus, and who plan to finish their mathematics with a noncalculus mathematics course such as statistics. MAP 103 is a skills course for students who need further work in high school algebra and related topics before continuing with calculus or other mathematics. Students who plan to take both calculus and statistics should take MAP 103, then calculus, and then calculus-based statistics. Some students, upon completing MAP 103, are able to pass the Mathematics Placement Examination at a level that allows them to go directly into MAT 125 or 131.

Placement

The Mathematics Placement Examination indicates which mathematics course a student is ready to take. It tests the level of the student's skills at the time the test is taken; students are advised to study beforehand. The examination is given at orientation, during the first two weeks of the semester, and during Prime Time.

All incoming freshmen are required to take the Mathematics Placement Examination. Transfer students must also take the examination under any of the following circumstances:

1. If they have not met the entry skill requirement (basic mathematics competence).
2. If they have not satisfied D.E.C. category C (mathematical and statistical reasoning).
3. If they have been or wish to be accepted into a major in the College of Engineering and Applied Sciences.
4. If they have chosen or are considering choosing a major in a department that requires mathematics.
5. Before they may take any mathematics course at Stony Brook.

In taking the Mathematics Placement Examination, a student chooses whether to take Parts I-II or Parts II-III. Part I deals with high school algebra, Part II with 12th-year high school mathematics, and Part III with calculus. Students who have had at least one semester of calculus should take Parts II-III; others should take Parts I-II. The outcome of the test is one of nine levels:

Outcome	Placement
Level 1	MAP 101
Level 2	MAP 102 or 103
Level 3	MAT 123
Level 4	MAT 125 or 131 or 141, with 125 recommended
Level 5	MAT 125 or 131 or 141, with 131 or 141 recommended
Level 6	MAT 126
Level 7	MAT 132 or 142
Level 8	MAT 127
Level 9	Beyond 100-level calculus

Levels 1-3 can be achieved by a sufficiently high score on Part I, and levels 4-5 can be achieved by a sufficiently high score on Parts I-II. To achieve level 6 or higher, a student must take Parts II-III. The entry skill in mathematics requirement may be satisfied by attaining a score of level 3 or higher. The D.E.C. category C requirement may be satisfied by attaining a score of level 6 or higher. A student who achieves a particular level is free to begin with a mathematics course corresponding to a lower level, so long as taking the course does not mean that credit is given for the same material twice.

Challenge Examinations

Entering transfer students who score at level 9 on the Mathematics Placement Examination, or who have had some linear algebra or multivariate calculus, should seek advice on MAT placement from the Mathematics Department.

Upon request, the department may offer Challenge Examinations in courses at the 200 level or higher. The usual reason for offering such examinations is to validate equivalency of transferred upper-division courses that are central to the mathematics major.

Transfer Credit

When they enter, transfer students automatically receive credit toward graduation at Stony Brook for any courses they have already successfully completed at accredited institutions of higher education and that count there toward graduation. The number of credits from a particular college or university appears on

the Stony Brook transcript with no courses or grades indicated, and the number of transferred credits is unaffected by the student's score on the Mathematics Placement Examination. In addition, transferred mathematics courses are automatically evaluated by title for applicability to the entry skill in mathematics requirement and the D.E.C. category C requirement; this evaluation does not depend on the result of the placement examination.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

Note: No mathematics course may be taken for credit after credit has been obtained in a course for which it is a prerequisite. Exceptions are made only with written permission of the department's director of undergraduate studies.

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. Does not satisfy the entry skill in mathematics requirement or the D.E.C. category C requirement. Students who have otherwise satisfied D.E.C. category C may not register for this course. Overqualified students as determined by a placement test may be deregistered and directed to transfer to another course. Does not count toward graduation. A through C/Unsatisfactory grading only. May not be taken for Pass/No Credit.
Fall and spring, 3 credits

MAP 102 Proficiency Mathematics
A review of high school algebra and other mathematics as preparation for non-calculus-based statistics such as in AMS 101 and 102. Facility with exponents, basic graphing, solving linear and quadratic equations in one variable, solving linear systems in two variables, polynomials, factorization of algebraic expressions, binomial theorem, and inequalities. More extensive graphing, work with ratios and proportions, coin tossing in probability, mean and variance. Does not count toward graduation. A through C/Unsatisfactory grading only. May not be taken for Pass/No Credit.
Spring, 3 credits

MAP 103 Proficiency Algebra
An intensive review of high school algebra as preparation for calculus and other mathematics. Facility with exponents, basic graphing, solving linear and quadratic equations in one variable, solving linear systems in two variables, polynomials, factorization of algebraic expressions, binomial theorem, and inequalities. Algebraic manipulations, analytic geometry of lines. Does not count toward graduation. A through C/Unsatisfactory grading only. May not be taken for Pass/No Credit.
Fall and spring, 3 credits

MAT 123-C Introduction to Calculus
The basics of calculus, taught along with the necessary preparatory material from 12th-year high school mathematics and illustrated with relatively simple examples. Slope and derivative, rational functions, mean value theorem, maxima and minima, area under a graph, the fundamental theorem, integration of polynomial functions, introduction to exponential and logarithm functions.
Prerequisite: MAP 103 or passing the Mathematics Placement Examination at level 3 or higher. Prerequisite must be met within one year prior to beginning MAT 123
Fall and spring, 3 credits

MAT 124 Introduction to Calculus B
Continuation of MAT 123. Trigonometric functions, review of the fundamental theorem, 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 125, 130, 131, 141, or the discontinued 133.
Prerequisite: C or higher in MAT 123
Fall and spring, 3 credits

MAT 125-C Calculus A
Calculus, emphasizing computations and applications, for students who have the necessary background from 12th-year high school mathematics. Differentiation and integration of elementary algebraic and trigonometric functions, area under a graph, the fundamental theorem. May not be taken for credit in addition to MAT 124, 131, 141, or the discontinued 133.
Prerequisite: Passing the Mathematics Placement Examination at level 4 or higher
Fall and spring, 3 credits

MAT 126 Calculus B
Applications of the definite integral to geometric and physical problems, differentiation and integration of logarithmic and exponential functions, inverse functions, techniques of integration, improper integrals and l'Hospital's rule. May not be taken for credit in addition to MAT 132 or 142.
Prerequisite: C or higher in MAT 124 or 125 or 131 or 141, or passing Parts II-III of the Mathematics Placement Examination at level 6 or higher
Fall and spring, 3 credits

MAT 127 Calculus C
Sequences, infinite series, Taylor series, complex numbers and the complex exponential, first- and second-order differential equations. May not be taken for credit in addition to MAT 132 or 142.
Prerequisite: MAT 126, or passing Parts II-III of the Mathematics Placement Examination at level 8 or 9
Fall and spring, 3 credits

MAT 130 Trigonometric Functions
Trigonometry, trigonometric functions, radians, trigonometric limits. Open to prospective students in engineering, physical sciences, and mathematics who need to bridge the gap between MAT 123 and MAT 131. May not be taken for credit in addition to MAT 124.
Prerequisite: C or higher in MAT 123
Corequisite: MAT 131
Spring, 1 credit

MAT 131-C Calculus I
Functions of one variable, derivatives and applications, integration, the fundamental theorem. Applications-oriented approach with emphasis on numeric and graphical solutions; use of graphing calculators. May not be taken for credit in addition to MAT 124 or 125 or 141.
Prerequisite: C or higher in MAT 123 and coregistration in MAT 130, or passing the Mathematics Placement Examination at level 4 or higher
Fall and spring, 4 credits

MAT 132 Calculus II
Numerical methods of integration, applications of integration, differential equations (first and second order) and applications, complex numbers, Taylor and Fourier series. Applications-oriented approach with emphasis on numeric and graphic solutions; use of graphing calculators. May not be taken for credit in addition to MAT 126 or 127 or 142.
Prerequisite: C or higher in MAT 131 or 141, or passing Parts II-III of the Mathematics Placement Examination at level 7 or higher
Fall and spring, 4 credits

MAT 141-C Honors Calculus I
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 124, 125, or 131.
Prerequisites: Passing the Mathematics Placement Examination at level 4 or higher; priority given to Honors College and Honors Program students, Presidential Scholars, and Freshman Scholars
Fall, 4 credits

MAT 142 Honors Calculus II
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, or MAT 131 with an A- or A, or passing Parts II-III of the Mathematics Placement Examination at level 7 or higher
Spring, 4 credits

MAT 203 Calculus III with Applications
Vector algebra in two and three dimensions, multivariate differential and integral calculus, optimization, vector calculus including the theorems of Green, Gauss, and Stokes. Applications to economics, engineering, and all sciences, with emphasis on numerical and graphical solutions; use of graphing calculators. May not be taken for credit in addition to

the equivalent AMS 261, to MAT 205, or to the discontinued MAT 306 and AMS 323.
Prerequisite: MAT 127 or 132 or 142 or passing Parts II-III of the Mathematics Placement Examination at level 9
Fall and spring, 4 credits

MAT 205 Calculus III
Vector algebra, matrices and linear tansformations, multivariate differential and integral calculus, Lagrange multipliers, implicit function theorem, divergence and curl, line and surface integrals, theorems of Green, Gauss, and Stokes. More theoretical than MAT 203, with applications to the physical sciences. May not be taken for credit in addition to MAT 203 or AMS 261 or to the discontinued MAT 306 and AMS 323.
Prerequisite: MAT 127 or 132 or 142 or passing Parts II-III of the Mathematics Placement Examination at level 9
Fall, 3 credits

MAT 211 Introduction to Linear Algebra
Introduction to the theory of linear algebra with some applications; vectors, vector spaces, bases and dimension, applications to geometry, linear transformations and rank, eigenvalues and eigenvectors, determinants and inner products. May not be taken for credit in addition to the discontinued MAT 231.
Prerequisite: MAT 131 or 141, or coregistration in MAT 126, or passing Parts II-III of the Mathematics Placement Examination at level 7 or higher
Fall and spring, 3 credits

MAT 216 Invitation to Modern Mathematics
An introduction to the fundamental conceptual tools of higher mathematics and a survey of elementary topics related to active areas of current research. Features occasional guest lectures by prominent research mathematicians. Recommended for those considering a career in mathematics, mathematics-related disciplines, or the physical sciences.
Prerequisite: MAT 126 or 131 or 141
Fall, 3 credits

MAT 217 Modern Mathematics in Physics
The topics in pure mathematics that are fundamental to the understanding of physics in the junior and senior years, and which fall outside the scope of standard freshman and sophomore mathematics courses: the geometry of Minkowski space, action of transformation groups, dual spaces and tensors, differential forms and electromagnetism, Hilbert space, the elements of symplectic geometry, and the calculus of variations. May feature an occasional guest lecture by a prominent researcher in mathematical physics. Recommended for those considering a career in physics, mathematics, or related physical sciences.
Prerequisite: MAT 203 or 205 or 216
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 is 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
Fall or spring, 3 credits (not offered in 1996-97)

MAT 303 Calculus IV with Applications
Homogeneous and inhomogeneous linear differential equations; systems of linear differential equations; series solutions; Laplace transformations; introduction to waves, heat, and Laplace equations; Fourier series. Applications to economics, engineering, and all sciences with emphasis on numerical and graphical solutions; use of computers. May not be taken for credit in addition to the equivalent AMS 361.
Prerequisite: MAT 203 or 205 or AMS 261
Fall and spring, 4 credits

MAT 305 Calculus IV
Linear versus nonlinear equations and their numerical solutions, existence and uniqueness, Duhamel's principle for linear equations, series solutions, systems. Introduction to wave, heat, and Laplace equations; Fourier series; comparison of separation of variables with integral formulas. More theoretical than MAT 303. Applications to the physical sciences. May not be taken for credit in addition to MAT 303 or AMS 361.
Prerequisite: MAT 203 or 205 or AMS 261
Fall and 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 211, or MAT 216 and 305, or MAT 216 and AMS 210
Fall and spring, 3 credits

MAT 311 Number Theory
Congruences, quadratic residues, quadratic forms, continued fractions, Diophantine equations, number-theoretical functions, and properties of prime numbers.
Prerequisites: MAT 211 or 216; MAT 203 or 205 or AMS 261
Fall, 3 credits

MAT 312 Applied Algebra
Topics in algebra: groups, informal set theory, relations, homomorphisms. Applications: error-correcting codes, Burnside's theorem, computational complexity, Chinese remainder theorem. Crosslisted with AMS 351.
Prerequisites: MAT 211 or AMS 210; MAT 203 or 205 or AMS 261
Fall and spring, 3 credits

MAT 313 Abstract Algebra
Groups and rings together with their homomorphisms and quotient structures. Unique factorization, polynomials, and fields.
Prerequisites: MAT 211 or 216; MAT 203 or 205 or AMS 261
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 may include Sylow theorems, structure theory of fields, Galois theory.
Prerequisite: MAT 313
Spring, 3 credits

MAT 315 Polynomials and Number Fields
Application of groups, fields, and vector spaces to specific problems in algebra, e.g., polynomial algebras, ruler-and-compass constructability, solution of cubic equations, questions in number theory related to quadratic number fields. This course is a version of MAT 314 that emphasizes topics connected to secondary school mathematics.
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 203 or 205 or 211 or 216 or AMS 261 or A- 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.
Prerequisites: MAT 203 or 205 or AMS 261; MAT 320
Spring, 3 credits (not offered in 1995-96)

MAT 324 Real Analysis
Metric spaces, including compactness, connectedness, completeness, and continuity. Introduction to Lebesgue integration. Aspects of Fourier series, function spaces, Hilbert spaces, Banach spaces.
Prerequisites: MAT 303 or 305 or AMS 361; MAT 320
Spring, 3 credits (not offered in 1995-96)

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 (pi, exp(-20), gamma(½), etc.), Euler-Maclaurin summation formula, 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 203 or 205 or AMS 261
Fall and spring, 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 Theory of One Complex Variable
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
Spring, 3 credits

MAT 341 Applied Real Analysis
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; numerical methods.
Prerequisite: MAT 303 or 305 or AMS 361
Fall and spring, 3 credits

MAT 342 Applied Complex Analysis
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 303 or 305 or AMS 361
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 303 or 305 or AMS 361
Fall, 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 is developed in the course and is not assumed.
Prerequisite: MAT 305 or 320 or 341
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 203 or 205 or AMS 261
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 203 or 205 or AMS 261
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 313 and 320
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. Crosslisted with CSE 371.
Corequisite: MAT 313
Fall or spring, 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 is required for the implementation and comparison of algorithms. Crosslisted with AMS 373 and CSE 373.
Prerequisites: MAT 211 or AMS 210; CSE 214
Spring, 3 credits

MAT 475 Undergraduate Teaching Practicum in Mathematics
Each student assists in teaching a lower-division mathematics course or works in the Mathematics Learning Center. The student's work is regularly supervised by a faculty member. In addition, a weekly seminar is 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 undergraduate studies
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 also takes 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 undergraduate studies
Fall and spring, 3 credits

MAT 491 Honors Seminar
For juniors and seniors who are majoring in mathematics, especially those in the honors program. The faculty member in charge selects a topic consisting of mathematics of current interest that is not normally presented in undergraduate courses. The material is presented in seminar style with students giving the lectures. May be repeated.
Prerequisite: Permission of the director of undergraduate studies
Spring, 3 credits

MAT 495 Honors Thesis
The student and a supervising faculty member together choose a topic in mathematics, and the student writes a substantial paper expounding the topic in a new way.
Prerequisite: Permission of the director of undergraduate studies
Fall and spring, 3 credits

Graduate Courses

Junior and senior mathematics students of above-average ability are encouraged to take appropriate graduate courses in mathematics, subject to university limits (see p. 77). 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 to be teachers of mathematics in the secondary schools. It satisfies all requirements for New York State provisional certification for teaching mathematics, grades 7-12.

Students wishing to enroll in the program should register with the director of mathematics teacher preparation by the end of the freshman year, if possible, and at the latest before registering for the junior year.

Requirements

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 327, 350

The program includes three semesters of practical work in the teaching of mathematics. In the fall of the junior year, students observe classes in local secondary schools (MAE 311). In the spring, students engage in a supervised program of limited classroom participation (MAE 312). In one semester of the senior year, students 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.

Note: Courses taken for Pass/No Credit may not be used to satisfy the preparation in professional education component of the teacher preparation program.

Sample Program (Required Courses Only)

Freshman: MAT 131, 132 (or 141, 142 or 125, 126, 127)
Sophomore: MAT 203 or 205 or AMS 261; AMS 310 (fall); MAT 303 or 305 or AMS 361; MAT 313 (spring)
Junior: MAE 301 and 311, MAT 320 (fall); MAE 302 and 312, MAT 360 (spring); SSI 327 and 350
Mathematics electives required for MAT or AMS major
Senior: MAE 450 and 454
Mathematics electives required for MAT or AMS major

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, 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 director of mathematics teacher preparation. MAE courses do not satisfy D.E.C. requirements.

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.
Prerequisite: MAT 211
Corequisite: MAE 311
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 are included. Debriefing and analysis follow each visit.
Prerequisite: MAT 211
Corequisite: MAE 301
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
Pre- or corequisite: MAE 302
Spring, 2 credits

MAE 447 Directed Readings in Mathematics Education
Tutorial studies in recent advances in mathematics education.
Prerequisite: MAE 312
Fall and spring, 1 credit

MAE 450 Student Teaching
Intensive supervised teaching in a secondary school. Students work in the school under the supervision of an experienced teacher. Satisfactory/Unsatisfactory grading only.
Prerequisites: MAE 312; MAT 310 or 313; MAT 320; permission of director of mathematics 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. The course includes a unit on identifying and reporting child abuse and maltreatment. Students in this course are required to pay a fee; it is used to secure the New York State Certificate in Identifying and Reporting Child Abuse and Maltreatment.
Corequisite: MAE 450
Fall and spring, 3 credits

Media Arts

Minor Coordinator: Farley Richmond, Theatre Arts

Students seeking a coordinated set of courses that examine media technology, theory, and practice may elect the minor in media arts (MDA). The minor should prepare a student for specialized studies in any one of the media. Media skills 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. The minor requires 21 credits.

Requirements for the Minor in Media Arts

A. Courses required of all students:
THR 117 Film, Video, and Audio Narrative
THR 270 Introduction to Radio Broadcasting
THR 377 The Media Industry

THR 403 Media Theory and Criticism
One of the following courses:
THR 487 Projects in Theatre Arts (appropriate topic only)
THR 488 Internship (appropriate topic only)

B. Six credits to be chosen from:
AFS 463, 464 The Media and Black America I, II
EST/CSE 100 Societal Impact of Computers
HUF 211 French Cinema (in English)
HIS 267 American History/American Film
HUG 221 German Cinema Since 1945 (in English)
HUI 231 Italian Film (in English)
HUM 201, 202 Film and Television Studies, I, II
HUR 145 Russian Film and History (in English)
POL 367 Mass Media in American Politics
SOC 372 Mass Communications
THR 272 Introduction to Television
THR 295 Special Workshop (appropriate topic only)
THR 298 Student Media Leadership
THR 325 Scriptwriting for Film and Television
THR 362 Acting for the Camera
THR 370 Radio News
THR 375 Television Production
THR 487 Projects in Theatre Arts (appropriate topic only; see note 3)

THR 488 Internship (appropriate topic only; see note 3)

Notes:

1. 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 21 credits must be taken at Stony Brook.
2. No more than six credits required for the media arts minor may be counted toward the theatre arts major.
3. Either THR 487 or 488 may be taken for requirement B when not used as part of the minor core.
4. No more than a total of three credits from THR 295, 487, and 488 may be applied to the minor.

Medieval Studies

Minor Coordinator: Charles Franco, French and Italian

Affiliated Faculty

Sarah Fuller, Music
Aaron W. Godfrey, Comparative Studies

Jacques Guilmain, Art
Thomas Kerth, Germanic and Slavic Languages and Literatures
Helen Rodnite Lemay, History
Anita Moskowitz, Art
Joaquin Martinez-Pizarro, English
Clyde Lee Miller, Philosophy
Joel Rosenthal, History
Walter Scheps, English
Stephen Spector, English
Louise Vasvari, Comparative Studies

The minor in medieval studies (MVL) offers students the opportunity to acquire an understanding of the historical, cultural, and social forces that shaped Western civilization during the European Middle Ages. Under the direction of an advisor from the medieval studies program faculty, the student must establish an advisement folder with the minor coordinator and construct a program of at least 24 credits fulfilling the requirements listed below.

Requirements for the Minor in Medieval Studies

All courses offered to fulfill the requirements of the minor must be passed with a grade of C or higher.

1. Introductory course in medieval civilization, HIS 234 or MVL 141
2. Two additional courses in medieval history or politics, of which one must be numbered 300 or above, chosen from among HIS 234 (if not used above), 302, 303, 360
3. Three courses in medieval philosophy, art, music, or literature, of which two must be numbered 300 or above and which must include two different designators:
   - ANT 361 Peasants
   - ARH 101 Art in Culture from Prehistoric Times to the Age of the Cathedrals, ca. 1400 A.D.
   - 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
   - CSL 211 Literary Survey: Medieval through Late Renaissance
   - EGL 300 Old English Literature
   - EGL 302 Medieval Literature in English
   - EGL 340 Chaucer
   - GER 338 History of the German Language
   - ITL 324 History of the Italian Language
   - ITL 329, 330 Studies in 13th- and 14th-Century Literature
   - LAT 355 Early Medieval Latin
   - LAT 356 Late Medieval Latin
   - MUS 340 Western Music before 1600
   - MVL 141 The Legend of King Arthur (if not used above)
   - PHI 204 Introduction to Medieval Philosophy
   - PHI 304 Medieval Philosophy
   - RLS 270 Christianity
   - RLS 310 Biblical Theology
   - RLS 321 Christian Classics (appropriate topic only)
   - RUS 302 History of the Russian Language
   - SPN 445 Topics in Spanish Literature from the Middle Ages to the Present (appropriate topic only)

   Additional relevant courses may be substituted with the prior approval of the minor coordinator
4. HIS 451 Colloquium in Medieval History
5. One semester (or three-credit equivalent) of college study of Latin or a relevant European foreign language at the intermediate level or beyond. Students are encouraged to complete two semesters of intermediate foreign language.

Course

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on the course number indicates which D.E.C. category the course satisfies.

MVL 141-B The Legend of King Arthur
A study of the development of the legend of King Arthur from the earliest references in medieval English chronicles through the flowering and fixing of the tradition in French and German literary works of the High and Late Middle Ages. Among the texts considered are works by Bede, Giraldus Cambrensis, Geoffrey of Monmouth, Chrétien de Troyes, Wolfram von Eschenbach, and Hartmann von Aue.
Fall or spring, 3 credits

Middle Eastern Studies

Minor Coordinator: Robert Hoberman, Comparative Studies

Affiliated Faculty

Said Arjomand, Sociology
Ellen Broselow, Linguistics
William Chittick, Comparative Studies
Robert Goldenberg, Comparative Studies
Sachiko Murata, Comparative Studies
June Starr, Anthropology
Elizabeth 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. The minor requires 18 credits.

Requirements for the Minor in Middle Eastern Studies

A. SOC 264 Introduction to Middle Eastern Studies
B. 15 credits chosen from courses on the Middle East, of which at least nine credits must be upper division. Courses to be distributed as follows:
   1. 12 credits in courses on the student's approved topic
   2. Three credits in a related course from another minor topic area in Middle Eastern studies

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.

Near Eastern Religions
SOC 264 Introduction to Middle Eastern Society
SOC 386 State and Society in the Middle East
JDS/HIS 225 The Formation of the Judaic Heritage
JDS/HIS 226 The Shaping of Modern Judaism
JDH/RLS 230 Judaism
JDH/RLS 320 The Rabbinic Tradition
RLS 280 Islam
ANT 360 Ancient Mesopotamia
(ARB 111, 112 Elementary Arabic *or* HBW 111, 112 Elementary Hebrew)

Ancient Near East
SOC 264 Introduction to Middle Eastern Society
SOC 386 State and Society in the Middle East
JDS/HIS 225 The Formation of the Judaic Heritage
ANT 290 Science and Technology in Ancient Society
ANT 358 Ways to Civilization
ANT 360 Ancient Mesopotamia
(ARB 111, 112 Elementary Arabic *or* HBW 111, 112 Elementary Hebrew)

Middle Eastern Culture and Politics
SOC 264 Introduction to Middle Eastern Society
SOC 386 State and Society in the Middle East
ANT 240 Immersion in Another Culture (appropriate topic only)
ANT 310 Ethnography (appropriate topic only)
RLS 280 Islam
RLS 380 Islamic Classics
(ARB 111, 112 Elementary Arabic *or* HBW 111, 112 Elementary Hebrew)

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on the course number indicates which D.E.C. category the course satisfies.

ARB 111, 112 Elementary Arabic I, II
An introduction to Arabic, stressing speaking, comprehension, reading, and writing. Selected texts are read. Practice in the language laboratory supplements class work. No student who has had two or more years of Arabic in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for ARB 111 without written permission from the supervisor of the course.
Prerequisite to ARB 112: ARB 111
Fall (111) and spring (112), 3 credits each semester (not offered in 1996-97)

ARB 191-J, 192-J Intermediate Arabic I, II
Continued study of Arabic at a more advanced level of speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work. No student who has had four years of Arabic in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for ARB 191, 192 without written permission from the supervisor of the course.
Prerequisite to ARB 191: ARB 112
Prerequisite to ARB 192: ARB 191
Fall (191) and spring (192), 3 credits each semester (not offered in 1995-96)

Multidisciplinary Studies

Director: Judith Wishnia, Social Sciences Interdisciplinary

The multidisciplinary studies major (MTD), which offers no courses of its own, allows students to design their 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 a multidisciplinary studies advisor. (Students whose primary interests focus on disciplines within the social sciences should select the interdisciplinary major in social sciences, described on p. 205.)

Requirements for the Multidisciplinary Studies Major

Completion of the multidisciplinary studies major, which leads to the Bachelor of Arts degree, entails 45 credits.

A. Course Distribution
Courses from two or three departments or areas distributed as follows:
15 credits in department or area A
15 credits in department or area B
15 credits in department or area C
(or 15 credits in additional courses from department or area A, B, or both)

B. Upper-Division Writing Requirement
All students majoring in multidisciplinary studies must satisfy the upper-division writing requirement established in one of the two or three departments chosen for distribution of multidisciplinary studies major credit. Students must report the department in which they will meet the upper-division writing requirement to the director of the multidisciplinary studies major by the start of the final semester of their junior year. Details of the writing requirement for each major are listed among the major requirements in each department. Where there is no clear disciplinary department, the student should consult with the director of the multidisciplinary studies major.

Further Stipulations
1. At least 30 credits offered to fulfill major requirements must be in courses numbered 300 and above. Of these at least nine credits in concentration A and nine credits in concentration B must be in upper-division courses.
2. A maximum of 15 credits may be used in courses from departments outside the College of Arts and Sciences.
3. The 45 credits must include at least 15 upper-division credits taken at Stony Brook.
4. At least 39 of the 45 credits must be taken for a letter grade and passed with a grade of C or higher.
5. No more than one course in a concentration may be passed with a P.
6. No more than three credits of activity-related courses (see p. 75), teaching methods courses, student teaching, undergraduate teaching practica, research courses, directed readings, or internships may be used in each concentration.
7. Students in the multidisciplinary studies major may not declare a second major.

Department of Music

Chairperson: Sarah Fuller

Director of Undergraduate Studies: Judith Lochhead

Faculty

Joseph Auner, Assistant Professor, Ph.D., University of Chicago: 19th- and 20th-century history and theory.

Samuel Baron, Professor, B.S., Juilliard School of Music; pupil of George Barrere and Arthur Lora: Flute; chamber music.

Timothy Eddy, Professor, M.Mus., Manhattan School of Music: Cello; chamber music.

Sarah Fuller, Associate Professor, Ph.D., University of California, Berkeley: Medieval and Renaissance history and theory. Recipient of the President's Award for Excellence in Teaching, 1984.

Robert Gjerdingen, Associate Professor, Ph.D., University of Pennsylvania: Music theory; psychology of music; ethnomusicology.

Lazar Gosman, Professor, Diploma, Moscow State Conservatory; pupil of David Oistrakh: Violin; chamber music.

Perry Goldstein, Assistant Professor, D.M.A., Columbia University: Musicianship.

Gilbert Kalish, Professor and Codirector of Contemporary Chamber Players, B.A., Columbia University: Piano; chamber music.

Richard Kramer, Professor, Ph.D., Princeton University: 18th-century history; Beethoven; Schubert.

David Lawton, Professor and Graduate Studies Director, Ph.D., University of California, Berkeley: Orchestral and opera conducting; 19th-century history.

Julius Levine, Professor, B.S., Juilliard School of Music: String bass; chamber music.

Judith Lochhead, Associate Professor, Ph.D., State University of New York at Stony Brook: 20th-century theory and history.

Bradley Lubman, Lecturer and Director of the Stony Brook Symphony Orchestra, M.M., State University of New York at Stony Brook: Conducting; contemporary music performance.

Timothy Mount, Associate Professor and Director of Choral Music, D.M.A., University of Southern California: Choral conducting.

Joyce Robbins, Professor, B.S., Juilliard School of Music: Violin; viola; pedagogy; chamber music.

Daria Semegen, Associate Professor and Director of Electronic Music Studio, M.Mus., Yale University: Composition; theory; electronic music.

Sheila Silver, Associate Professor, Ph.D., Brandeis University: Composition; theory.

Mary Ann Smart, Assistant Professor, Ph.D., Cornell University: 19th-century history; opera.

Jane Sugarman, Assistant Professor, Ph.D., University of California, Los Angeles: Ethnomusicology; world music cultures.

Daniel Weymouth, Assistant Professor and Director of Computer Music Studio, Ph.D., University of California, Berkeley: Composition; computer music and technology.

John Winemiller, Lecturer, M.A., University of Chicago: 18th-century history; Handel.

Peter Winkler, Associate Professor, M.F.A., Princeton University: Composition; theory; popular music. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1977.

Performing Artists in Residence

Ronald Anderson, M.S., Juilliard School of Music; Ed.D., Columbia University: Trumpet; chamber music.

Elaine Bonazzi, B. Mus., Eastman School of Music: Voice; opera workshop.

Ronald Borror, D.M.A., Yale University: Trombone; chamber music.

Miriam Burns, Director of the University Orchestra, M.M., Mannes College of Music: Conducting.

Martin Canin, Emeritus, M.S., Juilliard School of Music: Piano; chamber music.

Todd Coolman, Director of the Jazz Ensemble, M.M., Manhattan School of Music: Jazz studies.

Raymond Des Roches, Codirector, Contemporary Chamber Players, M.Mus., Manhattan School of Music: Percussion; chamber music.

Bruce Engel, Director of the University Wind Ensemble, M.M., Juilliard School of Music: Conducting.

Dennis Godburn, B.Mus., Hartt School of Music: Bassoon; chamber music.

Arthur Haas, M.A., University of California, Los Angeles: Harpsichord; performance of early music.

Jack Kreiselman, Director Emeritus of University Wind Ensemble and University Orchestra, Manhattan School of Music; pupil of Simeon Bellison and Simon Kovar: Clarinet; chamber music.

Caroline Levine, B.Mus., The Curtis Institute of Music: Viola; chamber music.

Thomas Muraco, M.Mus., Eastman School of Music: Vocal coach.

Charles Neidich, B.A., Yale University; Diploma, Moscow State Conservatory: Clarinet; chamber music.

William Purvis, M.Mus., Hunter College: Horn; chamber music.

Jerry Willard, Cleveland Institute of Music; study with John Williams and Misha Mishakoff: Guitar; chamber music.

Teaching Assistants
Estimated number: 42

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

The major in music leads to the Bachelor of Arts degree.

Completion of the major requirements entails 63 to 67 credits.

A. Admittance to the Major

Any student wishing to major in music must pass an audition in voice or instrument and a musicianship examination that tests aural skills and musical literacy (elementary theory, interval recognition, simple melodic and rhythmic dictation, and sight singing).

The undergraduate musicianship examination is given three times each year: the first or second day of each semester and at the end of April. Auditions are held in the first week of classes. Students should consult the department office to sign up for the undergraduate musicianship examination and to make an appointment for an audition.

B. Study within the Area of the Major

1. *Theory:*
   MUS 121 Musicianship I
   MUS 131, 132 Keyboard Harmony I, II
   MUS 220 Musicianship II
   MUS 221 Musicianship III
   MUS 222 Modal Counterpoint
   MUS 231, 232 Keyboard Harmony III, IV
   MUS 321, 322 Tonal Harmony I, II
   MUS 323 Techniques of Late 19th- and 20th-Century Music
   MUS 331 Musicianship IV
   MUS 421 Analysis of Tonal Music
   MUS 422 Analysis of 20th-Century Music
2. *History and Literature:*
   MUS 101 Introduction to Music
   MUS 340 Western Music before 1600
   MUS 341 Western Music from 1600 to the Early 19th Century
   MUS 342 Western Music of the 19th and 20th Centuries
   Two additional history courses numbered 455 to 463 to be chosen in consultation with the student's advisor. The courses should be distributed among a range of historical periods. MUS 432 or 434 may be

substituted for one of the two required electives in the sequence 455-463

3. *Performance:*
   a. Eight credits from courses in the groups MUS 161-187 Performance Study or MUS 361-387 Advanced Performance Study
   b. Study for a minimum of four semesters from the following courses: MUS 261 Stony Brook Chorale *or* MUS 262 University Orchestra *or* MUS 263 University Wind Ensemble *or* MUS 393 Chamber Chorus. Two of the four semesters may be fulfilled with MUS 264 Jazz Ensemble *or* MUS 391 Chamber Music. (Pianists and guitarists only may fulfill the four semesters with any of the courses above and MUS 388 Fundamentals of Accompanying.)

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. Upper-Division Writing Requirement

As evidence of acceptable writing skills in the discipline, students majoring in music must submit to the director of undergraduate studies a portfolio of three papers no later than one month before the end of their junior year. Papers written for music history courses (MUS 340, 341, 342, or higher) or for MUS 421 or 422 are preferred, but in any case, at least one of the three papers must be from such a course. Up to two of the remaining papers may have been written for other courses in the Division of Humanities and Fine Arts. The papers should demonstrate a mastery of language sufficient to express clearly and accurately concepts of sophistication commensurate with upper-division work. A special committee reads the papers and assesses the quality of writing. The committee communicates the results of its assessments by the end of the student's junior year. If writing skills are judged deficient, the committee recommends a course of action for the improvement of such skills and reviews examples of writing during the senior year. Students must demonstrate acceptable writing skills before they graduate.

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. (For this purpose, but not for the entry skill in foreign language requirement, 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 agrees to act as sponsor for the honors project. An eligible student may submit a proposal for a project to the proposed sponsor, who forwards 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, which may be in performance, composition, history, or theory, must be carried out under the supervision of the sponsor. The completed project is 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, which has a general track and a theory track, is designed to provide students interested 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. The general track requires 20 to 22 credits; the theory track requires 24 credits.

General Track

1. *Theory:*
   MUS 119 Elements of Music
   MUS 315, 316 Structural Principles of Music
2. *History:*
   Three courses chosen from the following: MUS 103, 104, 301-314
3. *Performance:*
   Two semesters of one or more of the following:
   MUS 261 Stony Brook Chorale
   MUS 262 University Orchestra
   MUS 263 University Wind Ensemble
   MUS 264 Jazz Ensemble
   MUS 391 Chamber Music
   MUS 393 Chamber Chorus

Theory Track

1. *Theory:*
   MUS 121 Musicianship I
   MUS 220 Musicianship II
   MUS 221 Musicianship III
   MUS 222 Modal Counterpoint
   MUS 321 Tonal Harmony I
   MUS 322 Tonal Harmony II
2. *History:*
   Two courses from the following: MUS 103, 104, 301-314
3. *Performance:*
   Three credits from the following:
   MUS 261 Stony Brook Chorale
   MUS 262 University Orchestra
   MUS 263 University Wind Ensemble
   MUS 264 Jazz Ensemble
   MUS 391 Chamber Music
   MUS 393 Chamber Chorus

Note: At least three credits from requirement 2 or 3 in either track must be upper division.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

MUS 101-D Introduction to Music
The basic concepts of music such as melody, harmony, rhythm, counterpoint, and form are studied through investigation of the historical and contemporary masterpieces of the Western classical tradition, of various non-Western musics, and of various "popular" traditions. The different styles and types of music are considered not only in light of the cultural values they embody, but also in relation to present-day cultural and musical values. No previous musical training is assumed.
Fall and spring, 3 credits

MUS 103-D Music Cultures of the World I
(Formerly MUS 201)
An introduction to musical traditions in the Middle East and Asia. Consideration of selected musical genres and styles in their relation to religious beliefs, social systems, and other aspects of culture. Not for major credit.
Fall, 3 credits (not offered in 1996-97)

MUS 104-D Music Cultures of the World II
(Formerly MUS 202)
An introduction to musical traditions in sub-Saharan Africa, Europe, and the Americas. Consideration of selected musical genres and styles in their relation to religious beliefs, social systems, and other aspects of culture. Not for major credit.
Fall, 3 credits (not offered in 1995-96)

MUS 109-G Rock Music
A study of rock music, including an investigation of its musical constituents—rhythm, form, pitch structure, instrumental texture, and vocal style—and an historical survey beginning with the roots of rock in earlier folk and popular styles and tracing its development from the end of World War II to the present. Special attention is paid to various syntheses of African and European traditions.
Fall, 3 credits (not offered in 1995-96)

MUS 119-D The Elements of Music
The notation of intervals, scales, chords, rhythms, and meters; practical exercises and ear training. Not for major credit.
Fall and spring, 3 credits

MUS 120 Elementary Sight-Singing and Dictation
Beginning ear-training, including rhythmic and melodic dictation and sight-singing. Intended for students who are not prepared to enter MUS 121. May be repeated, but credit counts toward graduation only once. Not for major credit.
Prerequisite: MUS 119 or placement by undergraduate musicianship examination
Fall and spring, 2 credits

MUS 121 Musicianship I
Review of notation of pitch, rhythm, scales, intervals, and chords. Sight singing, dictation, and transcription of melodic, harmonic, and rhythmic material.
Prerequisite: Placement by undergraduate musicianship examination (consult department as early as possible concerning dates)
Corequisites: MUS 131 and 222
Fall, 2 credits

MUS 131, 132 Keyboard Harmony I, II
Practical studies in music theory through basic keyboard exercises.
Prerequisite to MUS 131: Placement by undergraduate musicianship examination
Corequisites to MUS 131: MUS 121 and 222
Prequisites to MUS 132: MUS 121, 131, and 222
Corequisites to MUS 132: MUS 220 and 321
Fall (131) and spring (132), 1 credit each semester

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 Classical Guitar
MUS 170 Flute
MUS 171 Oboe
MUS 172 Clarinet
MUS 173 Bassoon
MUS 175 Horn
MUS 176 Trumpet
MUS 177 Trombone
MUS 180 Percussion
MUS 182 Voice
MUS 187 Other Instruments
A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. 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
Corequisite to MUS 165-168, 170-180, 187: MUS 262 or 263
Corequisite to MUS 182: MUS 261 or 393
Fall and spring, 2 credits each

MUS 208 Technology in the Arts
A multidisciplinary, hands-on introduction to the concepts and techniques of computer-influenced art, combining art, music, and theatre. Students explore computer creation and manipulation of sounds and images, as well as various ways of combining them. Current creative work using these techniques is studied. Crosslisted with ARS 208 and THR 208.
Prerequisites: MUS 222 or THR 216 or six credits of ARS courses; permission of instructor
Fall, 3 credits

MUS 220 Musicianship II
Sight singing, dictation, and transcription of more complex melodic, harmonic, and rhythmic material, including music in two voices and simple chord progressions. Elementary analysis of a few basic forms.
Prerequisites: MUS 121 or placement by undergraduate musicianship examination; MUS 131 and 222
Pre- or corequisite: MUS 101
Corequisites: MUS 132 and 321
Spring, 2 credits

MUS 221 Musicianship III
Advanced sight singing and dictation, including modal, modulating, and chromatic melodies; music in two, three, and four voices; chord progressions; and complex rhythms. Exercises in aural analysis.
Prerequisite: MUS 220 or placement by undergraduate musicianship examination
Corequisites: MUS 231 and 322
Fall, 2 credits

MUS 222 Modal Counterpoint I
An introduction to fundamental principles of musical structure through exercises in two-part species counterpoint in 16th-century style.
Corequisites: MUS 121 and 131
Fall, 3 credits

MUS 231, 232 Keyboard Harmony III, IV
Practical studies in music theory through intermediate keyboard exercises.
Prerequisites to MUS 231: MUS 132, 220, and 321
Corequisites to MUS 231: MUS 221 and 322
Prerequisites to MUS 232: MUS 221, 231, and 322
Corequisites to MUS 232: MUS 323 and 331
Fall (231) and spring (232), 1 credit each semester

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 261 Stony Brook Chorale
Study and performance of a repertory from the Middle Ages to the present. Grading is based upon attendance. May be repeated.
Prerequisite: Audition
Fall and spring, 1 credit

MUS 262 University Orchestra
Study and performance of works from the repertory of the concert orchestra. Grading is based upon attendance. May be repeated.
Prerequisite: Audition
Fall and spring, 1 credit

MUS 263 University Wind Ensemble
Study and performance of works for ensembles of woodwinds, brass, and percussion in various combinations. Grading is based upon attendance. May be repeated.
Prerequisite: Audition
Fall and spring, 1 credit

MUS 264 Jazz Ensemble
Study and performance of works for jazz ensemble. Grading is based on attendance. May be repeated.
Prerequisite: Audition
Fall and spring, 2 credits

MUS 290 Vocal Repertory
(Formerly MUS 490)
Performance and analysis of works from the vocal repertory. May be repeated.
Prerequisite: Permission of instructor
Corequisite: MUS 182 or 382
Fall or spring, 1 credit

Note: At least one course from the group MUS 301-314 will be offered every semester. Consult the class schedule for current offerings.

MUS 301-I Music of the Baroque
The development during the late Renaissance of a new style in Italy and elsewhere will be traced 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. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 302-I 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. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 303-I 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. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 305-G 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. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 306-G 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. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 307-I 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. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 308-K History of Jazz
Survey of jazz styles, including ragtime, blues, New Orleans jazz, swing, bebop, "cool" jazz, "free" jazz, fusion, and Latin styles. Guidance in the appreciation of jazz and related musics, musical analysis of representative works, and demonstrations of improvisation. Jazz as an expression of cultural pluralism. Not for major credit.
Prerequisite: MUS 101 or 109 or 119
3 credits

MUS 309-G 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. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 310-K Music and Culture in the 1960s
The music of Bob Dylan, John Cage, the Beatles, Pauline Oliveros, Ornette Coleman, Milton Babbitt, Luciano Berio, and others is studied in conjunction with texts from or criticism on the 1960s. Music and texts are correlated by the topics of protest, chaos, mass culture, the women's movement, subcultures, superrationality, deconstruction, and others. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 312-J Music in the Middle East
A survey of traditional and contemporary musics of Turkey, Iran, Israel, and the Arab world. Musics of rural and urban communities are examined both in terms of their structure and style, and in the ways that they relate to aspects of Middle Eastern life such as religious observance, social relations, ethnic and national identity, modernization, and emigration. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 313-G Cross-Cultural Musics from Stravinsky to World Beat
An investigation into cross-cultural exchanges in Western and non-Western classical and popular musics in the 20th century, exploring the political and social contexts of, the role of technology in, and the aesthetic and ethical implications of musical borrowings. Among the topics covered are turn-of-the-century exoticism, uses of folk music by classical composers, mutual borrowings between the West and Indonesia, Middle Eastern music and the West, and Paul Simon and the music of South Africa. Not for major credit.
Prerequisite: MUS 101 or 119
3 credits

MUS 314-G Women Making Music
A study of the contributions made by women to music making in various contemporary and historical cultures of the world, with emphasis on Western traditions. Topics include women as composers, performers, and listeners; genres designed for women; women's roles in relation to men's; gender implications in musical style; and depictions of women in musical dramas. All types of music will be considered: "classical," rock, pop, folk, jazz, various "fusions," and non-Western musics such as those from India, China, Indonesia, and the Middle East. Crosslisted with WNH 314.
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. Not for major credit.
Prerequisite to MUS 315: MUS 119
Prerequisite to MUS 316: MUS 315
Fall (315) and spring (315, 316), 3 credits

MUS 317 Interactive Performance, Media, and MIDI
Practical and theoretical issues related to interactive performance, combining elements of art, music, theatre, performance art, video, and computer science. Course topics include sound synthesis, sampling, video, lighting, alternative input, and MIDI. This hands-on course stresses small experimental, creative laboratory assignments and culminates in final small group or individual projects. Crosslisted with ARS 317 and THR 317.
Prerequisites: One 200- or 300-level ARS, MUS, or THR studio or performance course
Spring, 3 credits

MUS 321, 322 Tonal Harmony I, II
Practice in homophonic writing, including the harmonization of chorales.
Prerequisites to MUS 321: MUS 121, 131, and 222
Corequisites to MUS 321: MUS 132 and 220
Prerequisites to MUS 322: MUS 132, 220, and 321
Corequisites to MUS 322: MUS 221 and 231
Fall (322) and spring (321), 3 credits each semester

MUS 323 Techniques of Late 19th- and 20th-Century Music
Study and practice in the techniques used in the late 19th and 20th centuries to organize pitch, rhythm, tone color, and dynamics.
Prerequisites: MUS 132, 221, and 322
Corequisites: MUS 232 and 331
Spring, 3 credits

MUS 331 Musicianship IV
Sight singing and dictation of complex tonal, modal, and atonal material. Special emphasis on melodic, harmonic, and rhythmic idioms characteristic of 20th-century music.
Prerequisites: MUS 221, 231, and 322
Corequisites: MUS 232 and 323
Spring, 2 credits

MUS 340-G Western Music before 1600
The history of Western music from antiquity to the late 16th century.
Prerequisites: MUS 132, 220, and 321
Fall, 4 credits

MUS 341-G Western Music from 1600 to the Early 19th Century
A survey of style and form from early opera through the late quartets of Beethoven.
Prerequisite: MUS 340
Spring, 4 credits

MUS 342-G 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, 4 credits

MUS 349-G The Creative Process in the Fine Arts
An examination of the creative process and its philosophical foundations in Western culture. Students explore highlights of the philosophical tradition since Plato; attend exhibits, rehearsals, and performances; and discuss with visiting artists their work and its sources. Not for major credit. Crosslisted with THR 349 and ARH 349.
Prerequisites: One philosophy course; ARH 101 or 102 or MUS 101 or 119 or THR 101 or 104 or 114
Fall or spring, 3 credits

MUS 361 to 387 Advanced Performance Study
MUS 361 Piano
MUS 363 Harpsichord
MUS 365 Violin
MUS 366 Viola
MUS 367 Cello
MUS 368 String Bass

MUS 369 Classical Guitar
MUS 370 Flute
MUS 371 Oboe
MUS 372 Clarinet
MUS 373 Bassoon
MUS 375 Horn
MUS 376 Trumpet
MUS 377 Trombone
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 are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.
Prerequisites: Audition; permission of instructor
Prerequisite to MUS 387: Approval of department undergraduate studies committee
Corequisite to MUS 365-368, 370-380, 387: MUS 262 or 263
Corequisite to MUS 382: MUS 261 or 393
Fall and spring, 4 credits each

MUS 388 Fundamentals of Accompanying
Development of skills required of an accompanist, including sight-reading and instrumental and vocal accompaniment. Specific accompanying assignments will be made throughout the semester. May be repeated once.
Prerequisites: Audition; permission of instructor
Fall or spring, 2 credits

MUS 389 Jazz Improvisation
An overview of jazz theory, nomenclature, and chord-scale relationships as they relate to the playing of improvised jazz solos. In-class performances and transcription analysis are an integral part of the course.
Prerequisites: MUS 119 or 121; audition; permission of instructor
Spring, 1 credit

MUS 391 Chamber Music
Ensembles formed by students enrolled in MUS 161 to 187 Performance Study who receive approval of a faculty instructor and assignment of a repertory. Two hours of rehearsal per 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.
Prerequisite: Audition
Fall and spring, 1 credit

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 is selected from representative works by Debussy, Bartok, Schoenberg, Stravinsky, Webern, and others.
Prerequisite: MUS 421
Spring, 3 credits

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
Fall, 3 credits (not offered in 1995-96)

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
Fall or spring, 3 credits (not offered in 1995-96)

MUS 439 Composition
Open only to students demonstrating sufficient aptitude and capacity for original work. May be repeated.
Prerequisite: Permission of instructor
Fall or spring, 3 credits

Advanced Studies in Music History

MUS 455, 457, 459, 461, and 463 are designed primarily for majors. When offered, specific topics for each are announced in the class schedule. Detailed information on course content is available in the Music Department prior to registration each semester.

MUS 455 Major Composers
An examination of the achievement of composers who have had a major influence upon the Western classical tradition. Individual representative figures such as Monteverdi, J.S. Bach, Beethoven, Stravinsky, or groups of artists such as Chopin, Schumann, and Liszt are studied. May be repeated for credit as the topic varies.
Prerequisite: At least one 300-level music course specified when the topic is announced
Schedule to be announced, 3 credits

MUS 457 Major Genres
Inquiry into the nature, development, and cultural context of an important musical genre, such as the classical string quartet, the romantic tone poem, the baroque concerto, or the Renaissance motet. May be repeated for credit as the topic varies.
Prerequisite: At least one 300-level music course specified when the topic is announced
Schedule to be announced, 3 credits

MUS 459 Dramatic Music
Studies in opera, oratorio, or other genres such as madrigal comedy, melodrama, or incidental music or program music inspired by plays. The course may focus on the work of a single composer (Alessandro Scarlatti, Mozart, Verdi, Berg), a national tradition (English masque, French *tragédie lyrique,* German romantic opera, Italian *verismo*), a genre (comic opera), or a problem (opera conventions and reforms). May be repeated for credit as the topic varies.
Prerequisite: At least one 300-level music course specified when the topic is announced
Schedule to be announced, 3 credits

MUS 461 Music and Poetry
Studies in the interaction of poetic language and music. Topics might include the songs of Debussy and Ives, the medieval lyric, the lied from the Enlightenment through Mahler and Schoenberg, the madrigal of the 16th century, the blues repertory of Bessie Smith, or new genres inspired by such works as *Le marteau sans maître.* May be repeated for credit as the topic varies.
Prerequisite: At least one 300-level music course specified when the topic is announced
Schedule to be announced, 3 credits

MUS 463 Studies in 20th-Century Music
Issues raised by music of the present century from historical and analytical perspectives. Topics may focus on music since 1945, electronic music, American popular music, recent trends in composition, or musical modernism. May be repeated for credit as the topic varies.
Prerequisite: At least one 300-level music course specified when the topic is announced
Schedule to be announced, 3 credits

MUS 475 Undergraduate Teaching Practicum
Each student receives 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, 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 487 Independent Project
Individual study under the guidance of a faculty 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 491 Conducting
Manual technique and the analysis and preparation of scores for performance. May be repeated.
Prerequisites: MUS 322; permission of instructor
Corequisite: MUS 261 or 262 or 263 or 393
Spring, 3 credits

Optics

Minor Coordinator: Robert McCarthy, Physics

The minor in optics (OPT), which is housed in the Department of Physics, is intended for students outside the physics major who wish to obtain a thorough understanding of the nature of light and its interactions with matter. After learning the basic principles of optics in PHY 352, students may pursue their scientific or professional interests by taking further courses in the Department of Physics or the College of Engineering and Applied Sciences. The minor requires 21 credits

A. Basic courses:
PHY 132
PHY 251 or ESG 281
PHY 301 or ESE 319
PHY 352

B. At least two of the following:
ESC 342, 441*, 499*
ESE 321, 362, 441*, 499*
ESG 441*
ESM 499*
PHY 302, 452, 455, 487*, 488*

*These courses may be used if the research project is in optics. Each such course must be taken for three credits and the student must obtain written approval of the Department of Physics for his or her research proposal before starting research.

Department of Pharmacological Sciences

Chairperson and Director of Undergraduate Studies: Arthur P. Grollman

Paul R. Adams, Professor, Ph.D., London University: Ion channels and synaptic transmission.

Miguel Berrios, Assistant Professor, Ph.D., Rockefeller University: Characterization of the nucleoskeleton; nuclear pore complexes.

Daniel Bogenhagen, Professor, M.D., Stanford University: Mitochondrial molecular bioogy; 5S RNA gene expression.

Moises Eisenberg, Associate Professor, Ph.D., California Institute of Technology: Molecular modeling of biomolecules.

JoAnne Engebrecht, Assistant Professor, Ph.D., University of California, San Diego: Mechanism of meiotic chromosome segregation.

Paul A., Fisher, Associate Professor, M.D., Ph.D., Stanford University: The extrachromosomal karyokeleton/eukaryotic DNA replication.

Michael Frohman, Assistant Professor, M.D., Ph.D., University of Pennsylvania: Control of gene expression during mammalian embryogenesis.

Arthur P. Grollman, Professor, M.D., The Johns Hopkins University: Molecular mechanism of cardinogenesis and DNA repair.

Charles R. Iden, Associate Professor, Ph.D., The Johns Hopkins University: DNA damage produced by genotoxic substances.

Francis Johnson, Professor, Ph.D., Glasgow University: Inhibition of HIV-1 (AIDS) using rationally designed drugs; effects of chemical carcinogens on DNA.

Craig C. Malbon, Professor, Ph.D., Case Western Reserve University: Signal transduction during differentiation and development: roles of G-proteins.

Richard Miksicek, Assistant Professor, Ph.D., University of Minnesota: Organization of the estrogen receptor; breast cancer.

Andrew J. Morris, Assistant Professor, Ph.D., University of Birmingham: Roles of phospholipids in cellular signaling.

Joav Prives, Associate Professor, Ph.D., McGill University: Regulation of surface receptors in muscle cells.

Edward Reich, Distinguished Professor, M.D., The Johns Hopkins University: Biochemistry of plasma proteins; new therapeutic systems.

Shinya Shibutani, Research Associate Professor, Ph.D., Toyama Medical and Pharmaceutical University: Mechanisms of translesional DNA synthesis.

Sidney Strickland, Professor, Ph.D., University of Michigan: Molecular recognition of oogenesis and early embryogenesis.

Masaru Takeshita, Research Associate Professor, Ph.D., Tokyo Kyoiku University: Genetic toxicology; molecular biology of DNA damage.

William Van der Kloot, Professor, Ph.D., Harvard University: Acetycholine; quanta; neuromuscular junction; synapse; neurotransmitter.

David Williams, Professor, Ph.D., University of Illinois at Urbana-Champlain: Hormonal regulation of mRNA stability; molecular biology of carcinogenesis and DNA repair.

The major in pharmacology (BCP) introduces the scientific principles of drug action on biological systems. The program embraces a knowledge of chemical structures, biological effects, and therapeutic uses of drugs. Pharmacology is a science that is basic to medicine, pharmacy, dentistry, and veterinary medicine. Experimental studies in pharmacology range from those that focus on the treatment and prevention of disease states to determining the effects of chemical agents upon subcellular mechanism and the toxicology of biohazard, pesticides, and industrial pollutants.

Students should contact the Department of Pharmacological Sciences for information about the pharmacology major and for forms mentioned in requirements and course descriptions. The department's office also coordinates advising and processes graduation clearances for major requirements.

Requirements for the Major

All courses offered for the major must be taken for a letter grade. In requirements A and B below, a minimum grade point average of 3.0 must be obtained for all 100-level and upper-division courses. Courses taken under the P/NC option may not be applied to the major.

Completion of the major requirements entails approximately 66-67 credits.

A. Courses in Related Fields
1. CHE 131, 132 General Chemistry *or* 141, 142 Honors Chemistry
2. CHE 133, 134 General Chemistry Laboratory *or* 143, 144 Honors Chemistry Laboratory
3. CHE 321, 322 Organic Chemistry *or* 331, 332 Honors Organic Chemistry
4. CHE 327 Organic Chemistry Laboratory A *or* CHE 333 Organic Chemistry Laboratory B
5. MAT 131, 132 Calculus I, II (See note 1)
6. PHY 121, 122 Physics for the Life Sciences (See note 1)

B. Courses in Biological Sciences
1. BIO 152 Principles of Biology: From Molecules to Organisms *or* BIO 172 Honors Biology: Molecules to Organisms (See note 2)
2. BIO 310 Cell Biology
3. HBY 350 Physiology (See note 3)
4. BIO 361, 362 Biochemistry I, II
5. BIO 365 Biochemistry Laboratory

C. Pharmacology
1. BCP 400 Writing in Pharmacology

2. BCP 401 Principles of Pharmacology
3. BCP 402 Advanced Pharmacology
4. BCP 403 Principles of Pharmacology Laboratory
5. BCP 404 Advanced Pharmacology Laboratory
6. BCP 406 Pharmacology Colloquium
7. BCP 487 Pharmacology Research (for at least 3 credits)

D. Upper-Division Writing Requirement

To fulfill the upper-division writing requirement in pharmacology, a sample of writing from an upper-division course in biological sciences must be submitted to the Department of Pharmacological Sciences for evaluation by the Pharmacology Writing Committee. This writing sample can be a laboratory report, a term paper, or a report for a reading or research course, and it must contain at least 750 words of text. It is to be accompanied by a form (available in the Department of Pharmacological Sciences office) signed by the student and the instructor of the course for which the material was written. The student must enroll in BCP 400 Writing in Pharmacology for the semester in which the upper-division writing requirement is being attempted. The deadline for submission of the writing sample is December 1 for students graduating in the following May or August, and May 1 for students graduating in the following December.

If the writing in this sample is judged satisfactory by the writing committee the requirement is fulfilled. If the writing is judged unsatisfactory, the student is advised to seek help in writing skills from the Writing Center and must pass a writing examination administered by the Department of Pharmacological Sciences at a scheduled time prior to graduation.

Notes

1. The following alternate sequences may be substituted for major requirements: MAT 124,126,127 *or* 125, 126, 127 *or* 141, 142 for 131,132; PHY 131, 132 *or* 141, 142 *or* 125, 126, 127 for PHY 121, 122.
2. Students with documented A.P. biology scores receive a waiver of requirement B.1 (BIO 152 or 172).
3. BIO 328 is acceptable instead of HBY 350.
4. BCP 488 Internship is not required for the major, but it is suggested as a worthwhile learning experience.
5. The attention of students majoring in pharmacology is directed to the following courses of interest to them in other departments: CHE 301, 302, 305, 312, BIO 220.

Honors Program in Pharmacology

Graduation with honors in pharmacology requires (1) a cumulative grade point average of 3.5 or higher in all courses in requirements A, B, and C above, and (2) presentation of an acceptable thesis based on a research project performed under BCP 487, written in the format of a paper in a scientific journal. A student interested in becoming a candidate for honors should submit an outline of the proposed thesis research project to the department's honors coordinator as early as possible, but in any case no later than the second week of classes in the last semester. (Acceptance of a project for BCP 487 registration does not imply automatic acceptance of that project for honors.) The honors coordinator in consultation with the student then appoints a thesis committee consisting of the research sponsor and two additional faculty members. Two members of the thesis committee must be members of the Department of Pharmacological Sciences and one must be a member of another department in a related field.

Three copies of the finished thesis, approved by the research sponsor, must be presented to the honors coordinator at least 21 days before the date of graduation. The honors coordinator then submits the thesis for final approval to the other two members of the thesis committee.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. BCP courses do not satisfy D.E.C. requirements.

BCP 400 Writing in Pharmacology
See requirements for the major in pharmacology, upper-division writing requirement. Satisfactory/Unsatisfactory grading only.
Prerequisites: Pharmacology major; upper-division standing
Fall and spring, 0 credits

BCP 401 Principles of Pharmacology
Basic principles and mechanisms of drug distribution, absorption, metabolism, and elimination. Principles of chemical carcinogenesis and tumor promotion. Autonomic, smooth-muscle, and CNS pharmacology. Pharmacology of specific drugs of historical interest including alcohol, antibiotics, aspirin, nicotine, and morphine. Review of anticoagulants and thrombolytic agents, antiparasitics, and drugs for the treatment of allergic conditions and gout.
Prerequisites: BIO 362; CHE 322 and 327; a G.P.A. of 3.0 or higher in these courses and their prerequisites
Corequisite: BCP 403
Fall, 3 credits

BCP 402 Advanced Pharmacology
Advanced concepts of drug metabolism, pharmacokinetics, biochemical and molecular mechanisms of drug action, and drug resistance in human disease states. Toxicological agents and environmental pollutants. The pharmacology of autocoids, anti-inflammatories, immunosuppressants, and antiasthmatics. Rational drug design and drug receptor interactions using computer molecular modeling techniques.
Prerequisites: BCP 401 and 403
Corequisite: BCP 404
Spring, 3 credits

BCP 403 Principles of Pharmacology Laboratory
The use of computer software for data collection and analysis. Illustrations of the principles of drug absorption, distribution, metabolism, and elimination. *In vitro* assays that demonstrate dose response relationships. Principles of bioassays. Determination of drug potency using isolated tissue preparations. Determination of the affinity of an antagonist for an agonist at a receptor site. Evaluation of potencies of anesthetics, analgesics, and anticonvulsant agents.
Corequisite: BCP 401
Fall, 2 credits

BCP 404 Advanced Pharmacology Laboratory
The use of molecular modeling software for the understanding of structure activity relationships. *In vivo* studies to demonstrate the pharmacological mechanism of action of drugs acting on the autonomic, cardiovascular, and renal systems. Pharmacokinetic studies, using HPLC, to determine the rate of absorption, distribution, and excretion of therapeutic agents. Radio- and enzyme-immunoassays for the detection of circulating hormones. Cell culture techniques for drug determination and evaluation.
Prerequisites: BCP 401 and 403
Corequisite: BCP 402
Spring, 2 credits

BCP 406 Pharmacology Colloquium
Seminars on research in pharmacology and toxicology presented by faculty and distinguished scientists from academic and industrial institutions. Students are expected to develop an understanding of the scientific principles presented in the colloquium. Speakers meet with the students after the seminar to discuss research concepts and to answer questions. May be repeated.
Prerequisites: BIO 152 or 171; CHE 322; a G.P.A. of 3.0 in these courses and their prerequisites
Fall and spring, 1 credit

BCP 487 Research in Pharmacology
Completion of an individual student research project under the supervision of a faculty member. Previously acquired laboratory course techniques and new procedures are utilized. Experimental results must be submitted to the department for grade evaluation in the format of a research report. Not for credit in addition to HBH 396, 398, and 399. May be repeated.
Prerequisites: BIO 152; CHE 322 and 327; a G.P.A. of 3.0 in these courses and their prerequisites; permission of instructor and department
Fall and spring, 1 to 3 credits

BCP 488 Internship
Research participation in off-campus laboratories, the pharmaceutical industry, and other academic and public agencies. Students are required to submit to the department a proposal at the time of registration and a report at the end of the semester. Satisfactory/Unsatisfactory grading only.
Prerequisites: BIO 361; CHE 322; G.P.A. of 3.0 or higher in these courses and their prerequisites; permission of department and Office of Undergraduate Studies
Summer, 3 to 6 credits

Department of Philosophy

Chairperson: Edward S. Casey

Director of Undergraduate Studies: Michael A. Simon

Faculty

David B. Allison, Associate Professor, Ph.D., Pennsylvania State University: Contemporary European philosophy.

Kenneth Baynes, Associate Professor, Ph.D., Boston University: Social and political philosophy; moral theory; modern and contemporary German philosophy.

Edward S. Casey, Professor, Ph.D., Northwestern University: Philosophy of psychology; aesthetics; phenomenology.

Robert Crease, Associate Professor, Ph.D., Columbia University: Philosophy of science; aesthetics; modern philosophy.

David A. Dilworth, Professor, Ph.D., Fordham University; Ph.D., Columbia University: History of philosophy; Chinese and Japanese philosophy.

Brian Jeffrey Edwards, Assistant Professor, Ph.D., Universität Marburg: History of modern philosophy; Kant and German idealism; ethics and political philosophy.

Sidney Gelber, Distinguished Service Professor Emeritus, Ph.D., Columbia University: Political philosophy.

Patrick Grim, Professor, Ph.D., Boston University: Ethics; logic; contemporary analytic philosophy. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1988, and the President's Award for Excellence in Teaching, 1988.

Dick Howard, Professor, Ph.D., University of Texas: Political and social philosophy.

Don Ihde, Professor, Ph.D., Boston University: Phenomenology; philosophy of technology; hermeneutics.

Eva Feder Kittay, Professor, Ph.D., City University of New York: Philosophy of language; philosophy and literature; feminism.

Peter Ludlow, Associate Professor, Ph.D., Columbia University: Philosophy of linguistics; philosophy of cognitive science; philosophy of language.

Gary Mar, Associate Professor, Ph.D., University of California, Los Angeles: Logic; philosophy of science; philosophy of mathematics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1993, and the President's Award for Excellence in Teaching, 1993.

Clyde Lee Miller, Associate Professor, Ph.D., Yale University: History of philosophy. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1980.

Rita D. Nolan, Professor, Ph.D., University of Pennsylvania: Theory of knowledge; philosophy of language; philosophy of psychology.

Francois Raffoul, Assistant Professor, Ancien élève de l'École Normale Supérieure, Agrégé de Philosophie: History of philosophy; continental philosophy.

Mary C. Rawlinson, Associate Professor, Ph.D., Northwestern University: 19th-century philosophy; philosophy of medicine; aesthetics and literary theory; Hegel; philosophical psychology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1994, and the President's Award for Excellence in Teaching, 1994.

Hugh J. Silverman, Professor, Ph.D., Stanford University: Continental philosophy; literary theory; history of ideas. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1977.

Michael A. Simon, Professor, Ph.D., Harvard University; J.D., Cardozo School of Law: Philosophy of mind; philosophy of biology and of the social sciences; philosophy of law; social philosophy.

Marshall Spector, Professor, Ph.D., The Johns Hopkins University: Philosophy of science; philosophy of technology.

Walter Watson, Professor Emeritus, Ph.D., University of Chicago: History of philosophy.

Donn Welton, Associate Professor, Ph.D., Southern Illinois University: Phenomenology; epistemology.

Peter Williams, Associate Professor, J.D., Ph.D., Harvard University: Philosophy of law; ethics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1978.

Affiliated Faculty

Donald Kuspit, Art
Peter Manchester, Comparative Studies

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 17

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:

Completion of the major requirements entails 36 credits.

1. PHI 300 and 306
2. PHI 391 or 392 or 393
3. Two courses in Category I, Styles and Systems of Philosophy in Historical Perspective, exclusive of those required for items 1 and 2 above
4. Three courses in Category II, Basic Skills and Problem Areas of Philosophy
5. Three courses in Category III, Philosophy in Relation to Other Arts and Sciences
6. PHI 435 Senior Seminar
7. Upper-Division Writing Requirement
   Philosophy majors must achieve an evaluation of S (Satisfactory) on the written work for either PHI 300 or PHI 306, which, for this purpose, must be taken before the end of the junior year. Students who wish to satisfy this requirement must inform the instructor of their intention to do so no later than the third week of the semester, so that the student's essays for the course may be given special appraisal for advanced writing skills appropriate to philosophy majors, in addition to their appraisal for the course. A student must achieve an appraisal of S in advanced writing skills in order to register for PHI 435 Senior Seminar.

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.
4. No more than six philosophy courses may be used to satisfy D.E.C. requirements.

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 consists 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 is reviewed by the advisor and one other member of the philosophy faculty and by a faculty member from outside the department. The senior paper is then the focus of an oral examination. Honors are awarded upon 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 include history of philosophy; logic, science, and technology; moral, political, and legal issues; literature and the arts. Interested students should consult with the department's director of undergraduate studies 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. No more than one 100-level course may count toward satisfying the minor requirements.

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. See also Study Abroad, p. 71.

Courses

See p. 77, Course Credit and Prerequisites, and p 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

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.

PHI 100-B Concepts of the Person (II)
An historical 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-B 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. A variety of texts is used. May not be taken for credit in addition to PHI 150.
Fall or spring, 3 credits

PHI 104-B Moral Reasoning (II)
An historical 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.
Fall and spring, 3 credits

PHI 105-G Politics and Society (III)
An historical introduction to philosophy through an analysis of political theories, theories of action, and styles of political life. Main themes 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-B 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 develops a sensitivity to language and argumentation that is applicable to a wide range of situations and subject matters.
Fall and spring, 3 credits

PHI 109-B Literature and Human Life (III)
A survey in translation of major authors and works of Western or non-Western cultures, focused around such problems as the self and moral values.
Fall or spring, 3 credits

PHI 110-B Arts and Ideas (III)
An introduction to the historical and comparative study of the various arts in relation to the philosophical ideas that prevailed at the same time. At least four significantly different historical periods of intense creative activity—such as ancient Greece, the Renaissance, the 18th or 19th century in the West, ancient China, T'ang or Sung dynasty China, Heian or Muromachi period Japan, and the contemporary age—are studied in terms of the interconnections between philosophical theorizing and artistic practice.
Fall or spring, 3 credits

PHI 111-B Introduction to Eastern Philosophy (I)
A study of different systems of Eastern philosophy and of the main classical texts drawn from Hinduism, Buddhism, Taoism, Confucianism, and Neo-Confucianism. Efforts are made to recover the different modes of knowledge, language, identification, and liberation dealt with in these texts.
Fall or spring, 3 credits

PHI 150-G 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; (2) the application of philosophical analysis to some phenomenon of contemporary life, e.g., technology; or (3) the study of philosophy's relation to another discipline, e.g., science or history. May not be taken for credit in addition to PHI 103.
Prerequisite: Permission of department; priority given to Honors College and Honors Program students, Presidential Scholars, and Freshman Scholars
Fall or spring, 3 credits

PHI 200-G Introduction to Ancient Philosophy (I)
Readings and discussion of the major Greek and Roman thinkers, e.g., the pre-Socratics, Plato, Aristotle, the Stoics, and Plotinus.
Prerequisite: Sophomore standing or one course in philosophy
Fall or spring, 3 credits

PHI 204-G Introduction to Medieval Philosophy (I)
Readings and discussion of the major thinkers of the medieval period, e.g., Augustine, Boethius, Anselm, Abelard, Maimonides, Aquinas, and Nicholas of Cusa.
Prerequisite: Sophomore standing or one course in philosophy
Fall or spring, 3 credits

PHI 206-G Introduction to Modern Philosophy (17th- and 18th-Century) (I)
Readings and discussion of the major thinkers of the 17th and 18th centuries, e.g., Des-

cartes, Leibniz, Spinoza, Hobbes, Locke, Berkeley, Hume, and Kant.
Prerequisite: Sophomore standing or one course in philosophy
Fall or spring, 3 credits

PHI 208-G Introduction to 19th-Century Philosophy (I)
Readings and discussion of the major thinkers of 19th-century Europe, e.g., Kant, Hegel, Comte, Marx, Mill, Schopenhauer, and Nietzsche.
Prerequisite: Sophomore standing or one course in philosophy
Fall or spring, 3 credits

PHI 220-C 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.
Prerequisites: Sophomore standing or one course in philosophy; satisfaction of entry skill in mathematics requirement
Fall and spring, 3 credits

PHI 230-H The Nature and Practice of Science (III)
An examination of the scientific experience. A particular scientific discovery, such as nuclear fission and its exploitation, is followed from its origins in order to explore the influences of historical, social, technological, and philosophical forces on science. The nature of discovery; the interplay between experiment and theory; technology and the environment; paradigm shifts; science and gender; the difference between fraud and error; and self-discovery are considered.
Prerequisites: Sophomore standing or one course in philosophy; one D.E.C. category E course
Fall or spring, 3 credits

PHI 247-G 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 are used to interpret contemporary lifestyles and culture.
Prerequisites: Sophomore standing; one course in philosophy; PHI 100 recommended
Fall and spring, 3 credits

PHI 249-G 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, and Derrida.
Prerequisites: Sophomore standing; one course in philosophy; PHI 105 recommended
Fall or spring, 3 credits

PHI 264-D Philosophy and the Arts (III)
A study of the arts focusing on the nature of the creative process, methods of interpretation, essential differences among the various arts, and the relation of performance to text.
Prerequisite: Sophomore standing or one PHI or ARH or MUS or THR course
Fall or spring, 3 credits

PHI 277-G 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 284-G Introduction to Feminist Theory (III)
The social construction of gender and how this construction affects philosophical thought and practices. The course provides an introductory survey of current feminist issues and analyses. It also examines the meaning of feminism for philosophy—the effect of introducing a political analysis of gender into a discipline that is supposedly universal and neutral. Crosslisted with WNH 284.
Prerequisite: Sophomore standing or one course in philosophy or women's studies
Fall or spring, 3 credits

PHI 285-G The Uses of Philosophy (III)
Introductory study of the bearing of philosophic considerations on the special arts and sciences. May be repeated as the topic varies.
Prerequisite: Sophomore standing or one course in philosophy
Fall or spring, 3 credits

Upper-Division Courses

PHI 300-I Ancient Philosophy (I)
Advanced studies in selected Greek thinkers from Thales to Aristotle.
Prerequisites: Three courses in philosophy; PHI 200, 204, 206, or 208 recommended
Fall and spring, 3 credits

PHI 304-I Medieval Philosophy (I)
Study of the writings of major thinkers from Augustine to William of Ockham.
Prerequisites: Two courses in philosophy; PHI 200 or 204 recommended
Fall or spring, 3 credits (not offered in 1996-97)

PHI 306-I Modern Philosophy (I)
Advanced studies in selected thinkers such as Descartes, Vico, Spinoza, Locke, Berkeley, Hume, and Kant.
Prerequisites: Three courses in philosophy; PHI 200, 204, 206, 208, 247, or 300 recommended
Fall and spring, 3 credits

PHI 308-I 19th-Century Philosophy (I)
Study of major figures in 19th-century thought, such as Hegel, Schopenhauer, Marx, Mill, Nietzsche, Kierkegaard, Spencer, and Comte.
Prerequisites: Two courses in philosophy; PHI 200, 204, 206, 208, 247, 300, or 306 recommended
Fall or spring, 3 credits

PHI 310-K American Philosophy (I)
A study of selected major figures in the American tradition, e.g., Jefferson, Emerson, Edwards, James, Peirce, Dewey, Whitehead, and Santayana.
Prerequisites: Two courses in philosophy; PHI 200, 204, 206, 208, 247, 300, 306, or 308 recommended; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

PHI 312-I 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 as the topic varies.
Prerequisites: Two courses in philosophy; PHI 206, 208, 300, 304, 306, or 310 recommended
Fall or spring, 3 credits

PHI 320-G Metaphysics (II)
An inquiry into the first principles of all science, art, and action as these are treated by representative classical and modern authors.
Prerequisites: Two courses in philosophy
Fall or spring, 3 credits

PHI 323-G Philosophy of Perception (II)
An inquiry into the philosophical and methodological problems pertaining to sensing, perceiving, and observing the world. Major theories of classical and modern authors are considered.
Prerequisites: Two courses in philosophy; PSY 103 or 104 recommended
Fall or spring, 3 credits

PHI 325-G Contemporary Philosophies of Language (II)
A discussion of current topics in the philosophy of language, semiotics, and literary theory.
Prerequisites: Two courses in philosophy
Fall or spring, 3 credits

PHI 330-C 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-G Theories of Knowledge (II)
A study of a variety of conceptions of the structure and content of knowledge as found in classical and contemporary epistemologies. Fundamental methods and principles of philosophical inquiry are applied to questions about the ways in which concepts and theories are generated in the physical and social sciences and to questions about knowledge of what is of value, knowledge in philosophy, and knowledge in the arts.
Prerequisites: Two courses in philosophy; PSY 103 or 104 recommended
Fall or spring, 3 credits

PHI 335-G Philosophy of Time (II)
An inquiry into the nature of time as it is treated by philosophers of classical and modern times.
Prerequisites: One course in philosophy; one course in physics
Fall or spring, 3 credits

PHI 336-G Philosophy of Religion (III)
A philosophical analysis of basic concepts, principles, and problems of religious thought. Topics may include faith and knowledge, religion and morality, divine attributes, arguments for and against the existence of God, and the problem of evil.
Prerequisites: Two courses in philosophy; one course in religious studies
Fall or spring, 3 credits

PHI 342-J History of Chinese Philosophy (I)
Readings in translation of the major texts of Chinese philosophy, including classical Confucianism and Taoism; Han dynasty developments of Confucianism and Taoism; the skepticism of Wang Ch'ung; the schools of Chinese Buddhism; Sung and Ming dynasty Neo-Confucianism.
Prerequisites: PHI 111 or RLS 240 or 246 or 260; one other course in philosophy
Fall or spring, 3 credits

PHI 344-J Japanese Thought and Philosophy (I)
An examination of major texts in Japan's religious, poetic-artistic, and philosophical traditions down to modern times. Topics may include Tendai, Shingon, Pure Land, and Zen Buddhism; the cultural forms of Shinto religiosity; aesthetic concepts such as *miyabi;* Tokugawa Neo-Confucianism and its impact on modern Japan; philosophical aspects of the modern Japanese novel; the Kyoto school of Buddhism.
Prerequisites: PHI 111 or RLS 240 or 246 or 260; one other course in philosophy
Fall or spring, 3 credits

PHI 347-G Hermeneutics and Deconstruction (III)
An exploration of the major assumptions, commitments, methods, and strategies of hermeneutics and deconstruction. The course examines how these two recent schools of thought have developed out of the contemporary philosophical scene and how they have had such a significant impact on literary theory, art criticism, text theory, social theory, and the history of philosophy. Readings include selections from the writing of Heidegger, Gadamer, Jauss, Ricoeur, Derrida, Kristeva, Lyotard, Kofman, Irigaray, and others.
Prerequisite: Two courses in philosophy
Spring, 3 credits

PHI 353-G 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.
Prerequisites: Two courses in philosophy; PSY 103 or 104 recommended
Fall or spring, 3 credits

PHI 360-G 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 knowledge is acquired and transmitted.
Prerequisites: Two courses in philosophy; or one course in philosophy and one course related to education
Fall or spring, 3 credits

PHI 363-G Philosophy of the Social Sciences (III)
A study of the philosophical foundations of the social sciences, applying principles and methods of philosophical analysis to questions concerning the structures of social reality, the methodological and epistemological status of the social sciences, and the criteria for evidence and theory formation in the social sciences.
Prerequisites: One course in philosophy; two D.E.C. category F courses
Fall or spring, 3 credits (not offered in 1996-97)

PHI 364-H Philosophy of Technology (III)
A systematic study of the interrelations of human beings and their social institutions with the surrounding world of nature and of technological artifacts. The impact of technological culture on human beliefs and perceptions of the world is explored. This course is interdisciplinary in scope, with readings from philosophy, anthropology, literature, history, environmental studies, and other areas where technology is of concern.
Prerequisites: One course in philosophy; two D.E.C. category E courses
Fall or spring, 3 credits

PHI 366-G Philosophy and the Environment (III)
Philosophical aspects of how human beings relate to the natural world. Close consideration is given to the meaning and scope of basic terms such as "nature," "the earth," "the atmosphere," "wildnerness." Also to be examined are philosophical issues in ecology, e.g., those raised by the contemporary movements of deep ecology (which investigates non-anthropocentric values inherent in nature) and ecological feminism (which explores parallels between misogyny and the exploitation of natural resources).
Prerequisites: Two courses in philosophy; or one course in philosophy and two D.E.C. category E courses
Fall or spring, 3 credits

PHI 368-H Philosophy of Science (III)
A course in the philosophy of science using both historical and contemporary materials. Methodological issues discussed include scientific explanation and prediction, the structure of theories, the nature of scientific revolutions, and the role of laws in science. Philosophic problems in understanding specific sciences and their relation to each other are also considered, as are their relations to other areas of philosophic concern, such as metaphysics.
Prerequisites: One course in philosophy; two D.E.C. category E courses
Fall or spring, 3 credits

PHI 369 Philosophy of Mathematics (III)
An investigation of philosophical issues that arise in mathematics. Topics inlcude foundational issues within mathematics (logicism, formalism, institutionalism, and platonism, as well as recent theories of mathematical naturalism); the nature and existence of mathematical objects; the nature of mathematical truth; the concept of set; reinterpretations of the history of mathematics.
Prerequisites: One course in philosophy; one D.E.C. category C course
Fall or spring, 3 credits

PHI 370-G 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 or 104
Fall or spring, 3 credits

PHI 372-G Ethical Inquiry (II)
An intensive study of the methodological principles governing the formation of ethical theories and ethical judgments through an investigation of selected ethical problems.
Prerequisites: Two courses in philosophy; PHI 104 recommended
Fall or spring, 3 credits

PHI 374-G 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: Two courses in philosophy
Schedule to be announced, 3 credits

PHI 375-G Philosophy of Law (III)
An examination of the concept of law and the nature of legal reasoning. The course explores the relationship of law to other central philosophical and social ideas such as freedom, rights, morality, authority, welfare, property, justice, equality, and constitutionalism.
Prerequisites: Two courses in philosophy; or one course in philosophy and one course acceptable for socio-legal studies minor
Fall or spring, 3 credits

PHI 376-G Philosophy and Medicine (III)
An investigation of the role that philosophical concepts play in medical thinking and practice. The course focuses 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 relationship; and specific moral problems that arise in medical practice.
Prerequisites: One course in philosophy; HIS 237 or 238 or SOC/HMC 200 or HMC 331 also recommended
Fall or spring, 3 credits

PHI 377 Contemporary Political Philosophy (III)
A critical examination of selected issues in contemporary political philosophy, for example, the nature and justification of basic rights, the legitimation of political authority, and the various relations between ideals of social justice and democratic rule. Readings represent contemporary views such as libertarianism, liberalism, socialism, communitarianism, and feminism, and include selections by authors such as Rawls, Nozick, Dworkin, Walzer, Habermas, and Pateman. Crosslisted with POL 377.
Prerequisites: Two courses in philosophy; PHI 105, 277, or 375 recommended; a 300-level political science course is also recommended
Fall or spring, 3 credits

PHI 380-G Literature and Philosophy (III)
An intensive study of the methods and principles of the philosophical analysis of literature and the relations between literature and philosophy. Primary texts are selected to demonstrate the precise nature of the relationship. Topics vary from term to term.
Prerequisites: One philosophy course; one literature course; PHI 109 or 110 recommended
Fall or spring, 3 credits

PHI 381-G Aesthetics (II)
An intensive study of methods and principles specific to the philosophical analysis of art through selected classical texts in aesthetics (e.g., Plato's Phaedrus, Aristotle's Poetics, Kant's Critique of Judgment, and Nietzsche's The Birth of Tragedy). Discussions 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.
Prerequisites: Two courses in philosophy; one D.E.C. category D course
Fall or spring, 3 credits

PHI 384-G Advanced Topics in Feminist Philosophy (III)
An intensive philosophical study of selected topics of feminist concern. Topics are selected to further the understanding of what effect feminism has upon the traditional tenets of philosophy, such as universality and truth, as well as providing a detailed understanding of particular feminist theories. Crosslisted with WNH 384.
Prerequisites: One course in philosophy; one course in women's studies; PHI/WNH 284 and one other course in women's studies recommended
Schedule to be announced, 3 credits

PHI 391-G, 392-G Individual Systems of the Great Philosophers (I)
A detailed study of the works of a single great philosopher. May be repeated as the topic varies.
Prerequisite: PHI 300 or 304 or 306 or 308 or 310 or 312
Schedule to be announced, 3 credits each semester

PHI 393-G Analysis of Philosophic Texts (I)
Detailed analysis of a major philosophic text. May be repeated as the topic varies.
Prerequisite: PHI 300 or 304 or 306 or 308 or 310 or 312
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 is announced before the start of the term. May be repeated as the topic varies.
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 emphasizes careful reading, rigorous discussion, and extensive writing at an advanced level. The content of the seminar is announced before the start of the term, and students are consulted on the content as it proceeds.
Prerequisites: Senior major standing; six courses in philosophy; satisfaction of upper-division writing requirement
Fall and spring, 3 credits

PHI 475 Undergraduate Teaching Practicum
Each student works with a faculty member as an assistant in one of the faculty member's regularly scheduled courses. The student attends all the classes and receives regularly scheduled supervision from the faculty member. Responsibilities may include conducting periodic recitations to supplement a lecture course, preparation of materials used for class discussion, and helping students with study problems and research papers. Satisfactory/Unsatisfactory grading only.
Prerequisites: Prior preparation in subject field; permission of instructor and director of undergraduate studies
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, subject to university limits (see p. 77). Course descriptions are posted on the bulletin boards outside the departmental offices.

Department of Physical Education

Chairperson: John DeMarie

Faculty

David B. Alexander, Instructor, part time, M.S., Adelphi University: Swimming.

Peter G. Angelo, Assistant Professor, Ph.D., State University of New York at Stony Brook: Aquatics; first aid and cardiopulmonary resuscitation.

Kathleen P. Borbet, Lecturer, part time, A.A., State University of New York College of Technology at Farmingdale: Aerobics.

David Caldiero, Instructor, M.S., University of Bridgeport: Football; general physical education.

John DeMarie, Associate Professor, M.A., Adelphi University: General physical education.

Beckie Dickinson, Lecturer, M.A., Niagara University: Basketball.

Susan DiMonda, Assistant Professor, M.A., Adelphi University: General physical education.

Paul J. Dudzick, Associate Professor, M.A., State University of New York at Stony Brook: General physical education.

John Espey, Associate Professor, M.A., University of North Carolina at Chapel Hill: Lacrosse; general physical education.

Nobuyoshi Higashi, Associate Professor, part time, M.A., New York University: Self-defense; judo.

Samuel B. Kornhauser, Associate Professor and Director of Men's Athletics, M.S., Southern Illinois University: Football.

Kathyrn Ann Koshansky, Assistant Professor, M.S., University of Illinois at Urbana-Champaign: Athletic training. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1989, and the President's Award for Excellence in Teaching, 1989.

Gregory Laub, Lecturer, part time, M.B.A., Adelphi University: First aid and cardiopulmonary resuscitation.

George Lukemire, Assistant Professor, part time, B.S., Cornell University: Horsemanship.

Colin A. Martindale, Associate Professor and Director of Professional Studies, Ph.D., City University of New York: General physical education.

Richard B. Miekley, Jr., Lecturer, M.S., Ohio University: Athletic training; general physical education.

Susan Moor, Assistant Professor, part time, M.S., Smith College: General physical education.

Masataka Mori, Associate Professor, part time, B.A., Takushoku University: Self-defense; karate.

John W. Ramsey, Associate Professor Emeritus, M.S., Hofstra University: General physical education.

Susan Ryan, Assistant Professor, M.A., State University of New York at Stony Brook: Soccer; general physical education.

Nicholas Sansom, Instructor, M.A., Adelphi University: Soccer; general physical education.

Peter A. Schultheiss, Lecturer, part time, M.S., Adelphi University: Squash.

Matthew Senk, Lecturer, part time, B.S., State University College at Cortland: Baseball.

Robert B. Snider, Assistant Professor Emeritus, B.S., College of William and Mary: General physical education.

Mansour Tabibnia, Lecturer, part time, B.A., St. John's University: Tennis.

RossJames Tazzetta, Lecturer, part time, B.A., State University of New York at Stony Brook: First aid and cardiopulmonary resuscitation.

Theresa Tiso, Associate Professor, M.S., State University College at Cortland: Volleyball; wellness; general physical education.

Bernard Tomlin, Lecturer, B.A., Hofstra University: Basketball

David Villano, Lecturer, part time, Certificate, Dance Educators of America: General physical education.

Sandra Weeden, Associate Professor and Director of Women's Athletics, M.Ed., University of North Carolina at Greensboro: General physical education.

Adjunct Faculty
Estimated number: 3

Teaching Assistants
Estimated number: 3

The Department of Physical Education is dedicated to developing the abilities and character of each student in order to foster a healthy and productive life. The curriculum is directed toward helping each student acquire a foundation in movement, skill, knowledge, and appreciation that has lifetime application.

The Department of Physical Education supports and is enhanced by the positive interaction among intramurals, intercollegiate athletics, and related School of Professional Development and Continuing Studies (S.P.D.) programs.

Students in the College of Arts and Sciences may offer a maximum of ten PEC credits, including no more than four credits of 100-level courses, toward the 120 credits required for the bachelor's degree. Only three credits of physical education may be counted toward degree requirements in the College of Engineering and Applied Sciences.

Facilities

Indoor sports facilities are housed in the Indoor Sports Complex, which has a main arena that seats 3,900 for basketball and volleyball and 5,000 for special events such as lectures, concerts, and graduation ceremonies. The complex contains a four-lane, five-sprint-lane track (177 meters in distance); six glass, back-walled squash courts, locker room facilities including six team rooms, and a training room with capacity for hydrotherapy and electrotherapy.

The complex also includes a gymnasium that seats 1,800 for basketball or volleyball. When not in use for competition, the gymnasium contains three multipurpose courts suitable for basketball, volleyball, badminton, and indoor soccer. The facility also houses a six-lane, 25-yard pool, eight racquetball courts, two Universal weight rooms, a dance studio, and an exercise room.

Outdoor physical education and athletic facilities extend over 25 acres and include the 2,500-seat Seawolves Field, which is the home of football and lacrosse; 20 tennis courts; a six-lane, 400-meter running track; four single-wall handball/paddleball courts; and fields for varsity soccer, baseball, and softball. Intramural fields are available for softball, touch football, soccer, beach volleyball, and many other sports.

Most facilities may be used for recreational purposes when they are not scheduled for classes, intercollegiate athletics, intramural competitions, or special events. Current schedules of 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 whether or not they can safely participate in a particular program should be evaluated at the University Health Service.

Neither the Department of Physical Education nor the State University of New York maintains liability insurance coverage associated with the activities or events sponsored by the department, the Sports Complex and related sports facilities, or the University. Students assume full and complete responsibility for obtaining proper health and accident insurance coverage.

Areas of Activity

Individual and Team Sports, Self-Defense, Physical Conditioning
PEC 101, 102, 103, 105, 106, 107, 108, 109, 110, 113, 133, 134, 136, 137, 145, 146, 147, 148, 151, 152, 153, 159, 164, 240

Swimming and Water Safety
PEC 120, 121, 122, 123, 124, 125, 127, 129, 223, 225, 226, 227, 228, 229

Horsemanship
PEC 180, 181, 282

First Aid and Athletic Training
PEC 270, 271, 272, 310, 311, 312, 313, 314

Participation in Intercollegiate Athletics
PEC 188-199

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. PEC courses do not satisfy D.E.C. requirements.

PEC 101 Racquetball
A basic course in racquetball covering skills, rules, safety, court etiquette, and competition. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 102 Racquetball II
All aspects of competitive racquetball, emphasizing advanced strategies, kill shots, a variety of serves, and a thorough understanding of the rules. Class competitions and tournament play are also included. Satisfactory/Unsatisfactory grading only.
Prerequisite: PEC 101
Spring, 1 credit

PEC 103 Beginning Squash
A basic course in squash covering skills, rules, safety, court etiquette, and competition. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 105 Weight Control
A course designed for the overweight person 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. Satisfactory/Unsatisfactory grading only.
Prerequisite: Written approval of student's family physician
Spring, 1 credit

PEC 106 Basic Karate
Instruction in and practice of the fundamentals of karate. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 107 Intermediate Karate
A continuation of skills instruction in karate beyond the beginner's level with testing for the various degree levels. Satisfactory/Unsatisfactory grading only.
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). Satisfactory/Unsatisfactory grading only.
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. Satisfactory/Unsatisfactory grading only.
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 is 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. Satisfactory/Unsatisfactory grading only.
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 is an introduction to bouts. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 120 Basic Swimming
Designed to equip students at the beginner's level with basic swimming skills and knowledge. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 121 Intermediate Swimming
Designed to equip the deep-water swimmer with more advanced strokes and water skills. Satisfactory/Unsatisfactory grading only.
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. Also includes instruction in basic rescue and water safety. Satisfactory/Unsatisfactory grading only.
Prerequisites: PEC 121; skill proficiency test
Fall, 1 credit

PEC 123 Lifeguard Training I
The first in a two-semester sequence leading to certification as an American Red Cross lifeguard. Course content includes elementary rescue techniques, boating and equipment rescues, and swimming rescues. Satisfactory/Unsatisfactory grading only.
Prerequisite: PEC 122
Fall, 2 credits

PEC 124 Lifeguard Training II
Preparation for the Red Cross certification in lifeguard training. The material 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. Satisfactory/Unsatisfactory grading only.
Prerequisite: PEC 123
Spring, 2 credits

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 is also given in order to improve efficiency of movement. Satisfactory/Unsatisfactory grading only.
Prerequisite: Intermediate-level swimming proficiency
Spring, 1 credit

PEC 127 Hydro-Aerobics
A water exercise program appropriate for individuals at all fitness levels. Strong emphasis will be on cardiovascular conditioning; exercises that develop flexibility, muscular strength, and endurance are also included. The natural buoyancy and resistance of water make this activity well suited for individuals who are overweight or physically impaired and who wish to achieve and maintain fitness levels while avoiding the risk of injury. Satisfactory/Unsatisfactory grading only.
Spring, 1 credit

PEC 133 Aerobic Dancing
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. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 134 Step Aerobics
Advanced body conditioning using steps to enhance cardiovascular fitness. Energetic dance forms are combined with warm-ups, muscle-strengthening exercises, and cool-down. Satisfactory/Unsatisfactory grading only.
Prerequisite: PEC 133
Fall and spring, 1 credit

PEC 136 Basic Social Dance
Fundamental steps in such ballroom dances as fox trot, waltz, rhumba, cha-cha, tango, and lindy. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 137 Intermediate Social Dance
The presentation of additional steps to those dances taught in PEC 136, as well as the introduction of several new dances. Emphasis is placed on the following: good standards of leading and following; use of proper footwork, positioning, and styling; music recognition; and interchanging certain steps from one style of dance to another. Satisfactory/Unsatisfactory grading only.
Prerequisite: PEC 136
Fall, 1 credit

PEC 145 Basic Physical Conditioning
The acquisition of appropriate skills in and appreciation of physical conditioning. Instruction is primarily devoted to improvement of muscular strength, flexibility, and endurance with some effort given to weight control. Activities include weight training with the Universal gym machine or free weights, stretching, calisthenics, and other activities known for their physical conditioning benefits. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 146 Advanced Physical Conditioning
The maintenance and improvement of advanced levels of fitness. Instruction is primarily devoted to improvement of muscular strength, flexibility, and endurance. Activities include weight training with the Universal gym machine or free weights, stretching, calisthenics, and other activities known for their physical conditioning benefits. Satisfactory/Unsatisfactory grading only.
Prerequisite: PEC 145
Fall and spring, 1 credit

PEC 147 Aerobic Running
A fundamental course in body conditioning with stress on cardiovascular endurance, muscular endurance, and flexibility. Students develop an ability to maintain a high degree of aerobic fitness through long-distance running. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 148 Advanced Aerobic Running
The improvement of the intermediate-level runner to a higher level of fitness. The course provides an in-depth study and practice of running. The physiological, emotional, and nutritional aspects of aerobic fitness are emphasized to prepare the student for road racing. Students are required to serve as volunteer workers for one road race and as participants in at least three 5-to-15 kilometer races. Satisfactory/Unsatisfactory grading only.
Prerequisite: PEC 147
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 are included. Satisfactory/Unsatisfactory grading only.
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 are included. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 153 Basic Golf
The history and traditions, rules, skills, physical training, and practice routines of golf. Lectures, demonstrations, skill development practice, and group and individual instruction lead to actual play at selected area golf courses. An extra fee course. Satisfactory/Unsatisfactory grading only.
Fall and spring, 1 credit

PEC 159 Badminton
A comprehensive course designed to develop basic and intermediate-level skill in badminton. Rules, strategies, court courtesy, and competition are also covered. Satisfactory/Unsatisfactory grading only.
Fall and spring, 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. Satisfactory/Unsatisfactory grading only.
Fall, 1 credit (not offered in 1995-96)

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 begins the study of the environmental needs of the horse. An extra-fee course. Satisfactory/Unsatisfactory grading only.
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 are refined, and cross-country and beginning jumping are covered. Theory includes breeds, colors, and sports. An extra-fee course. Satisfactory/Unsatisfactory grading only.
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 are covered. May be repeated for credit as far as the limit on 100-level PEC courses permits. Satisfactory/Unsatisfactory grading only.
Prerequisite: Permission of instructor
Fall or spring, 1 credit each

PEC 223 Water Safety Instructor
A course designed to help the student meet the requirements for certification as a Red Cross water safety instructor.
Prerequisites: PEC 123; skill proficiency test
Spring, 2 credits

PEC 225, 226 Instructor of Adapted Aquatics I, II
A two-semester sequence leading to American Red Cross instructor certification in adapted aquatics. Course content emphasizes the adaptation of the aquatic environment and skills to meet the needs of children and adults with a wide spectrum of mental, emotional, physical, and multiple disabilities. Class time is equally divided between lecture/recitation and clinical work in the swimming pool. The courses may be completed in either order for certification.
Prerequisite: PEC 223
Fall (225) and spring (226), 2 credits each semester

PEC 227, 228 Instructor of Lifeguard Training I, II
A two-course sequence designed to meet the American Red Cross certification as instructor of lifeguard training. The course includes teaching methods for physical skills in advanced lifesaving and general rescue.
Prerequisites to PEC 227: PEC 124 and 223; permission of instructor
Prerequisites to PEC 228: PEC 227; permission of instructor
Fall (227) and spring (228), 2 credits each semester

PEC 229 Fieldwork in Adapted Aquatics Instruction
Provides currently certified instructors of adapted aquatics with additional knowledge and practical experience in teaching swimming to persons with disabilities. The course may also be used by experienced instructors who wish to update or renew Red Cross certification in aquatics. May be repeated twice.
Prerequisite: PEC 226
Fall and spring, 1 credit

PEC 240 Introduction to Wellness
An introduction to healthy living in the areas of fitness, nutrition, and stress reduction. By understanding the interactive influences of the dimensions of wellness, the individual learns about self-responsibility when making lifestyle choices.
Spring, 2 credits

PEC 270 First Aid and Cardiopulmonary Resuscitation
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. An extra-fee course.
Fall and spring, 2 credits

PEC 271 Instructor of Cardiopulmonary Resuscitation
Covers the Red Cross certification requirements for Instructor of Community Cardiopulmonary Resuscitation (CPR) and Instructor of Basic Life Support Cardiopulmonary Resuscitation. The course includes teaching methods and protocols of cardiopulmonary resuscitation, including infant, child, and adult procedures.
Prerequisites: PEC 270; permission of instructor
Fall and summer, 2 credits

PEC 272 Instructor of First Aid
Covers the Red Cross certification requirements for Instructor of Standard First Aid. The course includes teaching methods and protocols for effective first-response techniques in various emergencies, including treatment of bleeding, burns, fractures and dislocations, and sudden illness.
Prerequisites: PEC 270; permission of instructor
Spring and summer, 2 credits

PEC 282 Intermediate Horsemanship
A stable management course: the care of the horse and the control of his environment; first aid and training of the young horse. Riding covers sophisticated jumping techniques in the ring and in the hunt course. 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 occuring in athletics. The nature and evaluation of injuries, their mechanisms, protective devices utilized, and

rehabilitation are discussed. Consists of lecture and laboratory experience.
Prerequisites: BIO 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 are emphasized. Consists of lecture and laboratory experience.
Prerequisites: PEC 310; Red Cross first aid and CPR certification
Spring, 3 credits

PEC 312, 313, 314 Athletic Training Practicum
Advanced practical experience under professional supervision in athletic training. The student is assigned to a sport-related activity (such as an intercollegiate sport or an intramural season) and assumes the responsibility for injury prevention, recognition, emergency care, and rehabilitation.
Prerequisite: PEC 311
Fall (312, 313) and spring (313, 314), 2 credits each

PEC 475 Undergraduate Teaching Practicum I
Selected undergraduates assist faculty members teaching physical education activity classes. In addition to working as tutors during instructional periods, students have regular conferences with a faculty supervisor. Student effort concentrates on teaching motor skills, class safety, principles of sportsmanship, and basic coaching strategies. Satisfactory/Unsatisfactory grading only.
Prerequisites: Advanced skill level; permission of instructor and department
Fall and spring, 2 credits

PEC 476 Undergraduate Teaching Practicum II
Advanced training in the methods of planning for physical education classes, administration of sports skills testing, and advanced coaching strategies. Students are expected to assume greater responsibility in small unit coaching in team sports and concentrated individual coaching in lifetime sports. Satisfactory/Unsatisfactory grading only.
Prerequisites: PEC 475; permission of instructor and department
Fall and spring, 2 credits

Department of Physics

Chairperson: Gene D. Sprouse

Director of Undergraduate Studies: Robert L. McCarthy

Faculty

Philip B. Allen, Professor, Ph.D., University of California, Berkeley: Theoretical solid-state physics; superconductors and superconductivity.

Dimitri Averin, Assistant Professor, Ph.D., Moscow State University: Solid-state physics.

Nandor L. Balazs, Professor, Ph.D., University of Amsterdam: Theoretical physics; statistical mechanics; general relativity.

Ilan Ben-Zvi, Adjunct Professor, Ph.D., Weizmann Institute: Accelerator and beam physics.

Peter Braun-Munzinger, Professor, Ph.D., University of Heidelberg: Experimental nuclear physics.

Gerald E. Brown, Distinguished Professor, Ph.D., Yale University; D.Sc., University of Birmingham: Theoretical nuclear physics. Member, Institute for Theoretical Physics.

Robert L. deZafra, Professor, Ph.D., University of Maryland at College Park: Experimental atomic physics; optical pumping and double resonance quantum electronics.

Carl Dover, Adjunct Professor, Ph.D., Massachusetts Insititute of Technology: Theoretical nuclear physics.

Roderich Engelmann, Professor, Ph.D., University of Heidelberg: Experimental elementary particle physics.

Richard C. Fernow, Adjunct Professor, Ph.D., Syracuse University: Experimental accelerator physics.

Guido Finocchiaro, Professor, Ph.D., Catania University: Experimental particle physics.

David B. Fossan, Professor, Ph.D., University of Wisconsin-Madison: Experimental nuclear physics; nuclear structure and reactions.

Marvin Geller, Adjunct Professor, Ph.D., Massachusetts Institute of Technology: Atmospheric dynamics.

Alfred S. Goldhaber, Professor, Ph.D., Princeton University: Theoretical physics; nuclear theory; particle physics. Member, Institute for Theoretical Physics.

Vladimir Goldman, Associate Professor, Ph.D., University of Maryland at College Park: Experimental low-temperature physics.

Erlend H. Graf, Associate Professor, Ph.D., Cornell University: Experimental low-temperature physics.

Paul D. Grannis, Professor, Ph.D., University of California, Berkeley: Experimental high-energy physics; elementary particle reactions.

Michael Gurvitch, Professor, Ph.D., State University of New York at Stony Brook: Experimental solid-state physics.

Thomas Hemmick, Assistant Professor, Ph.D., University of Rochester: Experimental relativistic heavy-ion nuclear physics.

Terence Hwa, Assistant Professor, Ph.D., Massachusetts Institute of Technology: Solid-state theory.

Andrew D. Jackson, Professor, Ph.D., Princeton University: Nuclear theory.

Chris Jacobsen, Assistant Professor, Ph.D., State University of New York at Stony Brook: X-ray physics.

Jainendra Jain, Associate Professor, Ph.D., State University of New York at Stony Brook: Theoretical solid-state physics.

Chang Kee Jung, Assistant Professor, Ph.D., Indiana University: Experimental high-energy physics.

Peter B. Kahn, Professor, Ph.D., Northwestern University: Theoretical physics; the many-body problem; statistical properties of spectra; curriculum development.

Janos Kirz, Professor, Ph.D., University of California, Berkeley: Experimental particle physics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1976.

Peter M. Koch, Professor, Ph.D., Yale University: Experimental atomic physics; synchrotron radiation.

Vladimir Korepin, Professor, Ph.D., Leningrad University: Exactly solvable models in quantum field theory. Member, Institute for Theoretical Physics.

T.T.S. Kuo, Professor, Ph.D., University of Pittsburgh: Nuclear theory.

Linwood L. Lee, Jr., Professor, Ph.D., Yale University: Experimental nuclear structure.

Juliet Lee-Franzini, Adjunct Professor, Ph.D., Columbia University: Experimental particle physics.

Konstantin Likharev, Professor, Ph.D., Moscow State University: Solid-state physics.

James Lukens, Professor, Ph.D., University of California, San Diego: Experimental solid-state physics.

Robert L. McCarthy, Professor, Ph.D., University of California, Berkeley: Experimental elementary particle physics.

Barry M. McCoy, Professor, Ph.D., Harvard University: Statistical mechanics. Member, Institute for Theoretical Physics.

Robert L. McGrath, Professor, Ph.D., University of Iowa: Experimental physics; nuclear structure.

John H. Marburger, University Professor, Ph.D., Stanford University: Theoretical laser physics.

Michael Marx, Professor, Ph.D., Massachusetts Institute of Technology: Experimental high-energy physics.

Emilio Mendez, Professor, Ph.D., Massachusetts Institute of Technology: Solid-state experimental physics.

Harold J. Metcalf, Professor, Ph.D., Brown University: Atomic physics; level crossing techniques. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974.

Laszlo Mihaly, Professor, Ph.D., University of Budapest: Experimental low-temperature physics.

Mohammad Mohammadi, Assistant Professor, Ph.D., University of Wisconsin-Madison: High-energy physics.

Richard A. Mould, Associate Professor, Ph.D., Yale University: Theoretical physics; general relativity; quantum theory of measurements.

Herbert R. Muether, Professor, Ph.D., Princeton University: Experimental nuclear physics; neutron physics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1978.

Robert Nathans, Professor, Ph.D., University of Pennsylvania: Experimental solid-state physics.

Hwa-Tung Nieh, Professor, Ph.D., Harvard University: Theoretical physics; elementary particles. Member, Institute for Theoretical Physics.

Luis Orozco, Assistant Professor, Ph.D., University of Texas at Austin: Experimental atomic physics.

Robert Palmer, Adjunct Professor, Ph.D., Imperial College: Accelerator physics.

Peter Paul, Distinguished Service Professor, Ph.D., University of Freiburg: Experimental nuclear physics.

Michael Rijssenbeek, Professor, Ph.D., University of Amsterdam: Experimental high-energy physics.

Martin Rocek, Professor, Ph.D., Harvard University: Theoretical physics. Member, Institute for Theoretical Physics.

Robert Shrock, Professor, Ph.D., Princeton University: Theoretical physics; gauge theories. Member, Institute for Theoretical Physics.

Edward Shuryak, Professor, Ph.D., Novosibirsk Institute of Nuclear Physics: Theoretical nuclear physics.

Warren Siegel, Professor, Ph.D., University of California, Berkeley: Theoretical physics; strings. Member, Institute for Theoretical Physics.

Henry B. Silsbee, Professor Emeritus, Ph.D., Harvard University: Experimental physics; molecular and atomic beams; magnetic resonance.

John Smith, Professor, Ph.D., University of Edinburgh: Elementary particle physics. Member, Institute for Theoretical Physics.

Gene D. Sprouse, Professor, Ph.D., Stanford University: Experimental nuclear structure.

Johanna Stachel, Professor, Ph.D., University of Mainz: Experimental nuclear structure.

Peter W. Stephens, Professor, Ph.D., Massachusetts Institute of Technology: Experimental solid-state physics.

George Sterman, Professor, Ph.D., University of Maryland at College Park: Theoretical physics; elementary particles. Member, Institute for Theoretical Physics.

Arnold A. Strassenburg, Professor, Ph.D., California Institute of Technology: Experimental particle physics; high-energy instrumentation; curriculum development.

Clifford E. Swartz, Professor, Ph.D., University of Rochester: Experimental high-energy physics; school curriculum revision.

Peter van Nieuwenhuizen, Professor, Ph.D., Utrecht University: Theoretical physics. Member, Institute for Theoretical Physics.

Jacobus Verbaarschot, Assistant Professor, Ph.D., University of Utrecht: Nuclear theory.

William I. Weisberger, Professor and Graduate Studies Director, Ph.D., Massachusetts Institute of Technology: Theoretical physics. Member, Institute for Theoretical Physics.

Chen Ning Yang, Einstein Professor and Director of Institute for Theoretical Physics, D.Sc., Princeton University; Ph.D., University of Chicago: Theoretical physics; field theory; statistical mechanics; particle physics.

Ismail Zahed, Associate Professor, Ph.D., Massachusetts Institute of Technology: Theoretical nuclear physics.

Teaching Assistants
Estimated number: 38

The main goal of the physics program is to teach students how to think about the world in a scientific manner. This basic education is applicable to many fields (physics, engineering, computer programming, astronomy, geology, biophysics, medicine, medical technology, teaching, law, business, etc.). Students preparing for research in physics or a related field should consider meeting the requirements of the physics major with honors. Students should see their advisors often in order to plan course programs that remain current with their interests.

Requirements for the Major in Physics

The major in physics leads to the Bachelor of Science degree. All courses must be taken for a letter grade.

Completion of the major requirements entails approximately 64 credits.

A. Courses in Physics

The following eleven courses: PHY 131, 132, 251, 262, 301, 303, 306, 308, 335, 352, 445. Each upper-division course must be completed with a grade of C or higher and at least four of these upper-division courses must be taken at Stony Brook.

Note: PHY 125, 126, 127 or 141, 142 may be substituted for PHY 131, 132.

B. Courses in Mathematics

Equivalency for MAT courses achieved on the Mathematics Placement Examination is accepted as fulfillment of the corresponding requirements without the necessity of substituting other credits.

1. One of the following sequences: MAT 131, 132 or 141, 142 or 124, 126, 127 or 125, 126, 127
2. MAT 205 or 203 or AMS 261
3. MAT 305 or 303 or AMS 361

C. Courses in Related Fields

Twelve credits of acceptable physics-related courses that complement a physics major's education. A list of acceptable courses is posted in the Physics Undergraduate Office.

D. Upper-Division Writing Requirement

Students satisfy this requirement in conjunction with their laboratory work in PHY 262, 335, 352, or 445. The student's proficiency in writing according to standards of acceptable scientific communication is judged by examination of the student's laboratory reports by the faculty member in charge of the course. Each student must attempt to pass this requirement

before the end of the junior year. If the first attempt is judged unsatisfactory, the student must repeat the writing effort until a satisfactory level is achieved. Students must notify the instructor at the beginning of the semester when they intend to use the course's laboratory reports for this requirement. The satisfaction of the writing requirement is certified independently of the course grade.

Honors

To receive the Bachelor of Science in physics with honors, a student must take ten courses in the department numbered 300 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 131 Classical Physics I *or* 141 Classical Physics I: Honors
PHY 132 Classical Physics II *or* 142 Classical Physics II: Honors
MAT 131 Calculus I
MAT 132 Calculus II

Sophomore Year
PHY 251 Modern Physics
PHY 262 Introduction to Solid-State Physics
MAT 205 Calculus III
MAT 305 Calculus IV
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
PHY 335 Electronics and Instrumentation Laboratory
PHY 352 Optics and Waves
MAT 341 Applied Real Analysis
MAT 342 Applied Complex Analysis

Senior Year
PHY 405 Advanced Quantum Physics
PHY 445 Senior Laboratory I
At least two courses selected from:
PHY 403 Nonlinear Dynamics
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 Department that satisfy his or her educational goals.

The Physics of Materials Program

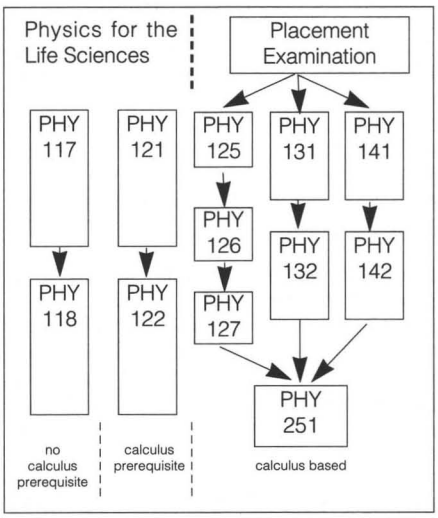
A student wishing to pursue a career in engineering physics with emphasis on materials science and engineering would, in addition to completing the requirements for the B.S. in physics, take courses during the junior and senior years in the Department of Materials Science and Engineering. After the successful completion of a minimum of five courses in the Department of Materials Science and Engineering (the student should consult with the directors of undergraduate studies in both the Department of Physics and 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.

Teacher Preparation Program in Physics

This program is designed for the student who is preparing to teach physics in secondary schools. Professional courses are provided through the Center for Science, Mathematics, and Technology Education, whose courses are described on p. 204.

Basic Physics Sequences

The courses PHY 131, 132 (or 141, 142 or 125, 126, 127) and 251 present an intensive introduction to classical and modern physics for those who may major in physics, some other physical science, or engineering. Entering students interested in this course sequence must take the Physics Placement Examination, which determines whether they should take the intensive 131, 132 sequence or the 125, 126, 127 sequence, which teaches the same material in three semesters. The flow chart below shows the five basic physics sequences available. (In the PHY 125, 126, 127 sequence 126 and 127 may be taken in either order.



Courses

See p. 77 Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. A letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

Any course numbered 200 or above that is to be used as a prerequisite for a physics course must be completed with a grade of C or higher.

PHY 111-E The Physics of Musical Sound
A discussion of the physical basis of music starting with the nature of sound itself and its human perception, then proceeding through discussions of pitch, loudness, spectrum analysis of musical instruments, architectural acoustics, and the high-fidelity reproduction of recorded music. Hypotheses about the nature and perception of sound are developed through comparison of the predictions of quantitative models with the results of experimentation (some of which are demonstrated in lecture).
Prerequisite: Satisfaction of entry skill in mathematics requirement
Fall or spring, 3 credits

PHY 112-E Light, Color, and Vision
An introduction for the non-science major to the modern theories of light, color, and vision. Topics include quantum theory, relativity, geometrical optics, photography, optical instruments, and human vision. Not for major credit.
Prerequisite: Satisfaction of entry skill in mathematics requirement
Fall or spring, 3 credits

PHY 117-E, 118-E Physics and Biological Systems
A one-year sequence in introductory physics for students entering undergraduate health science professional programs. Topics 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 are 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 121-E, 122-E Physics for the Life Sciences *(Formerly PHY 103, 104)*
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 lecture hours, one recitation, and two laboratory hours per week. Credit cannot be received for PHY 121 and either PHY 125 or 131 or 141, or for PHY 122 and either PHY 126, 127, 132, or 142.
Prerequisites for PHY 121: MAT 124 or 125 or 131 or 141; CHE 132 or 142
Prerequisite for PHY 122: PHY 121
Fall and spring, 4 credits each semester

PHY 125-E Classical Physics A
An introductory survey of the mechanics of point particles and extended objects. Particular emphasis is placed upon motion in one and two dimensions and upon the concepts of momentum and energy. Calculus is used concurrently with its development in MAT 125. Three lecture hours, one recitation, and two laboratory hours per week. Not for credit in addition to PHY 131, 121, or 141.
Corequisite: MAT 131 or 141 or 125 or 124
Fall and spring, 4 credits

PHY 126-E Classical Physics B
An introduction to fluid mechanics, thermodynamics, wave mechanics, and optics. Three lecture hours, one recitation, and two laboratory hours per week. Not for credit in addition to PHY 132, 122, or 142.
Prerequisite: PHY 125 or 131 or 141
Corequisite: MAT 131 or 141 or 126
Fall and spring, 4 credits

PHY 127-E Classical Physics C
An introductory survey of electromagnetism and electric circuit theory. Particular emphasis is placed upon the concepts of vector fields, scalar potentials, as well as DC and AC circuit theory with real and complex impedances. Calculus is used concurrently with its development in MAT 126. Three lecture hours, one recitation, and two laboratory hours per week. Not for credit in addition to PHY 132, 122, or 142.
Prerequisite: PHY 125 or 131 or 141
Corequisite: MAT 132 or 142 or 126
Fall and spring, 4 credits

PHY 131-E Classical Physics I *(Formerly PHY 101)*
An introductory survey of mechanics, wave motion, kinetic theory, and thermodynamics. Calculus is used concurrently with its development in MAT 131. Three lecture hours, one recitation, and two laboratory hours per week. Not for credit in addition to PHY 121, 125, or 141.
Prerequisite: Passing score on Physics Placement Test; permission of department
Corequisite: MAT 131 or 141 or 126
Fall and spring, 4 credits

PHY 132-E Classical Physics II *(Formerly PHY 102)*
An introductory survey of electromagnetism, electric circuit theory, and optics. Calculus is used concurrently with its development in MAT 132. Three lecture hours, one recitation, and two laboratory hours per week. Not for credit in addition to PHY 122, 126, 127, or 142.
Prerequisite: PHY 131 or 141
Corequisite: MAT 132 or 142 or 127
Fall and spring, 4 credits

PHY 141-E, 142-E Classical Physics I, II: Honors *(Formerly PHY 105, 106)*
A sequence intended for students with strong interests and abilities in science and mathematics. The topics covered are similar to those in PHY 131, 132, but are treated in more depth in a small class setting. Students may transfer to PHY 131, 132 at any time during the first half of each semester without penalty. Three lecture hours, one recitation hour, and one two-hour laboratory per week. Credit cannot be received for PHY 141 and PHY 121, 125, or 131, or for PHY 142 and PHY 122, 126, 127, or 132.
Prerequisite to PHY 141: Permission of department; priority given to Honors College and Honors Program students, Presidential Scholars, and Freshman Scholars
Corequisite to PHY 141: MAT 131 or 141 or 126
Prerequisite to PHY 142: PHY 141 or permission of department
Corequisite to PHY 142: MAT 132 or 142 or 127
Fall (141) and spring (142), 4 credits each semester

PHY 191, 192 Transitional Study
Laboratories for transfer students to supplement courses taken at another institution. Students take the laboratory portion of a 100-level course for which they have taken the theoretical portion elsewhere.
Prerequisite: Permission of department
Fall and spring, 1 credit each semester

PHY 237-H Current Topics in World Climate and Atmosphere
An exploration of current concerns about the greenhouse effect, acid rain, and global ozone loss, in a format accessible to non-science majors. The social and political steps being taken to limit global atmospheric pollution and climate change will be discussed. Not for major credit. Crosslisted with ATM 237.
Prerequisites: Satisfaction of entry skill in mathematics requirement; one D.E.C. category E course
Fall or spring, 3 credits

PHY 251-E Modern Physics
The elements of the special theory of relativity. Wave-particle duality, the concept of wave functions, and other fundamentals of the quantum theory are treated and applied to nuclei, atoms, molecules, and solids. In the laboratory students perform some of the pivotal experiments of the 20th century. Three lecture hours, one recitation hour, and one two-hour laboratory per week.
Prerequisite: PHY 132 or 142 or 126, 127
Pre- or corequisite: MAT 205 or 203 or AMS 261
Fall and spring, 4 credits

PHY 262-E An Introduction to Solid-State Physics
Presentation of important electrical, thermal, and optical properties of solids, particularly semiconductors and superconductors. Topics include crystal structure, wave phenomena in periodic media, phonons, free electron theory of metals, band theory of solids, and their applications. Phenomena introduced in lecture are studied in the laboratory with emphasis on understanding bulk properties of solids in terms of their underlying microstructure.
Prerequisite: PHY 251
Fall and spring, 4 credits

PHY 291 Transitional Study
A laboratory for transfer students to supplement a course taken at another institution. Students take the laboratory portion of a 200-level course for which they have taken the theoretical portion elsewhere.
Prerequisite: Permission of department
Fall and spring, 1 credit

PHY 301-E, 302-E 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.
Prerequisite to PHY 301: PHY 251
Corequisite to PHY 301: MAT 341
Prerequisite to PHY 302: PHY 301
Fall (301) and spring (302), 3 credits each semester

PHY 303-E Mechanics
The Newtonian formulation of classical mechanics is reviewed and applied to more advanced problems than those considered in PHY 131 and 132. The Lagrangian and Hamiltonian methods are then derived from the Newtonian treatment and applied to various problems.
Prerequisites: PHY 251; MAT 305 or 303 or AMS 361
Fall, 3 credits

PHY 306-E Thermodynamics, Kinetic Theory, and Statistical Mechanics
The course is in two parts. Those relations among the properties of systems at thermal equilibrium that 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.
Prerequisite: PHY 251
Fall and spring, 3 credits

PHY 308-E Quantum Physics
The concepts, historical development, and mathematical methods of quantum mechanics. Topics include Schrödinger's equation in time-dependent and time-independent forms; one- and three-dimensional solutions, including the treatment of angular momentum and spin. Applications to simple systems, especially the hydrogen atom, are stressed.
Prerequisites: PHY 262, 301, and 303
Spring, 3 credits

PHY 335 Electronics and Instrumentation Laboratory
An intensive laboratory-based electronics course covering modern electronic circuits and the theory behind them. Topics include AC circuits, digital techniques, and interfacing to computers—involving both the interface hardware and programming in a high-level language such as BASIC or Pascal. Two three-hour laboratories per week.
Prerequisite: PHY 262
Fall and spring, 3 credits

PHY 352-E Optics and Waves
A survey of geometrical and physical optics with associated laboratory. Polarization, interference, and diffraction phenomena are studied. Three lecture hours and one three-hour laboratory per week.
Prerequisite: PHY 301 or ESE 319
Spring, 4 credits

PHY 403 Nonlinear Dynamics
One-dimensional dynamical systems with an emphasis on the development of perturbative sections that are valid for long periods of time. An introduction to bifurcations and chaos is included through a study of the logistic map and Lorenz equations.
Prerequisite: PHY 303
Spring, 3 credits

PHY 405 Advanced Quantum Physics
The quantum mechanical treatment of identical particles, symmetry principles, the structure of multi-electron atoms, perturbation theory with such applications as Zeeman and Stark splitting and radiative transitions, an introduction to advanced operator techniques, and the quantum mechanical description of scattering.
Prerequisites: PHY 303 and 308; MAT 341
Fall, 3 credits

PHY 407 Physics of Continuous Media
Topics to be covered include the response of nonideal solids to stress, the properties of compressible fluids, viscosity, momentum transfer in fluid motion, irrotational flow, wave motion in gases, acoustics, conducting fluids, magneto-hydrodynamic 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 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 are 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 students progress, they 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 to PHY 445: PHY 308 and 335
Prerequisites to PHY 446: PHY 445
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 faculty member 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 undergraduate studies
Fall and spring, 2 to 4 credits each semester at discretion of instructor

PHY 452 Lasers
Introduction to the theory of lasers including resonance conditions, normal modes, optical cavities, and elementary quantum mechanics. Description of types of lasers, methods of control, limitations of power, precision, wavelength, etc. Applications to research, medicine, communication, computing.
Prerequisites: PHY 308 or ESG 333; PHY 352
Fall, 3 credits

PHY 455 Principles of Microscopy
The physical principles underlying various types of microscopy, including light, electron, and scanned-probe microscopies. Both geometrical and Fourier optics treatments are presented, and applications to biological and materials science imaging are emphasized.
Prerequisite: PHY 352
Fall, 3 credits

PHY 461 Modern Physics Research Through Computers
A project-oriented course aimed at developing the basic skills of programming, numerical analysis, and computation in the physical sciences. Emphasis is placed on physical problems in interdisciplinary subjects covering classical physics, quantum physics, and statistical physics. Projects address topical issues in atomic physics, high-energy nuclear and particle physics, and astrophysics. Six hours of laboratories per week.
Prerequisite: PHY 308
Spring, 3 credits

PHY 472 Solid-State Physics
A study of the principal types of solids with emphasis on their thermal, electrical, and optical properties; theory of electrons in metals; energy bands; phonons. Applications to semiconductors, superconductors, magnetism, and 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 meet once a week with a faculty supervisor to discuss problems that have been encountered and to plan future activities. Students are generally 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 122 or 132 or 142 or 126, 127; interview; permission of director of undergraduate studies
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 undergraduate studies
Fall and spring, 2 to 4 credits each semester at discretion of instructor

Graduate Courses

Qualified students may take 500-level courses (subject to University limits, see p. 77) 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

Chairperson: Mark Schneider

Director of Undergraduate Studies: Frank Myers

Faculty

Albert D. Cover, Associate Professor, Ph.D., Yale University: American politics and institutions; legislative politics.

James F.X. Doyle, Lecturer, part time, J.D., Fordham University: Administrative law.

Stanley Feldman, Professor and Graduate Studies Director, Ph.D., University of Minnesota: Political behavior and political sociology; logic of inquiry and research design; statistics.

Robert Huckfeldt, Professor, Ph.D., Washington University: Political behavior; political sociology; research network analysis; dynamic modeling.

Leonie Huddy, Assistant Professor, Ph.D., University of California, Los Angeles: Political psychology; public opinion.

Joel T. Kaji, Assistant Professor, Ph.D., University of Michigan: American politics; methodology.

Elliot Kleinman, Professor, part time, J.D., Brooklyn Law School: Business law.

Lee E. Koppelman, Professor, D.P.A., New York University: Regional planning; resource management.

Milton Lodge, Professor, Ph.D., University of Michigan: Political psychology; political behavior.

Kathleen McGraw, Associate Professor, Ph.D., Northwestern University: Social psychology; cognition; research methods; psychology and the law.

Frank Myers, Professor, Ph.D., Columbia University: Comparative politics; political theory.

Helmut Norpoth, Professor, Ph.D., University of Michigan: Political behavior; legislative process; research process; research methods.

Mitchell H. Pally, Lecturer, part time, J.D., Albany Law School: Legislative and economic affairs; state and local politics.

Merton Reichler, Adjunct Professor Emeritus, M.A., Columbia University: Constitutional law.

Howard A. Scarrow, Professor, Ph.D., Duke University: Comparative politics; American government; political parties. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1987, and the President's Award for Excellence in Teaching, 1987.

Mark Schneider, Professor, Ph.D., University of North Carolina at Chapel Hill: Public policy; urban politics.

John Scholz, Professor, Ph.D., University of California, Berkeley: Public policy; public administration.

Jeffrey A. Segal, Professor, Ph.D., Michigan State University: American institutions; constitutional and public law.

Charles Taber, Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign: International relations; political psychology; foreign policy.

Paul Teske, Associate Professor, Ph.D., Princeton University: Political economy; urban politics; regulatory policy.

Richard J. Timpone, Assistant Professor, Ph.D., State University of New York at Stony Brook: American government; political psychology; methodology.

Martin B. Travis, Professor Emeritus, Ph.D., University of Chicago: International law; comparative foreign policy.

James W. Weller, Lecturer, part time, J.D., Hofstra University: Constitutional law.

Affiliated Faculty

Jeff T. Casey, Harriman School
Lester Paldy, Technology and Society
Olufemi O. Vaughan, Africana Studies

Adjunct Faculty
Estimated number: 4

Teaching Assistants
Estimated number: 6

Requirements for the Major in Political Science

The major in political science leads to the Bachelor of Arts degree. The following courses are required.

Completion of the major requirements entails 39 credits.

A. Study Within the Area of the Major

1. Required courses:
   POL 101 World Politics
   POL 102 American Government
   or POL 105 Honors American Government
   POL 103 Comparative Politics

2. Political Science electives:
   a. All must be selected from courses numbered 200 or above (excluding POL 201), and at least 12 credits must be from courses 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 courses with Satisfactory/Unsatisfactory grading may be applied.
   b. No grade less than C in courses numbered 200 and above may be used to fulfill major requirements.
   c. No more than nine political science credits may be taken at another institution (with exceptions made in the case of planned foreign study). Of the nine credits no more than six may be used toward fulfilling the requirement of 24 credits from courses at the 200 level or above. Only transfer courses with grade of C or higher are accepted.

B. Study in Related Areas

Two courses numbered 300 or above, offered by another department (and not crosslisted with a political science course) 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.

C. Methodology Requirement

Majors must demonstrate competence in appropriate social science methodology by passing with a grade of C or higher any one of the following courses: AMS 102, ECO 320, POL 201, PSY 201, 203, SOC 202, or 311, 312. The department suggests that students fulfill this

requirement no later than the beginning of their junior year. A course taken to fulfill the methodology requirement may not count toward fulfilling any other major requirement.

D. Upper-Division Writing Requirement
Political science majors are expected to fulfill the upper-division writing requirement by the end of their junior year. The requirement may be met in either of two ways:

Method I: Students may submit to the department's director of undergraduate studies a portfolio of papers on subjects relevant to political science. These papers may include term papers or shorter pieces written for political science courses at Stony Brook or elsewhere. There is no requirement concerning the number of papers submitted, but the portfolio must consist of at least 20 pages of material.

Method II: Students may seek to have their writing evaluated by the instructor of any upper-division political science course in which there is an assigned research paper. Writing evaluation forms are available in the department office for students to give to their instructors along with their papers. Students should check with the undergraduate office if they have any questions about whether they have fulfilled the writing requirement.

Students whose writing is not judged adequate should consult with the director of undergraduate studies on further steps to fulfill the writing requirement.

Note: With the exception of POL 287, 488, and 489, all courses in the major must be taken for a letter grade.

Programs of Study

Comparative Politics and International Relations

POL 214, 216, 305, 307, 309, 311, 313, 335, 336, 337, 350, 372, 382, 411, 412. Also 287, 401, 402, 403, 447, 487, and 495 when the topic is applicable.

American Government, Law, and Public Policy

POL 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 334, 336, 344, 347, 350, 351, 358, 359, 364, 365, 366, 367. Also 287, 401, 402, 403, 447, 487, and 495 when the topic is applicable.

Political Behavior and Political Psychology

POL 317, 318, 323, 334, 343, 344, 346, 347, 348, 349, 350, 351, 364, 367, 377. Also 287, 401, 402, 403, 447, 487, and 495 when the topic is applicable.

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 takes 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 takes 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.

Honors Program

Departmental majors with a 3.5 average in political science courses and a 3.0 average overall may enroll in the political science honors program at the end of their junior year. The student, after asking a faculty member to be a sponsor, must submit a proposal to the department describing the research project that is to be the subject of the honors thesis. The supervising faculty member must also submit a statement supporting the student's proposal. If the project is approved by the department, the student may enroll in POL 495-496 Senior Honors Project in Political Science in the fall and spring semesters of the senior year. The honors paper resulting from the student's research is read by two political science faculty members and a faculty member from another department, as arranged by the director of undergraduate studies. If the paper is judged to be of extraordinary merit and the student's record warrants such a determination, honors are conferred.

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 includes two 100-level courses. It also includes six courses from those numbered 200 and above (excluding POL 201), of which at least three must be chosen from upper-division courses. At least four of the courses must be in one of the programs of study listed above.

No more than six credits of courses with Satisfactory/Unsatisfactory grading may be applied to the minor. All courses except POL 287, 488, and 489 must be taken for a letter grade. No grade less than C in courses numbered 200 and above may be used to fulfill minor requirements. No more than nine credits may be taken at another institution, and of these no more than six credits may be used toward the requirement of 18 credits from courses numbered 200 and above. Only transfer courses graded C or higher are accepted for minor credit.

Courses

See p. 77, Course Credit and Prerequisites, and p 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

POL 101-F 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 are considered according to various models of national and international conflict. The relationship between the characteristics of nations and their foreign policies is studied on a comparative basis.
Fall and spring, 3 credits

POL 102-F 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. May not be taken for credit in addition to POL 105.
Fall and spring, 3 credits

POL 103-F 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 105-F Honors Introduction to American Government
An enriched introduction to American government. Topics covered include political participation, public opinion, voting and elections,

parties, interest groups, federalism, Congress, the Presidency, the bureaucracy, the judiciary, and public policy formation. This course requires more reading and more written work than does POL 102. May not be taken for credit in addition to POL 102.
Prerequisites: Permission of department; priority given to Honors College and Honors Program students, Presidential Scholars, and Freshman Scholars.
Fall or spring, 3 credits

POL 121 Library Skills for Research in American Politics
A workbook and workshop approach is used to teach library skills and bibliographic resources. Workshops throughout the semester provide adequate contact between students and librarians. Reference and other library materials of special interest to political science students are covered. Skills such as the use of catalogs, bibliographies, and special indexes are also treated. Not for credit in addition to PSY 121 or SOC 121.
Fall or spring, 1 credit

POL 201-C Introduction to Statistical Methods in Political Science
Elementary statistical methods in empirical political science, focusing on the analysis of public opinion, survey research designs, sampling, and probability. The course considers the application of descriptive and inferential statistics to testing hypotheses on various political issues. May not be taken for credit after AMS 102, ECO 320, PSY 201, 203, SOC 202 or 311, 312.
Prerequisites: Satisfaction of entry skill in mathematics requirement; POL 101 or 102 or 103 or 105
Fall and spring, 3 credits

POL 214-J 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. Crosslisted with HIS 214.
Prerequisite: One 100-level HIS course
Spring, 3 credits

POL 216-J 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 considers changes in American policy toward Latin America, as well as the varying responses of Latin American nations to U.S. intervention and influence. Crosslisted with HIS 216.
Prerequisite: One 100-level HIS course
Fall, 3 credits (not offered in 1995-96)

POL 287 Introductory Research in Political Science
Supervised research experience open to all undergraduates as part of the University's URECA Program. Students assist faculty members in various aspects of research on political science topics. Assignments vary depending on background and interests of students. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits, but only six credits may count toward major or minor requirements in political science.
Prerequisite: Permission of departmental URECA coordinator
Fall and spring, 1 to 6 credits

POL 305-I Government and Politics of the United Kingdom
Examination of the political system of Great Britain and Northern Ireland, including the Constitution, parliament, cabinet, political parties, and the policy-making process.
Prerequisites: POL 103; one other social science course
Fall or spring, 3 credits

POL 307-I Politics in Germany
An examination of governmental institutions and policy making in Germany with special emphasis on the development of democracy, the process of national unification, political culture, citizen politics, party government, and Germany's role within the European Community and the North Atlantic Treaty Organization.
Prerequisite: POL 103
Fall or spring, 3 credits

POL 309-I Politics in France and Italy
Examination of the political process in France and Italy, focusing on selected topics of comparative interest, such as constitutional structure and interpretation; legislative-executive relations; social, cultural, and economic bases of democratic politics; political ideologies; and relations with the European Community.
Prerequisite: POL 103
Fall or spring, 3 credits

POL 311-F Introduction to International Law
Casebook 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 or spring, 3 credits

POL 313-F 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.
Prerequisites: POL 101; POL 201 or any other course satisfying the major's methodology requirement
Fall or spring, 3 credits

POL 317-F American Election Campaigns
The politics of presidential nominations through primaries, caucuses, and conventions; the conduct of presidential general election campaigns; mass media coverage and opinion polling; the citizen's involvement in campaign politics; voter attitudes toward parties, candidates, and issues; and the interpretation of electoral outcomes.
Prerequisite: POL 102 or 105
Fall or spring, 3 credits

POL 318-F Voters and Elections
An examination of how citizens make electoral decisions, including the decision to participate at all in elections. The course compares models of voter behavior and probes the influence of such factors as party identification, opinions on issues, ideological orientations, and candidate evaluations. In addition, the social and economic context of voting is explored, as is the importance of elections for policy-making and the functioning of the political system.
Prerequisites: POL 102 or 105; POL 201 or any other course satisfying the major's methodology requirement
Fall or spring, 3 credits

POL 319 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, antitrust laws, and environmental and civil rights regulations. May not be taken for credit in addition to the discontinued POL 261.
Prerequisites: Upper-division standing; two D.E.C. category F courses
Fall and spring, 3 credits

POL 320-F 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 policy-making role in economic regulation.
Prerequisite: POL 102 or 105
Fall and spring, 3 credits

POL 321-F 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 is placed in the setting of American politics, i.e., in the context of legislative, executive, party, and community behavior. May not be taken for credit in addition to the discontinued POL 220.
Prerequisite: POL 102 or 105
Fall, 3 credits

POL 322-F 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 or 105
Fall or spring, 3 credits

POL 323-F 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 or 105
Fall or spring, 3 credits

POL 324-F 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 or 105
Fall or spring, 3 credits

POL 325-F Civil Liberties and Civil Rights
A systematic treatment of leading Supreme Court decisions in such areas as freedom of speech, the press, and religion; the rights of criminal defendants; voting rights; the right to privacy; and discrimination on grounds of race, sex, poverty, illegitimacy, and alienage.
Prerequisite: POL 320
Fall or spring, 3 credits

POL 326-F Politics of New York State
Analysis of parties, pressure groups, and the political process in New York State. Particular attention is paid to the legislative process in Albany.
Prerequisite: POL 102 or 105
Fall or spring, 3 credits

POL 327-K Urban Politics
Emphasizes both the formal and informal political institutions and processes in American cities and suburbs, including governmental structures, political parties, interest groups, and service delivery systems. Special attention is given to the multiethnic and multicultural context within which urban politics in the United States takes place.
Prerequisite: POL 102 or 105
Fall or spring, 3 credits

POL 328-F Criminal Law
A survey of substantive and procedural criminal law as it applies to traditional and contemporary penal issues, including a review of relevant U.S. and New York constitutional, statutory, and case law provisions.
Prerequisite: POL 320
Fall or spring, 3 credits

POL 329-F Administrative Law
A study of substantive and procedural law as it applies to administrative actions at the federal, state, and local levels of government. Includes a review of relevant constitutional, statutory, and administrative acts; case law; and court rulings on some current administrative issues.
Prerequisite: POL 320
Fall and spring, 3 credits

POL 330-K Women and the Law
An exploration of areas of American law that have had a particular impact on the personal and professional lives of women such as employment discrimination, child custody, the battered spouse syndrome, and property laws affecting women. In addition, the course examines the obstacles to the advancement of women in the legal profession including gender bias in the court systems and the tension between career and family responsibilities. Crosslisted with WNS 330.
Prerequisite: POL 102 or 105 or WNS/SSI 102
Fall or spring, 3 credits

POL 331-F Law and Political Representation
An examination of the leading federal court decisions relating to a citizen's right to participate and be fairly represented in government. Topics include voter qualifications, legislative apportionment, political and racial gerrymandering, the evolution of the Voting Rights Act, and the rights of political parties and interest groups.
Prerequisite: POL 320
Fall or spring, 3 credits

POL 332-F Criminal Law Procedure
A survey of the procedural steps through which a criminal case passes, commencing with the initial investigation of a crime; covering the laws and court rules governing arrest, search and seizure, bail, and fair trial; and concluding with the unconditional release of an offender.
Prerequisite: POL 328
Fall or spring, 3 credits

POL 334-F Supreme Court Decision Making
A comprehensive examination of Supreme Court decision making, aided by analysis of a computer database on the court. The course covers various stages of the judicial process, including the decision to grant certiorari, the decision on the merits, majority-opinion assignment, and majority-opinion coalitions.
Prerequisites: POL 201 or any other course satisfying the major's methodology requirement; POL 320 recommended
Fall or spring, 3 credits

POL 335-J 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 is 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 336-F U.S. Foreign Policy
An examination of the central problems in making U.S. foreign policy. The particular system and structure of foreign policy-making as they have evolved from the consititutional and historical roots of the United States are the focus. An important central theme is the potential tension between the demands of effective foreign policy and democratic restraints. May not be taken for credit in addition to the discontinued POL 211.
Prerequisites: POL 101; upper-division standing
Fall or spring, 3 credits

POL 337-J 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 AFS 337.
Prerequisites: Two AFS or POL courses
Spring, 3 credits

POL 343-F 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 is 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 103 or 104
Fall or spring, 3 credits

POL 344-F American Political Ideology and Public Opinion
An examination of the nature of contemporary political ideology and public opinion in the United States. The goal is to understand political conflict and debate in the U.S. and the ways in which the public influences that debate. Major topics in public opinion include political tolerance and trust, attitudes toward women and African Americans, the role of the mass media, and the impact of political values and ideology on political campaigns and elections.
Prerequisites: POL 102 or 105; POL 201 or any other course satisfying the major's methodology requirement
Fall or spring, 3 credits

POL 346-F 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.
Prerequisites: POL 201 or any other course satisfying the major's methodology requirement
Fall or spring, 3 credits

POL 347-K Women and Politics
Analysis of the role of women in current American politics from a social psychological perspective. The focus is on changing trends in women's electoral participation, political interest, and office seeking over the last several decades, and recent gender differences in political involvement, candidate support, support for women's issues, and support for other public policies. Crosslisted with WNS 347.
Prerequisites: POL 102 or 105; POL 201 or any other course satisfying the major's methodology requirement
Fall or spring, 3 credits

POL 348-F 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 105; POL 201 or any other course satisfying the major's methodology requirement
Fall or spring, 3 credits

POL 349-F Social Psychology of Politics
A survey of social cognition theory and research as applied to the study of mass politics. The course takes an information processing approach to understanding how people form impressions of others. Political applications focus on how citizens perceive and evaluate political candidates, voters make decisions, and the mass media shape candidate impressions.
Prerequisite: POL 201 or any other course satisfying the major's methodology requirement
Fall or spring, 3 credits

POL 350-I Contemporary European Political Theory
Analysis of major writings in 20th-century European political thought, focusing on four important ideological groupings: liberalism, socialism, fascism, and conservatism.
Prerequisites: Upper-division standing; two D.E.C. category F courses
Fall or spring, 3 credits

POL 351 Social Surveys in Contemporary Society
An interdisciplinary course on the history, uses, design, and implementation of the social survey. Emphasis is given to the use of surveys in politics, the media, and business. Crosslisted with SOC 377.
Prerequisite: POL 201 or any other course satisfying the major's methodology requirement
Fall, 3 credits

POL 352 Advanced Survey Research
Advanced review of survey techniques and report writing. The course covers the analysis of survey data and the preparation of descriptive reports suitable for distribution to the media. Topics include a refresher on basic statistics, the logic of scientific enquiry and hypothesis testing, the use of focus groups and in-depth interviewing to supplement survey responses, the addition of census information to complement survey responses, effective report writing, and the varied uses of social science data. Crosslisted with SOC 378.
Prerequisite: POL 351/SOC 377
Spring, 3 credits

POL 359-F Public Policy Analysis
A course analyzing the connection between the administrative processes of government in the United States and the public policy process. It focuses on the analysis of policy formulation and the broader connections between public policy and the American political process.
Prerequisite: POL 102 or 105
Fall or spring, 3 credits

POL 364-F 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 359 or ECO 303
Fall, 3 credits (not offered in 1995-96)

POL 365-F Economy and Democracy
An examination of the interplay between economics and politics in Western democracies. Topics include the economic theory of democracy; the political-business cycle; political parties and economic policies; the economy and voter choices in elections; economic performance and government (especially presidential) popularity; and the formation of economic expectations.
Prerequisites: POL 102 or 103; POL 201 or any other course satisfying the major's methodology requirement; ECO 101
Fall or spring, 3 credits

POL 366-F 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 also compares alternative explanations for regulatory agency failures as well as possible explanations for why some regulatory agencies perform better than others. Finally, the course considers proposed reforms, such as clearer legislative standards, curbs on "revolving door" practices, greater citizen participation in agency proceedings, and deregulation.
Prerequisites: POL 102 or 105; one of the policy courses listed on p. 191
Fall or spring, 3 credits

POL 367-F Mass Media in American Politics
Competing theories of the power of the press are 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 are also assessed. Conflicts between freedom of the press and such values as privacy, national security, and the right to fair trial are discussed. The relationships between freedom of the press and the public's right to know are also explored.
Prerequisites: POL 101 or 102 or 103 or 105; POL 201 or any other course satisfying the major's methodology requirement
Fall or spring, 3 credits

POL 372-J Politics in the Third World
Analysis of problems and prospects of nonindustrialized nations that are experiencing political and economic development. Particular attention is paid to the impact of colonialism, social problems, economic modernization, and foreign policy orientations of Third World nations.
Prerequisite: POL 101 or 103
Fall or spring, 3 credits (not offered in 1995-96)

POL 377 Contemporary Political Philosophy
A critical examination of selected issues in contemporary political philosophy, for example, the nature and justification of basic rights, the legitimation of political authority, and the various relations between ideals of social justice and democratic rule. Readings represent contemporary views such as libertarianism, liberalism, socialism, communitarianism, and feminism, and include selections by authors such as Rawls, Nozick, Dworkin, Walzer, Habermas, and Pateman. Crosslisted with PHI 377.
Prerequisites: Two courses in philosophy; PHI 105, 277, or 375 recommended; a 300-level political science course also recommended
Fall or spring, 3 credits

POL 382-J Politics and Political Change in Latin America
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 guerrilla warfare. Crosslisted with HIS 382.
Prerequisite: HIS 213 or HIS/POL 214 or 216
Fall, 3 credits (not offered in 1995-96)

POL 401, 402, 403, 404 Seminars in Advanced Topics
Special projects and research papers on a topic of political interest, which is announced before the start of the term. May be repeated as the topic varies.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits each semester

POL 411-H Science, Technology, and Arms Control *(Formerly POL 361/EST 360)*
A study of the application of scientific technology to national 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. Crosslisted with EST 411.
Prerequisites: Upper-division standing; one D.E.C. category E course
Fall, 3 credits

POL 412 Intelligence Organizations, Technology, and Democracy
The role of intelligence organizations in decision making through analysis of agency practices in support of U.S. national security policy. The course also explores the roles of intelligence agencies and practices in democratic societies. Crosslisted with EST 412. May not be taken for credit in addition to the discontinued POL/EST358.
Prerequisites: Upper-division standing; POL 101 and 102; one D.E.C. category E course
Spring, 3 credits

POL 447 Directed Readings in Political Science
Individually supervised readings 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 conducts a periodic recitation that supplements a lecture course. The student receives regularly scheduled supervision from the instructor. Responsibilities may include preparing material for discussion and helping students with research papers. Satisfactory/Unsatisfactory grading only. May not be used to fulfill major requirements.
Prerequisites: Political science major; senior standing; interview; permission of instructor
Fall and spring, 3 credits

POL 476 Undergraduate Teaching Practicum II
Advanced training in techniques of organization and management of political science courses. Students assume greater responsibility in leading discussions and in analyzing results of tests that have already been graded. The course in which a student is permitted to work as a teaching assistant must be different from the course in which he or she previously served. Not for major credit. Satisfactory/Unsatisfactory grading only.
Prerequisites: POL 475; political science major; senior standing; permission of instructor and department
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. Permission of departmental URECA coordinator may be substituted.
Fall and spring, 1 to 3 credits

POL 488 Internship
Participation in a local, state, or federal governmental agency or community organization. Students are 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 or minor 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 or Albany Internship
Designed so that students can participate in Washington, D.C. at the Washington Center as interns in private or public sector organizations and agencies or in Albany as interns in the New York State Assembly or Senate Program. Students are supervised by selected practitioners within the organization or agency. Students are required to submit journals of experience and observation which, together with the supervisor's report, become the basis for a Satisfactory/Unsatisfactory grade. Only three credits for this course may be applied to major requirements. Crosslisted with SSI 489.
Prerequisites: Admission to Washington Center or New York State Assembly or Senate Program; political science major or minor 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 or Albany Seminar
Seminar offered in Washington, D.C. as part of the internship program of the Washington Center or in Albany as part of the New York State Assembly or Senate Internship Program. 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 Washington Center or New York State Assembly or Senate Program; political science major or minor 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

POL 495-496 Senior Honors Project in Political Science
A two-semester project for political science 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 research paper under the close supervision of a faculty member. Students enrolled in POL 495 are obliged to complete POL 496.
Prerequisite: Admission to the political science honors program
Fall and spring, 3 credits

Department of Psychology

Chairperson: Alexandra W. Logue

Director of Undergraduate Studies: Dana Bramel

Faculty

Arthur Aron, Assistant Professor, Ph.D., University of Toronto: Motivation and cognition in close relationships; intergroup relations; methodology.

Robert Boice, Professor, Ph.D., Michigan State University: Procrastination and blocking in writing.

Dana Bramel, Professor, Ph.D., Stanford University: Intergroup attitudes; social class.

Jasper Brener, Professor, Ph.D., University of London: Cardiovascular psychophysiology; behavioral energetics; autonomic learning.

Susan Brennan, Assistant Professor, Ph.D., Stanford University: Psycholinguistics; human-computer interaction.

Darla Broberg, Adjunct Assistant Professor, Ph.D., University of Washington: Clinical psychology; psychiatry.

Edward G. Carr, Professor, Ph.D., University of California, San Diego: Behavior modification; developmental disabilities.

David Cross, Associate Professor, Ph.D., University of Michigan: Psychophysics; mathematical models.

Thomas J. D'Zurilla, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign: Cognitive-behavior therapy; social problem solving; problem-solving therapy.

Edward Eisenstein, Adjunct Professor, Ph.D., University of California, Los Angeles; M.D., Michigan State University: Learning and memory mechanisms in lower animals; learning and memory pathology in humans.

David S. Emmerich, Professor, Ph.D., Indiana University: Sensory processing; perception.

Nancy J. Franklin, Assistant Professor, Ph.D., Stanford University: Memory; spatial cognition; mental models of dynamic physical systems.

Robert W. Frick, Assistant Professor, Ph.D., University of Washington: Cognitive psychology; human learning.

Ronald Friend, Professor and Graduate Studies Director, Ph.D., University of Toronto: Social psychology; health psychology.

Richard Gerrig, Associate Professor, Ph.D., Stanford University: Cognitive psychology; understanding literature.

David C. Glass, Professor Emeritus, Ph.D., New York University: Behavior patterns; stress and coronary disease.

Marvin R. Goldfried, Professor, Ph.D., State University of New York at Buffalo: Behavioral assessment; cognitive behavior therapy.

Paul S. Kaplan, Adjunct Assistant Professor, Ph.D., New York University: Developmental psychology.

Edward S. Katkin, Professor, Ph.D., Duke University: Psychophysiological disorders; assessment of emotions.

Robert Kelsey, Research Associate Professor, Ph.D., State University of New York at Buffalo: Biopsychology; health psychology; statistics.

Daniel N. Klein, Professor, Ph.D., State University of New York at Buffalo: Mood disorders; psychopathology.

Lauren Krupp, Adjunct Associate Professor, M.D., Albert Einstein College of Medicine: Neurology; headaches; neuroimmunology.

Marvin Levine, Professor Emeritus, Ph.D., University of Wisconsin-Madison: Human learning with emphasis on cognitive functions.

Robert M. Liebert, Professor, Ph.D., Stanford University: Observational learning; laboratory methodology; statistics.

Marci Lobel, Assistant Professor, Ph.D., University of California, Los Angeles: Health psychology; stress and coping; women's health.

Alexandra W. Logue, Professor, Ph.D., Harvard University: Choice; self-control; food preferences and aversions; history of psychology.

Emil Menzel, Professor Emeritus, Ph.D., Vanderbilt University: Primate behavior; social behavior.

Elizabeth Mezzacappa, Research Assistant Professor, Ph.D., Uniformed Services University of the Health Sciences, Bethesda: Medical psychology; social psychophysiology; astronaut behavior.

H. William Morrison, Associate Professor Emeritus, Ph.D., University of Michigan: Perception of abstract relations; instructional techniques.

Marc Nathan, Adjunct Professor, Ph.D., University of Washington: Stress-induced hypertension; effects of drugs on learning and memory.

John Neale, Professor, Ph.D., Vanderbilt University: Schizophrenia; emotion.

K. Daniel O'Leary, Distinguished Professor, Ph.D., University of Illinois at Urbana-Champaign: Marital discord; spouse abuse; depression in marriage.

Susan G. O'Leary, Professor, Ph.D., State University of New York at Stony Brook: Child and family problems.

David M. Pomeranz, Associate Professor, Ph.D., University of Rochester: Environmental psychology; behavior modification.

Howard C. Rachlin, Professor, Ph.D., Harvard University: Choice; self-control; gambling; decision making.

Suparna Rajaram, Assistant Professor, Ph.D., Rice University: Human memory.

John Robinson, Assistant Professor, Ph.D., University of New Hampshire: Animal behavior; learning and memory; psychobiology.

Arthur G. Samuel, Professor, Ph.D., University of California, San Diego: Cognitive psychology; speech perception; psychology of language; perception.

Nancy K. Squires, Associate Professor, Ph.D., University of California, San Diego: Human neuropsychology and electrophysiology.

Sarah Hall Sternglanz, Adjunct Assistant Professor, Ph.D., Stanford University: Development; gender roles.

Zvi Strassberg, Assistant Professor, Ph.D., Vanderbilt University: Behavioral problems in children; abnormal psychology; developmental psychology; aggression.

Stuart Valins, Professor, Ph.D., Columbia University: Stress and social interaction.

Dina Vivian, Research Assistant Professor, Ph.D., State University of New York at Stony Brook: Spouse abuse; cognitive processes in dyadic communication; marital therapy.

Everett Waters, Professor, Ph.D., University of Minnesota: Social and personality development.

Harriet S. Waters, Associate Professor, Ph.D., University of Minnesota: Memory and cognitive development.

Gerdi Weidner, Associate Professor, Ph.D., Kansas State University: Health psychology; personality.

John J. Werner, Adjunct Assistant Professor, Ph.D., Hofstra University: Clinical and school psychology; special education.

Grover J. Whitehurst, Professor, Ph.D., University of Illinois at Urbana-Champaign: Early intervention for children at risk; language disorders.

Camille B. Wortman, Professor, Ph.D., Duke University: Health psychology; stress; coping with loss.

Paul M. Wortman, Professor, Ph.D., Carnegie-Mellon University: Program evaluation and applied research; health interventions; meta-analysis.

Everett J. Wyers, Professor Emeritus, Ph.D., University of California, Berkeley: Comparative psychology; evolution of behavior; animal learning.

Affiliated Faculty

Janet Fischel, Pediatrics
Richard Friedman, Psychiatry
John H. Gagnon, Sociology
Manuel London, Harriman School
Jan Loney, Psychiatry
Kathleen M. McGraw, Political Science
Lawrence P. Morin, Psychiatry
Joyce Sprafkin, Psychiatry
Arthur A. Stone, Psychiatry
Robert Strecker, Psychiatry
Rex Wang, Psychiatry
Gerrit Wolf, Harriman School

Teaching Assistants
Estimated number: 20

Programs in Psychology

The Department of Psychology offers undergraduate programs leading to either a Bachelor of Arts or Bachelor of Science degree. Both programs provide a 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 in the content of the outside requirements. 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. Within psychology, the B.S. degree requires laboratory and statistics courses that are optional in the B.A. program. Both the B.S. and B.A. programs provide good preparation for graduate school. The B.S. program provides stronger preparation for graduate training in careers that involve research.

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. Students majoring in psychology should check on their progress toward graduation at least once each semester.

Requirements for the Majors in Psychology

All courses required for either the B.S. or B.A. degree must be taken for a letter grade. A grade of C or higher must be earned in all courses (within and outside the Psychology Department) required for the major.

Completion of the major requirements entails 58 to 62 credits for the B.A. program and approximately 58 to 63 credits for the B.S. program.

A. Study within Psychology
For both degree programs, 33-34 credits in psychology to be distributed as follows:

1. Core Program:
   PSY 103 or 104 Introduction to Psychology

PSY 201 or 203 Statistical Methods in Psychology or another allowed statistics course
PSY 300 Research Methodology

2. Distribution Requirements within Psychology:
   Two courses from each group (a and b below):
   a. PSY 206 Theories of Personality
      PSY 209 Social Psychology
      PSY 211 Developmental Psychology
      PSY 215 Abnormal Psychology
   b. PSY/CBN 241 Brain and Behavior: Introduction to Behavioral Neuroscience
      PSY 318 Animal Learning
      PSY 323 Sensation and Perception
      PSY 343 Comparative Psychology
      PSY 348 Cognitive Psychology
      or PSY 353 Human Learning and Instruction
3. Four additional courses of which three must be upper division. PSY 273, 283, 399, 447, 475, 476, 487, 488, and 495-496 may not be used
   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 a laboratory course (PSY 302-308) and another must be PSY 322 or 372 or AMS 315
      Note: The department strongly recommends that any B.A. student planning to attend graduate school take one of the advanced laboratory courses, PSY 302-308. For the honors student in the B.A. program, one of the upper-division courses must be a laboratory course.
4. Upper-Division Writing Requirement: The upper-division writing requirement can be fulfilled through a writing sample of at least six pages, submitted in any psychology course, that is judged by the instructor of that course to be satisfactory writing in the discipline of psychology. The writing sample can consist of one or more reports or term papers that are prepared as part of the regular assignments for a course, or the sample can be prepared exclusively to fulfill the upper-division writing requirement. A student must obtain the permission of the instructor prior to submitting a writing sample for evaluation. An evaluation form that can be obtained in the Psychology Undergraduate Office must be submitted to the instructor with the writing sample. A student who receives an "unsatisfactory" on the writing sample may, with the permission of the instructor, revise and resubmit the sample for evaluation. Alternatively, the student may submit another sample in another course. Since instructors are obligated to accept only a limited number of writing samples for evaluation in a given course, students are strongly advised to attempt to complete the writing requirement in their junior year.

B. Courses outside the Psychology Department

For the B.A. Student:

1. Mathematics (one course from among the following):
   AMS 101, CSE 110, MAT 123, or any higher AMS, CSE, or MAT course, except AMS 102, *or* passing the Mathematics Placement Examination at level 4 or higher
2. Biology: Any one-semester BIO course
3. Philosophy: Any one-semester PHI course
4. Social Sciences: Any one-semester SOC, ANT, or POL course except SOC 202 or 311, 312 or POL 201
   Note: Requirement 1, 2, 3, or 4 is waived if the related concentration (mathematics, biology, philosophy, or one of the social sciences) is chosen.
5. A four- or five-course concentration, such as one of the following (see the Psychology Department for the specific acceptable courses):
   a. Africana Studies
   b. Anthropology/Sociology
   c. Biology
   d. Computer Science
   e. Economics
   f. History of Science
   g. Linguistics
   h. Mathematical Sciences
   i. Philosophy
   j. Political Science

   The following may be substituted for the required option (see the Psychology Department for details):
   aa. A minor program
   bb. A second major
   cc. Student-designed options if approved by the departmental undergraduate committee

For the B.S. Student:

1. Mathematics: MAT 124 *or* 125, 126, 127 *or* MAT 131, 132 *or* MAT 141, 142 *or* passing the Mathematics Placement Examination at level 9.
2. Biology: BIO 151, 152 *or* 171, 172
3. Other sciences (two of the following groups of courses):
   a. Biology: Two BIO or biology-related courses allowed by the Psychology Department
   b. Chemistry: CHE 131, 132 and 133, 134 *or* 141, 142 and 143, 144
   c. Mathematics: two courses approved by the Psychology Department
   d. Physics: PHY 131, 132 *or* 121, 122 *or* 141, 142 *or* 125, 126, 127 *or* 117, 118
   e. Computer Science: CSE 113, 114

Notes:

1. 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. 77, for further limits on directed readings and research courses, and Undergraduate Teaching Assistantships, p. 76.
2. Transfer students must take at least 12 credits of psychology in residence at Stony Brook.
3. The list of approved courses that B.S. program students may use to satisfy requirement B.3.a or c may be obtained from the Psychology Undergraduate Office.

Honors Program in Psychology

The psychology honors program features (a) courses with small enrollments that are limited to students with high grade point averages, (b) a faculty mentor for each honors student, and (c) collaborative research with faculty that results in a senior thesis. Students are encouraged to apply for acceptance to the honors program as soon as Prime Time during the first semester of their sophomore year at Stony Brook. The latest point at which students may enroll is three semesters prior to graduation. Application forms and information are available in the Psychology Undergraduate Office. For acceptance into the honors program a student must have a cumulative grade point average of 3.2 or higher. A student whose cumulative grade point average falls below 3.0 may

be dropped from the honors program. Conferral of honors in psychology requires the following:

1. A grade of B or higher in at least two honors courses in psychology
2. A cumulative G.P.A. of 3.0 and a 3.5 G.P.A. in psychology
3. A grade of C or higher in a laboratory course in psychology (PSY 302-308)
4. Successful completion of a senior thesis, as described below

The senior thesis program in psychology is followed for three semesters. During the spring of their junior year, students enroll in PSY 399 Junior Honors Seminar, and PSY 487 for two credits in both semesters of the senior year as well as PSY 495-496 Senior Honors Seminar. The thesis is judged by the thesis director and two additional faculty members, one of whom must be from outside the department.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

PSY 103-F Introduction to 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 PSY 104.
Fall and spring, 3 credits

PSY 104-F Introduction to Psychology: Honors
An enriched version of PSY 103, involving more hands-on experience, writing, individualized feedback, and in-depth consideration of topics than typical in PSY 103. May not be taken for credit in addition to PSY 103.
Prerequisites: Permission of department; placement 4 on the English Placement Examination; satisfaction of entry skill in mathematics requirement; priority given to Honors College and Honors Program students, Presidential Scholars, and Freshman Scholars
Fall, 3 credits

PSY 121 Library Skills for Psychological Research
An introduction to basic library skills and bibliographic resources for psychological research, using a course workbook as well as regularly scheduled workshops. Reference and other library materials of special interest to psychology students are covered. Such skills as the efficient use of catalogs, bibliographies, and specialized indexes are also treated. Workshops provide adequate contact between students and librarians. Not for credit in addition to POL 121 or SOC 121.
Prerequisite: PSY 103 or 104
Fall and spring, 1 credit

PSY 150 Supplementary Seminar
A supplementary seminar to be taken in conjunction with a lower-division course in psychology. Topics depend on the lecture course to which it is attached. Students read and discuss original articles. Other requirements may involve writing or leading discussions.
Prerequisite: Permission of instructor
Fall and spring, 1 credit

PSY 201-C 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 after AMS 102, ECO 320, POL 201, PSY 203, SOC 202 or 311, 312.
Prerequisites: PSY 103 or 104; satisfaction of entry skill in mathematics requirement
Fall and spring, 3 credits

PSY 203-C Statistical Methods with Computer Laboratory
In addition to PSY 201 topics, includes introduction to a statistical computer package for exercises and statistical analyses. Does not assume computer literacy or involve computer programming. May not be taken for credit after AMS 102, ECO 320, POL 201, PSY 201, SOC 202 or 311, 312.
Prerequisites: PSY 103 or 104; satisfaction of entry skill in mathematics requirement
Fall or spring, 4 credits

PSY 206-F 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 207 Theories of Personality: Honors
A supplement to PSY 206, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 103 or 104; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 206
Fall or spring, 1 credit

PSY 209-F 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 are discussed in the context of American social structure.
Prerequisite: PSY 103 or 104
Fall and spring, 3 credits

PSY 210 Social Psychology: Honors
A supplement to PSY 209, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 103 or 104; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 209
Fall or spring, 1 credit

PSY 211-F 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 212 Developmental Psychology: Honors
A supplement to PSY 211, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 103 or 104; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 211
Fall or spring, 1 credit

PSY 215-F Abnormal Psychology
Psychopathology, including the neuroses and functional and organic psychoses, is 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

PSY 216 Abnormal Psychology: Honors
A supplement to PSY 215, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 103 or 104; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 215
Fall or spring, 1 credit

PSY 241-F Brain and Behavior: Introduction to Behavioral Neuroscience
Introduction to the neural basis of sensory processes, motor control, attention, emotion, and learning. Crosslisted with CBN 241.
Prerequisite: PSY 103 or 104 or BIO 101 or 151 or 171
Fall, 1 credit

PSY 242 Brain and Behavior: Honors
A supplement to PSY/CBN 241, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 103 or 104 or BIO 101 or 151 or 171; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 241
Fall or spring, 1 credit

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 vary from semester to semester. General information is available in the Undergraduate Office in the Department of Psychology. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of six credits.
Prerequisite: Permission of instructor
Fall and spring, 1 to 3 credits

PSY 300-F Research Methodology
Basic principles in the design and execution of research in psychology.
Prerequisites: PSY 103 or 104; PSY 201 or 203 or AMS 102
Fall and spring, 3 credits

PSY 301 Research Methodology: Honors
A supplement to PSY 300, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 103 or 104; PSY 201 or 203 or AMS 102; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 300
Fall or spring, 1 credit

PSY 302 Research Methodology in Human Factors
Current theories and empirical methods in the psychology of human-computer interaction. Students practice techniques in the research, design, and evaluation of human-computer interfaces.
Prerequisite: PSY 348
Fall or spring, 4 credits (not offered in 1996-97)

PSY 303 Research Methodology Laboratory
An intensive course in which students learn scientific methodology through laboratory experience and quantitative analysis, and learn to communicate empirical results in written form. Four hours of laboratory and two hours of lecture per week.
Prerequisites: PSY 300; satisfaction of D.E.C. category A requirement
Fall and spring, 4 credits

PSY 304 Research Methodology in Social Psychology
Techniques and experimental problems in social psychology, including natural observation, surveys, and experimental design. Three hours of lecture and two hours of field or laboratory research per week.
Prerequisites: PSY 300; permission of instructor
Fall or spring, 4 credits

PSY 305 Research Methodology in Perception and Cognition
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. Two hours of lecture and four hours of laboratory per week.
Prerequisites: PSY 300; permission of instructor
Fall or spring, 4 credits

PSY 306 Research Methodology in Learning and Performance
Experimental analysis of human performance. Topics include learning, cognitive processes, human-computer interaction, and motor skills. Two hours of lecture and four hours of laboratory per week.
Prerequisites: PSY 300; permission of instructor
Fall or spring, 4 credits

PSY 307 Research Methodology in Biological Psychology
Techniques for studying brain mechanisms underlying behavior through such topics as recording of autonomic responses in humans, motor control in humans or animals, pharmacological effects on animal behavior, and recordings of human brain activity. One hour of lecture and four hours of laboratory per week.
Prerequisites: PSY 300; PSY/CBN 241 or 340; permission of instructor
Fall or spring, 3 credits

PSY 308 Field Research on Social Conflict
Students formulate and carry out team research projects focusing on issues involving conflict within the university or in the surrounding communities.
Prerequisites: PSY 300; permission of instructor
Fall or spring, 3 credits

PSY 309-F 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; and international perspectives on democracy and authority in the workplace.
Prerequisites: PSY 300; PSY 209 or SOC 380
Spring, 3 credits

PSY 311-F 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 is explored in depth in a given semester, with another topic offered the following semester. The topic for a given semester is announced prior to advance registration. May be repeated once.
Prerequisites: PSY 211 and 300
Fall or spring, 3 credits

PSY 312-F 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.
Prerequisites: PSY 211 and 300
Fall and spring, 3 credits

PSY 313-F Organizational Behavior Management
The application of behavioral and cognitive sciences to human resource management in occupational settings. The course covers behavior modification principles and techniques, research methods, controversies, evidence, and specific applications aimed at improving work performance and job satisfaction, while reducing stress and conflict, in a variety of different work settings.
Prerequisite: PSY 206 or 209 or 211 or 215
Fall, 3 credits

PSY 315-F Clinical Behavior Modification
The application of behavioral and cognitive sciences to the assessment and treatment of clinical problems. The aims of the course are to familiarize the student with the theoretical and empirical foundations of clinical behavior modification, provide examples of applications to a variety of different clinical problems, and discuss the results of outcome studies. While specific treatment methods are described and issues related to clinical application are discussed, no actual clinical training or practicum is provided in this course.
Prerequisites: PSY 215 and 300
Spring, 3 credits

PSY 318-F Animal Learning
Principles of adaptation and behavioral change with emphasis on techniques of reward and punishment and of stimulus control.
Prerequisite: PSY 300
Fall or spring, 3 credits

PSY 319 Animal Learning: Honors
A supplement to PSY 318, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 300; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 318
Fall or spring, 1 credit

PSY 320-F Judgment, Decision, and Choice
Cognitive, behavioral, ethological, and economic theories of individual judgment, decision, and choice among probabilistic and delayed outcomes. Empirical studies of human and animal behavior are related to theory and compared with each other. Implications for self-control, social relations, and everyday human decisions in medicine, clinical psychology, business, and law are explored.
Prerequisites: PSY 300; PSY 318 or 353
Fall or spring, 3 credits

PSY 322 Advanced Statistics
Survey of probability and sampling theory, descriptive and inferential statistics, and introduction to experimental design.
Prerequisite: PSY 300
Fall or spring, 3 credits

PSY 323-F Sensation and Perception
An examination of both the basic mechanisms and the organizational processes of perception including the perception of color, depth, movement, pitch, loudness, speech, touch, temperature, and pain. Particular emphasis is given to visual and auditory perception.
Prerequisite: PSY 300
Fall and spring, 3 credits

PSY 324 Sensation and Perception: Honors
A supplement to PSY 323, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 300; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 323
Fall or spring, 1 credit

PSY 330-F The Psychology of Eating and Drinking
A survey of theories of eating and drinking as well as discussion of various methods of treating drinking and eating disorders. Material from many areas of psychology is 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 Behavioral Neuroscience
An advanced survey of knowledge on the neurobiological bases of behavior. A review of basic neurophysiology, neuroanatomy, and neurochemistry is followed by considerations of the circuitry and neural processing supporting perception, motion, emotion, sleep, attention, learning, language, and higher cognitive mechanisms. Crosslisted with CBN 340.
Prerequisite: BIO 152 or 172 or PSY/CBN 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 are described.
Prerequisite: PSY/CBN 241
Spring, 3 credits

PSY 343 Comparative Animal Behavior
An analysis of the behavioral repertoires of different species in terms of evolutionary constraints and psychological processes. General processes underlying behavior are examined as a prelude to the discussion of the different ways species have solved survival problems.
Prerequisites: PSY 300; BIO 101 or 151 or 171
Fall or spring, 3 credits

PSY 344 Comparative Animal Behavior: Honors
A supplement to PSY 343, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 300; BIO 101 or 151 or 171; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 343
Fall or spring, 1 credit

PSY 348-F Cognitive Psychology
An examination of theoretical and empirical work on human cognition including pattern recognition, memory, attention, language comprehension, decision making, and problem solving.
Prerequisite: PSY 300
Fall and spring, 3 credits

PSY 349 Cognitive Psychology: Honors
A supplement to PSY 348, emphasizing hands-on experience, writing, individualized feedback, and in-depth consideration of topics.
Prerequisites: PSY 300; cumulative G.P.A. of 3.0 or higher
Corequisite: PSY 348
Fall or spring, 1 credit

PSY 351-F Topics in Cognition
An in-depth study of a selected topic from among (1) problem solving, (2) memory, (3) attention, and (4) imaginal processes. The topic is announced and described in detail prior to advance registration. May be repeated as the topic varies up to a total of six credits.
Prerequisite: PSY 348
Fall or spring, 1 to 3 credits to be assigned when course is scheduled

PSY 352-F 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
Fall or spring, 3 credits

PSY 353-F Human Learning and Instruction
The application of basic principles of cognition to the acquisition of knowledge (concepts, cognitive strategies, verbal information), with an emphasis on instructional design.
Prerequisite: PSY 300
Fall or spring, 3 credits

PSY 370-F The Psychology of Language
Examination of language acquisition and a consideration of its implication for cognitive psychology.
Prerequisite: PSY 348
Fall or spring, 3 credits

PSY 372-F 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 have the opportunity to develop a personality test and put these principles and techniques into practice.
Prerequisites: PSY 300; permission of instructor
Fall or spring, 3 credits

PSY 377-F 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. Crosslisted with WNS 377.
Prerequisites: WNS/SSI 102; ANT 367 or PSY 103 or 104 or SOC/WNS 247
Fall or spring, 3 credits

PSY 390-F, 391-F, 392-F, 393-F Special Topics in Psychology
Lecture courses on current topics in psychology, which are announced and described before the start of each term. May be repeated for different topics.
Prerequisites: PSY 300; at least one other course specified when the topic is announced
Schedule to be announced, 3 credits

PSY 398 Supplementary Seminar
A supplementary seminar to be taken in conjunction with an upper-division course in psychology. Topics depend on the lecture course to which it is attached. Students read and discuss original articles. Other requirements may involve writing or leading discussions.
Prerequisite: Permission of instructor
Fall and spring, 1 credit

PSY 399 Junior Honors Seminar
A seminar on research in psychology. Topics investigated by faculty are reviewed. The class focuses on particular theories, methods, and results that illustrate the research process within the department. Students are expected to present oral and written proposals for their senior year research project.
Prerequisites: PSY 300; admission to psychology honors program
Spring, 1 credit

PSY 447 Readings in Psychology
Directed readings under the guidance of a faculty member. May be repeated once.
Prerequisites: PSY 300; permission of department
Fall and spring, 1 to 3 credits

PSY 475 Undergraduate Teaching Practicum I
Each student conducts a weekly recitation or laboratory section that supplements a lecture course. The student receives 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: PSY 300; 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 are expected to assume greater responsibility in such areas as leading discussions, analyzing results of tests that have already been graded, 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 different from the course in which he or she previously served. 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 in 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.
Prerequisites: PSY 300; permission of department
Fall and spring, 2 to 6 credits

PSY 488 Internship
Participation in public and private agencies and organizations. Students are 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 including PSY 300; 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 are 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 300; permission of instructor
Schedule to be announced, 3 credits each semester

PSY 495-496 Senior Honors Seminar
A two-semester research seminar with continuing discussions of methods and theories relevant to honors research projects. Students are expected to design and execute a research project and submit a thesis under the supervision of appropriate faculty sponsorship. Students enrolled in PSY 495 are obliged to complete PSY 496.
Prerequisite: PSY 399
Corequisite: PSY 487
Fall (495) and spring (496), 1 credit each semester

Religious Studies

Program Coordinator: Thomas J.J. Altizer, Comparative Studies

Teaching Assistants
Estimated Number: 4

The Program in Religious Studies offers an interdisciplinary approach to the 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 Religious Studies 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 D.E.C. requirements. Further information and advising in regard to any of the program's services are available through the program coordinator.

Requirements for the Major in Religious Studies

The major in religious studies leads to the Bachelor of Arts degree. It requires ten courses, all to be taken for a letter grade, distributed as follows.

Completion of the major requirements entails 30 credits.

A. 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.
B. Depth requirement: Four courses at the 200, 300, and 400 levels in one of the following areas of emphasis:
   1. Buddhism
   2. East Asian religions (Chinese, Japanese, and Korean religions)
   3. Judaism (in coordination with Judaic studies; ordinarily all four courses in this area emphasis are JDS and JDH, but one may be replaced with a relevant RLS or other course with advisor's approval)
   4. Christianity (to include at least one Judaic studies course; JDH/RLS 230 or JDS/HIS 225, 226 recommended)
   5. Islam (may include one course in Judaism or Christianity; ARB 111, 112 may also count as one course for this area)
   6. Theology, philosophy, and method in religion
   7. Other areas, as available; these must be approved by the major advisor before the first semester of the senior year.
C. Breadth requirement: Four RLS courses in areas outside the area emphasis.
D. Upper-Division Writing Requirement: Majors are required to demonstrate a capability for expressing themselves effectively in writing. They should meet this requirement by taking RLS 301 before the end of their junior year and achieving a special overall rating of "satisfactory" on the written work in that course apart from the course grade. An overall rating of "unsatisfactory" necessitates remedial action. More detailed information about this requirement is available from the program.

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 coordinator; by their junior year all majors 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 programs listed below. Students wishing to satisfy the requirements with yet other courses may do so with the approval of the major advisor.

Related Courses in Other Programs

Detailed course descriptions appear under appropriate program listings and should be examined there.

ANT 351	Comparative Religion
ANT 358	Ways to Civilization
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 326	Arts of Ancient Mesoamerica

ARH 327	Arts of Central Africa
ARH 328	Arts of West Africa
CLS 215	Classical Mythology
EGL/JDH 261	The Bible as Literature
EGL 342	Milton
HIS 234	Medieval Europe: A Survey
JDS/HIS 225	The Formation of the Judaic Heritage
JDS/HIS 226	The Shaping of Modern Judaism
JDH 369	Topics in Biblical Interpretation
JDH 447	Readings in Judaic Studies
KRH 346	Philosophy of Education in Korea and Japan
PHI 304	Medieval Philosophy
PHI 336	Philosophy of Religion
PHI 342	Chinese Philosophy
PHI 344	Japanese Philosophy
SOC 264	Introduction to Middle Eastern Society
SOC 352	Sociology of Religion

Appropriate special topics from these or other programs may also be offered to fulfill major requirements with permission of the major advisor.

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, with registration in 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, meet to decide whether to recommend conferring the degree with honors. The decision is 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 program coordinator 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 (nine credits) must be 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:

A. RLS 103 or 104 or 150; a 200-level RLS course
B. RLS 301
C. At least three courses in one of the area emphases listed for the major

Students desiring to minor in religious studies should consult with the program coordinator by the semester in which they register for RLS 301 for advice 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. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

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 (not offered in 1995-96)

RLS 103-G, 104-G World Religions I, II
An historical introduction to the major religious traditions of India, East Asia, the Middle East, and Europe. The first semester treats Judaism, Christianity, and Islam; the second semester studies Hinduism, Buddhism, Confucianism, and Taoism. Attention is given to the cultural background, art, literature, philosophy, and institutional development of each tradition.
Fall (103) and spring (104), 3 credits each semester

RLS 110-B The Bible: A Critical Introduction
An introduction to a modern critical understanding of the Bible, emphasizing both a study of the major Biblical books and the history of Biblical Israel and the early Christian community. The Biblical books are studied in their original historical and religious context apart from any ecclesiastical or theological tradition.
Fall, 3 credits

RLS 150-B The Religious Dimension
An introduction to the nature and experience of religion as a universal dimension of human reality. Drawing from religious texts in all their worldwide variety, the course explores a particular topic as an introduction to the comprehension and analysis of religion in the comparative study of personal and cultural values. Topics include religious symbol and myth, death and afterlife, angels and demons, mystical experience, and religion and knowledge of the future.
Fall or spring, 3 credits (not offered in 1996-97)

RLS 220-G Studies in Religion
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 as the topic varies.
Schedule to be announced, 3 credits

RLS 230-G Judaism
A survey of the great texts of the Judaic heritage, with the aim of learning the contribution of each to the Jewish tradition. The course includes an examination of characteristic Jewish beliefs, practices, and attitudes. Crosslisted with JDH 230.
Fall, 3 credits (not offered in 1995-96)

RLS 240-J Confucianism and Taoism
An introduction to the basic philosophies and doctrines of Confucianism and Taoism, such as the concept of Tao, nonaction, benevolence, and propriety. The course explores both the similarities and the differences between these two traditions.
Fall or spring, 3 credits

RLS 246-J Korean and Japanese Religions
An introduction to Korean and Japanese religious history from earliest recorded periods to the 19th century. Emphasis is given to Buddhism, Confucianism, Taoism, Korean shamanism, and Japanese Shintoism. Relationships between the Korean variant of religious traditions and those of China and Japan are also investigated.
Fall, 3 credits (not offered in 1996-97)

RLS 260-J 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, are treated. Particular attention is paid to the meaning of faith, practice, and enlightenment in Buddhism.
Fall, 3 credits

RLS 270-I Christianity
A critical introduction to the scripture, tradition, history, and religious practices and beliefs of Christianity as one of the principal factors in the shaping of European culture.
Spring, 3 credits

RLS 280-J 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 concludes with an examination of Islam in the modern world.
Spring, 3 credits

RLS 301-G Sources and Methods
An in-depth inquiry 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 103 or 104 or 150, and one 200-level RLS course; or two 200-level RLS courses
Fall, 3 credits (not offered in 1995-96)

RLS 302-G 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
Fall or spring, 3 credits (not offered in 1996-97)

RLS 310-G Biblical Theology
Intensive introduction to the theological tendencies and implications of selected major texts from the Christian and Jewish scriptures. The course surveys historical and critical work on the selected texts, but focuses on the religious thinking reflected in them and their influence on later traditions. May be repeated once for credit as the topic varies.
Prerequisites: RLS/JDH 230 or RLS 270; or RLS 110 and one 200-level RLS course
Fall, 3 credits (not offered in 1995-96)

RLS 320-G 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, 3 credits (not offered in 1995-96)

RLS 321-I Christian Classics
Intensive study of a particular influential classic Christian text or genre, orthodox or heterodox, selected from early Christian, medieval, Reformation, or modern works that have significantly contributed to the shaping of European culture. May be repeated as the topic varies.
Prerequisites: RLS 270 or EGL/JDH 261; permission of instructor
Fall or spring, 3 credits (not offered in 1995-96)

RLS 330-G Special Topics
An investigation of a particular area or dimension of religious studies, which varies from semester to semester. May be repeated as the topic varies.
Prerequisite: Satisfaction of D.E.C. category B
Schedule to be announced, 3 credits

RLS 341-J 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: RLS 104 or 260
Spring, 3 credits

RLS 350-G Philosophical Theology
A study of selected theological problems that integrates 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
Fall or spring, 3 credits (not offered in 1995-96)

RLS 361-J Japanese Buddhism
An introduction to the teachings and practices of the three major schools of Japanese Buddhism: Esoteric Buddhism, Zen, and Pure Land. The course focuses on the writings of the founders of the important lineages within these schools.
Prerequisite: RLS 246 or 260
Spring, 3 credits (not offered in 1995-96)

RLS 366-G Feminine Spirituality
The role and destiny of woman as envisaged by the world's great religions. The course discusses both the concepts of femininity as a principle in theology, metaphysics, and cosmology, and the theoretical and practical place of woman in society. Topics include woman's responsibilities and rights; woman and religious law; her relation to man and to the masculine principle; her role in symbolism, mythology, and literature; and her path of spiritual development.
Prerequisite: One 200-level RLS course
Spring, 3 credits (not offered in 1996-97)

RLS 380-J Islamic Classics
A study in depth of Islamic texts in translation. Selections may be made from the Qur'an, 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 the topic varies.
Prerequisite: RLS 280
Spring, 3 credits (not offered in 1995-96)

RLS 400 Religious Studies Seminar
A seminar 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 philosophic interpretation on the other.
Prerequisite: Permission of program coordinator
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.
Prerequisites: Permission of program coordinator
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 is given to the question of long-term continuity and the appearance of innovation in such responses. Crosslisted with JDH 465.
Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230
Spring, 3 credits (not offered in 1996-97)

RLS 475 Undergraduate Teaching Practicum
Students assist instructors in religious studies courses with large enrollments. Under the supervision of the course instructor, they are responsible for conducting discussion and review sections of the course and helping students with course readings and assignments such as research papers. Satisfactory/Unsatisfactory grading only.
Prerequisites: Senior religious studies major; permission of instructor and program coordinator
Fall and spring, 3 credits

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.
Prerequisites: Permission of instructor and program coordinator
Fall and spring, 3 credits each semester

Science, Mathematics, and Technology Education

Directors: Albert D. Carlson, Neurobiology and Behavior; Lester G. Paldy, Technology and Society

Faculty

Jacqueline Grennon Brooks, Lecturer, Ed.D., Columbia University: Science education.

Lester G. Paldy, Distinguished Service Professor, M.S., Hofstra University: Arms control verification and negotiation; science education policy.

Nancy A. Morvillo, Lecturer, Ph.D., State University of New York at Stony Brook: Genetics; biotechnology education.

Wallace Nelson, Lecturer, M.A., Hofstra University: School administration.

Affiliated Faculty

David Bynum, Biochemistry and Cell Biology
Daniel M. Davis, Earth and Space Sciences
Ronald G. Douglas, Mathematics
Bernard S. Dudock, Biochemistry and Cell Biology
Jules Elias, Pathology
Theodore D. Goldfarb, Chemistry
George J. Hechtel, Ecology and Evolution
Robert C. Kerber, Chemistry
Chirakkal V. Krishnan, Chemistry
Joseph W. Lauher, Chemistry
Thomas T. Liao, Technology and Society
Eli Seifman, Social Sciences Interdisciplinary
Arnold A. Strassenburg, Physics
Clifford E. Swartz, Physics
Alan Tucker, Applied Mathematics and Statistics

The Center for Science, Mathematics, and Technology Education (CSMTE) offers undergraduate science education courses satisfying New York State requirements for provisional certification as a secondary school teacher of biology, chemistry, earth science, physics, and general science.

Students who wish to enter this program are expected to consult with a CSMTE advisor and establish an advisement program prior to the beginning of the junior year. Failure to do so may result in a delay in meeting the certification requirements.

Requirements for the Science Teacher Preparation Program

In addition to completing major requirements in biology, chemistry, earth and space sciences, geology, astronomy, atmospheric sciences, or physics, prospective science teachers are required to take the following courses, totaling 27 credits, in order to satisfy all requirements for New York State provisional certification:

SCI 200 Introduction to Science Teaching
SCI 300 Science Instructional Strategies and Techniques
SCI 450 Supervised Teaching—Science
SCI 454 Student Teaching Seminar
SSI 327 Adolescent Growth and Development
SSI 350 Foundations of Education

Note: Courses taken for Pass/No Credit may not be used to satisfy the preparation in professional education component of the teacher preparation program.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. SCI courses do not satisfy D.E.C. requirements.

SCI 200 Introduction to Science Teaching
Teaching strategies, lesson planning, and student evaluation materials used in teaching secondary school sciences. Observation of classroom activities in selected junior and senior high school science classrooms. Students are expected to spend five half-days in a secondary school during the semester.
Prerequisite: BIO 151 or 152 or 171 or 172 or CHE 131 or 141 or GEO 102/112 or 122 or PHY 125 or 131 or 141
Fall and spring, 3 credits

SCI 300 Science Instructional Strategies and Techniques
One of the courses in a series for prospective secondary school teachers of science, including biology, chemistry, physics, and earth science. It emphasizes instructional strategies and techniques necessary to create and implement inquiry and discovery activities within a science curriculum. Curriculum development and independent science projects are part of the course. Students are expected to spend five half-days in a secondary school during the semester.
Prerequisite: SCI 200
Fall and spring, 3 credits

SCI 385-K Language and Science: A Multicultural Perspective
In-depth study of the linguistically diverse population in American schools and its unique linguistic, social, and cultural needs. The development of effective classroom environments for language acquisition is explored with a focus on using science and mathematics hands-on projects. Supervised field work experience in K-8 classroom settings is included. Crosslisted with LIN 385.
Prerequisites: Two D.E.C. category E courses; one D.E.C. category C course; LIN 101; upper-division standing; permission of instructor; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits (not offered in 1995-96)

SCI 447 Readings in Science Education
Tutorial studies on recent advances in science education.
Prerequisite: Permission of Center for Science, Mathematics, and Technology Education
Fall and spring, 1 credit

SCI 450 Supervised Teaching—Science
Extensive practice under selected cooperating teachers for prospective secondary school science teachers. Student teachers work with one or two certified science teachers in secondary schools each regular school day for the entire semester. Frequent consultations with university faculty members assist the student. Applications must be filed with the Center for Science, Mathematics, and Technology Education one semester prior to student teaching. Satisfactory/Unsatisfactory grading only.
Prerequisites: Senior standing with 2.7 G.P.A. in major; permission of Science Teacher Preparation Program
Corequisite: SCI 454
Fall and spring, 12 credits

SCI 454 Student Teaching Seminar
Seminar on problems encountered by student teachers and public school teachers at the secondary level. Study and analysis of many aspects of science teaching such as classroom management, school culture, and social issues affecting schools and student performance. The course includes a unit on identifying and reporting child abuse and maltreatment. Students in this course are required to pay a fee that is used solely to secure the New York State Certificate in Identifying and Reporting Child Abuse and Maltreatment.
Prerequisite: Permission of Science Teacher Preparation Program
Corequisite: SCI 450
Fall and spring, 3 credits

SCI 475 Teaching Practicum
Study of the literature, resources, and teaching strategies in science education with a supervised clinical experience in undergraduate instruction. Satisfactory/Unsatisfactory grading only.
Prerequisites: Senior standing; permission of instructor
Fall and spring, 3 credits

Interdisciplinary Program in Social Sciences

Program Director: Eli Seifman

Director of Undergraduate Studies: Shi Ming Hu

Faculty

Barbara Baskin, Associate Professor, Ed.D., Wayne State University: Special education.

Beverly Birns, Professor Emerita, Ph.D., Columbia University: Child and family studies; child development; psychology of women; social policy.

Georges Fouron, Associate Professor, Ed.D., Columbia University: Social studies education; bilingual education.

Kenneth D. Gadow, Professor, Ph.D., University of Illinois at Urbana-Champaign: Special education.

Joan F. Kuchner, Lecturer, Ph.D., University of Chicago: Child and family studies; child development; social policy.

Shi Ming Hu, Distinguished Teaching Professor, Ed.D., Columbia University: Chinese; Asian studies; social science education. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1989, and the President's Award for Excellence in Teaching, 1989.

Eli Seifman, Distinguished Service Professor, Ph.D., New York University: Social science education; Asian studies.

Judith Wishnia, Associate Professor, Ph.D., State University of New York at Stony Brook: Women's history; labor history; European history.

Affiliated Faculty

Joel T. Rosenthal, History

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 2

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, women's studies, and the social sciences program courses (e.g., SSI 102). The student must complete work in at least four of these fields.

The Social Sciences Interdisciplinary Program is the administrative home of the Social Studies Secondary Teacher Preparation Program and two minors: Chinese studies and child and family studies. Social sciences majors who wish to follow one of these minors as an area of concentration may choose courses in that minor so as to simultaneously fulfill a large number of their social sciences requirements. (Requirements for the two minors appear under each program title elsewhere in the alphabetical listing 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.

Completion of the major requirements entails at least 48 credits.

Courses with at least four of the social science designators (AFS, ANT, CNS, ECO, HIS, LIN, POL, PSY, SOC, SSI, WNS) are required, distributed as follows:

A. Two courses with *each* of any two social science designators
B. Four courses with *each* of any two other social science designators (at least two of the courses with each designator must be numbered 300 or above)
C. Four additional courses with any social science designator(s) numbered 300 or above
D. Upper-Division Writing Requirement
   Option 1: Successful completion of the upper-division writing requirement of any one of the following majors: Africana studies, anthropology, economics, history, linguistics, political science, psychology, or sociology.
   Option 2: SSI majors must achieve an evaluation of S (Satisfactory) on the written work for one of the following CNS, SSI, or WNS courses: CNS 447, 461, 487, SSI 308, 310, 321, 339, 345, 405, 417, 447, 487, WNS 333, 334, or 407, which must be taken before the end of the junior year. Students who wish to satisfy this requirement with one of these courses must inform the instructor of their intention to do so no later than the third week of the term so that the student's essays may be given special appraisal for advanced writing skills appropriate to SSI majors in addition to their appraisal for the course.
E. Other requirements:
   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 allowed related courses is available from the Social Sciences Interdisciplinary Program Office. Social sciences majors who have elected the Chinese 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, upper-division Africana studies courses with the AFH designator, upper-division Chinese studies courses with the CNH designator, and upper-division women's studies courses with the WNH designator.
   5. AFS 283, PSY 283, SSI 283, 450, 454, the lower-division language courses taught by the Linguistics Department, and lower-division AFH, CNH, and WNH courses may not be used to fulfill major requirements. Only one teaching practicum (475) may be counted.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

SSI 102-F Introduction to Women's Studies in the Social Sciences
A general introduction to women's studies in the social sciences 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. Crosslisted with WNS 102.
Fall or spring, 3 credits

SSI 110-F Human Development: The Family Context
Theories and research pertaining to stages in the life cycle from infancy to old age. Traditional theories of Freud, Erikson, and Piaget as well as contemporary interaction and ecological models are explored. Each stage is considered from the perspective of developmental tasks and its familial and social implications. Ethnicity, social class, and sex roles are examined with special attention to their effects on the family. May not be taken for credit after PSY 211.
Fall or spring, 3 credits

SSI 220-F The Infant and Young Child
Growth and development during the earliest stages of life. Socioeconomic class, ethnicity, and individual differences of infants and young children are explored. Topics include cognitive, socioemotional, and language development; the at-risk infant; and caregivers' role in health care, safety, and nutrition. Students make periodic systematic observations of infants and young children in a variety of settings.
Prerequisite: SSI 110 or PSY 211
Fall or spring, 3 credits

SSI 281-F Seminar in Child Development
Students meet weekly to discuss their experience in a campus 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 emphasize language and cognition, social and motor behavior, play, "arts and crafts," and various techniques for organizing group and individual energies.
Prerequisites: SSI 110 or PSY 211; permission of instructor
Corequisite: SSI 283
Fall and spring, 3 credits

SSI 283 Practicum in Child Development
Students work nine hours a week in a full-day child-care center to gain practical experience in teaching, making materials, and observing preschool children. Daybook records are kept and are one of the bases for discussion in SSI 281. This course requires students to use the knowledge gained in SSI 281 in a closely supervised situation. Satisfactory/Unsatisfactory grading only.
Prerequisites: SSI 110 or PSY 211; permission of instructor
Corequisite: SSI 281
Fall and spring, 3 credits

SSI 287 Supervised Research in Social Science
Participation in laboratory and field research in social science under the direct supervision of a faculty member in the Social Sciences Interdisciplinary Program. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of six credits.
Prerequisite: Permission of instructor
Fall and spring, 1 to 3 credits

SSI 308-F Abuse of Women and Children
Theories and research about physical and sexual abuse of women and children. Among the topics to be discussed are rape, incest, and spouse abuse. The approach includes sociological, psychological, and feminist perspectives. Solutions involving the medical and legal systems and the establishment of shelters are also explored.
Prerequisites: 18 credits in the social and behavioral sciences
Fall or spring, 3 credits

SSI 310-F Contemporary Feminist Issues
An analysis of major issues affecting women in today's society. Reproductive rights, women's employment, and political power are among the topics discussed. Crosslisted with WNS 310.
Prerequisites: 15 credits in the social and behavioral sciences
Fall or spring, 3 credits

SSI 311-F 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 varies from semester to semester. May be repeated as the topic varies.
Prerequisites: 18 credits in the social and behavioral sciences
Schedule to be announced, 3 credits

SSI 320-F The Special Child
Social, political, philosophical, and educational issues related to the habilitation and integration of children. The course focuses on the interaction between children who have developmental, sensory, communication, behavioral, orthopedic, or other health disorders, as well as those who are gifted, and on community response to their exceptional needs.
Prerequisite: SSI 110 or PSY 211
Fall or spring, 3 credits

SSI 321-F Early Childhood Environments
A study of physical and social environments for young children from birth to eight years old. Public, commercial, and private settings are considered, including homes, hospitals, museums, libraries, and both indoor and outdoor play spaces. Alternative, traditional, and innovative child-care, preschool, and school settings are examined. May not be taken for credit in addition to the discontinued SSI 221.
Prerequisite: SSI 110 or PSY 211 or SOC 304
Fall or spring, 3 credits

SSI 327-F Adolescent Growth and Development
The biological and psychological development of adolescents that affects teaching and curriculum development. Additional topics include adolescent psychiatric disorders, secondary special education programs, drug and alcohol use and abuse, and societal issues.
Prerequisites: Upper-division standing; enrollment in a teacher preparation program
Fall and spring, 3 credits

SSI 339-F 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 is especially useful to students who are contemplating professional work with children.
Prerequisite: SSI 110 or PSY 211
Fall or spring, 3 credits

SSI 345-K Parental Roles in a Pluralistic Society
An examination of parental roles in family life from a multicultural perspective. Theoretical models of parent education are evaluated, and alternative approaches to service delivery are explored within the context of America's pluralistic society. Specific issues such as ethnic socialization by parents and multiculturalism in child care and school settings are analyzed.
Prerequisites: SSI 110 or PSY 211 or SOC 304; upper-division standing; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

SSI 350-F 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.
Prerequisites: Upper-division standing; one D.E.C. category F course
Fall and spring, 3 credits

SSI 397 Teaching Social Studies
Social studies as 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.
Prerequisite: Registration in the Social Studies Secondary Teacher Preparation Program (see alphabetical listing)
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, Law, 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, is explored. The major focus is on current legislation. The following issues are analyzed: child health, Aid to Families with Dependent Children, nutrition, education of the handicapped, adoption and foster care, Head Start, day care, and child abuse.
Prerequisites: Upper-division standing; permission of instructor
Fall or spring, 3 credits

SSI 417 Senior Seminar in Child and Family Studies
A seminar for advanced students in the minor in child and family studies. A selected topic, chosen from among the following, is explored in depth: motherhood, parent education, families with disabled members, family and individual development in the later years, and cross-cultural perspectives on child care and the parent-child relationship. The topic is announced at the time of registration.
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.
Prerequisites: Permission of instructor and program
Fall and spring, 1 to 3 credits

SSI 450 Supervised Student Teaching
Prospective secondary school social studies teachers 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 each full school day for the entire 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 are announced in the *Undergraduate Bulletin Supplement.* 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 Secondary Teacher Preparation Program; approval of social studies director
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. The course includes a unit on identifying and reporting child abuse and maltreatment. Students in this course are required to pay a fee that is used solely to secure the New York State Certificate in Identifying and Reporting Child Abuse and Maltreatment.
Corequisite: SSI 450
Fall and spring, 3 credits

SSI 475 Undergraduate Teaching Practicum I
Each student conducts a weekly recitation section that supplements a lecture course. The student receives 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 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 Social Sciences Interdisciplinary Program courses. Students assume greater responsibility in such areas as leading discussions, analyzing results of tests that have already been graded, and observing teaching methods. The course in which a student is permitted to work as a teaching assistant must be different from the course in which he or she previously served. Satisfactory/Unsatisfactory grading only.
Prerequisites: SSI 475; 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 fieldwork on a practical or community problem. May be repeated.
Prerequisites: 18 credits in the social and behavioral sciences; permission of program
Fall and spring, 1 to 6 credits

SSI 488 Internship
Participation in local, state, or federal government public and private agencies and organizations. Students are 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 the social and behavioral sciences; permission of instructor, program, and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

SSI 489 Washington or Albany Internship
Designed so that students can participate in Washington, D.C. at the Washington Center as interns in private or public sector organizations and agencies or in Albany as interns in the New York State Assembly or Senate Program. Students are supervised by selected practitioners within the organization or agency. Students are required to submit journals of experience and observation that, together with the supervisors' report, become the basis for a Satisfactory/Unsatisfactory grade. Only three credits for this course may be applied to major requirements. Crosslisted with POL 489.
Prerequisites: Admission to Washington Center or New York State Assembly or Senate Program; 15 credits from at least three social and behavioral sciences departments
Corequisite: SSI 490
Fall and spring, 12 credits

SSI 490 Washington or Albany Seminar
Seminar offered in Washington, D.C. as part of the internship program of the Washington Center or in Albany as part of the New York State Assembly or Senate Internship Program. 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 Washington Center or New York State Assembly or Senate Program; 15 credits from at least three social and behavioral sciences departments
Corequisite: SSI 489
Fall and spring, 3 credits

Social Studies Secondary Teacher Preparation Program

Director: Eli Seifman, Social Sciences Interdisciplinary

Through this program students may prepare for a teaching career and 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 director and establish an advising folder prior to the beginning of the junior year. Failure to do so may result in a delay in meeting the certification requirements. The program requires 75 credits, many of which also satisfy major 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
three credits in U.S. history
three credits in European history

2. Completion of one of the following majors: 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
27 credits distributed as follows:
SSI 327 Adolescent Growth and Development
SSI 350 Foundations of Education
SSI 397 Teaching Social Studies
SSI 398 Social Studies Teaching Strategies
SSI 450 Supervised Student Teaching
SSI 454 Student Teaching Seminar

Notes:
1. Courses taken for Pass/No Credit may not be used to satisfy the preparation in professional education component of the teacher preparation program.
2. Neither ECO 114 or 214 can be used to satisfy the requirements of this program.

Socio-Legal Studies

Director: Jeffrey Segal, Political Science

Affiliated Faculty

Patrick Grim, Philosophy
Mark H. Lazerson, Sociology
Michael Simon, Philosophy
June Starr, Anthropology
Mary Vogel, Sociology
Peter Williams, Preventive Medicine

The interdisciplinary minor in socio-legal studies (SLS) is intended for students who have an interest in law and social control and a major in one of the social and behavioral science departments, interdisciplinary programs, or humanities departments. It emphasizes the interrelationships among 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. The minor requires 21 credits.

Requirements for the Minor in Socio-Legal Studies

1. POL 320 or 321
2. Ethnic Diversity and Legal Pluralism: ANT 215 or AFS 390 or SOC 310 or another designated course. (Students wishing to propose a substitute for this requirement should petition the director.)
3. 12 credits chosen from the list of allowed courses. (A maximum of six credits may be applied from research or internship options to this requirement. See note 5.)
4. Capstone seminar: ANT 411 or SLS 411

Notes:
1. No course for the minor may be taken Pass/No Credit.
2. No more than nine credits, excluding ANT 411, may be taken in any one department.
3. The capstone seminar will normally be taken in the student's final year after completing at least three other courses in the minor, including POL 320 or 321.
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 consult a minor advisor and plan the courses they will take for fulfillment of the minor.

Allowed Courses

The following courses are allowed for the minor:

AFS/HIS 325	The Civil Rights Movement
AFS 390	Legal Process and Social Structure
ANT 215	Anthropology of Law
ECO 345	Law and Economic Issues
HMC 331	Legal and Ethical Issues in Health Care
PHI 277	Political Philosophy
PHI 375	Philosophy of Law
POL 320	Constitutional Law and Politics: United States
POL 321	Law and Politics
POL 323	The Legislative Process
POL 325	Civil Liberties and Civil Rights
POL/WNS 330	Women and the Law
POL 331	Law and Political Representation
POL 334	Supreme Court Decision Making
POL 343	Behavioral Assumptions of the Law
POL 350	Contemporary European Political Theory
POL 366	Government Regulation of Business
PSY 310	Studies of Social Conflict
SOC 309	Social Conflicts and Movements
SOC 310	Ethnic Relations
SOC 337	Social Deviance
SOC 338	The Sociology of Crime
SOC 354	Sociology of Law
SOC 356	Political Sociology
SOC/WNS 371	Gender and Work
SSI 308	Abuse of Women and Children
SSI 405	Seminar in Children, Law, and Social Policy

Special topics courses, as appropriate, with the approval of the director of the minor.

Course

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. SLS 411 does not satisfy D.E.C. requirements.

SLS 411 Perspectives on Law and Society
Major theoretical issues in the study of law in society. Empirical research and legal cases illustrate ideas and theories. Topics may include folk law and state law, comparative legal traditions, the legal profession and legal ethics, and relations between law and the social sciences.
Prerequisites: POL 320 or 321; two other courses in the socio-legal studies minor
Spring, 3 credits

Department of Sociology

Chairperson: Andrea Tyree

Director of Undergraduate Studies: O. Andrew Collver

Faculty

Said Amir Arjomand, Professor, Ph.D., University of Chicago: Comparative; historical; political; religion.

Diane Barthel, Associate Professor and Graduate Studies Director, Ph.D., Harvard University: Culture; sex roles; historical. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1989, and the President's Award for Excellence in Teaching, 1989.

Clem Brooks, Assistant Professor, Ph.D., University of California, Berkeley: Political sociology; social change; quantitative methods; stratification.

Ivan D. Chase, Associate Professor, Ph.D., Harvard University: Social inequality; social structure; resource allocation; cross-species comparisons.

Stephen Cole, Professor, Ph.D., Columbia University: Science; theory; culture. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1992, and the President's Award for Excellence in Teaching, 1992.

O. Andrew Collver, Associate Professor, Ph.D., University of California, Berkeley: Complex organizations; demography; ecology.

Lewis A. Coser, Distinguished Professor Emeritus, Ph.D., Columbia University: Theory; sociology of knowledge and intellectuals; conflict and violence; political sociology.

Kenneth A. Feldman, Professor, Ph.D., University of Michigan: Social psychology; higher education; socialization.

John H. Gagnon, Professor, Ph.D., University of Chicago: Deviance; family simulations; sexual conduct; social change.

Erich Goode, Professor, Ph.D., Columbia University: Deviance; criminology.

Norman Goodman, Distinguished Teaching Professor and Distinguished Service Professor, Ph.D., New York University: Social psychology; family; socialization. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1976.

David Halle, Professor, Ph.D., Columbia University: Work; political; theory; social change.

Nilufer Isvan, Assistant Professor, Ph.D., University of Michigan: Rural sociology; gender; comparative; social change.

Roberta Karant, Lecturer, part time, Ph.D., State University of New York at Stony Brook: Sex; gender; sociology of professions; family.

Michael Kimmel, Associate Professor, Ph.D., University of California, Berkeley: Comparative and historical development; social movements; gender and sexuality.

Mark H. Lazerson, Assistant Professor, J.D., Ph.D., New York University: Economic; industrial; law; organizations.

Thomas Phelan, Research Assistant Professor and Director of the Social and Behavioral Science Data Laboratory, Ph.D., State University of New York at Stony Brook: Science; urban; race; ethnicity.

Frank Romo, Associate Professor, Ph.D., Yale University: Statistics; methodology; social organizations; economic.

Ian Roxborough, Professor, Ph.D., University of Wisconsin-Madison: Comparative social structures; development; Latin American politics; social change; Latin American labor movements.

James B. Rule, Professor, Ph.D., Harvard University: Theory; political sociology; technology.

Michael Schwartz, Professor, Ph.D., Harvard University: Methodology; historical; political economy; business structure; social movements. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1975.

Judith Tanur, Distinguished Teaching Professor, Ph.D., State University of New York at Stony Brook: Statistics; methodology; social psychology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1990, and the President's Award for Excellence in Teaching, 1990.

Andrea Tyree, Professor, Ph.D., University of Chicago: Demography; social stratification; statistics; ethnicity.

Mary Vogel, Assistant Professor, Ph.D., Harvard University: Law and politics; historical; theory.

Robert Zussman, Associate Professor, Ph.D., Columbia University: Work; medical; political.

Affiliated Faculty

Richard Howard, Philosophy
Joseph Schwartz, Psychiatry
H. Barry Waldman, Dental Health

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 8

Requirements for the Major in Sociology

The major in sociology leads to the Bachelor of Arts degree. The following courses are required:

Completion of the major requirements entails 40 to 42 credits, of which 31 to 33 are in sociology courses.

A. Study within the Area of the Major

1. Required courses: One introductory course selected from among the following:
   SOC 105 Structure and Methods in Sociology *or* 106 Introduction to Sociology: Honors *or* 305 Modernity and Identity
   SOC 121 Library Skills for Sociological Research
   SOC 311, 312 Methods and Statistics I, II *or* SOC 201 Research Methods *and* SOC 202 Statistical Methods in Sociology or another allowed statistics course
   SOC 361 Historical Development of Contemporary Sociology
   SOC 362 Introduction to Sociological Theory (SOC 361 and 362 should be taken consecutively during the junior or senior year)
2. Sociology electives
   Free selection of courses, totaling 15 credits, from among all sociology course offerings.

Notes on Group A:

1. SOC 106 is recommended for majors considering graduate study.
2. If any required course is waived for any reason, it must be replaced with an additional elective.
3. Only six credits of independent study courses, SOC 287, 447, 487, and 488, may be used toward the requirement of 15 elective credits in sociology.

B. Study in Related Areas

At least three courses (nine credits) chosen from one of the following related social sciences: Africana studies (only those courses with designator AFS), anthropology, economics, history, linguistics, political science, psychology, social sciences, and women's studies (WNS only). Credits from applied social science professions such as social work, police science, education, and management science are not applicable. Courses that are crosslisted with a sociology course do not satisfy this requirement.

C. Upper-Division Writing Requirement

Sociology majors are expected to fulfill the upper-division writing requirement by the end of their junior year. Students may meet the requirement by having their writing evaluated in certain upper-division sociology courses (list available in the department). Students who have indicated that they wish to have their writing evaluated receive a separate report on writing proficiency in addition to their regular course grade.

Students whose writing is not judged adequate should consult with the director of undergraduate studies on further steps to fulfill the writing requirement.

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 for Pass/No Credit.
2. Except for SOC 287, 475, 476, and 488 all sociology courses offered in satisfaction of major requirements must be passed with a grade of C or higher.
3. No transferred sociology course with a grade lower than C is accepted for credit in the major.

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.

Honors Program

The honors program is open to seniors majoring in sociology who have maintained a G.P.A. of 3.5 in the major and 3.0 overall, and who have completed or are in the process of completing the methods and statistics requirement and the upper-division writing requirement. Students should apply for the honors program before the beginning of their senior year. With the approval of the sponsoring faculty member, the student must submit a written proposal for a major paper or research project to be completed during the senior year. Acceptance into the honors program depends on the approval of the proposal by the department.

During the senior year, the student enrolls in SOC 495 during the first semester and SOC 496 during the second semester, for a total of six credits. The student's major paper or research project must be completed no later than four weeks prior to the end of the second semester, to allow for possible revisions. It is read and evaluated by a committee consisting of the student's sponsor, one other sociology faculty member, and one faculty member from another department.

If the honors program is completed with distinction and the student has achieved a 3.5 G.P.A. in all sociology courses taken in the senior year, honors are conferred.

Courses

See. p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

SOC 105-F Structure and Methods in Sociology
A general introduction to the science of sociology. This course emphasizes sociological theory and methods. Students are taught what is unique about the way in which sociologists analyze human behavior and society. Differences between the sociological perspective and perspectives of other social sciences are emphasized. There is also a heavy emphasis on the types of methods and data that sociologists use to test the validity of their ideas. May not be taken for credit in addition to SOC 106, 301, or 305.
Fall and spring, 3 credits

SOC 106-F 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 requires more reading and covers more complex topics than SOC 105, providing an introduction to sociology in greater depth. May not be taken for credit in addition to SOC 105, 301, or 305.
Prerequisite: Priority given to Honors College and Honors Program students, Presidential Scholars, and Freshman Scholars
Fall or spring, 3 credits

SOC 121 Library Skills for Sociological Research
An introduction to basic library skills and bibliographic resources for sociological research, using a workbook approach as well as regularly scheduled workshops. 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. Opportunity for adequate contact between students and librarians is provided at workshops. Not for credit in addition to POL 121 or PSY 121.
Prerequisites: SOC 105 or 106 or 301 or 305; sociology major
Fall and spring, 1 credit

SOC 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. Practicing physicians or other health care professionals present clinical cases to emphasize such topics as allocation of scarce resources, issues of dying and refusing treatment, confidentiality, and cultural factors and disease. Discussion focuses on the social, historical, ethical, and humanistic import of the cases. Crosslisted with HMC 200.
Fall or spring, 3 credits

SOC 201 Research Methods in Sociology
Methods of collecting and analyzing empirical data to test sociological hypotheses. Emphasis is on multivariate analysis of tabular and statistical data. Not for credit in addition to SOC 311, 312.
Prerequisite: SOC 105 or 106 or 301 or 305
Fall and spring, 3 credits

SOC 202-C 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 AMS 102, ECO 320, POL 201, PSY 201, 203, or SOC 311, 312.
Prerequisites: SOC 105 or 106 or 301 or 305; satisfaction of entry skill in mathematics requirement
Fall and spring, 3 credits

SOC 204-F Intimate Relationships
The dynamics of forming, maintaining, and dissolving intimate relationships. Attention is focused on dating, partner selection, sexuality, marriage, divorce, and remarriage. Crosslisted with WNS 204.
Fall and spring, 3 credits

SOC 243-F Sociology of Youth
Adolescent socialization; age structures and intergenerational conflict; peer groups and youth subcultures.
Fall and spring, 3 credits

SOC 247-K Sociology of Gender
The roles of women and men in American society; changing relations between the sexes; women's liberation and related movements. Crosslisted with WNS 247.
Prerequisite: Completion of D.E.C. categories I and J strongly recommended
Fall and spring, 3 credits

SOC 264-J Introduction to Middle Eastern Society
A broad survey of society, politics, and culture in the Islamic Middle East and North Africa. The course includes 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 are analyzed. The major patterns of social change, modernization of states, and political revolutions in the 20th century are also studied.
Fall or spring, 3 credits

SOC 268 Theory and Practice in Student Leadership
Leadership theory, leadership qualities, and group dynamics are explored with an emphasis placed on experiential learning and group observation. Effective communication skills, understanding group dynamics, and appreciating cultural diversity are topics of significant relevance.
Prerequisite: SOC 105 or 106 or 301 or 305
Fall or spring, 3 credits

SOC 287 URECA Research in Sociology
Supervised research under the sponsorship of a sociology faculty member as part of the University's URECA program. Students assist faculty in various aspects of ongoing research. Assignments depend on the nature of the project. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits, but a total of no more than six

credits of SOC 287, 447, 487, and 488 may count toward the major.
Prerequisite: Permission of departmental URECA coordinator
Fall and spring, 1 to 6 credits

SOC 301-F 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 illustrates the use of a sociological perspective in the analysis of the social world, rather than focusing on sociological concept development. Topics to be included are chosen from the following: ethnic relations, deviance and delinquency, socialization, organizational analysis, the family as a social institution, population analysis, and urban life. Not for credit in addition to SOC 105, 106, or 305, or for major credit. May be used as a prerequisite for higher-level sociology courses in place of SOC 105, 106, or 305.
Prerequisites: Upper-division standing; a major other than sociology
Fall, 3 credits

SOC 302-K 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 and cultural pluralism, social mobility, and urban problems.
Prerequisites: Upper-division standing; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits

SOC 303-F Social Stratification
Theories of social stratification; patterns of differentiation in wealth, prestige, and power; social mobility; power structures and elites.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall or spring, 3 credits

SOC 304-F Sociology of the Family
A historical and cross-cultural analysis of the family as a major social institution in society; the demography of contemporary American families; selected policy issues involving the family. Crosslisted with WNS 304.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Spring, 3 credits

SOC 305-F Modernity and Identity
A sociological perspective applied to the emergence of modern society. Special attention is focused on the impact of the industrial revolution, urbanism, and the rise of modern democracies. The course considers how new social structures, such as bureaucracies, lead to new definitions of personal identity, and how social order and culture become increasingly problematic as new social groups are formed and demands made. May not be taken for credit in addition to SOC 105, 106, or 301.
Prerequisite: Upper-division standing
Fall or spring, 3 credits

SOC 307-F 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 105 or 106 or 301 or 305; two other courses in the social sciences
Fall, 3 credits

SOC 309-F Social Conflicts and Movements
An examination of aggregate phenomena; revolutionary and counterrevolutionary programs and organizations. Historical and cross-cultural examples are emphasized.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Spring, 3 credits

SOC 310-K Ethnic Relations
The comparative experience of ethnic and other minority groups within the United States, including formation, migration, and conflict; prejudice, discrimination, and minority self-hatred.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences; completion of D.E.C. categories I and J strongly recommended
Fall and spring, 3 credits

SOC 311, 312-C Methods and Statistics I, II
An integrated view of sociological methodology and the place of statistical techniques. Students learn descriptive and inferential statistics through designing and carrying out either individual or group research projects; the students consider the interrelations between theory and research as well as the mechanics of carrying out the research process. Every student is required to analyze a set of data and to write a research report. May not be taken for credit after AMS 102, ECO 320, POL 201, PSY 201, 203, or SOC 201 or 202.
Prerequisites to SOC 311: SOC 105 or 106 or 301 or 305; satisfaction of entry skill in mathematics requirement
Prerequisites to SOC 312: SOC 311; permission of instructor
Fall (311) and spring (312), 4 credits each semester (not offered in 1995-96)

SOC 315-H Sociology of Technology
Social systems and the various "tools" 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 is given to the role of technology in all societies, from the simplest to the most developed.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences; one D.E.C. category E course
Spring, 3 credits

SOC 320-F Demography
Sources and consequences of changes in population size and composition; the "demographic explosion."
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall, 3 credits

SOC 323-F 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 105 or 106 or 301 or 305; two other courses in the social sciences
Fall and spring, 3 credits

SOC 335-F Sociology of Labor Movements
An analysis of the rise and present status of labor movements with emphasis on the growth of large corporations; the role of the state; imperialism; and the influence of class, race, and gender.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall or spring, 3 credits

SOC 336-F Social Change
Development and modernization are studied in a historical and comparative perspective that emphasizes the universality of social change in human societies. The approach is macrosociological, focusing on broad patterns of change in economic, social, and political organization in the modern era. Revolutions as dramatic instances of socio-political change receive particular attention.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall, 3 credits

SOC 337-F Social Deviance
Competing theories of the nature of social deviance; stigmatizing, labeling, and application of informal social controls; technical, legal, and ethical issues related to "non-victim" crimes.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall and spring, 3 credits

SOC 338-F The Sociology of Crime
The application of formal social control to criminally prosecutable offenses; the relationship of law and society; the criminal justice system.
Prerequisite: SOC 337
Fall and spring, 3 credits

SOC 339-F 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 105 or 106 or 301 or 305; two other courses in the social sciences
Fall, 3 credits (not offered in 1995-96)

SOC 341-F Historical Sociology
Sociological theories and methods applied to the study of historical phenomena such as revolutions, migration, and industrialization.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences; a history course is also recommended
Fall or spring, 3 credits

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.
Prerequisite: SOC 202 or 312 or another allowed statistics course
Spring, 4 credits

SOC 344-F 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 105 or 106 or 301 or 305; two other courses in the social sciences
Spring, 3 credits

SOC 351-F Sociology of the Arts
Theories on the arts and society; the social role of the artist; processes of cultural production. Examples are drawn from one or more of the arts, including literature and the visual and performing arts.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall or spring, 3 credits

SOC 352-F 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 105 or 106 or 301 or 305; two other courses in the social sciences
Spring, 3 credits

SOC 353-H 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 105 or 106 or 301 or 305; one D.E.C. category E course
Fall or spring, 3 credits

SOC 354-F 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 105 or 106 or 301 or 305; two other courses in the social sciences
Fall or spring, 3 credits

SOC 356-F Political Sociology
Social structure and processes as they affect, and are affected by, political behavior and organizations; the sociology of power, authority, and legitimacy.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall and spring, 3 credits

SOC 361-F Historical Development of Sociological Theory
Main currents in the development of modern sociology, with an emphasis on Marx, Weber, and Durkheim, among other leading theorists.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall and spring, 3 credits

SOC 362-F Contemporary Sociological Theory
A systematic treatment of the dominant general orientations in sociology including structural-functional analysis, symbolic interactionism, and modern versions of Marxism.
Prerequisite: SOC 361
Fall and spring, 3 credits

SOC 364-J Sociology of Latin America
A survey of Latin American societies, social structures, and processes of social, political, and economic change. Topics include social stratification; occupational structure; demographic characteristics; the state; class structure; military intervention in politics; conditions for democracy, political stability, and revolution; policy making; and popular social movements.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall or spring, 3 credits

SOC 370-F 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 105 or 106 or 301 or 305; two other courses in the social sciences
Fall, 3 credits (not offered in 1995-96)

SOC 371-K Gender and Work
Gender differences in work force participation and occupational attainment, with an emphasis on the United States. Covers such topics as historical changes in work force participation; economic, legal, and social factors affecting employment; career options; and pay equity. Readings and lectures focus on the historical and contemporary experience of American men and women, including differences by ethnicity and class. Crosslisted with WNS 371.
Prerequisites: WNS/SSI 102 or WNH 103 or SOC 105 or 106 or 301 or 305; two other courses in the social sciences; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits

SOC 372-F Mass Communications
Social influences on the content and effects of mass communications; communication systems; the public functions of mass communication.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall, 3 credits (not offered in 1995-96)

SOC 373-F 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 105 or 106 or 301 or 305; two other courses in the social sciences
Spring, 3 credits

SOC 375-F Biosociology
Comparison of basic social processes in human and animal groups. Topics covered include dominance, hierarchies, the distribution of scarce resources, cooperation, and the division of labor.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences or two courses in biology
Spring, 3 credits

SOC 377 Social Surveys in Contemporary Society
An interdisciplinary course on the history, uses, design, and implementation of the social survey. Emphasis is given to the use of surveys in politics, the media, and business. Crosslisted with POL 351.
Prerequisite: POL 201 or SOC 202 or any other course satisfying the political science major's methodology requirement
Fall, 3 credits

SOC 378 Advanced Survey Research
Advanced review of survey techniques and report writing. The course covers the analysis of survey data and the preparation of descriptive reports suitable for distribution to the media. Topics include a refresher on basic statistics, the logic of scientific enquiry and hypothesis testing, the use of focus groups and in-depth interviewing to supplement survey responses, the addition of census information to complement survey responses, effective report writing, and the varied uses of social sciences data. Crosslisted with POL 352.
Prerequisite: POL 351/SOC 377
Spring, 3 credits

SOC 380-F Social Psychology
Individual and social factors in human behavior; the structure of personality; identity development; communication processes; and attitudes.
Prerequisites: SOC 105 or 106 or 301 or 305 or PSY 103 or 104; two other courses in the social sciences
Fall and spring, 3 credits

SOC 381-F Sociology of Organizations
Bureaucracy as a form of organization; the structure of relations between and within organizations.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall and spring, 3 credits

SOC 382-F Small Groups
The structure and functioning of face-to-face groups in field and laboratory settings.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall or spring, 3 credits

SOC 383-F 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
Fall or spring, 3 credits

SOC 384-F 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. Covers 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 105 or 106 or 301 or 305; two other courses in the social sciences
Fall or spring, 3 credits

SOC 385-F The Sociology of Economic Life
The sociological approach to markets, production, distribution, and consumption. Special attention to the differences between sociological and economic theories of the same phenomena and to the embeddedness of economic action in social structure. Topics include the historical emergence of sociology and economics as separate disciplines; labor markets and the labor process; discrimination; vertical integration and industrial organization; the organization of professions such as law and medicine; fertility and population changes; and comparisons of tribal and non-Western economic systems to those familiar in modern industrial society.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall or spring, 3 credits

SOC 386-J State and Society in the Middle East
State building and modernization in the Middle East during the last century and a half are studied in the context of the Middle Eastern social structure and institutions. The analysis of political change—reform and revolution—in the Middle East is viewed from a socio-historical perspective.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Fall or spring, 3 credits

SOC 387-F 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 105 or 106 or 301 or 305; two other courses in the social sciences
Fall, 3 credits

SOC 390-F, 391-F, 392-F, 393-F, 394 Special Topics
Lectures on topics of current sociological interest, which are announced before the start of the term. May be repeated as the topic varies.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Schedule to be announced, 3 credits each

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 287, 447, 487, and 488 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 I
Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and 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 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 sociology courses. Students assume greater responsibility in such areas as leading discussions, analyzing results of tests that have already been graded, and observing teaching methods. The course in which a student is permitted to work as a teaching assistant is different from the course in which he or she previously served. Satisfactory/Unsatisfactory grading only.
Prerequisites: SOC 475; 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 used for URECA projects associated with faculty research. May be repeated. A total of no more than six credits of SOC 287, 447, 487, and 488 may be counted toward the major.
Prerequisites: Written permission of instructor and director of undergraduate studies. For URECA projects, permission of URECA coordinator required instead of that of the 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 are 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, but a total of no more than six credits of SOC 287, 447, 487, and 488 may be counted toward the major.
Prerequisites: Twelve credits in sociology; permission of instructor, department, and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

SOC 495, 496 Senior Honors Project I, II
A two-semester project for candidates for the degree with honors in sociology, arranged in consultation with the director of undergraduate studies. The project involves independent readings or research and writing a paper under the close supervision of an appropriate faculty member on a suitable topic selected by the student.
Prerequisite to SOC 495: Admission to the sociology honors program
Prerequisite to SOC 496: SOC 495
Fall and spring, 3 credits each semester

Department of Theatre Arts

Chairperson: Farley Richmond

Director of Undergraduate Studies: John Cameron

Faculty

Loyce Arthur, Assistant Professor, M.F.A., New York University: Costume design; folklore.

William J. Bruehl, Professor Emeritus, Ph.D., University of Pennsylvania: Directing; modern drama; improvisation; acting.

John Cameron, Associate Professor, Ph.D., Kent State University: Acting; directing; American theatre.

Dunsi Dai, Assistant Professor, M.F.A., University of Illinois at Urbana-Champaign: Stage design.

Richard Dunham, Assistant Professor, M.F.A., Ohio State University: Theatrical design; scene and lighting design.

Theresa Kim, Assistant Professor, Ph.D., New York University: Acting; Asian drama.

Jonathan Levy, Distinguished Teaching Professor, Ph.D., Columbia University: Criticism; playwrighting. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1991, and the President's Award for Excellence in Teaching, 1991.

John Lutterbie, Assistant Professor and Graduate Studies Director, Ph.D., University of Washington: History and criticism.

Deborah Mayo, Adjunct Instructor, M.F.A., Yale University: Acting; youth theatre.

Thomas Neumiller, Professor, M.F.A., Yale University: Acting; directing. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1993, and the President's Award for Excellence in Teaching, 1993.

Norman Prusslin, Adjunct Instructor, B.A., State University of New York at Stony Brook: Radio broadcasting; media leadership.

Farley Richmond, Professor, Ph.D., Michigan State University: Asian theatre; directing.

David Saltz, Assistant Professor, Ph.D., Stanford University: Multimedia; theory; criticism.

Amy Sullivan, Associate Professor, M.F.A., University of North Carolina at Greensboro: Modern dance with emphasis on performance and choreography.

Randy Thomas, Assistant Professor, M.A., Ohio State University: Ballet and jazz dance.

Rose Zimbardo, Distinguished Teaching Professor, Ph.D., Yale University: Restoration satiric drama; modern drama; the Renaissance. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1981.

Adjunct Faculty
Estimated number: 1

Teaching Assistants
Estimated number: 8

The theatre arts major offers students a comprehensive introduction to the theory and practice of the theatre arts. The core program (see A below) provides a balance of historical and practical courses, ensuring that students share a common background while encouraging them to identify and build on their strengths. Electives (see B below) encourage students to develop individual talents and interests, exploring a range of information and techniques for artistic work. Students participate in theatre productions at every stage of the program. Study culminates in the senior seminar, in which students pursue an advanced, individual project in theatre arts.

Students graduate with a strong background in liberal arts and theatre study. With a major in theatre arts they may pursue theatre-related careers, go on to further theatre study, or enter other professions such as law, business, publishing, advertising, and public relations.

Requirements for the Major in Theatre Arts

The major in theatre arts leads to the Bachelor of Arts degree.

Completion of the major requirements entails 48 credits.

A. Theatre Arts Core Program
THR 105 Acting I
THR 115 Stagecraft I
THR 116 Stagecraft II
THR 216 Introduction to Theatrical Design
THR 230 Voice and the Actor
THR 264 Movement Awareness and Analysis
THR 311 European Theatre and Drama
THR 312 American Theatre and Drama
THR 313 Asian Theatre and Drama
THR 320 Production I
THR 321 Production II
THR 354 Topics in Dramaturgy
THR 401 Senior Seminar

B. Electives
Nine additional credits in theatre arts courses acceptable for major credit.

C. Upper-Division Writing Requirement
Before the end of the second semester of the junior year, each student submits to the director of undergraduate studies a portfolio of at least two papers written for different instructors in upper-division theatre courses. The director of undergraduate studies, in consultation with the faculty, evaluates the papers to determine the writing competence of the student.

Notes:
1. Students majoring in theatre arts may not satisfy D.E.C. categories B and D with THR courses.
2. All courses for the major in theatre arts must be taken for a letter grade. No grade lower than C may be applied to 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 for 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, media, performance, design, or management. The honors project is reviewed by at least two members of the Department of Theatre Arts faculty and one outside evaluator. If the honors project is carried out with distinction and the student has achieved a 3.5 G.P.A. in all theatre arts courses taken during the senior year, honors are conferred.

Course credit for the honors project is given under THR 487. Guidelines are available in the department office.

Minor in Theatre Arts

The minor in theatre arts provides the student with the opportunity to explore several aspects of the dramatic arts. The course of study should lead the student to an understanding of the necessary next steps should his or her interest be sharpened by the experience. Completion of the minor entails 21 credits.

A. Theatre Arts Minor Core Program
1. THR 105 Acting I
2. One of the following courses:
   THR 115 Stagecraft I
   THR 116 Stagecraft II
3. One of the following courses:
   THR 320 Production I
   THR 321 Production II
4. One of the following courses:
   THR 311 European Theatre and Drama
   THR 312 American Theatre and Drama
   THR 313 Asian Theatre and Drama

B. Electives
Nine credits to be chosen from courses in theatre arts, six of which must be upper division.

Note: All courses for the minor in theatre arts must be taken for a letter grade. No grade lower than C may be applied to the minor. At least 12 of the 21 credits must be taken at Stony Brook.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C.category.

The following performance courses do not count toward the 90 liberal arts credits required for the B.A. degree: THR 222, 244, 295, 296, 301 through 307, 340.

THR 101-D Understanding Theatre
An overview of performance, design, and production in the theatre. Specific texts are explored through lectures, demonstrations, and a close examination of the rehearsal process. Professionals working in the theatre are invited to speak on such topics as stage management, technical production, and direction. Not for major credit.
Fall and spring, 3 credits

THR 104-B 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. Not for major credit. May not be taken for credit in addition to THR 114.
Fall and spring, 3 credits

THR 105-D 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.
Fall and spring, 3 credits

THR 110 Public Speaking
An introduction to public speaking techniques that includes increased awareness of physical and vocal expression and speech content. Not for major credit.
Fall and spring, 3 credits

THR 114-B Play Analysis: Honors
An enriched version of THR 104. The course explores cultural constructions of race, gender, and ethnicity as they have been presented in American drama. The stereotypes of "other" and the manner of their presentation are considered in regard to African Americans, Asians and Asian Americans, Jewish Americans, Italian Americans, gay Americans, and Latino Americans. Both plays and films are examined. May not be taken for credit in addition to THR 104.
Prerequisite: Permission of department; priority given to Honors College and Honors Program students, Presidential Scholars , and Freshman Scholars
Fall, 3 credits

THR 115 Stagecraft I
A study of the tools and technology involved in the creation of theatrical lighting, sound, and costume.
Fall and spring, 3 credits

THR 116 Stagecraft II
A study of the tools and technology involved in the creation of theatrical scenery and properties.
Fall and spring, 3 credits

THR 117 Film, Video, and Audio Narrative
Principal techniques of dramatic narrative are studied in relation to film, video, and audio. Analysis of the work of major artists in each of these media.
Fall or spring, 3 credits

THR 161-D Modern Dance Technique and History
The fundamentals, technique, and history of modern dance. Basic principles of alignment, centering, placement, and modern technique are introduced. The historical component includes various styles within the field of modern dance, individual artists who have contributed to the field, and the place of modern dance in society and culture at large.
Fall and spring, 3 credits

THR 162-D Ballet Technique and History
The fundamentals, technique, and history of ballet. The course covers the development of body alignment through stretching and strengthening exercises; simple barre exercises, center floor combinations, and movement phrases to music. The historical component includes the development of ballet from the 15th century to the present day. Various styles, companies, techniques, and individual artists are discussed.
Fall or spring, 3 credits

THR 163-D Jazz Dance Technique and History
The fundamentals, technique, and history of jazz dance. Basic principles of alignment, centering, placement, and jazz technique are covered. The historical component includes various styles within the field of jazz dance, individual artists who have contributed to the field, and the place of jazz dance in society and culture at large.
Fall and spring, 3 credits

THR 164-D Tap Technique and History
The fundamentals, technique, and history of tap dance. Basic technique, time step, and combinations are covered. The historical component traces the development of tap from its roots in the music of jazz to presentday expressions. Various traditional styles, individual artists, and current trends are discussed.
Fall, 3 credits

THR 205-G Acting II
The exploration of realistic character analysis and development through scenes and monologues.
Prerequisite: C or higher in THR 105
Fall and spring, 3 credits

THR 208 Technology in the Arts
A multidisciplinary, hands-on introduction to the concepts and techniques of computer-influenced art, combining art, music, and theatre. Students explore computer creation and manipulation of sounds and images, as well as various ways of combining them. Current creative work using these techniques is studied. Crosslisted with ARS 208 and MUS 208.
Prerequisites: MUS 222 or THR 216 or six credits of ARS courses; permission of instructor
Fall, 3 credits

THR 216-D Introduction to Theatrical Design
An exploration of the elements of theatrical design. The student uses general design elements in play analysis and discovers the process by which a total visual statement can be developed from dramatic literature.
Prerequisite: THR 115 or 116
Spring, 3 credits

THR 222 Stage Makeup
An investigation into the theory, techniques, and materials of stage makeup and its relation to character analysis. Students explore aspects of facial anatomy, color theory, and graphic representation of three-dimensional form.
Prerequisite: THR 105
Fall or spring, 3 credits

THR 223-D Stage Costume
An introduction to stage costume design and technology, combining theory and practice. Students study the tradition and history of costume design, do exercises in conceiving and rendering designs, and learn how to use costume shop equipment and materials.
Prerequisites: THR 115 and 216
Fall, 3 credits

THR 230 Voice for the Actor
A practical course in voice production for the actor designed for theatre arts majors. Students participate in exercises for developing the speaking voice with an emphasis on the involvement of the body. Increasing resonance, range, and articulation and their link to acting and improvisation are explored.
Prerequisites: THR 105; permission of instructor
Fall or spring, 3 credits

THR 244 Summer Theatre Workshop I
Service as apprentices working on the planning, preparation, and execution of a summer stock series. May be repeated for a maximum of six credits. No more than six credits may be taken in combination with THR 340.
Prerequisite: Permission of instructor
Summer, 1 to 6 credits

THR 246-D Stage Lighting
An introduction to the aesthetics and traditions of stage lighting design and technology, combining theory and practice. The course includes an exploration of color, intensity, and control through classroom and laboratory exercises using equipment and computer boards in the Staller Center for the Arts.
Prerequisites: THR 115 and 216
Fall or spring, 3 credits

THR 256-D Stage Design
Introduction to the aesthetics and traditions of scene design. The study includes exercises in design rendering with opportunities for students to conceive and work through design ideas.
Prerequisites: THR 116 and 216
Fall, 3 credits

THR 261 Modern Dance Technique and Composition
Further development of modern dance technique. In addition to technical training, the course presents basic concepts in dance composition—the skill and craft of structuring movement. Students are expected to create compositional movement studies based on their technique and understanding of modern dance.
Prerequisites: THR 161 (THR 162 or 163 may be substituted); permission of instructor
Fall or spring, 3 credits

THR 262 Ballet Technique and Composition
Further development of ballet technique. In addition to technical training, the course presents basic concepts in dance composition—the skill and craft of structuring movement. Students are expected to create compositional movement studies based on their technique and understanding of ballet.
Prerequisites: THR 162 (THR 161 or 163 may be substituted); permission of instructor
Fall or spring, 3 credits

THR 263 Jazz Dance Technique and Composition
Further development of jazz dance technique. In addition to technical training, the course presents basic concepts in dance composition—the skill and craft of structuring movement. Students are expected to create compositional movement studies based on their technique and understanding of jazz dance.
Prerequisites: THR 163 (THR 161 or 162 may be substituted); permission of instructor
Fall or spring, 3 credits

THR 264-D Movement Awareness and Analysis
A course designed for theatre arts majors covering the fundamentals of movement based on knowledge of the skeleton and muscles. Students are guided toward correct body alignment and movement based on theories of Laban, Bartentieff, Alexander, Feldenkrais, and Todd and Sweigard. Analysis of movement enables the student to correct improper use of the body, allowing for efficiency of movement.
Prerequisites: THR 105; permission of instructor
Spring, 3 credits

THR 270 Introduction to Radio Broadcasting
An introduction to the tools and techniques of radio production. The course provides a broad theoretical and practical foundation in the techniques 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 the skills and techniques of the professionals and artisans who make it work. Equipment and technique are demonstrated, but this is not a hands-on course. Broadcast television, cable television, instructional TV, industrial training, and experiments in community communication are examined.
Prerequisite: THR 117
Fall or spring, 3 credits

THR 295 Special Workshop
Intensive workshop in a specific skill from the disciplines of arts management, directing, performance, playwrighting, film and television, criticism, etc. Among possible workshops are music theatre, theatre and the media, and public broadcasting fund-raising. May be repeated as the topic varies. Satisfactory/Unsatisfactory grading only.
Prerequisite: Permission of instructor
Schedule to be announced, 1 to 3 credits (to be assigned when course is scheduled)

THR 296 Special Workshop in Design and Technical Theatre
An intensive workshop in a specific skill, including but not limited to the following: pattern drafting for costumes; special sewing and dyeing techniques; mask making; wig making; molding and making plastic properties, scenery, or costume pieces. May be repeated as the topic varies. Satisfactory/Unsatisfactory grading only.
Prerequisite: Permission of instructor
Schedule to be announced, 1 to 3 credits (to be assigned when course is scheduled)

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 301 Stage Management Laboratory
Development of skills needed to accomplish the functions of the stage manager. May be repeated once.
Prerequisite: Permission of department
Fall and spring, 1 credit

THR 302 Theatre Management Laboratory
Development of practical skills in the business and managerial problems of theatre. May be repeated once.
Prerequisite: Permission of department
Fall and spring, 1 credit

THR 303 Costume Crafts Laboratory
Development of skills needed for costume and accessory construction. May be repeated once.
Prerequisite: Permission of department
Fall and spring, 1 credit

THR 304 Marketing Laboratory
Development of skills needed in marketing theatre. May be repeated once.
Prerequisite: Permission of department
Fall and spring, 1 credit

THR 305 Lighting and Sound Laboratory
Development of skills needed in installation and control of lighting and sound equipment. May be repeated once.
Prerequisite: Permission of department
Fall and spring, 1 credit

THR 306 Stagecraft Laboratory
Development of skills needed in theatre construction. May be repeated once.
Prerequisite: Permission of department
Fall and spring, 1 credit

THR 307 Performance Laboratory
Development of skills in performance through the preparation and rehearsal of a production. Student must audition, be cast in a role in a major department production, and engage in the entire rehearsal process. May be repeated once.
Prerequisite: Permission of department
Fall and spring, 1 credit

THR 311-I European Theatre and Drama
The relation between dramatic literature and theatre conventions in the Western tradition, focusing on an issue that illustrates the connection between performances and historical context.
Prerequisites: Completion of D.E.C. categories A, B, and D
Fall, 3 credits

THR 312-K American Theatre and Drama
The history of American theatre and dramatic literature from its earliest origins through the influence of the European tradition, emphasizing major events and various cultural, religious, and ethnic influences. Original contributions to world theatre in the 19th century, particularly staging techniques and the development and growth of the musical theatre, are covered.
Prerequisites: Completion of D.E.C. categories A, B, and D; completion of D.E.C. categories I and J strongly recommended
Fall, 3 credits

THR 313-J Asian Theatre and Drama
A comprehensive overview of Asian theatre with special emphasis on drama, theatrical aesthetics, and conventions of production in India, China, and Japan.
Prerequisites: Completion of D.E.C. categories A, B, and D
Spring, 3 credits

THR 314-G Modern Drama on Stage
A seminar examining the forms of modern drama in the context of production from 1860 to the present.
Prerequisites: Completion of D.E.C. categories A, B, and D
Fall or spring, 3 credits

THR 316-G 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 115 and 116
Spring, 3 credits

THR 317 Interactive Performance, Media, and MIDI
Practical and theoretical issues related to interactive performance, combining elements of art, music, theatre, performance art, video, and computer science. Course topics include sound synthesis, sampling, video, lighting, alternative input, and MIDI. This hands-on course stresses small experimental-creative laboratory assignments and culminates in final small-group or individual projects. Crosslisted with ARS 317 and MUS 317.
Prerequisite: At least one 200- or 300-level ARS, MUS, or THR studio or performance course
Spring, 3 credits

THR 320 Production I
The application of practical skills in a theatrical production environment. The course provides experience in several areas of theatre technology through participation in full-scale theatrical productions. Costume crafts, stage management, lighting, and sound may be among the areas of focus. THR 320 and 321 may be taken in either order.
Prerequisites: THR 115 and 116
Fall, 3 credits

THR 321 Production II
The application of practical skills through participation in full-scale theatrical productions. Marketing, performance, theatre management, and stagecraft may be among the areas of focus. THR 320 and 321 may be taken in either order.
Prerequisites: THR 115 and 116
Spring, 3 credits

THR 322-G Acting III
Advanced work in scene study limited to one or two major playwrights.
Prerequisites: THR 205 and 230
Fall or spring, 3 credits

THR 323-G Costume Design
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 Scriptwriting for Film and Television
Preparation and construction of scripts for use in media: radio, television, and motion pictures.
Prerequisites: THR 117; permission of instructor
Fall or spring, 3 credits

THR 326 Playwrighting
A workshop devoted to planning and writing finished scripts for the stage.
Prerequisite: EGL 202 or 285 or THR 104 or 114
Fall, 3 credits

THR 327 Advanced Playwrighting
An advanced workshop to develop skills used by playwrights in the craft of structuring action and developing character through action.
Prerequisites: THR 326; permission of instructor
Spring, 3 credits

THR 332 Improvisation
Drill in both verbal and nonverbal exercises and assorted theatre games leading to the development of improvisational skills.
Prerequisites: THR 205; permission of instructor
Fall or spring, 3 credits

THR 333-G 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 105; THR 320 or 321
Fall, 3 credits

THR 336 Stage Management
Various aspects of stage management, including analysis of scripts and reading of blueprints and light plots.
Prerequisite: THR 321
Fall or spring, 3 credits

THR 339 Directing II
Advanced work in interpretation and handling of production complexities. Students mount a production.
Prerequisite: THR 333
Spring, 3 credits

THR 340 Summer Theatre Workshop II
Service in positions of responsibility for advanced students in running the summer theatre. No more than six credits may be taken in combination with THR 244.
Prerequisites: THR 244; permission of instructor
Summer, 1 to 6 credits

THR 344-G 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 are also considered.
Prerequisite: THR 311 or EGL 243 or 345 or 346
Fall or spring, 3 credits

THR 346-G Lighting Design
Advanced topics in lighting design intended to acquaint the student with highly specialized lighting genres. Subjects include lighting for repertory theatres, the dance, and musical theatre.
Prerequisites: THR 246; permission of instructor
Fall or spring, 3 credits

THR 349-G The Creative Process in the Fine Arts
An examination of the creative process and its philosophical foundations in Western culture. Students 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 MUS 101 or 119 or THR 101 or 104 or 114
Fall or spring, 3 credits

THR 351 Auditioning for Careers
An examination of potential careers in acting and development of the audition skills requisite for pursuit of advanced degrees in acting or roles in professional theatre.
Prerequisite: THR 205
Fall or spring, 3 credits

THR 353-G Special Topics in Performance
A concentration in one aspect of acting, such as preparation for the work of a specific playwright, readers' theatre, oral interpretation, improvisation, or musical theatre. May be repeated once as the topic varies.
Prerequisites: THR 105; permission of instructor
Schedule to be announced, 3 credits

THR 354-G Topics in Dramaturgy
In-depth study of a specific subject in the history, theory, aesthetics, criticism, or dramatic tradition of the theatre. May be repeated as the topic varies.
Prerequisites: Completion of D.E.C. categories A, B, and D
Schedule to be announced, 3 credits

THR 356-G Scene Design
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 361 Modern Dance Technique and Performance
Advanced study in modern dance techniques, combining dance training, compositional skills, and performance technique.
Prerequisites: THR 261 (THR 262 or 263 may be substituted); permission of instructor
Fall or spring, 3 credits

THR 362 Acting for the Camera
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.
Prerequisite: THR 205
Fall or spring, 3 credits

THR 363 Jazz Dance Technique and Performance
Advanced study of jazz techniques, combining dance training, compositional skills, and performance techniques.
Prerequisites: THR 263 (THR 261 or 262 may be substituted); permission of instructor
Fall or spring, 3 credits

THR 364 Choreography
Training in the craft of choreography, the creation of dance, using applied dance techniques, improvisational tools, perceptual skills, and investigations. Students create studies and original dance compositions and critique the various developmental stages in order to modify and expand their creations. The theory presented contains basic aesthetic concepts that contribute to the structure and form of dance.
Prerequisite: THR 261 or 262 or 263
Spring, 3 credits (not offered in 1995-96)

THR 370 Radio News
Principles of radio news, including writing and announcing, conceiving and producing features, field recording, legal concepts for the audio producer, and the role of radio news as an information resource. Students research, script, produce, and review such audio assignments as newscasts, public service announcements, features, interviews, field recordings, and mini-documentaries.
Prerequisite: THR 270
Fall or spring, 2 credits

THR 375 Television Production
Planning, writing, analysis, rehearsal, production, and post-production of a television program. Students study the techniques of studio lighting, camera operation, electronic field production (EFP) and studio taping, audio production, directing, and electronic editing. Films and tapes of professional productions are analyzed and critiqued.
Prerequisites: THR 272; permission of instructor
Fall or spring, 4 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 that are

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; nine credits in media arts minor
Fall or spring, 3 credits

THR 400 Performance Dance Ensemble
Concentrated development of dance technique and performance skills through rehearsal and presentation of choreography. May be repeated once.
Prerequisites: THR 261 or 262 or 263; audition; permission of instructor
Fall or spring, 3 credits

THR 401 Senior Seminar
An intensive investigation of theatre theorists with particular emphasis on the application of theory to practice.
Prerequisites: Theatre arts major; senior standing
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
Fall or spring, 3 credits

THR 405 Western Styles in Acting
A study of the specific requirements of one or two styles of performance that have emerged in Western theatre. Possible topics include the styles of Greek drama, Shakespearean drama, Restoration comedy, comedy of manners, *commedia dell'arte,* farce, and musical theatre. Topics vary by semester. May be repeated once.
Prerequisites: THR 205, 230, and 264
Fall or spring, 3 credits

THR 406 Eastern Styles in Acting
Study in and practice of the various principles of stylized acting, based on Asian models. Possible models include, but are not limited to, *no, kabuki,* the Suzuki method, Beijing opera, and *kutiyattam* of India. Topics may vary by semester according to availability of guest artists and to productions scheduled in the season. May be repeated once.
Prerequisites: THR 205, 230, and 264
Fall or spring, 3 credits

THR 447 Readings In Theatre Arts
Selected readings in a special area, to be arranged by the student and the instructor.
Prerequisites: At least four theatre arts courses; sponsorship of a faculty member; permission of department
Fall and spring, 1 to 3 credits

THR 475 Undergraduate Teaching Practicum I
Each student is responsible for some aspect of a course, depending on his or her particular skills. The student receives 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 the 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 are 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 the major.
Prerequisites: THR 475; permission of instructor and department
Fall and spring, 3 credits

THR 487 Projects in Theatre Arts
Advanced work on a particular problem in management, performance, design, dramaturgy, scriptwriting, technical theatre, media, or directing. May be repeated once. Applications for projects must be submitted by the end of the advance registration period.
Prerequisite: Permission of instructor and department
Fall and spring, 3 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 are 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

Women's Studies

Director: Adrienne Munich, English

Faculty

Temma Kaplan, Professor, Ph.D., Harvard University: Comparative history; 20th-century social movements of women.

Carole Kessner, Assistant Professor, part time, Ph.D., State University of New York at Stony Brook: Women and Judaism; women and ethnicity.

Connie Koppelman, Lecturer, part time, Ph.D., State University of New York at Stony Brook: Women in Long Island history; Long Island women artists.

Adrienne Munich, Associate Professor, Ph.D., City University of New York: Victorian literature; feminist theory.

Sarah Hall Sternglanz, Lecturer, Ph.D., Stanford University: Psychology of women; sex role development.

Affiliated Faculty

Harriet Allentuch, French and Italian
Frank Anshen, Linguistics
William Arens, Anthropology
Diane Barthel, Sociology
Beverly Birns (Emerita), Social Sciences Interdisciplinary
Michele Helene Bogart, Art
Ruth S. Bottigheimer, Comparative Studies
Barbara Brand, Library
Ruth Brandwein, Social Welfare
Floris Barnett Cash, Africana Studies
Lou Charnon-Deutsch, Hispanic Languages and Literature
Helen Cooper, English
Ruth Schwartz Cowan, History
Barbara Elling, Germanic and Slavic Languages and Literatures
Ann Gibson, Art
Norman Goodman, Sociology
Robert O. Hawkins, Allied Health Professions
Laura Henigman, English
Leonie Huddy, Political Science
Don Ihde, Philosophy
Nilufer Isvan, Sociology
E. Ann Kaplan, English
Michael Kimmel, Sociology
Eva Feder Kittay, Philosophy
Joan Kuchner, Social Sciences Interdisciplinary
Brooke Larson, History
Helen Lemay, History
Ira Livingston, English
Marci Lobel, Psychology
Judith Lochhead, Music
Iona Man-Cheong, History
Rita Nolan, Philosophy
Lester Paldy, Technology and Society
Ilona Rashkow, Comparative Studies
Carol Rosen, English
Joel Rosenthal, History
June Starr, Anthropology
Jane Sugarman, Music
Nancy Tomes, History
Gerdi Weidner, Psychology
Barbara Weinstein, History
Kathleen Wilson, History
Judith Wishnia, Social Sciences Interdisciplinary
Patricia Wright, Anthropology

Adjunct Faculty
Estimated number: 2

Teaching Assistants
Estimated number: 8

Women's studies is a scholarly field that examines its subject—women—from an interdisciplinary perspective. By bringing the questions, methods, and theories of one discipline to focus on the subject matter of others, scholars in this

area often discover new approaches to their own fields, through their own insights and through their interactions with faculty and students trained in other disciplines. The Women's Studies Program provides a focus for scholars who are interested in the interdisciplinary study of women.

The women's studies minor (WNS) is designed for students interested in the interdisciplinary study of women's roles and achievements. The minor consists of courses offered by the Women's Studies Program as well as courses in the social and behavioral sciences, the humanities, and the health sciences. Students wishing to elect this 21-credit minor may major in any discipline; they should consult the director of women's studies and establish an advising folder by the beginning of the junior year.

Some of the courses accepted for the minor are taught in the home departments of the affiliated faculty, with that department's designator rather than WNS or WNH. The director of women's studies provides a list of such courses at Prime Time each semester. Affiliated faculty also teach the readings and research courses and the teaching practicum in women's studies.

Requirements for the Minor in Women's Studies

1. WNS/SSI 102 Introduction to Women's Studies in the Social Sciences *or* WNH 103 Introduction to Women's Studies in the Humanities
2. WNH, WNS 407 Senior Seminar in Women's Studies
3. Five courses chosen from among WNS and WNH offerings and the list below. At least two of these courses must be numbered 300 or above.

Note: No more than one course may be taken for Pass/No Credit.

AFS 370	The African-American Family
ANT 367	Male and Female
HIS 369	American Social History to 1860
HIS 370	U.S. Social History, 1860-1930
HUM 122	Images of Women in Literature
HWC 349	Overview of Gay and Lesbian Issues
PSY 209	Social Psychology
RLS 366	Feminine Spirituality
SOC 380	Social Psychology
SSI 110	Human Development: The Family Context
SSI 308	Abuse of Women and Children
SSI 405	Seminar in Children, Law, and Social Policy

Related special topics courses given in various departments are acceptable for the women's studies minor with the approval of the director of women's studies.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

WNS 102-F Introduction to Women's Studies in the Social Sciences
A general introduction to women's studies and to the feminist movement. The course looks at the way a number of different social science 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. Crosslisted with SSI 102.
Fall and spring, 3 credits

WNH 103-G Introduction to Women's Studies in the Humanities
A general introduction to women's studies in the humanities and to interdisciplinary feminist thought. The course considers a number of different academic disciplines, particularly those most relevant to feminist work in the humanities, and examines the contribution of women's studies in various fields in the humanities.
Fall and spring, 3 credits

WNS 121 Library Skills for Research in Women's Studies
An introduction to basic library skills and bibliographic resources for research in women's studies, using a workbook and workshop approach. Reference and other library materials of special interest to women's studies minors are covered, with an emphasis on the interdisciplinary nature of the field. Such topics as the efficient use of the on-line catalog, bibliographies, computerized sources, and specialized reference titles are treated. Workshop sessions are held throughout the semester.
Prerequisites: WNS/SSI 102 or WNH 103 or six credits in other courses satisfying the women's studies minor
Fall and spring, 1 credit

WNS 204-F Intimate Relationships
The dynamics of forming, maintaining, and dissolving intimate relationships. Attention is focused on dating, partner selection, sexuality, marriage, divorce, and remarriage. Crosslisted with SOC 204.
Fall and spring, 3 credits

WNS 247-K Sociology of Gender
The roles of women and men in American society; changing relations between the sexes; women's liberation and related movements. Crosslisted with SOC 247.
Prerequisite: Completion of D.E.C. categories I and J strongly recommended
Fall and spring, 3 credits

WNH 250-J Women in the Third World
The problems of women in Third World societies, as illustrated through narratives by and about women. Oppression, madness, and the quests for freedom, love, identity, and fulfillment are themes to be approached through the texts of this course. The interrelationships between women and men, underlining the basic human need for personal fulfillment, are studied.
Fall, 3 credits (not offered in 1995-96)

WNS 275-J 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 are 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. Crosslisted with AFS 275.
Prerequisite: One D.E.C. category F course
Spring, 3 credits

WNH 276-B Feminism: Literature and Cultural Contexts
An examination of works written by or about women reflecting conceptions of women in drama, poetry, and fiction. The course focuses on literature seen in relation to women's sociocultural and historical position. Crosslisted with EGL 276.
Prerequisite: EGC 101 or placement 4 on the English Placement Examination
Fall or spring, 3 credits

WNH 284-G Introduction to Feminist Theory
The social construction of gender and how this construction affects philosophical thought and practices. The course provides an introductory survey of current feminist issues and analyses. It also examines the meaning of feminism for philosophy—the effect of introducing a political analysis of gender into a discipline that is supposedly universal and neutral. Crosslisted with PHI 284.
Prerequisite: Sophomore standing or one course in philosophy or women's studies
Fall or spring, 3 credits

WNS 287 URECA Research in Women's Studies
Supervised research under the sponsorship of a women's studies faculty member as part of the University's URECA program. Students assist faculty in various aspects of ongoing research. Assignments depend on the nature of the project. May be repeated up to a limit

of six credits, but only three credits may count toward the minor. Satisfactory/Unsatisfactory grading only.
Prerequisite: Permission of the program URECA coordinator
Fall and spring, 1 to 6 credits

WNS 304-F Sociology of the Family
A historical and cross-cultural analysis of the family as a major social institution in society; the demography of contemporary American families; selected policy issues involving the family. Crosslisted with SOC 304.
Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Spring, 3 credits

WNS 310-F Contemporary Feminist Issues
An analysis of major issues afffecting women in today's society. Reproductive rights, women's employment, and political power are among the topics to be discussed. Crosslisted with SSI 310.
Prerequisites: 15 credits of social and behavioral sciences
Fall or spring, 3 credits

WNS 314-G Women Making Music
A study of the contributions made by women to music making in various contemporary and historical cultures of the world, with emphasis on Western traditions. Topics include women as composers, performers, and listeners; genres designed for women; women's roles in relation to men's; gender implications in musical style; and depictions of women in musical dramas. All types of music are considered: "classical," rock, pop, folk, jazz, various "fusions," and non-Western musics such as those from India, China, Indonesia, and the Middle East. Crosslisted with MUS 314.
Prerequisite: MUS 101 or 119
3 credits

WNS 316-F 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 also treats the development of organized medicine and its impact upon female healers and patients. Crosslisted with HIS 316.
Prerequisite: One 100-level HIS or any WNS course or WNH 103
Fall or spring, 3 credits (not offered in 1995-96)

WNS 320-F Women in Judaism
A survey of women in Judaism and in Jewish life from the Biblical period to the present, focusing on such topics as the representation of women in the Bible; Jewish law concerning women; the role of women in the Enlightenment in Germany and America; immigrant women in America; women in the Holocaust; and women in Israel. Crosslisted with JDS 327.
Prerequisite: One JDS or WNH or WNS course
Fall, 3 credits (not offered in 1996-97)

WNS 330-K Women and the Law
An exploration of areas of American law that have had particular impact on the personal and professional lives of women such as employment discrimination, child custody, the battered spouse syndrome, and property laws affecting women. In addition, the course examines the obstacles to the advancement of women in the legal profession including gender bias in the court systems and the tension between career and family responsibilities. Crosslisted with POL 330.
Prerequisites: POL 102 or 105 or WNS/SSI 102; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

WNS 333-K 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 is placed on topics of special interest to women, i.e., the cult of domesticity, the birth control movement, feminism, women and reform, and changing attitudes toward female sexuality. Crosslisted with HIS 333.
Prerequisites: HIS 103 or 104 or WNS/SSI 102 or WNH 103; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

WNS 334-I 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 is 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 are domestic work, prostitution, sexual attitudes and mores, child-rearing practices, women and revolutionary movements, and the growth of feminism. Crosslisted with HIS 336.
Prerequisite: HIS 102 or WNS/SSI 102 or WNH 103
Fall, 3 credits (not offered in 1995-96)

WNS 347-K Women and Politics
Analysis of the role of women in current American politics from a social-psychological perspective. The focus is on changing trends in women's electoral participation, political interest, and office seeking over the last several decades, and on recent gender differences in political involvement, candidate support, support for women's issues, and support for other public policies. Crosslisted with POL 347.
Prerequisites: POL 102 or 105; POL 201 or any other course satisfying the major's methodology requirement; completion of D.E.C. categories I and J strongly recommended
Fall or spring, 3 credits

WNS 360-I Women in Premodern Europe
An examination of the position of women in European society from ancient Greece through the Italian Renaissance. The course emphasizes 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. Crosslisted with HIS 360.
Prerequisite: HIS 101 or any WNS course or WNH 103
Spring, 3 credits (not offered in 1996-97)

WNS 371-K Gender and Work
Gender differences in work force participation and occupational attainment, with an emphasis on the United States. Covers such topics as historical changes in work force participation; economic, legal, and social factors affecting employment; career options; and pay equity. Readings and lectures focus on the historical and contemporary experience of American men and women, including differences by ethnicity and class. Crosslisted with SOC 371.
Prerequisites: WNS/SSI 102 or WNH 103 or SOC 105 or 106 or 301 or 305; two other courses in the social sciences; completion of D.E.C. categories I and J strongly recommended
Spring, 3 credits

WNS 377-F Psychology of Women
(Formerly WNS 307)
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. Crosslisted with PSY 377.
Prerequisites: WNS/SSI 102; ANT 367 or PSY 103 or 104 or SOC/WNS 247
Fall or spring, 3 credits

WNH 384-G Advanced Topics in Feminist Philosophy
An intensive philosophical study of selected topics of feminist concern. Topics are selected to further the understanding of what effect feminism has upon the traditional tenets of philosophy, such as universality and truth, as well as providing a detailed understanding of particular feminist theories. Crosslisted with PHI 384.
Prerequisites: One course in philosophy; one course in women's studies; PHI/WNH 284 and one other women's studies course recommended
Schedule to be announced, 3 credits

WNS 387-J 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 is on women in political protest and revolution. Crosslisted with HIS 387.
Prerequisite: HIS 213 or HIS/POL 214 or any WNS course or WNH 103
Fall or spring, 3 credits (not offered in 1996-97)

WNH-G, WNS-F 391, 392 Special Topics in Women's Studies
Lecture course on current topics in women's studies, such as social issues in human reproduction, women in Hispanic literature, and feminist issues for the 1990s. The designator WNH is assigned to topics in the humanities area; WNS is assigned to topics in the social sciences area. May be repeated once as the topic varies.
Prerequisites: WNS/SSI 102 or WNH 103 or six credits from courses that satisfy requirements for the women's studies minor
Schedule to be announced, 3 credits

WNH, WNS 401, 402 Seminar in Women's Studies
A seminar on selected topics in women's studies. Topics may include eating disorders, women in multiethnic America, literary analysis of the works of a particular author. The designator WNH is assigned to topics in the humanities area; WNS is assigned to topics in the social sciences area. May be repeated as the topic varies.
Prerequisites: WNS/SSI 102 or WNH 103 or six credits from courses that satisfy requirements for the women's studies minor; at least one other course specified when the topic is announced
Schedule to be announced, 3 credits

WNH, WNS 407 Senior Seminar in Women's Studies
An exploration of significant feminist scholarship in various disciplines. Seminar participants present and discuss reports on reading and research. The designator WNH is assigned to topics in the humanities area; WNS is assigned to topics in the social sciences area.
Prerequisites: 15 credits of the women's studies minor
Fall and spring, 3 credits

WNH, WNS 447 Directed Readings in Women's Studies
Intensive readings in women's studies for qualified juniors and seniors under the close supervision of a faculty instructor. Topic to be chosen in consultation with the faculty member. The designator WNH is assigned to topics in the humanities area; WNS is assigned to topics in the social sciences area. May be repeated once.
Prerequisites: Permission of instructor and program director
Fall and spring, 1 to 3 credits

WNS 475 Undergraduate Teaching Practicum
Students aid instructors and students in women's studies courses in one or several of the following ways: leading discussion sections, helping students improve writing and research skills, and library research. Students meet regularly with the supervising instructor. Satisfactory/Unsatisfactory grading only.
Prerequisites: Minor in women's studies; upper-division standing; permission of instructor
Fall and spring, 3 credits

WNS, WNH 487 Independent Project in Women's Studies
The design and conduct of a research project selected by the student and arranged by the student and the instructor. The designator WNH is assigned to topics in the humanities area; WNS is assigned to topics in the social sciences area. May be repeated once.
Prerequisite: Permission of instructor and program director
Fall and spring, 3 credits

WNS 488 Internship
Participation in public and private agencies and organizations. Students are required to submit written reports on their experience to the faculty sponsor and the Women's Studies Program. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of six credits.
Prerequisites: Six credits toward the women's studies minor; permission of instructor, director of women's studies, and Office of Undergraduate Studies
Fall and spring, 3 to 6 credits

College of Engineering and Applied Sciences

Programs in Engineering and Applied Sciences

Engineers and applied scientists are concerned with complex practical problems that can be approached only by those with a broad knowledge of mathematics and the physical sciences, supplemented by deeper training in a specific technical discipline. These problems often have social, political, economic, and legal aspects that must be considered in arriving at workable solutions. The understanding and judgment required to balance often conflicting technical and societal needs is acquired in part through study of the humanities and social and behavioral sciences. Consequently, the engineering and applied sciences curricula promote educational development not only in the technical areas, but in the social and behavioral sciences and humanities as well. They also provide a strong foundation of general principles that enables professional engineers and applied scientists to adapt to shifts in technological emphasis. The curricula include courses that examine contemporary technology and problems and courses that examine the technology and problems likely to be contemporary in the future. Graduates are well prepared for successful careers in large part because they are educated to develop with technology.

In order to realize these objectives, the engineering and applied sciences curricula are 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, computer science, or information systems, 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 broad program 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 (CEAS) offers six different majors, listed below.

Bachelor of Science in:
Applied Mathematics and Statistics
Computer Science
Information Systems

Bachelor of Engineering in:
Engineering Science
Electrical Engineering
Mechanical Engineering

Each student is enrolled in one of these majors. There is, in addition, great flexibility for specialization toward desired careers because of the freedom provided by electives within the majors. For example, the student may decide to emphasize *computer engineering* within electrical engineering, *materials science* within engineering science, or *thermal sciences and fluid mechanics* within mechanical engineering. The College of Engineering and Applied Sciences cooperates with the College of Arts and Sciences in interdisciplinary programs in engineering chemistry and physics of materials, both of which lead to the Bachelor of Science degree.

The college also offers four minors: applied mathematics and statistics, computer science, materials science, and technology and society.

Accreditation

All three undergraduate engineering (B.E.) degree programs offered by the college, including the computer engineering option within electrical engineering, are accredited by the Accreditation Board for Engineering and Technology, Inc.

The Undergraduate Student Office

The Undergraduate Student Office, a branch of the College of Engineering and Applied Sciences Deans' Office, provides numerous services to students who are matriculated in one of the college's undergraduate majors. The services include general academic advising, appropriate referrals for academic advising in a major, advising about the college Diversified Education Curriculum (D.E.C.) requirements, and assistance with the processing of transfer credits. The Undergraduate Student Office receives and processes applications for admission to engineering majors from Stony Brook students in other degree programs, and receives and processes student petitions to the college's Committee on Academic Standing and Appeals. The office serves as the center for the Internships Program and as a resource center for job opportunities, special scholarships for engineering students, and the activities of engineering and applied sciences professional societies, clubs, and honor societies.

The CEAS Internships Program

The College of Engineering and Applied Sciences (CEAS) is actively involved with many engineering and high-technology companies, both large and small, in the Long Island region. The many collaborative academic and industrial efforts include teaching, research, consultation, and cooperative problem solving to promote the physical and fiscal well-being of the region. Undergraduate students have a place in this working relationship between the college and industry as participants in the CEAS Internships Program, which provides them with real-world experience in which they observe engineers and scientists at work, work for and with professionals in their area of interest, apply theory learned in class, learn new applications, and learn about the corporate culture and environment. The internship experience is an important element of a student's education and enhances his or her qualifications for permanent job placement following graduation.

Although several departments in the college offer internships for academic credit, this program's internships carry no academic course credit and do not require course registration; they are full-time paid summer work experiences or paid part-time positions during the academic year. More than 50 regional companies support the Internships Program.

The program is administered by the college's Undergraduate Student Office, which receives participating companies' internship requirements, posts and distributes internship position announcements, processes student applications, reviews student records and verifies academic qualifications, forwards resumés to internship employers, and, when necessary, assists in scheduling interviews on or off campus according to employer needs.

Acceptance into College of Engineering and Applied Sciences Programs

All programs in the College of Engineering and Applied Sciences currently find it necessary to limit the number of students accepted, in accordance with the University policy outlined on p. 51, "Limitation of Acceptance into Majors." While acceptance criteria are based mainly on demonstrated scholastic ability, extraordinary personal circumstances, experiences, and academic background may also be considered in the evaluation process. A new student desiring acceptance into an engineering or applied sciences major should clearly indicate the

particular major desired on his or her application to Stony Brook. Admission to the University, however, *does not* guarantee either immediate or future acceptance into the major for which the student applied.

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 directly to the department after completion of a prescribed set of courses (see p. 228).

Computer Science and Information Systems:
Qualified freshman and transfer applicants are accepted directly into the computer science or information systems major upon admission to the University. Students not accepted upon admission or through a joint admission program may apply directly to the Department of Computer Science after completing a prescribed set of courses (see p. 232 for computer science and p. 241 for information systems). All transfer students are urged to contact the appropriate undergraduate program director as early as possible.

Engineering:
Freshman and transfer applicants who have specified their interest in an engineering major may be accepted directly into the electrical engineering, mechanical engineering, or engineering science major upon admission to the University. Applicants admitted to the University but not immediately accepted into an engineering major may apply for acceptance twice a year, beginning in the fall and spring semester Prime Time periods until the end of the semester's final examination week. Students in good academic standing may apply in any semester, but priority for admission to an engineering major is given to those students who have (1) completed MAT 132 and PHY 132 or their equivalents, (2) earned a G.P.A. of 3.0 in all mathematics and physics courses with no more than one grade in the C range, and (3) received completed course evaluations for all transferred courses that are to be used to meet requirements of the major. (The program in electrical engineering further specifies that students complete at least two semesters at Stony Brook, including ESE 123 and 124, prior to admission to the major.)

Simultaneous Bachelor's 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 simultaneously by planning a program that 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 or a Bachelor of Science in the Health Sciences Center. For details see p. 53.

Double Majors

Approved combinations of two majors leading to a Bachelor of Engineering degree are an engineering major (electrical engineering, mechanical engineering, or engineering science) with applied mathematics and statistics or computer science or information systems or a major in the College of Arts and Sciences. (It is not possible to have two engineering majors.)

Approved combinations of two majors leading to a Bachelor of Science degree are applied mathematics and statistics with computer science or information systems, or applied mathematics and statistics or computer science or information systems with a major in the College of Arts and Sciences. (It is not possible to have a double major consisting of computer science and information systems.)

See p. 53 for additional information.

Bachelor's/Master's Degree Program

An engineering science student may apply at the end of the junior year for admission to enter this special program, which leads to a Bachelor of Engineering degree at the end of the fourth year and a Master of Science degree in materials science at the end of the fifth year. For the requirements, see p. 246.

An applied mathematics and statistics student may apply at the end of the junior year for admission to a special program that leads to a Bachelor of Science degree at the end of the fourth year and a Master of Science degree at the end of the fifth year. For the requirements see p. 228.

Regulations of the Bachelor's/Master's Degree 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 a 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. Admission to graduate study is provisional upon the awarding of the undergraduate degree.
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.

Degree Requirements

All candidates for the Bachelor of Engineering or the Bachelor of Science degree must satisfy the requirements of a particular major, the Diversified Education Curriculum, and other university degree requirements. See pp. 61-68. Candidates for the Bachelor of Engineering degree must also satisfy the college residence requirements.

Diversified Education Curriculum Requirements

The Diversified Education Curriculum (D.E.C.) requirements of the College of Engineering and Applied Sciences provide for broad exposure to the liberal arts and sciences, enabling the engineering or applied science student to better understand the context in which his or her technical discipline has been founded. The student also learns to integrate the historical, social, and humanistic aspects of technical problems and developments.

The college D.E.C. requirements outlined below are a slight modification of the Diversified Education Curriculum set forth in the University Studies chapter (pp. 61-68). The D.E.C. categories are fully described in that chapter, which also includes lists of courses that satisfy each category.

Students are encouraged to visit the Undergraduate Student Office for a formal review of their D.E.C. requirements at least two semesters prior to their expected date of graduation.

University Skills
One course from each category:
Category A: English Composition
Category B: Interpreting Texts in the Humanities
Category C: Mathematical and Statistical Reasoning
Category D: not required

Disciplinary Diversity
Category E: Natural Sciences (two courses)
Category F: Social and Behavioral Sciences (one course)
Category G: Humanities (one course)

Expanding Perspectives and Cultural Awareness
One course from each category, except for students enrolled in majors leading to the Bachelor of Engineering degree as noted below under category K. In choosing courses for categories I and J, students must select one with a humanities designator and one with a social sciences designator.
Category H: Implications of Science and Technology
Category I: European Traditions
Category J: The World Beyond European Traditions
Category K: American Pluralism (required only for students enrolled in majors leading to the Bachelor of Science degree)

B.E. degree students may petition the Undergraduate Student Office for permission to substitute a category K course for a category I or J course.

Additional Requirements for the B.E. Degree

Credit Hour Requirement
At least 128 credits must have been completed. Restrictions on credits that may be counted appear below ("Restrictions on Credits"), and on p. 77 ("Course Credit and Prerequisites").

Residence Requirement
At least seven engineering courses (those with the designator ESC, ESE, ESG, or ESM) and/or approved technical elective courses must be completed in the College of Engineering and Applied Sciences at Stony Brook. For the majors in electrical and mechanical engineering, at least five of the seven courses must be offered by the department of the student's major. ESC, ESE, ESG 440 and 441 *must* be taken at Stony Brook.

The following courses *may not* be used to meet this requirement: ESC 316, 317; ESE 211, 314, and 324; ESG 217, 312, and 316; and ESC, ESE, and ESG 300, 440, and 441.

Technical Electives

Students in majors leading to the B.E. degree must complete a defined number of technical elective courses in their major. A copy of technical elective requirements and the current list of approved technical elective courses for each engineering major are available in the relevant engineering department and in the Undergraduate Student Office.

Open Electives

Open electives are courses offered for credit at Stony Brook and any credits accepted as transfer credits that are not approved to meet specific requirements.

Grading

All courses used to meet Diversified Education Curriculum requirements and requirements of a particular major, including engineering technical electives (see "Requirements for the Major" in each department's alphabetical listing), must be taken for a letter grade. Pass/No Credit grading is not permitted except for open electives.

Restrictions on Credits

Only courses stating in the description that they may be repeated may be taken more than once for credit. No more than seven credits of undergraduate teaching practica (courses normally numbered 475 and 476), and no more than 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 major requirements.

Courses taken at other universities and colleges in a technology curriculum will normally not be transferred as equivalents to engineering or applied sciences courses.

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 Numbers

The three-letter designator for each course offered by the College of Engineering and Applied Sciences indicates its departmental affiliation as follows:

- AMS offered by the Department of Applied Mathematics and Statistics
- CSE offered by the Department of Computer Science
- ESC offered by the Department of Mechanical Engineering
- ESE offered by the Department of Electrical Engineering
- ESG engineering science interdisciplinary; offered by the Department of Materials Science and Engineering
- ESM offered by the Department of Materials Science and Engineering
- EST offered by the Department of Technology and Society
- ISE information systems; offered by the Department of Computer Science

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.

Permission to Take Graduate Courses

Upper-division students with superior academic records may take graduate courses in meeting requirements for their major with the permission of the

vice provost for graduate studies and the approval of the course instructor and of their department's undergraduate program director. Forms are available from the Graduate School for the vice provost's approval and in the Undergraduate Student Office for departmental major approval.

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 to both a baccalaureate and a master's degree.

Laboratory Fees

The following engineering courses have laboratory fees: ESC 316, 317, 440, and 441; ESE 314, 324, 440, and 441; ESG 312, 316, 440, and 441

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 or more than 19 credits without the approval of the Committee on Academic Standing and Appeals.

College Time Limits for B.E. and B.S. 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 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. In addition, students who withdraw from the University and return at a later date to complete degree requirements are required to have formally reevaluated all courses more than six years old that were taken (at Stony Brook or elsewhere) to fulfill major requirements.

Department of Applied Mathematics and Statistics

Chairperson: James Glimm

Undergraduate Program Director: Alan C. Tucker

Faculty

Esther Arkin, Associate Professor, Ph.D., Stanford University: Computational geometry; combinatorial optimization.

Laurence Baxter, Associate Professor, Ph.D., University of London: Reliability theory; statistics.

Edward J. Beltrami, Professor, Ph.D., Adelphi University: Optimization; stochastic models.

Hung Chen, Associate Professor, Ph.D., University of California, Berkeley: Statistics; robust methods.

Yung Ming Chen, Professor, Ph.D., New York University: Partial differential equations; inverse problems.

Yuefan Deng, Associate Professor, Ph.D., Columbia University: Computational fluid dynamics; parallel computing.

Daniel Dicker, Professor Emeritus, Sc.D., Columbia University: Boundary value problems of solid and fluid mechanics.

Vaclav Dolezal, Professor, Sc.D., Czechoslovak Academy of Science: Distribution theory; systems theory.

Pradeep Dubey, Professor, Ph.D., Cornell University: Game theory; mathematical economics. Member, Institute for Decision Sciences.

Stephen Finch, Associate Professor, Ph.D., Princeton University: Applied statistics.

Robert Frey, Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook: Operations research.

James Glimm, Distinguished Professor, Ph.D., Columbia University: Mathematical physics; nonlinear physics.

Sheldon Gordon, Adjunct Professor, Ph.D., McGill University: Mathematics education.

John Grove, Associate Professor, Ph.D., Ohio State University: Conservation laws; computational fluid dynamics.

Woo Jong Kim, Professor and Graduate Studies Director, Ph.D., Carnegie-Mellon University: Ordinary differential equations.

Brent Lindquist, Professor, Ph.D., Cornell University: Computational fluid dynamics; reservoir modeling.

Nancy Mendell, Associate Professor, Ph.D., University of North Carolina at Chapel Hill: Biostatistics; statistical genetics.

Joseph Mitchell, Associate Professor, Ph.D., Stanford University: Computational geometry.

Abraham Neyman, Professor, Ph.D., Hebrew University: Game theory; mathematical economics. Member, Institute for Decision Sciences.

Bradley Plohr, Professor, Ph.D., Princeton University: Conservation laws; computational fluid dynamics.

David Sharp, Adjunct Professor, Ph.D., California Institute of Technology: Mathematical physics.

Matthew J. Sobel, Professor, Ph.D., Stanford University: Stochastic models; optimization. Member, Institute for Decision Sciences.

Ram P. Srivastav, Professor, D.Sc., University of Glasgow; Ph.D., University of Lucknow: Integral equations; numerical solutions.

Don Sun, Assistant Professor, Ph.D., University of Waterloo: Industrial statistics; pattern recognition.

Michael Taksar, Professor, Ph.D., Cornell University: Stochastic processes.

Reginald P. Tewarson, Professor, Ph.D., Boston University: Numerical analysis; biomathematics.

Alan C. Tucker, Distinguished Teaching Professor, Ph.D., Stanford University: Combinatorics; applied models. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974.

Qiqing Yu, Associate Professor, Ph.D., University of California, Los Angeles: Decision theory; nonparametric statistics.

Qiang Zhang, Associate Professor, Ph.D., New York University: Scientific computing; computational fluid dynamics.

Affiliated Faculty

Hussein Badr, Computer Science
Eugene Feinberg, Harriman School
David Ferguson, Technology and Society
Roger Grimson, Preventive Medicine
Steven Skiena, Computer Science
Darko Skorin-Kapov, Harriman School
Jadranka Skorin-Kapov, Harriman School
Judith Tanur, Sociology
Frank Webster, Chemistry
Armen Zemanian, Electrical Engineering

Adjunct Faculty
Estimated number: 1

Teaching Assistants
Estimated number: 20

The undergraduate program in applied mathematics and statistics (AMS) 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 used by analysts and researchers in government, industry, and science. Many of the applied mathematics courses give students the opportunity to develop problem-solving techniques using campus computing facilities.

About half of the applied mathematics majors go on to graduate or professional schools, largely in statistics, operations research, computer science, and business management. 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 department's graduate placement advisor, who assists them in choice of schools and provides 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

The major in applied mathematics and statistics leads to the Bachelor of Science degree. The following courses, totaling approximately 60 credits, are required:

A. Study Within the Area of the Major

1. MAT 131, 132; AMS 210 *or* MAT 211; and AMS 261 or MAT 203
   Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:
   MAT 124, 126, 127 *or*
   MAT 125, 126, 127 *or*
   MAT 141, 142
2. CSE 110 *or* 111 *or* 114

3. 24 credits of AMS courses numbered 301 and above including AMS 301 and either AMS 310 or 311. (A minimum of 18 of these 24 credits must be designated AMS courses. The remaining six credits may be replaced by an equal number of credits taken from approved upper-division mathematically oriented courses. Typically approved substitutions are ECO 321, ECO 348, and all courses designated CSE numbered 301 and above and MAT 310 and above.)
4. Upper-Division Writing Requirement
   All degree candidates must demonstrate skill in written English at a level acceptable for applied mathematics and statistics majors. The AMS student must register for the writing course AMS 300, and submit a portfolio containing at least four papers on four different topics selected from a list provided by the department. If the standard of writing is judged acceptable, and if the papers are technically correct, the student passes the course, thereby satisfying this requirement. The requirement may also be met by earning a grade of C or higher in a writing course approved by the department or, if the student has a double major, by satisfying the requirement for the other major.

B. Study in Related Areas

To gain a background in fields that generate mathematical applications, a minimum of 14 additional credits are chosen from among the course offerings in appropriate social sciences, the natural sciences, and engineering. Courses taken to satisfy item 3 above may not be used to satisfy this requirement. No more than eight of these credits may come from any one department.

Grading

All courses taken to satisfy requirements 1, 2, and 3 above *must* be taken for a letter grade.

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 132 *or* 142 *or* 127; AMS 210 *or* MAT 211; and CSE 110 *or* 111 *or* 114.

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 double major (or to minor) 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.

Actuarial Science

The AMS major is equivalent to an actuarial science major. That is, the AMS major covers the mathematical sciences topics tested in the first five actuarial examinations. Examination 100 covers calculus and linear algebra (AMS 410 reviews this material); examination 110 covers probability and statistics (AMS 310, 311, and 312; AMS 301 is also helpful); examination 120 covers applied statistics (AMS 315); examination 130 covers operations research (AMS 341 and 342); and examination 135 covers numerical analysis (AMS 326). For more information about actuarial science as well as study materials to help prepare for actuarial examinations, students should see the department's actuarial advisor.

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, two semesters of physics numbered PHY 121 or higher, CSE 110 or 111 or 113, 114; 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 303. 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, 315, another CSE course beyond 110 or 111 or 114; students considering graduate statistics programs should take MAT 310 and 320.

Operations Research or Management Science: AMS 301, 310, 311, 331, 341, and 342; students considering graduate operations research programs should take MAT 310 and 320.

Programmer-Analyst: AMS 301, 310, 311, 321, 326, 341, 361, and CSE 214, 220, and 301.

Secondary Teaching: Students preparing for a career as a teacher of mathematics in the secondary schools enroll in the Mathematics Teacher Preparation Program. See p. 166 for details.

B.S./M.S. Program

An applied mathematics and statistics major may apply at the end of the junior year for admission to a special program that leads to the Bachelor of Science degree at the end of the fourth year and the Master of Science degree 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, the student takes 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.

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 programmer-analyst jobs).

For more details about the B.S./M.S. program, see the undergraduate program director or graduate studies director in the Department of Applied Mathematics and Statistics.

The Minor in Applied Mathematics and Statistics

The minor in applied mathematics and statistics is designed for students who

take a limited amount of mathematics in their major. The AMS minor must include at least 18 credits in courses that are not used to satisfy the requirements of the student's primary major; therefore, students in majors requiring a substantial amount of mathematics may find that a double major with AMS requires fewer credits.

A. Calculus: MAT 131, 132 or equivalent (See note under Requirements for the Major, A.1.)
B. Linear algebra: AMS 210 or MAT 211 (Students who took AMS 201 prior to declaring the AMS minor may substitute AMS 201.)
C. Core AMS courses: AMS 301 and 310
D. AMS electives: two additional 300-level AMS courses

Courses

See p. 225, Restrictions on Credits, Course Prerequisites, and Course Numbers. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

AMS 101-C 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, and linear programming. May not be taken by students with credit for MAT 127 or 132 or 142, or the discontinued MAT 134.
Prerequisite: Satisfaction of entry skill in mathematics requirement
Fall and spring, 3 credits

AMS 102-C 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 AMS 110, 310, 311, 312; ECO 320; POL 201; PSY 201, 203; or SOC 202 or 311, 312.
Prerequisite: Satisfaction of entry skill in mathematics 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; and analysis of variance, regression, and contingency tables. May not be taken for credit in addition to AMS 102.
Prerequisite: MAT 126 or 131 or 141
Fall and spring, 3 credits

AMS 194-C 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.
Prerequisite: Satisfaction of entry skill in mathematics requirement
Spring, 3 credits

AMS 201 Matrix Methods and Models
Basic properties of matrix algebra, matrix norms, eigenvalues, solving systems of equations; applications to economics, growth models, Markov chains, regression, linear programming. Computer software packages used. May not be taken by students with credit for MAT 211 or AMS 210.
Prerequisite: MAT 123 or 125 or 131 or 141
Fall and spring, 3 credits

AMS 210 Applied Linear Algebra
An introduction to the theory and use of vectors and matrices. Matrix theory including systems of linear equations. Theory of Euclidean and abstract vector spaces. Eigenvectors and eigenvalues. Linear transformations. May not be taken for credit in addition to MAT 211.
Prerequisite: MAT 127 or 132 or 142
Fall and spring, 3 credits

AMS 236 Statistics in Engineering Quality Control
Understanding of, and facilty with, basic statistical techniques used in manufacturing and quality control including introductory probability and statistical inference. Empirical distributions, discrete and continuous distributions, order statistics, testing, estimation, quality control, and regression.
Prerequisite: MAT 127 or 132 or 142
Fall, 1 credit

AMS 261 Applied Calculus III
Vector algebra and analytic geometry in two and three dimensions; multivariable differential calculus and tangent planes; multivariable integral calculus; optimization and Lagrange multipliers; vector calculus including Green's and Stokes's theorems. May not be taken for credit in addition to MAT 203 or 205.
Prerequisite: MAT 127 or 132 or 142
Fall and spring, 4 credits

AMS 300 Writing in Applied Mathematics
See "Requirements for the Major in Applied Mathematics and Statistics, Upper-Division Writing Requirement." Satisfactory/Unsatisfactory grading only.
Prerequisites: AMS major; upper-division standing
Fall and spring, 1 credit

AMS 301 Finite Mathematical Structures A
An introduction to graph theory and combinatorial analysis. The emphasis is on solving applied problems rather than on theorems and proofs. Techniques used in problem solving 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 211
Fall and spring, 3 credits

AMS 303 Finite Mathematical Structures B
Paths and circuits, trees and tree-based algorithms, graph coloring, digraphs, network flows, matching theory, matroids, and games with graphs.
Prerequisite: AMS 301
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. May not be taken for credit in addition to ECO 320.
Prerequisite: AMS 210 or MAT 211
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 203 or 205 or AMS 261
Fall and spring, 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 315 Data Analysis
Statistical analysis of data. Exploratory data analysis. Estimation. Parametric and nonparametric hypothesis tests. Power. Robust techniques. Use and interpretation of statistical computer packages, such as SPSS.
Prerequisite: AMS 102 or 310
Spring, 3 credits

AMS 318 Theory of Interest
Actuarial mathematics including the arithmetical and algebraic problems posed by calculation of simple and compound interest. Considers investment risks created by variable interest rates, inflation, changing foreign currency exchange rates, and changes in tax laws. Develops problem-solving skills adopting both deterministic and stochastic approaches and taking into account the perspectives of the consumer and the investor.
Prerequisite: AMS 310
Fall, 3 credits

AMS 321 Computer Projects in Applied Mathematics
The simulation methodology for a variety of applied mathematical problems in numerical linear and nonlinear algebra, statistical modeling, and numerical differentiation and integration. Graphical representation of numerical solutions. May not be taken for credit in addition to the discontinued AMS 226.
Prerequisites: AMS 210 or 261 or MAT 203; prior programming experience in C or Pascal or FORTRAN or Basic
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: AMS 210 or MAT 211; programming experience in Pascal, FORTRAN, or C
Fall and spring, 3 credits

AMS 331 Mathematical Modeling
Investigation of the process of translating real-world problems into mathematical models. Six to eight unconnected problems are studied in detail. These are chosen to illustrate various methods of formulation and solution, and generally find their origins in the physical and biological sciences.
Prerequisites: AMS 210 or MAT 211; AMS 310 or 311
Spring, 3 credits

AMS 335 Game Theory
Introduction to game theory fundamentals with special emphasis on problems from economics and political science. Topics include strategic games and Nash equilibrium, games in coalitional form and the core, bargaining theory, measuring power in voting systems, problems of fair division, and optimal and stable matching. Crosslisted with ECO 355.
Prerequisite: MAT 126 or 131 or 141
Fall, 3 credits

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. AMS 341 and 342 may be taken in either order, though it is recommended that AMS 341 be taken first.
Prerequisite: AMS 210 or MAT 211
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. AMS 341 and 342 may be taken in either order, though it is recommended that AMS 341 be taken first.
Prerequisites: AMS 210 or MAT 211; AMS 311
Fall, 3 credits

AMS 351 Applied Algebra
Topics in algebra: groups, informal set theory, relations, homomorphisms. Applications: error-correcting codes, Burnside's theorem, computational complexity, Chinese remainder theorem. Crosslisted with MAT 312.
Prerequisites: AMS 210 or MAT 211; AMS 261 or MAT 203 or 205
Fall and spring, 3 credits

AMS 361 Applied Calculus IV: Differential Equations
Homogeneous and inhomogeneous linear differential equations; systems of linear differential equations; solution with power series and Laplace transforms; partial differential equations and Fourier series. May not be taken for credit in addition to the equivalent MAT 303.
Prerequisite: MAT 127 or 132 or 142
Fall and spring, 4 credits

AMS 373 Analysis of Algorithms
Crosslisted with CSE 373 and MAT 373. (For course description, see alphabetical listing, Computer Science.)
Prerequisites: AMS 210 or MAT 211; CSE 214
Spring, 3 credits

AMS 410 Actuarial Mathematics
Single- and multivariable calculus and linear algebra are used to develop advanced proficiency in the calculus foundations of actuarial science, with particular attention to the types of problems found on Acturial Examination 100.
Prerequisites: AMS 261 or MAT 203 or 205; AMS 210 or MAT 211
Fall, 2 credits

AMS 421 Statistical Quality Control and Design of Experiments
Crosslisted with ESC 421. (For course description, see alphabetical listing, Mechanical Engineering.)
Prerequisite: ESC 317
Fall, 3 credits

AMS 441 Business Policy, Formulation, and Administration
Crosslisted with BUS 441. See W. Averell Harriman School for Management and Policy for description.
Prerequisites: BUS 340; BUS/ECO 114; POL 319; BUS 347 or 351 or PSY 309 or 313 or SOC 381
Fall and spring, 3 credits

AMS 475 Undergraduate Teaching Practicum
Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives 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
An independent research project with faculty supervision. Permission to register requires a B average and the agreement of a faculty member to supervise the research. May be repeated once. Only 3 credits of research electives (AMS 487, CSE 487, ESC 499, ESE 499, ESM 499, EST 499, ISE 487) may be counted toward engineering technical elective requirements.
Prerequisite: Permission of instructor and department
Fall and spring, 3 credits

AMS 492 Topics in Applied Mathematics
Treatment of an area of applied mathematics that expands upon the undergraduate curriculum. Topics may include applied mathematics, statistics, or operations research and change from semester to semester. May be repeated once.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits

Department of Computer Science

Chairperson: Philip M. Lewis

Undergraduate Program Director: Scott A. Smolka

Faculty

Leo Bachmair, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign: Computational logic; automated deduction; symbolic computation.

Hussein G. Badr, Associate Professor, Ph.D., Pennsylvania State University: Computer communication networks and protocols; performance evaluation, modeling, and analysis.

Arthur J. Bernstein, Professor, Ph.D., Columbia University: Distributed algorithms; concurrent programming; parallel and distributed database systems.

Tzi-cker Chiueh, Assistant Professor, Ph.D., University of California, Berkeley: Processor architecture; parallel I/O; high-speed networks; compression.

Herbert L. Gelernter, Professor, Ph.D., University of Rochester: Artificial intelligence; scientific applications; knowledge-based heuristic problem-solving systems.

Barbara J. Golden, Lecturer, M.S., Polytechnic University; M.S., Adelphi University: Computer science and mathematics education.

Jack Heller, Professor Emeritus, Ph.D., Polytechnic Institute of Brooklyn: Database systems; office automation; visualization.

Peter B. Henderson, Professor, Ph.D., Princeton University: Software engineering; programming environments; computer science education.

Jieh Hsiang, Professor, Ph.D., University of Illinois at Urbana-Champaign: Automated deduction; program correctness; computational logic.

Arie Kaufman, Professor, Ph.D., Ben-Gurion University: Computer graphics; visualization; computer architecture; computer vision.

Michael Kifer, Associate Professor, Ph.D., Hebrew University of Jerusalem: Database systems; logic programming; knowledge representation; artificial intelligence.

Ker-I Ko, Professor, Ph.D., Ohio State University: Computational complexity; theory of computation; computational learning theory.

Philip M. Lewis, Professor, Ph.D., Massachusetts Institute of Technology: Concurrency and concurrent systems; transaction processing systems; software engineering.

Prateek Mishra, Associate Professor, Ph.D., University of Utah: Programming language semantics; functional programming; type inference.

Theo Pavlidis, Professor, Ph.D., University of California, Berkeley: Image processing; machine vision; computer graphics.

I.V. Ramakrishnan, Associate Professor, Ph.D., University of Texas at Austin: Computer architecture; algorithms; rewrite systems.

Steven Skiena, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign: Algorithms; computational biology; computational geometry; discrete mathematics.

David R. Smith, Professor and Graduate Studies Director, Ph.D., University of Wisconsin: High-level VLSI design tools; experimental chip architectures.

Scott A. Smolka, Associate Professor, Ph.D., Brown University: Semantics of concurrency; CASE tools for concurrent systems; model checking; distributed languages and algorithms.

Eugene W. Stark, Associate Professor, Ph.D., Massachusetts Institute of Technology: Programming language semantics; distributed algorithms; formal specifications; verification; theory of concurrency.

Amitabh Varshney, Assistant Professor, Ph.D., University of North Carolina at Chapel Hill: Computer graphics; scientific visualization; geometric modeling; computational geometry.

David S. Warren, Professor, Ph.D., University of Michigan: Logic; logic programming; knowledge and database systems; natural language processing; artificial intelligence.

Anita Wasilewska, Associate Professor, Ph.D., University of Warsaw: Knowledge representation; logic; artificial intelligence.

Larry D. Wittie, Professor, Ph.D., University of Wisconsin: Massively parallel computations; fast remote memory access; distributed debugging; large computer networks; computer architecture; distributed operating systems.

Teaching Assistants
Estimated number: 25

The Department of Computer Science offers two undergraduate majors: computer science (CSE) and information systems (ISE). Requirements and courses for the latter appear under the program title in the alphabetical listing of Engineering and Applied Sciences programs. The two programs of study share a number of courses, particularly in the first two years, so that it is possible to follow a program that permits a student to select either major by the start of the junior year. The department also offers a minor in computer science.

Computer Science

The computer science major provides professional education in computer science to prepare the student for graduate study or for a career in the computing field.

Students learn concepts and skills needed for designing, programming, and applying computer systems while also learning the theoretical and mathematical foundations of computer science. They 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 utilize the flexibility of the program to satisfy the requirements of a second major for the bachelor's degree.

Computing Facilities

Computing facilities for undergraduates are maintained by both the University Computing Center and the Computer Science Department. The Computing Center operates IBM 3083, VAX 8600, and VAX 8350 systems with approximately 250 terminals available to students. Campus-wide instructional computing sites include both IBM personal computers and Apple Macintoshes, as well as a network of Hewlett Packard workstations.

The department facilities for undergraduates include a network of 16 Hewlett Packard graphics workstations, 40 terminals, and numerous printers. A second network of 18 Hewlett Packard 400 graphics workstations is available for students in graphics courses. A network of 12 Apple Macintoshes serves the courses CSE 113 and 213 Foundations of Computer Science I and II, and a laboratory of 12 PCs serves the database and transaction processing courses. A new laboratory of 40 PCs and four servers is also available for general use within the undergraduate computer science program.

The department also has approximately 80 SPARCstations, a 4-processor 384MB ram SPARC1000, five SPARCservers (4/260), 23 HP9000s (68040), two 4-processor 128MB ram SGI 4D/320s, and four 4D/25 Personal Irises. Access to a 32-node iPSC 860 hypercube-based multicomputer and a 64-node Paragon, both housed in the Department of Applied Mathematics and Statistics, is also available. The machines within the department are distributed over 12 subnetworks, all 10Mb/sec ethernet, and there is a 50-MBPS fiber-optics ring for departmental research use. A fiber-optics network provides links to other campus buildings, including the Computing Center. Stony Brook is an ARPANET host and has a 1.5 MBPS T1-link to the Internet.

Transfer Credits

Students wishing to transfer credits for courses equivalent to CSE 111, 113, 114, 213, 214, or 220 in order to use them as prerequisites for other CSE courses or toward meeting the requirements for acceptance into a major must demonstrate proficiency in the course material by passing a proficiency examination with a grade of C or higher. (Proficiency examinations covering the syllabi of CSE 111, 113, 114, 213, 214, and 220 are given during the first week of each semester and may be given at the beginning of the first summer session.)

Challenge Examination Credits

Challenge examinations are offered covering the syllabi of CSE 111, 113, 114, 213, 214, and 220 for students who feel they have mastered the material on their own. (See also p. 54, Challenge Program for Credit by Examination.)

Admittance to CSE and ISE Courses

The criteria for admittance to undergraduate computer science and information systems courses are as follows:

A. *For all CSE and ISE courses:*
Students must have successfully completed the necessary prerequisite courses, if any, with a grade of C or higher. (See pp. 242-243 for ISE courses)

B. *For CSE 111:*
Students must advance register for the course and go to the first class lecture, at which time permission for final registration is given to approved students. Preference is given to CEAS majors and students who have declared a pre-engineering area of interest.

Acceptance into the Computer Science Major

Qualified freshman and transfer applicants are accepted directly into the computer science major upon admission to the University. Currently enrolled students may be accepted into the major in one of three ways:

1. After completing CSE 113, 114, and MAT 131 (or MAT 126 or 141), students are guaranteed admission with a grade of B or higher in both CSE 113 and 114, a C or higher in MAT 131 (or MAT 126 or 141), and a G.P.A. of 3.0 or higher over all these courses. No course repetitions are allowed.
2. Students not meeting condition 1 are required to complete CSE 113, 114; any two courses from CSE 213, 214, 220; MAT 131, 132 (or approved equivalent MAT courses; see Requirements for the Major, 5, below); and MAT 211 or AMS 210 or 326. Admission is guaranteed to those who earn a G.P.A. of 2.6 or higher in these courses with no grade in any of them lower than a C (2.0).
3. Students not meeting conditions 1 or 2 may still be admitted by petitioning the department. Acceptance then depends on the student's individual performance.

Requirements for the Computer Science Major

The major in computer science leads to the Bachelor of Science degree. The following courses, totaling approximately 80 credits, are required. At least five upper-division courses from items 2, 3, and 4 below must be completed at Stony Brook.

1. CSE 113, 114, 213, 214, and 220
2. CSE 303, 308, 309, and AMS/CSE/MAT 373
3. Three courses from CSE 304, 305, 306, 307, 328, either CSE/ESE 345 or 380 but not both
4. Two additional upper-division CSE or ISE courses (excluding CSE or ISE 475 and ISE 440 and 441)
5. MAT 131, 132
   Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:
   MAT 124, 126, 127, *or*
   MAT 125, 126, 127, *or*
   MAT 141, 142
   Equivalency for MAT courses achieved through the Mathematics Placement Examination is accepted to meet MAT course requirements.
6. MAT 211 or AMS 210 or 326
7. AMS 301 and AMS 310 or 311 or 312
8. ESE 318
9. One of the following natural science sequences:
   BIO 151, 152 *or* 171, 172
   CHE 131, 132 *or* 141, 142
   GEO 102/112 or 122; *and* 309
   PHY 131, 132 *or* 141, 142 *or* 125, 126, 127
   PHY 125 or 131 or 141 and AST 203
10. Six credits from courses in quantitative studies, which can be additional courses from the natural science sequences (see 9 above); or other courses with a strong quantitative studies component, such as ECO 101, ECO/BUS 114, 214, POL 201, PSY 201, 203, SOC 201, 202 or 311, 312. Students wishing to take other courses to fulfill the quantitative studies requirement must obtain the approval of the Computer Science Department.
11. Upper-Division Writing and Oral Skills Requirement
    All degree candidates must demonstrate writing skills and oral communication skills in English at a level acceptable for computer science majors. To satisfy the requirement, the CSE student must register for the writing and oral skills course CSE 300 and (1) submit a technical paper on an appropriate computer science topic that illustrates the student's ability to write in a clear, concise, technical, and organized manner and (2) give an oral presentation that demonstrates the student's ability to use the spoken word to communicate effectively with other suitably trained technical persons.

    The oral skills portion of the requirement is met by giving a presentation of the technical paper described above, by serving as an undergraduate T.A. in a computer science course and leading a recitation lecture, or by some other suitable presentation approved by a Computer Science faculty member. Students whose writing or speaking does not meet the required standards are directed to seek remedial help and resubmit their work or repeat their presentation.

Note: In requirement 2 above, CSE/ESE double majors may substitute ESE 440, 441 Electrical Engineering Design I, II for CSE 308, 309 Software Engineering I, II provided that the design project contains a signficiant software component. Approval of the Computer Science Department is required.

Grading

All courses taken to satisfy requirements 1 through 10 *must* be taken for a letter grade and completed with a grade of C or higher.

A grade of C or higher is required in prerequisite courses listed for all upper-division CSE and ISE courses.

Suggested Elective Courses

Students are encouraged to pursue a program that provides 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/ISE 305; CSE 306; ISE 315
Hardware: CSE 306; CSE/ESE 345, 346, 380
Operating Systems: CSE 306, 307; CSE/ESE 345
Programming Languages and Software Engineering: CSE/ISE 302; CSE 304, 307
Theory: CSE 303; CSE/MAT 371; CSE/AMS/MAT 373
Graphics: CSE 328, 332, 333
Multimedia: CSE 325, 333, 334
Computer Networks and Communications: CSE/ESE 346; ISE 310

Other courses in the Departments of Mathematics, Applied Mathematics and Statistics, and Electrical Engineering may also be relevant and can be taken as open electives. Also, a large selection of graduate courses in the department's Master of Science program are available

to qualified seniors (see p. 77, "Permission to Take Graduate Courses"). Students should consult early with faculty members of the Department of Computer Science to plan their programs.

Sample Program (Courses Required for the CSE Major Only)

Fall	*Spring*
Freshman	
CSE 113	CSE 114
MAT 131	MAT 132
Natural science course	Natural science course
Sophomore	
CSE 213	CSE 214
CSE 220	AMS 310
MAT 211	Quantitative studies course
Quantitative studies course	
Junior	
ESE 318	CSE 303
CSE elective	CSE elective
AMS 301	CSE elective
Senior	
CSE 300	CSE 373
CSE 308	CSE 309

Students with weak mathematical preparation should take MAT 123, 124, 126, 127 *or* MAT 125, 126, 127 instead of MAT 131, 132 and should delay taking CSE 113 until successfully completing MAT 124 or 125. All students are encouraged to discuss their program with a department undergraduate advisor.

The Minor in Computer Science

The minor in computer science is open to all students not majoring in either computer science or information systems. The minor requires six CSE or ISE courses, totaling approximately 21 credits, as outlined below.

1. Three courses from the core sequence: CSE 113, 114, 213, 214, and 220.
2. Three upper-division CSE or ISE courses, excluding CSE and ISE 300. Of these six courses, not more than two may be crosslisted (specifically CSE/ESE 327, 345, 380, 381; CSE/ISE 346; CSE/MAT 371; CSE/AMS/MAT 373). Additional upper-division courses may be substituted for lower-division courses with departmental approval.

Grading

All courses *must* be taken for a letter grade and completed with a grade of C or higher. A grade of C or higher is required in prerequisite courses listed for all upper-division CSE and ISE courses.

Concentration in Computer-Human Interaction

The concentration in computer-human interaction requires four courses. The psychology aspect of the concentration deals with the design of effective computer-human interactions; the computer science aspect deals with the technical design and implementation of the systems for those interactions. A student is considered to be a participant in the program after successfully completing courses 1 and 2 below.

1. CSE/ISE 333 User Interface Development
2. PSY 348 Cognitive Psychology *and* PSY 349 Cognitive Psychology: Honors
3. The concentration requires completion of at least two electives from the following list:
   CSE 328 Fundamentals of Computer Graphics
   CSE/ISE 325 Principles of Computer-Supported Cooperative Work
   CSE/ISE 332 Introduction to Scientific Visualization
   CSE 334 Introduction to Multimedia Systems
   PSY 302 Research Methodology in Human Factors
   ISE 440 Information Systems Design I
   ISE 441 Information Systems Design II

Courses

See p. 225, Restrictions on Credits, Course Prerequisites, and Course Numbers. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

CSE 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 is made of economic, legal, and moral issues involved in the utilization of these capabilities. Crosslisted with EST 100. May not be taken for credit in addition to CSE 101.
Fall, 3 credits

CSE 101 Introduction to Computers and Information Technologies
An introduction to the basics of personal computing and information technologies intended primarily for students majoring in humanities, social and behavioral sciences, or business management. Topics include principles of personal (single-user) computer systems, office automation, and information in a modern, networked (multiuser) computing environment. Emphasis is on conceptual understanding of personal computing rather than use of specific hardware or software. Required participation in computer laboratories. May not be taken for credit in addition to CSE/EST 100 or after any other CSE or ISE course.
Prerequisite: Satisfaction of entry skill in mathematics requirement
Fall and spring, 3 credits

CSE 106 Introduction to Pascal Programming
An introduction to programming in the Pascal programming language. Students gain experience in Pascal by solving programming problems. Primarily for students planning to take CSE 114. May not be taken for credit in addition to CSE 110.
Fall and spring, 1 credit

CSE 110-C Introduction to Computer Science
An introduction to fundamentals of computer science for non-majors. Topics covered include algorithms, problem-solving techniques, computer applications, data structures, and machine principles. Students gain experience using a modern higher-level computer programming language (currently Pascal) to solve a variety of numeric and non-numeric problems. May not be taken simultaneously with CSE 111 or 114. Students who have a C or higher in CSE 111 or 114 may not take CSE 110.
Prerequisite: MAT 123 or passing the Mathematics Placement Examination at level 4 or higher
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 gain experience using the FORTRAN programming language. Primarily for engineering students *not* planning to take advanced computer science courses. May not be taken simultaneously with CSE 110. Students who have a C or higher in CSE 114 may not take CSE 111.
Pre- or corequisites: MAT 124 or 125 or 131 or 141; PHY 125 or 131 or 141 or CEAS major
Fall and spring, 3 credits

CSE 112-C Fundamentals of Computer Information Systems
Crosslisted with ISE 112. (For course description, see alphabetical listing, Information Systems.) May not be taken for credit in addition to CSE 113.
Prerequisites: MAT 123 or passing the Mathematics Placement Examination at level 4 or higher; previous experience with computers
Corequisite (recommended): CSE 106 or 111
Fall and spring, 3 credits

CSE 113-C Foundations of Computer Science I
A rigorous introduction to the conceptual and mathematical foundations of computer science. Problem-solving techniques and mathematical concepts that aid in the thinking processes required for problem analysis and designing computer-based solutions. Emphasis on general problem-solving principles, logical reasoning, recursion and induction, and

relevant discrete mathematics concepts. Extensive laboratory experience using logic-based theorem provers, logic programming, and functional programming. May not be taken for credit in addition to CSE/ISE 112.
Prerequisite: Passing the Mathematics Placement Examination at level 4 or higher
Fall and spring, 3 credits

CSE 114 Computer Science I
Introduces fundamental computer science concepts and applies principles the student has learned from ISE/CSE 112 or CSE 113 to the modeling, analysis, and development of software in a modern higher-level programming language. Concepts emphasized include software design, verification and validation, object-oriented design and development, data abstraction, recursive programming, and basic machine architecture. Students develop software systems for a broad range of computer applications. May not be taken simultaneously with CSE 110 or 111.
Prerequisites: CSE 106 or equivalent programming experience; grade of C or higher in CSE/ISE 112 or CSE 113 or passing the proficiency examination for CSE 113
Fall and spring, 3 credits

CSE 127 Introduction to C Programming
An intensive introduction to programming in the C programming language. Students gain experience with C by solving programming problems. Primarily for students planning to take upper-division computer science courses that require knowledge of C.
Prerequisites: CSE major; upper-division standing
Fall and spring, 1 credit

CSE 213 Foundations of Computer Science II
Builds a rigorous foundation for reasoning about algorithms and computer programs. Introduces formal techniques for specifying, verifying, and analyzing algorithms and programs, including mathematical logic, proof techniques, BNF, formal grammars, algebraic structures, finite-state machines, and combinatorics (pre- and post-conditions, logical assertions, invariants). The use of graphs and other structures for representing and solving problems. These concepts are enhanced through extensive laboratory experience using mathematical symbol processing software, logic and functional programming, and finite-state machine simulators.
Prerequisites: CSE 113 or CSE/ISE 112; CSE 114
Fall and spring, 3 credits

CSE 214 Computer Science II
Development of advanced software techniques with emphasis on data representation and manipulation. Rigorous treatment of abstract data types (e.g., lists, stacks, and queues), tree structures, recursive data structures, and algorithms for searching, sorting, and translation. Reinforces modern software engineering concepts, including modular and object-oriented analysis and design, systems specifications, software reuse, documentation, and verification and validation techniques. Students develop applications using a modern high-level programming language. May not be taken for credit in addition to the discontinued CSE 201.
Prerequisite: Grade of C of higher in CSE 114 or passing the proficiency examination for CSE 114
Fall and spring, 4 credits

CSE 220 Computer Organization and Systems Programming
Explores the physical structure of a computer; machine representation of information; architecture and organization of various mainframe, mini-, and microcomputers; primary and secondary storage; and input and output communication. Introduces machine and assembly language programming; and systems programming techniques in the programming language C.
Prerequisite: Grade of C or higher in CSE 110 or 111 or 114 or passing the proficiency examination for CSE 111 or 114
Fall and spring, 4 credits

CSE 230 Introduction to C and UNIX
A systematic introduction to the principles and practice of programming in the C langage. The course covers control structures, expressions, data types and structured data, functions, and parameter passing. Emphasis is placed on writing C programs that follow structured programming principles. Aspects of the UNIX operating system relevant to developing C programs (utilities, systems calls, standard libraries) are also covered.
Prerequisite: CSE 114 or one year of programming experience
Fall and spring, 3 credits

CSE 300 Writing and Oral Skills in Computer Science
See Requirements for the Major in Computer Science, Upper-Division Writing and Oral Skills Requirement. Satisfactory/Unsatisfactory grading only.
Prerequisites: CSE major; upper-division standing
Fall and spring, 1 credit

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 213 and 214
Fall and spring, 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. Students undertake a semester project that includes the design and implementation of a compiler for a language chosen by the instructor.
Prerequisites: CSE 214, 220, and 303
Fall, 3 credits

CSE 305 Principles of Database Systems
The design of database management systems to obtain consistency, integrity, and availability of data. Conceptual models and schemas of data: relational, hierarchical, and network. Students undertake a semester project that includes the design and implementation of a database system. Crosslisted with ISE 305.
Prerequisites: CSE 214 and 220
Fall or spring, 4 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 operating system are performed.
Prerequisites: CSE 214 and 220; AMS 310 or (for electrical engineering majors) ESE 306
Fall and spring, 3 credits

CSE 307 Principles of Programming Languages
Presents examples of important programming languages (PL) and paradigms such as LISP, ALGOL, ADA, ML, Prolog, and C++. Students write sample programs in some of the languages studied. The languages are used to illustrate PL constructs such as binding, binding times, data types and implementation, operations (assignment data-type creation, pattern matching), data control, storage management, parameter passing, and operating environment. The suitability of these various languages for particular programming tasks is also covered.
Prerequisites: CSE 214 and 220
Spring, 3 credits

CSE 308 Software Engineering I
Introduces the basic concepts and modern tools and techniques of software engineering. Stresses the development of reliable and maintainable software via systems requirements and specifications, software design methodologies including object-oriented design, implementation, integration, and testing; software project management; life-cycle documentation; software maintenance; and consideration of human factors issues. Students become familiar with a state-of-the-art Computer-Aided Software Engineering (CASE) tool set and begin to apply these tools to actual software development projects. Crosslisted with ISE 308.
Prerequisite: CSE 214
Fall, 3 credits

CSE 309 Software Engineering II
Students apply the concepts, tools, and techniques covered in CSE 308 to a large-scale software development project, working in teams consisting of at least five members so that they can acquire group management skills. Emphasis on the use of Computer-Aided Software Design (CASE) tools and object-oriented design and programming. Crosslisted with ISE 309.
Prerequisite: CSE/ISE 308
Spring, 3 credits

CSE 325 Principles of Computer-Supported Cooperative Work
Crosslisted with ISE 325. (For course description, see alphabetical listing, Information Systems.)
Prerequisites: CSE 114; PSY 103 or 104; AMS 310 or ECO 320 or PSY 201; CSE 214 and 220 recommended
Fall or spring, 3 credits

CSE 327 Computer Vision
Crosslisted with ESE 358. (For course description, see alphabetical listing, Electrical Engineering.)
Prerequisites: CSE 111 or 114; ESE 318
Fall, 3 credits

CSE 328 Fundamentals of Computer Graphics
An introduction to computer graphics including graphics application programming; data structures for graphics; representing and specifying color; fundamental hardware and software concepts for calligraphic and raster displays; two-dimensional, geometric transformations; introduction to three-dimensional graphics; graphics standards; and input devices, interaction handling, and user-computer interface.
Prerequisites: CSE 214 and 220; permission of instructor
Fall or spring, 3 credits

CSE 332 Introduction to Scientific Visualization
Crosslisted with ISE 332. (For course description, see alphabetical listing, Information Systems.)
Prerequisites: CSE 114; MAT 211 or AMS 210
Fall or spring, 3 credits

CSE 333 User Interface Development
Crosslisted with ISE 333. (For course description, see alphabetical listing, Information Systems.)
Prerequisites: CSE 214; PSY 103 or 104 recommended
Fall or spring, 3 credits

CSE 334 Introduction to Multimedia Systems
Crosslisted with ISE 334. (For course description, see alphabetical listing, Information Systems.)
Prerequisites: CSE/ISE 333; PSY 348
Fall or spring, 3 credits

CSE 345 Computer Architecture
Starts with functional components at the level of registers, buses, 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 220; ESE 318
Fall and spring, 3 credits

CSE 346 Computer Communications
Crosslisted with ESE 346. (For course description, see alphabetical listing, Electrical Engineering.) May not be taken by students with credit for ISE 310.
Prerequisites: CSE 111 or 114; MAT 211 or AMS 210 or AMS 361 or MAT 303
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 214 and 303
Fall, 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, is used to implement models of computer and engineering systems, deterministic and random signal processing, etc.
Prerequisites: Upper-division standing; CSE 111 or 114; MAT 211 or AMS 210
Fall, 3 credits

CSE 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. Crosslisted with MAT 371.
Pre- or corequisite: MAT 313 or CSE 213
Fall, 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 is required for the implementation and comparison of algorithms. Crosslisted with AMS 373 and MAT 373.
Prerequisites: MAT 211 or AMS 210; CSE 214
Spring, 3 credits

CSE 380 Microprocessors and Programmed Logic I
Crosslisted with ESE 380. (For course description, see alphabetical listing, Electrical Engineering.)
Prerequisites: ESE 318; CSE 220
Fall and spring, 4 credits

CSE 381 Microprocessors and Programmed Logic II
Crosslisted with ESE 381. (For course description, see alphabetical listing, Electrical Engineering.)
Prerequisite: ESE/CSE 380
Spring, 3 credits

CSE 475 Undergraduate Teaching Practicum
Students assist the faculty in teaching by conducting a recitation or laboratory section including teaching, grading, and consulting (3 credits), or assisting students with homework and laboratory assignments (1 credit). The student receives regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated up to a maximum of seven credits.
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, 1 or 3 credits

CSE 487 Research in Computer Science
An independent research project with faculty supervision. Only three credits of research electives (AMS 487, CSE 487, ESC 499, ESE 499, ESM 499, EST 499, ISE 487) may be counted toward engineering technical elective requirements. May not be taken for more than six credits.
Prerequisite: Permission of instructor and department
Fall and spring, 1 to 6 credits

CSE 488 Internship in Computer Science
Participation in local, state, national, or international private enterprise, public agencies, or nonprofit institutions. Students are required to submit a written proposal, progress reports, and a final report on their experience to the client and to the department. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits, but cannot be used more than once as an elective to satisfy CSE major requirements.
Prerequisites: CSE major, upper-division standing; permission of the Computer Science Department and Office of Undergraduate Studies
Fall and spring, 3 credits

CSE 491 Honors Seminar
Designed for upper-division CSE majors who have demonstrated excellence in computer science courses or a special interest in the topic being offered. Each time the course is offered, a topic is selected comprising material not otherwise presented in undergraduate courses. May be repeated for different topics.
Prerequisites: Computer science major; upper-division standing; permission of department
Schedule to be announced, 3 credits

Department of Electrical Engineering

Chairperson: Serge Luryi

Undergraduate Program Director: Harbans S. Dhadwal

Faculty

Bradley Carlson, Assistant Professor, Ph.D., Syracuse University: VLSI; circuit design; parallel and distributed computing; computer-aided design.

Chi-Tsong Chen, Professor, Ph.D., University of California, Berkeley: Systems and control theory; digital signal processing.

Harbans S. Dhadwal, Associate Professor, Ph.D., University of London: Lasers and spectroscopy; fiber optics; signal processing.

Petar M. Djuric, Assistant Professor, Ph.D., University of Rhode Island: Signal processing.

Michael Green, Assistant Professor, Ph.D., University of California, Los Angeles: Nonlinear circuit theory; computer-aided design; analog integrated circuits.

Ridha Kamoua, Assistant Professor, Ph.D., University of Michigan: Solid-state physics; solid-state devices and circuits; solid-state microwave devices; integrated circuits.

Serge Luryi, Professor, Ph.D., University of Toronto: Solid-state electronic devices.

Velio A. Marsocci, Distinguished Service Professor, Eng.Sc.D., New York University: Solid-state electronics; integrated electronics; biomedical engineering.

John Murray, Associate Professor, Ph.D., University of Notre Dame: Digital signal processing; control; power electronics.

Jayantkumar P. Parekh, Professor, Ph.D., Polytechnic Institute of Brooklyn: Microwave acoustics and magnetics; microwave electronics.

Nam Phamdo, Assistant Professor, Ph.D., University of Maryland at College Park: Data compression and coding.

Stephen S. Rappaport, Professor, Ph.D., New York University: Communication theory; systems.

Thomas G. Robertazzi, Associate Professor, Ph.D., Princeton University: Computer networks; parallel processing.

Yacov A. Shamash, Professor, Ph.D., Imperial College: Control systems.

Kenneth L. Short, Professor, Ph.D., State University of New York at Stony Brook: Digital system design; microprocessors and instrumentation. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1985, and the President's Award for Excellence in Teaching, 1985.

Muralidhara Subbarao, Associate Professor and Graduate Studies Director, Ph.D., University of Maryland at College Park: Computer vision; artificial intelligence; computer architecture; computer graphics.

Stephen Sussman-Fort, Associate Professor, Ph.D., University of California, Los Angeles: Computer-aided design and optimization; microwave electronics; circuit theory.

Wendy K. Tang, Assistant Professor, Ph.D., University of Rochester: Parallel and distributed processing; computer architecture.

Hang-Sheng Tuan, Professor, Ph.D., Harvard University: Electromagnetic theory; integrated and fiber optics; microwave acoustics; physical electronics.

Armen H. Zemanian, Professor, Eng.Sc.D., New York University: Network theory; mathematical models in economic geography.

Affiliated Faculty

Gene R. Gindi, Radiology
John H. Marburger, Physics
Theo Pavilidis, Computer Science
David R. Smith, Computer Science

Adjunct Faculty
Estimated number: 3

Teaching Assistants
Estimated number: 30

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 for his or her own interests and career goals. The department's research and teaching areas include computers, computer engineering, communications, microprocessors, computer networks, solid-state electronics, electronic circuits, networks, controls and systems, robotics, computer graphics, pattern recognition, optoelectronics, parallel processing, VLSI, artificial intelligence, biomedical instrumentation, and computer-aided design. The computer engineering specialization is an option within the major accredited by the Accreditation Board for Engineering and Technology, Inc.

While most electrical engineering students go into industry after graduation, many go directly to graduate school for further study in engineering, 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.

Requirements for the Major in Electrical Engineering

The major in electrical engineering leads to the Bachelor of Engineering degree. The curriculum begins with a focus on basic mathematics and natural science, followed by courses emphasizing engineering science, bridging courses combining engineering science and design, and culminating in a one-year design experience that integrates the different skills and knowledge acquired. A minimum of six technical electives taken in the Electrical Engineering Department is required. The core sequence, technical electives, and additional courses may be chosen in consultation with a faculty advisor, taking into consideration the particular interest of the student.The following courses, totaling approximately 100 credits, are required:

1. Mathematics:
   MAT 131, 132; AMS 261 or MAT 203; AMS 361 or MAT 303
   Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:
   MAT 124, 126, 127 *or*
   MAT 125, 126, 127 *or*
   MAT 141, 142
2. Natural Sciences:
   PHY 131, 132; CHE 198 and 199; and PHY 251 or ESG 281
   Note: The physics course sequence PHY 125, 126, 127 or 141, 142 is accepted in lieu of PHY 131, 132.
   The chemistry course sequence CHE 131, 132, and 133 *or* 141, 142, and 143 is accepted in lieu of CHE 198 and 199.
3. Freshman Introduction to Electrical Engineering:
   ESE 123 and 124
4. Engineering Topics:
   Engineering topics include engineering science and engineering design. Content of the former category is determined by the creative application of basic science skills, while the content of the latter category focuses on the procedure of devising a system, component, or process.

a. Engineering Sciences
ESE 211, 271, 305, 318, 319, 372, ESC 259, and one of the following: ESG 302, 332, 333
b. Engineering Design
ESE 314, 324, 440, 441 (ESE 440, 441 project must be carried out at Stony Brook under the supervision of an Electrical Engineering faculty member)

5. Probability and Statistics:
ESE 306
6. Engineering Specialization and Technical Electives:
Eight technical elective courses. Of these eight, at least six must be chosen from the technical elective courses offered by the department. (See ESE course list.)
7. Upper-Division Writing Requirement:
All degree candidates must demonstrate skill in written English at a level acceptable for electrical engineering majors. The ESE student must register for the writing course ESE 300 concurrently with ESE 324 and submit approximately three long reports on the experiments performed in ESE 324. Students whose writing does not meet the required standard are referred for remedial help. Detailed guidelines are provided by the department. If the standard of writing is judged acceptable, the student receives an S grade for ESE 300, thereby satisfying this requirement.

Grading

All courses taken to satisfy requirements 1 through 6 must be taken for a letter grade. A grade of C or higher is required in the following courses: ESE 211, 271, 318, 372; MAT 131, 132; PHY 131, 132; and six ESE technical electives.

Sample Course Sequence in the Electrical Engineering Major

The following is a sample course sequence for students interested in electrical engineering and undecided about specialization in a particular area. This sequence ensures that prerequisite and corequisite courses are taken in proper order.

Freshman	*Credits*
Fall	
EGC 101	3
MAT 131	4
PHY 131	4
ESE 123	3
Total	14
Spring	
MAT 132	4
PHY 132	4
ESE 124	3
CHE 198	4
CHE 199	1
Total	16

Sophomore	*Credits*
Fall	
AMS 361	4
ESE 318	4
ESE 211	2
ESE 271	4
ESE 305	3
Total	17
Spring	
AMS 261	4
ESE 306	3
ESE 314	3
ESE 372	4
D.E.C. course	3
Total	17

Junior	*Credits*
Fall	
ESE 300	1
ESE 319	3
ESE 324	2
ESE technical elective	4
ESC 259	4
D.E.C. course	3
Total	17
Spring	
PHY 251 or ESG 281	4
ESE technical elective	3
ESE technical elective	3
ESE technical elective	3
D.E.C. course	3
Total	16

Senior	*Credits*
Fall	
ESE 440	3
ESE technical elective	3
Technical elective	3
ESG 302 or 332 or 333	4
D.E.C. course	3
Total	16
Spring	
ESE 441	3
ESE technical elective	3
Technical elective	3
D.E.C. course	3
D.E.C. course	3
Total	15

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.

Bioengineering
Communications and Signal Processing
Control Systems and Circuit Theory
Computer Engineering (details below)
Electrical Power and Energy Systems
Electronic Circuits and Devices
Solid-State Electronics
Electromagnetic Fields and Optical Systems

Requirements for the Major with Computer Engineering Option

More and more frequently the solutions to current system design problems 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.

Computer engineering is an accredited option within electrical engineering, and the following courses totaling approximately 130 credits are required:

1. Mathematics:
MAT 131, 132; AMS 261 or MAT 203; AMS 361 or MAT 303
Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:
MAT 124, 126, 127 *or*
MAT 125, 126, 127 *or*
MAT 141, 142
2. Natural Sciences:
PHY 131, 132; CHE 198 and 199; and PHY 251 or ESG 281.
Note: The physics course sequence PHY 125, 126, 127 or 141, 142 is accepted in lieu of PHY 131, 132.
The chemistry course sequence CHE 131, 132, and 133 *or* 141, 142, and 143 is accepted in lieu of CHE 198 and 199.
3. Freshman Introduction to Electrical Engineering:
ESE 123 and 124
4. Engineering Topics:
Engineering topics include engineering science and engineering design. Content of the former category is

determined by the creative application of basic science skills, while the content of the latter category focuses on the procedure of devising a system, component, or process.
   a. Engineering Sciences
      ESE 211, 271, 305, 318, 319, 372, ESC 259, and one of the following: ESG 302, 332, 333
   b. Engineering Design
      ESE 314, 324, 440, 441 (ESE 440, 441 project must be carried out at Stony Brook under the supervision of an Electrical Engineering faculty member)
5. Probability and Statistics:
   ESE 306
6. Computer Science:
   CSE 113, 114, 214, 220, 306
7. Engineering Technical Electives:
   Three ESE electives chosen from ESE 311, 316, 346, 349, 381; and one elective chosen from ESG 302, 332, 333, ESC 259
8. Upper-Division Writing Requirement:
   See Requirements for the Major in Electrical Engineering, item 7.

Grading

All courses taken to satisfy requirements 1 through 7 must be taken for a letter grade. A grade of C or higher is required in the following courses: ESE 211, 271, 318, 345, 372, 380; MAT 131, 132; PHY 131, 132; and three ESE technical electives.

Sample Course Sequence in the Computer Engineering Option

The following is a sample course sequence for students interested in the computer engineering option. This sequence ensures that prerequisites and corequisite courses are taken in proper order.

Freshman	*Credits*
Fall	
EGC 101	3
MAT 131	4
PHY 131	4
CSE 113	3
ESE 123	3
Total	17
Spring	
MAT 132	4
PHY 132	4
ESE 124	3
CHE 198	4
CHE 199	1
Total	16

Sophomore	*Credits*
Fall	
AMS 361	4
ESE 318	4
ESE 211	2
ESE 271	4
CSE 114	3
Total	17
Spring	
AMS 301	4
ESE 372	4
ESE 314	3
CSE 220	4
Total	15

Junior	*Credits*
Fall	
ESE 300	1
ESE 324	2
ESE 345	3
ESE 305	3
ESE 380	4
D.E.C. course	3
Total	16
Spring	
ESE 306	3
ESE technical elective	3
ESE technical elective	3
PHY 251 or ESG 281	4
D.E.C. course	3
Total	16

Senior	*Credits*
Fall	
ESE 440	3
ESE technical elective	3
CSE 214	4
D.E.C. course	3
D.E.C. course	3
Total	16
Spring	
ESE 441	3
ESG 302 or 332 or 333 or ESC 259	4
CSE 306	4
D.E.C. course	3
D.E.C. course	3
Total	17

Courses

See p. 225, Restrictions on Credits, Course Prerequisites, and Course Numbers. An updated list of technical electives is available from the undergraduate office in the Electrical Engineering Department. ESE courses do not satisfy D.E.C. requirements.

ESE 123 Introduction to Electronic Design
The study of basic electronic design principles, through the modular design and construction of a specific electronic system. A different design specification is chosen each semester, incorporating transducers, analog circuits, and digital circuits. Both analytic and computer-aided design approaches are used. The resulting design is built in the laboratory and basic electronic test equipment is used to verify its performance.
Corequisites: MAT 125 or 131 or 141; PHY 125 or 131 or 141
Fall, 3 credits

ESE 124 Computer Techniques for Electronic Design
An extensive introduction to problem solving in electrical engineering using the ANSI C language. Topics covered include data types, operations, control flow, functions, data files, numerical techniques, pointers, structures, and bit operations. Students gain experience in applying the C language to the solution of a variety of electrical engineering problems, based on concepts developed in ESE 123. Knowledge of C at the level presented in this course is expected of all electrical engineering students in subsequent courses in the major.
Prerequisite: ESE 123
Spring, 3 credits

ESE 211 Electronics Laboratory A
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: ESE 124
Corequisite: ESE 271
Fall and spring, 2 credits

ESE 271 Electrical Circuit Analysis
An introduction to linear electrical circuit analysis. Kirchoff's Laws, Ohm's Law, nodal and mesh analysis for DC circuits, capacitors, inductors, and steady-state AC; transient analysis using phasors and Laplace transforms. Fundamentals of AC power, coupled inductors, and two-ports.
Prerequisites: MAT 132; PHY 132 or 142 or 126, 127
Pre- or corequisite: ESE 124
Fall and spring, 4 credits

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 allows the student to take the laboratory portion of a course for which he or she has had the theoretical portion elsewhere. Open elective credit only.
Prerequisite: Permission of department
Fall and spring, 1 to 3 credits

ESE 300 Writing in Electrical Engineering
See Requirements for the Major in Electrical Engineering, Upper-Division Writing Requirement. Satisfactory/Unsatisfactory grading only.
Prerequisites: ESE major; upper-division standing
Corequisite: ESE 324
Fall, 1 credit

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, and automated measurement systems. Application of measurement systems to pollution and to biomedical and industrial monitoring is considered.
Prerequisite: ESE 372
Fall, 3 credits

ESE 305 Deterministic Signals and Systems
Concepts of linearity and time-invariance. Convolution and transfer function, Laplace transforms, z-transform, Fourier transforms, and their relationships. Stability and its implications. Routh's test and Jury's test. Analog and digital computer simulation. Provides common background for control, communication, and digital signal processing. May not be used by electrical engineering majors as one of the six ESE technical electives.
Pre- or corequisite: ESE 271
Fall and spring, 3 credits

ESE 306 Random Signals and Systems
Random experiments and events; random variables, probability distribution, and density functions; continuous and discrete random processes; binomial, Bernoulli, Poisson, and Gaussian processes; system reliability; Markov chains; elements of queueing theory; detection of signals in noise; estimation of signal parameters; properties and application of auto-correlation and cross-correlation functions; power spectral density; response of linear systems to random inputs.
Prerequisite: ESE 305
Spring, 3 credits

ESE 307 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: ESE 271
Fall, 3 credits (not offered in 1995-96)

ESE 310 Modern Circuit Theory
Techniques of proofs. Finite and infinite graphs. Fundamental loops and cutsets and their algebraic representations. Elements of Hilbert-space theory. Existence and uniqueness of voltage-current regimes in finite and infinite networks. Least-power and monotonicity principles. Random walks on finite and infinite networks. Infinite cascades and grids. Applications to electrical engineering. Transfinite generalizations. Paradoxical behavior.
Prerequisite: ESE 271
Spring, 3 credits

ESE 311 Electronic Circuits Design
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 computer-aided techniques.
Prerequisite: ESE 372
Spring, 3 credits

ESE 312 Microwave Electronics
Fundamentals of microwave and RF electronics. Includes S-parameter theory, Smith charts, amplifier and oscillator design, matching network synthesis, large-signal and broadband methods, and power combiners. Computer-aided design packages are used throughout the course.
Prerequisite: ESE 372
Fall, 3 credits (not offered in 1995-96)

ESE 314 Electronics Laboratory B
Coordinated with, and illustrates and expands upon, the concepts presented in ESE 372. Experiments include diode circuits, class A BJT and FET amplifiers, differential amplifiers, and analog signal processing. Laboratory fee required.
Prerequisite: ESE 211
Pre- or corequisite: ESE 372
Fall or 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 descriptions are first introduced. A systematic procedure to analyze any linear control system is then introduced. 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: ESE 271
Spring, 3 credits

ESE 316 Digital Devices and Circuits
Switching characteristics of devices: bipolar transistors, MOSFETSs, C.C.D.s. Circuit analysis of leading IC gate technologies: TTL, ECL, MOS, CMOS, dynamic MOS. Interfacing logic families. Application of small-scale ICs in control and timing circuits. Large-scale integrated circuits: organization and characteristics of RAMs, ROMs, and PLAs. Opto-electrical devices.
Prerequisite: ESE 372
Fall, 3 credits

ESE 318 Digital Systems Design
A review of number systems and a concise description of digital circuits operation followed by development of methods to analyze and design both combinatorial and sequential systems, regarding digital circuits as functional blocks. Presented in an application-oriented manner utilizing demonstrations and laboratory projects. The projects consist of building hardware on breadboards and simulation of designs using CAD tools. Topics include number systems and codes; switching algebra and switching functions; digital circuits; analysis and design of combinational circuits; standard combinational modules and arithmetic circuits; realization of sequential modules; memory, combinational, and sequential PLDs and their applications; design of system controllers.
Prerequisites for engineering majors: ESE 124; PHY 127 or 132 or 142
Prerequisite for computer science majors: CSE 220
Fall and spring, 4 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: ESE 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 324 Electronics Laboratory C
Illustrates and expands upon advanced concepts presented in ESE 372. Experiments include multistage amplifiers, class B and class C power amplifiers, speech processing, active-RC and switched-capacitor filters, oscillators, and switching power supplies. Laboratory fee required.
Prerequisites: ESE 314 and 372; ESE major; junior standing
Corequisite: ESE 300
Fall, 2 credits

ESE 330 Integrated Electronics
Overview of the design and fabrication of integrated circuits. Topics include gate-level and transistor-level design; fabrication material and processes; layout of circuits; automated design tools. This material is directly applicable to IC design and provides a strong background for more advanced courses.
Prerequisite: ESE 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; ESE 271
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, and filtering; AM, FM, and PM; time and frequency multiplexing; discussion of problems encountered in practice; noise and bandwidth considerations; and pulse modulation schemes.
Prerequisites: ESE 271 and 305
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: ESE 271
Spring, 3 credits (not offered in 1995-96)

ESE 342 Digital Communications Systems
Pulse modulation and sampling. All-digital networks. Pulse code modulation. Digital modulation techniques including ASK, FSK, PSK, DPSK. Equalization. Error control coding. Exchange of reliability for rate. Synchronous and asynchronous systems. ARQ schemes. Message and circuit switching. Packet radio channels.
Prerequisite: ESE 340
Spring, 3 credits

ESE 343 Modern Electronic Communications Laboratory
Experimental study of communications systems and components. Design, test, and measurement techniques. AM and FM modulators and demodulators. Spectra, bandwidth measurement, analog and digital signaling equipment. Applications in communications and radar systems.
Prerequisite: ESE 340
Pre- or corequisite: ESE 342
Spring, 2 credits (not offered in 1995-96)

ESE 344 Software Tools for Engineering
Trains students to use computer systems to solve engineering problems. Includes the Unix programming environment, the C programming language, basic data structures and algorithms, and familiarization with graphic displays.
Prerequisites: ESE 124 and 305
Spring, 4 credits

ESE 345 Computer Architecture
Starts with functional components at the level of registers, buses, 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 220; ESE 318
Fall and 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.
Prerequisite: ESE 271
Spring, 3 credits

ESE 347 Digital Signal Processing
A basic course in digital signal processing covering both theory and implementation on signal processing chips. Topics include a review of discrete time systems, sampling and reconstruction, FIR and IIR filter design, FFT, architecture and assembly language of a basic signal processing chip, and an introduction to adaptive filtering.
Prerequisite: ESE 305
Fall, 4 credits

ESE 349 An Introduction to Fault Diagnosis of Digital Systems
A follow-up to ESE 318, 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 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 318
Fall, 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 are considered with appropriate inspection trips to examine examples of these facilities. The relationship between the facilities and their influence on the environment are reviewed. Topics included are power system fundamentals, characteristics of transmission lines, generalized circuit constants, transformers, control of power flow and of voltage, per unit system of computation, system stability, and extra-high voltage a.c. and d.c. transmission.
Prerequisite: ESE 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: ESE 271; ESC 301 or ESG 302
Spring, 3 credits (not offered in 1995-96)

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; and analysis of saturation effects.
Prerequisite: ESE 372
Fall, 3 credits

ESE 358 Computer Vision
Introduces fundamental concepts, algorithms, and computational techniques in visual information processing. The course covers image formation, image sensing, binary image analysis, image segmentation, Fourier image analysis, edge detection, reflectance map, photometric stereo, basic photogrammetry, stereo, pattern classification, extended Gaussian images, and the study of the human visual system from an information processing point of view. Crosslisted with CSE 327.
Prerequisite: ESE 318
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.
Prerequisite: ESE 372
Fall, 3 credits

ESE 371 Computer Graphics
Input and output devices for human-computer communication. Bitmap displays and their uses. Picture and graphics editor. Curve fitting with emphasis on Bezier splines. Scan conversion. Geometric transformations, projections, hidden line problems. Anti-aliasing.
Prerequisite: CSE 201 or ESE 344
Fall, 4 credits (not offered in 1995-96)

ESE 372 Electronics
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, and gate and electronic switches; large-signal and small-signal analysis of amplifiers; amplifier frequency response; and rectifiers and wave-shaping circuits.
Prerequisite: ESE 271
Fall, 4 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.
Prerequisite: ESE 318
Fall, 4 credits

ESE 381 Microprocessors and Programmed Logic II
A continuation of ESE 380 emphasizing systematic approaches to and trade-offs in the design of microprocessor-based systems from initial specification to implementation. Crosslisted with CSE 381.
Prerequisite: ESE/CSE 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 is made available at registration time. May be repeated for different topics but only three credits may be counted as technical electives.
Prerequisite: Permission of instructor
Schedule to be announced, 1 to 6 credits, to be assigned when course is scheduled

ESE 440 Electrical Engineering Design I
Lectures by faculty and visitors on typical design problems encountered in engineering practice. During this semester each student chooses a senior design project. A preliminary design report is required. Not counted as a technical elective. Laboratory fee required.
Prerequisites: ESE 324 and 372; two ESE technical electives (except ESE 390, 499); ESE major; senior standing
Fall, 3 credits

ESE 441 Electrical 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. Not counted as a technical elective. Laboratory fee required.
Prerequisites: ESE 440; ESE major; senior standing
Spring, 3 credits

ESE 475 Undergraduate Teaching Practicum
Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives 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

ESE 499 Research in Electrical Sciences
An independent research project with faculty supervision. Permission to register requires a B average in all engineering courses and the agreement of a faculty member to supervise the research. May be repeated, but only three credits of research electives (AMS 487, CSE 487, ESE 499, ESC 499, ESM 499, EST 499, ISE 487) may be counted toward the non-ESE technical elective requirements.
Fall and spring, 3 credits

Information Systems

Undergraduate Program Director: Hussein Badr, Computer Science

The information systems major, which is housed in the Department of Computer Science, prepares its graduates to design and manage computerized data processing and decision support systems. The program is technically oriented, emphasizing the design and implementation aspects of large-scale information systems as well as the more traditional managerial and organizational issues, and it balances development of system engineering skills with learning to deliver reliable systems on time and within budget. Throughout the program, students are exposed to diverse application areas ranging from traditional business, finance, and accounting through telecommunications, networks, multimedia, and database management, to computer-aided design and industrial production management systems.

Acceptance into the Information Systems Major

Qualified freshman and transfer applicants are accepted directly into the information systems major upon admission to the university. Currently enrolled students may be accepted into the major after completion of ISE/CSE 112, CSE 106, MAT 131, and ECO 101, each with a grade of C or higher and a minimum cumulative G.P.A. of 2.6. Students not meeting the grade point average requirement may petition the department for admission.

Requirements for the Major in Information Systems

The major in information systems leads to the Bachelor of Science degree. The following courses, totaling approximately 70 credits, are required. At least one of the courses under requirement A-2 below and all of the courses under requirement A-3 must be completed at Stony Brook.

A. Information Systems/Computer Science Courses:
1. CSE 106, ISE/CSE 112, CSE 114, 214, 220
2. ISE/CSE 305, 308
3. ISE 310, 440, 441
4. Twelve credits chosen from the following CSE and ISE courses:
   CSE 306, 307, 328
   ISE/CSE 325, 332, 333, 334
   ISE 315, 390, 487, 488

B. Mathematics Courses:
1. MAT 131 (or MAT 141 or 126)
2. AMS 210 or MAT 211, and AMS 310, *or* AMS 201 and ECO 320

C. Economics and Business Courses:
1. ECO 101
2. ECO/BUS 114
3. One course chosen from ECO/BUS 214; ECO 368, 389; EST 392, 393; BUS 346, 349
4. One course chosen from ECO 345; BUS 348; POL 319, 359; PSY 313; SOC 383
5. One course chosen from EST 302, 325; BUS 340

D. Upper-Division Writing and Oral Skills Requirement
All degree candidates must demonstrate written and oral communication skills at a level acceptable for information systems majors. To satisfy the requirement, the ISE student must register for the writing and oral skills course ISE 300 and (1) submit a technical paper on an appropriate information systems topic that illustrates the student's ability to write in a clear, concise, technical, and organized manner; and (2) give an oral presentation that demonstrates the student's ability to communicate effectively with other suitably trained technical persons. The oral skills portion of the requirement is met by giving a presentation of the technical paper described above, by serving as an undergraduate T.A. in an information systems course and leading a recitation lecture, or by some other suitable presentation approved by an Information Systems faculty member. Students whose writing or speaking does not meet the required standard are directed to seek remedial help and to resubmit their work or repeat their presentation.

Grading

All courses taken to satisfy requirements A through C (with the exception of ISE 488) *must* be taken for a letter grade and completed with a grade of C or higher. A grade of C or higher is required in prerequisite courses listed for all upper-division CSE and ISE courses.

Sample Course Sequence in the Information Systems Major

Freshman	*Credits*
Fall	
MAT 131	4
EGC 101	3
CSE 101 or D.E.C. course	3
D.E.C. course	3
D.E.C. course	3
Total	16
Spring	
ECO 101	4
CSE 106	1
ISE 112	3
D.E.C. course	3
D.E.C. course	3
Total	14

Sophomore	*Credits*
Fall	
ECO/BUS 114	3
CSE 114	3
AMS 201 or 210	3
D.E.C. course	3
D.E.C. course	3
Total	15
Spring	
CSE 214	4
CSE 220	4
Requirement C course	3
D.E.C. course	3
Total	14

Junior	*Credits*
Fall	
ISE 308	3
ISE 305	4
Requirement C course	3
ECO 320 or AMS 310	3
D.E.C. course or open elective	3
Total	16
Spring	
ISE 310	3
CSE/ISE elective	3
CSE/ISE elective	3
ISE 309	3
Open elective	3
Total	15

Senior	*Credits*
Fall	
ISE 300	1
ISE 440	3
CSE/ISE elective	3
Open elective	3
Open elective	3
Open elective	3
Total	16
Spring	
ISE 441	3
CSE/ISE elective	3
Requirement C course	3
Open elective	3
Open elective	3
Total	15

Admittance to ISE Courses

See p. 232, "Admittance to CSE and ISE Courses," subsection A.

Courses

See p. 225, Restrictions on Credits, Course Prerequisites, and Course Numbers. The letter tag on some course numbers indicates which D.E.C. category a course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

ISE 112-C Fundamentals of Computer Information Systems
An introduction to fundamentals of computer science and information technologies for information systems, engineering, or science majors, and computer science minors. Topics include principles of computer systems; algorithms; problem-solving techniques; and an introduction to the UNIX operating system. This course is designed to be taken concurrently with a computer programming course. Crosslisted with CSE 112. May not be taken for credit in addition to CSE 113.
Prerequisites: MAT 123 or passing the Mathematics Placement Examination at level 4 or higher; previous experience with computers
Corequisite (recommended): CSE 106 or 111
Fall and spring, 3 credits

ISE 300 Writing and Oral Skills in Information Systems
See Requirements for the Information Systems Major, Upper-Division Writing and Oral Skills Requirement. Satisfactory/Unsatisfactory grading only.
Prerequisites: ISE major; upper-division standing
Fall and spring, 1 credit

ISE 305 Principles of Database Systems
Crosslisted with CSE 305. (For course description, see alphabetical listing, Computer Science.)
Prerequisites: CSE 214 and 220
Fall or spring, 4 credits

ISE 308 Software Engineering I
Crosslisted with CSE 308. (For course description, see alphabetical listing, Computer Science.)
Prerequisite: CSE 214
Fall, 3 credits

ISE 309 Software Engineering II
Crosslisted with CSE 309. (For course description, see alphabetical listing, Computer Science.)
Prerequisite: ISE/CSE 308
Spring, 3 credits

ISE 310 Data Communication and Networks
Study of communication networks. Local area networks (LAN), integrated voice and data systems (IVDS), and wide area networks (WAN). Their topologies: bus, token passing, tree, point to point. Protocols, speed, and distance limitations: RS232, TCP/IP, MAP/TOP, ONS, OSI. Network design and management will be studied in various environments. May not be taken by students with credit for CSE/ESE 346.
Prerequisites: CSE 214 and 220
Spring, 3 credits

ISE 315 Database Transaction Processing Systems
Theory and practice of design for database applications. Transaction design, schema design, restart and recovery, journaling, distributed databases. Student groups perform design and implementation of significant database application.
Prerequisites: CSE/ISE 305 and 308
Fall, 3 credits

ISE 325 Principles of Computer-Supported Work
Psychological and organizational aspects of computer-supported cooperative work (CSCW), plus firsthand experience with technologies that can facilitate group-oriented tasks or provide support for group-based management activities such as negotiations or decision making. Technological issues include data management and sharing, computer-mediated communications, networks, video- and teleconferencing, and multimedia. Crosslisted with CSE 325.
Prerequisites: CSE 114; PSY 103 or 104; AMS 310 or ECO 320 or PSY 201; CSE 214 and 220 recommended
Fall or spring, 3 credits

ISE 332 Introduction to Scientific Visualization
Visualization of scientific, engineering, medical, and business data sets. Mechanisms to acquire sampled, computed, or synthetic data and methods to transform the symbolic into the visual. Topics include classic visualization process; visual perception; volume and surface visualization; methods for visualizing sampled, simulated, and geometric objects; and visualization systems. Emphasis on applications and case studies. Crosslisted with CSE 332.
Prerequisites: CSE 114; MAT 211 or AMS 210
Fall or spring, 3 credits

ISE 333 User Interface Development
Survey of user interface systems, including topics such as command language, windowing, multiple input/output devices, architecture of user interface management systems, and tool kits for designing user interfaces. Additional topics may include human factors, standards, or visual languages. Students participate in a project involving the design and implementation of a user interface system. Crosslisted with CSE 333.
Prerequisites: CSE 214; PSY 103 or 104 recommended
Fall or spring, 3 credits

ISE 334 Introduction to Multimedia Systems
Survey of technologies available for user interfaces. Discussion of hypertext; voice, music, and video together with tools and models for capturing, editing, presenting, and combining them. Capabilities and characteristics of a range of peripheral devices including devices based on posture, gesture, head movement, and touch. Case studies of academic and commercial multimedia systems including virtual reality systems. Students participate in laboratory exercises and build a multimedia project. Crosslisted with CSE 334.
Prerequisites: CSE/ISE 333; PSY 348
Fall or spring, 3 credits

ISE 390 Special Topics in Information Systems
Lecture or seminar course on a current topic in information systems, to be announced and described before the start of the semester of offering. May be repeated as the topic varies, but cannot be used more than twice to satisfy the ISE major requirements.
Prerequisites: ISE or CSE major; upper-division standing
Schedule to be announced, 3 credits

ISE 440 Information Systems Design I
Student groups select an appropriate senior design project; analyze application; and produce detailed documentation for requirements, specification, and high-level design.
Prerequisite: CSE/ISE 305 or ISE 310
Fall, 3 credits

ISE 441 Information Systems Design II
Continuation of ISE 440. Student groups complete design of project selected in ISE 440; perform coding, testing, and evaluation; and produce a user manual and final design documentation.
Prerequisite: ISE 440
Spring, 3 credits

ISE 475 Undergraduate Teaching Practicum
Students assist faculty by conducting a recitation or laboratory section including teaching, grading, and consulting (3 credits), or by assisting students with homework and laboratory assignments (1 credit). The student receives regularly scheduled supervision from the faculty advisor. May be used as an open elective only and repeated up to a maximum of seven credits.
Prerequisites: Senior standing as an undergraduate CEAS major; a minimum G.P.A. of 3.0 in all Stony Brook courses; grade of B in the course in which the student is to assist; or permission of department
Fall and spring, 1 or 3 credits

ISE 487 Research in Information Systems
An independent research project with faculty supervision. Only three credits of research electives (AMS 487, CSE 487, ESC 499, ESE 499, ESM 499, EST 499, ISE 487) may be counted toward engineering technical elective requirements. May not be taken for more than six credits and, if taken for three or more credits, cannot be used more than once as an elective to satisfy ISE major requirements.
Prerequisite: Permission of instructor and department
Fall and spring, 1 to 6 credits

ISE 488 Information Systems Internship
Participation in local, state, national, or international private enterprises, public agencies, or nonprofit institutions. Students are required to submit a written proposal, progress reports, and a final report on their experience to the client and to the department. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits but cannot be used more than once as an elective to satisfy ISE major requirements.
Prerequisites: ISE major; upper-division standing; permission of faculty sponsor, department, and Office of Undergraduate Studies
Fall and spring, 3 credits

Department of Materials Science and Engineering

Chairperson: Michael Dudley

Undergraduate Program Director: Jonathan C. Sokolov

Faculty

Christopher C. Berndt, Professor, Ph.D., Monash University: Mechanical properties.

Clive R. Clayton, Professor, Ph.D., University of Surrey: Structure and properties of materials; thin film processing.

Michael Dudley, Professor, Ph.D., University of Warwick: Diffraction techniques; materials in art, design, and technology.

Richard J. Gambino, Adjunct Professor, M.S., Polytechnic Institute of New York: Magnetic thin films; magneto-optical properties.

Allen N. Goland, Adjunct Professor, Ph.D., Northwestern University: Solid-state physics.

Gary P. Halada, Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook: Surface analysis; engineering design.

Patrick J. Herley, Professor, Ph.D., Rhodes University; Ph.D., Imperial College: Crystallography; chemistry of solids.

Herbert Herman, Professor, Ph.D., Northwestern University: Materials engineering.

Hugh Isaacs, Adjunct Professor, Ph.D., Imperial College: Surface defects; surface analysis.

A. Peter Jardine, Assistant Professor, Ph.D., Bristol University: Thermodynamics; processing of materials.

Franco P. Jona, Professor, Ph.D., Eidgenossische Technische Hochschule: Solid state; modern materials.

Alexander H. King, Professor, D.Phil., University of Oxford: Electron microscopy; crystal defects.

Miriam Rafailovich, Professor and Graduate Studies Director, Ph.D., State University of New York at Stony Brook: Polymer sciences and interfaces.

Sanjay Sampath, Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook: Thermal spray technology; tribilogy.

Leslie L. Seigle, Professor Emeritus, D.Sc., Massachusetts Institute of Technology: Thermodynamics.

Jonathan C. Sokolov, Associate Professor, Ph.D., State University of New York at Stony Brook: Polymer sciences and interfaces.

Masaki Suenaga, Adjunct Professor, Ph.D., University of California, Berkeley: Superconducting alloys; electron microscopy.

John B. Warren, Adjunct Assistant Professor, Ph.D., University of Florida: Analytical electron microscopy, X-ray fluorescence; semiconductor defects.

David O. Welch, Adjunct Professor, Ph.D., University of Pennsylvania: Kinetics of diffusion; energetics; crystal lattice defects; radiation effects.

Affiliated Faculty

Benjamin Chu, Chemistry

Adjunct Faculty
Estimated number: 10

Teaching Assistants
Estimated number: 20

The Department of Materials Science and Engineering offers the Bachelor of Engineering degree program in engineering science and the minor in materials science, as well as several interdisciplinary undergraduate programs in conjunction with other science and engineering departments on campus. These joint programs provide basic training for prospective graduates to enter a wide range of industries or to proceed to graduate studies in engineering fields. They are aimed at the materials aspect of mechanical engineering, electrical engineering, physics, and chemistry. Individualized programs are also available in biomedical materials, electronic materials, environmental properties of materials, and materials in energy conversion.

Engineering Science

The major in engineering science (ESG), in which all departments of the College of Engineering and Applied Sciences participate, furnishes the student with a broad background in the basic engineering disciplines. It is designed for those who want an engineering education of a less specialized nature than that available from conventional engineering departments.

The engineering science program includes an extensive design experience that builds upon fundamental concepts and matches the requirements of engineering science professional practice. Particular emphasis is placed on the following: development of creativity; use of open-ended problems; modern design theory and methodology; formulation of problem statements and specifications; consideration of alternate solutions; feasibility; production processes; concurrent design; and detailed descriptions.

Design is fundamental to the curriculum but is particularly concentrated in a two year, four-course design sequence (Engineering Design I, II, III, and IV) with the latter two courses comprising the capstone senior design project.

In addition, an area of specialization must be formally declared and is achieved through appropriate selection of technical electives and senior design topic. Areas of specialization and the required courses for each are listed below. 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. The major in engineering science is also good preparation for graduate studies in architecture, business, law, or medicine.

Requirements for the Major in Engineering Science

The major in engineering science leads to the Bachelor of Engineering degree. The following courses, totaling approximately 110 credits, are required:

1. Mathematics:
   MAT 131, 132; AMS 261 or MAT 203; AMS 361 or MAT 303

   Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:
   MAT 124, 126, 127 *or*
   MAT 125, 126, 127 *or*
   MAT 141, 142
2. Natural Sciences:
   PHY 131, 132; PHY 251 or ESG 281; CHE 198 and 199

   Notes:
   a. The physics course sequence PHY 125, 126, 127 *or* 141, 142 is acceptable in lieu of PHY 131, 132

   b. The chemistry course sequence CHE 131, 132, and 133 *or* CHE 141, 142, and 143 is acceptable in lieu of CHE 198 and 199 *only* if both courses in the sequence were completed prior to admission to the ESG major.
3. Computer Science:
   CSE 111 or 113, 114
4. Engineering Science Core Program:
   ESG 312; ESM 350, 450; and the following nine courses:
   Materials Science and Engineering—ESG 302, 332, 333, 339
   Electrical Engineering—ESE 271, 372
   Mechanical Engineering—ESC 260, 262, 363
5. Engineering Synthesis and Design:
   ESG 217, 316, 440, 441; ESM 355
6. Engineering Specialization and Technical Electives:
   The *area of specialization,* composed of five technical electives including at least two design-oriented courses, must be declared in writing by the end of the junior year. It is selected in consultation with the faculty advisor to ensure a cohesive course sequence with depth at the upper level.

   The five areas of specialization are biomedical engineering, electrical engineering, manufacturing engineering, materials science and engineering, and mechanical engineering. (Declaration of the materials science minor is accepted in lieu of the written statement for the materials science and engineering area of specialization.)
7. Upper-Division Writing Requirement:
   All degree candidates must demonstrate skill in written English at a level acceptable for engineering science majors. The ESG student must register for the writing course ESG 300 concurrently with ESG 316. The quality of writing in the technical reports submitted for ESG 316 is evaluated and students whose writing does not meet the required standard are referred for remedial help. Detailed guidelines are provided by the department. If the standard of writing is judged acceptable, the student receives an S grade for ESG 300, thereby satisfying the requirement.

Grading

A grade of C or higher is required in the following courses:

a. MAT 131, 132; PHY 131, 132; ESE 271; ESG 217, 312, 339; *and*
b. Each of the five required technical electives offered by the college.

All courses taken to satisfy requirements 1 through 6 must be taken for a letter grade.

Sample Course Sequence in the Engineering Science Major

Freshman		*Credits*
Fall		
MAT 131		4
PHY 131		4
EGC 101		3
D.E.C. course		3
D.E.C. course		3
	Total	17
Spring		
MAT 132		4
PHY 132		4
CSE 111		3
CHE 198		4
CHE 199		1
	Total	16

Sophomore		*Credits*
Fall		
AMS 261 or MAT 203		4
PHY 251 or ESG 281		4
ESC 260		3
ESG 332		4
D.E.C. course		3
	Total	18
Spring		
AMS 361 or MAT 303		4
ESC 262		3
ESC 363		4
ESE 271		4
	Total	15

Junior		*Credits*
Fall		
ESM 350		2
ESG 312		3
ESE 372		4
ESG 217		4
Technical elective (design)		3
	Total	16
Spring		
ESG 316		3
ESG 300		0
ESG 302		4
ESG 333		4
ESG 339		4
	Total	15

Senior	*Credits*
Fall	
ESG 440	3
ESM 450	2
Technical elective (design)	3
Two technical electives	6
D.E.C. course	3
Total	17
Spring	
ESM 355	3
ESG 441	3
Technical elective	3
D.E.C. course	3
D.E.C. course	3
Total	15

Areas of Specialization

Each area of specialization requires at least two design and three elective courses. Other technical electives may be substituted *only* with the approval of the student's faculty advisor.

Biomedical Engineering

1. Subspecialty in Instrumentation (e.g., Cardiac Monitoring and Imaging)

Design Courses
ESE 318 Digital Systems Design
ESE 380 Microprocessors and Programmed Logic I

Electives (three courses chosen from the following):

ESE 306 Random Signals and Systems
ESE 315 Introduction to Feedback Control Theory
ESE 362 Optoelectronic Devices and Optical Imaging Techniques
ESC 364 Introduction to Fluid Mechanics

2. Subspecialty in Mechanical Devices (e.g., Prosthetics)

Design Courses
ESC 310 Kinematics and Dynamics of Machinery
ESC 410 Design of Machine Elements

Electives (three courses chosen from the following):
ESC 342 Introduction to Experimental Stress Analysis
ESM 334 Materials Engineering
ESM 335 Mechanical Properties of Materials
ESM 353 Biomaterials
ESM 369 Polymers

Students should also choose five courses from the following list of open electives:

BIO 151, 152 Principles of Biology *or* BIO 171, 172 Honors Biology
BIO 310 Cell Biology
BIO 328 Mammalian Physiology
CHE 321, 322 Organic Chemistry
HBY 350 Physiology

Electrical Engineering

Core Program
ESE 271 Electrical Circuit Analysis
ESE 372 Electronics

1. Subspecialty in Digital Systems

Design Courses
ESE 318 Digital Systems Design
ESE 380 Microprocessors and Programmed Logic I

Electives (three courses chosen from the following):
ESE 316 Digital Devices and Circuits
ESE 330 Integrated Electronics
ESE 342 Digital Communications Systems
ESE 349 An Introduction to Fault Diagnosis of Digital Systems
ESE 381 Microprocessors and Programmed Logic II

2. Subspecialty in Analog Systems

Design Courses
ESE 312 Microwave Electronics
ESE 315 Introduction to Feedback Control Theory

Electives (three courses chosen from the following):
ESE 307 Modern Filter Design
ESE 321 Electromagnetic Waves and Fiber Optics
ESE 331 Physical Electronics
ESE 362 Optoelectronic Devices and Optical Imaging Techniques
ESE 351 Energy Conversion

Manufacturing Engineering

Design Courses
ESE 310 Kinematics and Dynamics of Machinery
ESC 410 Design of Machine Elements

Electives (three courses chosen from the following):
AMS 310 Survey of Probability and Statistics
ESC 305 Heat and Mass Transfer
ESC 325 Manufacturing Processes
ESE 315 Introduction to Feedback Control Theory
ESE 318 Digital Systems Design
ESE/CSE 346 Computer Communications
ESM 302 Introduction to the Crystalline State
ESM 334 Materials Engineering
ESM 335 Mechanical Properties of Materials
EST 392 Engineering and Managerial Economics

Materials Science and Engineering

1. Subspecialty in Electronic, Optical, and Magnetic (EOM) Applications

Design Courses
ESE 318 Digital Systems Design
ESE 380 Microprocessors and Programmed Logic I *or* ESE 312 Microwave Electronics
ESE 315 Introduction to Feedback Control Theory

Electives (three courses chosen from the following):
ESE 319 Introduction to Electromagnetic Fields and Waves
ESE 321 Electromagnetic Waves and Fiber Optics
ESE 330 Integrated Electronics
ESE 331 Physical Electronics
ESM 325 Diffraction Techniques and Structure of Solids
ESM 336 Electronic Materials
ESM 369 Polymers

2. Subspecialty in Physical Metallurgy

Design Courses
ESC 310 Kinematics and Dynamics of Machinery
ESC 410 Design of Machine Elements

Electives (three courses chosen from the following):
ESC 305 Heat and Mass Transfer
ESC 355 Applied Stress Analysis
ESM 309 Thermodynamics of Solids
ESM 325 Diffraction Techniques and Structure of Solids
ESM 334 Materials Engineering
ESM 335 Mechanical Properties of Materials

Mechanical Engineering

Core Program
ESC 260 Engineering Statics
ESC 262 Engineering Dynamics
ESC 301 Thermodynamics (in lieu of ESG 302)
ESC 363 Mechanics of Solids

Design Courses
ESC 310 Kinematics and Dynamics of Machinery
ESC 410 Design of Machine Elements

Electives (one of the following three-course sequences):

a. Fluid Mechanics
   ESC 364 Introduction to Fluid Mechanics
   ESC 393 Engineering Fluid Mechanics
   ESC 398 Thermodynamics II
b. Energy Systems
   ESC 350 Energy Conversion and Alternate Energy Technologies
   ESC 398 Thermodynamics II
   ESC 422 Thermal System Design

Engineering Chemistry

The engineering chemistry major combines work in the Department of Materials Science and Engineering and the Department of Chemistry and leads to the Bachelor of Science degree, awarded through the College of Arts and Sciences. See a description of this program on p. 121.

Physics of Materials

Physics majors may wish to pursue a career in engineering physics, particularly in the application of solid-state physics to materials science and engineering. After taking five courses in the Department of Materials Science and Engineering, the student may become eligible for the department's master's degree program. See p. 186 for information about the physics major.

Baccalaureate/M.S. Program

An engineering science, engineering chemistry, or physics student may apply at the end of the junior year for admission to this special program, which leads to a Bachelor of Engineering or Bachelor of Science degree at the end of the fourth year and a Master of Science degree at the end of the fifth year. In the senior year, a student in the program takes three credits of ESM 599 Research and three credits of an additional graduate course. In the fifth year the student takes 24 graduate credits, of which at least 15 credits are coursework and three 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.*

The Minor in Materials Science

The sequence of courses included in the minor in materials science (ESM) provides a firm background for students seeking employment in the materials science industry or those who will pursue graduate study in related fields. There are three versions of the minor: one for students enrolled in B.S. degree programs (e.g., physics and chemistry) and two for those enrolled in B.E. degree programs. (B.E. students should see the faculty advisor in their engineering major for approval before declaring the materials science minor.)

For students with majors leading to the B.S. degree, six courses with a grade of C or higher in each are required:

1. ESM 216
2. Two of ESG 332, 333, 339
3. Two of ESM 325, 334, 335, 355
4. ESM 488

For students in the engineering science major, six courses with a grade of C or higher in each are required:

1. ESM 216
2. ESM 325, 334, 335, 355
3. ESM 488

For students in the electrical engineering and mechanical engineering majors, six courses with a grade of C or higher in each are required:

1. ESM 217
2. ESG 332, 333, 339
3. ESM 355, 488

Courses

See p. 225, Restrictions on Credits, Course Prerequisites, and Course Numbers. ESG and ESM courses do not satisfy D.E.C. requirements.

Note: The designator ESG denotes engineering science courses. The designator ESM denotes materials science courses.

Engineering Science

ESG 217 Engineering Science Design I
An introduction to the philosophy of engineering design, emphasizing the integration of problem-solving techniques with choices of available technology and materials in order to respond to a particular human need. Engineering ethics are also examined from both historical and decision-making perspectives. Basic science of design, including system viability and project management, is discussed through examples, flowcharts, and optimization techniques. Semiconductor design and microchip packaging are the primary examples used to illustrate interaction of electrical, thermal, and mechanical design constraints.
Prerequisite: Sophomore standing
Fall, 4 credits

ESG 281 An Engineering Introduction to the Solid State
Presents an analytical study of the quantum theory of atoms, molecules, and solids. Reviews classical oscillation and waves. Introduces statistical and kinetic theory and quantum mechanics. Ionic and covalent binding in molecules, splitting of electron energy levels, crystalline solids, metal structures, energy bands, and energy gaps are described and discussed.
Prerequisites: PHY 132 or 142 or 126, 127
Fall and spring, 4 credits

ESG 300 Writing in Engineering Science
See Requirements for the Major in Engineering Science, Upper-Division Writing Requirement. Satisfactory/Unsatisfactory grading only.
Prerequisites: ESG major; upper-division standing
Corequisite: ESG 316
Spring, 0 credits

ESG 302 Thermodynamics of Materials
The basic laws and concepts of thermodynamics are elucidated, and the important thermodynamic relationships are 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.
Prerequisites: CSE 111 or 114; CHE 198
Pre- or corequisite: AMS 361 or MAT 303
Spring, 4 credits

ESG 312 Engineering Laboratory
Laboratory exercises and lectures covering the theory, practice, and design of engineering experimentation. The course has three components: error analysis and data message; electrical circuits and experiment control; and mechanical and optical measurement. Laboratory fee required.
Prerequisites: Junior standing; CSE 111 or 114
Fall, 3 credits

ESG 316 Engineering Science Design II: Methods
Design and design-planning methods are developed from the conceptual stages through the application stages using lecture and laboratory. Includes synthesis, optimization, modeling, and simulation and systems engineering. Case studies illustrate the design process. Students undertake a number of laboratory projects employing various design tools. Laboratory fee required.
Prerequisites: ESG 217 and 312; CSE 111 or 114; ESG major; junior standing
Corequisite: ESG 300
Spring, 3 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 transformation 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 or 198; 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 pn junctions, transistors, tunnel diodes, etc. is explained. Fundamentals and applications of photoconductors, lasers, magnetic materials, and superconductors are also discussed. (ESG 332 is not a prerequisite.)
Prerequisites: PHY 251 or ESG 281; CSE 111 or 114
Spring, 4 credits

ESG 339 Thin Film Processing of Advanced Materials
Fundamental aspects of thin film materials design, fabrication, and characterization addressing recent developments in microelectronics, superconductivity, and the surface engineering of bulk alloys. This course includes a design content of one credit, achieved through a design exercise related to thin film fabrication. Crosslisted with ESM 339.
Prerequisite: ESG 332, or ESE 331 for ESE majors
Spring, 4 credits

ESG 400 Engineering Precepts
Presentation of a diverse range of topics by speakers from regional industrial organizations. The subjects range from engineering ethics to case studies in technology and manufacturing and include project liability, patent law, transportation, and energy. Questions of productivity and engineering economics are addressed in light of today's highly competitive environment.
Prerequisites: CEAS major; upper-division standing
Fall or spring, 1 credit

ESG 440 Engineering Science Design III
Lectures by faculty members and visitors on typical design problems encountered in engineering practice. During this semester each student chooses a senior design project. A preliminary design report is required. Not counted as a technical elective. Laboratory fee required.
Prerequisites: ESG 312 and 316; CSE 111 or 114; ESG major; senior standing
Fall, 3 credits

ESG 441 Engineering Science Design IV
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. Not counted as a technical elective. Laboratory fee required.
Prerequisites: ESG 440; ESG major; senior standing
Spring, 3 credits

Materials Science

ESM 216 Materials in Art, Design, and Technology
The historical roots of modern art and technology based on natural and artificially formed materials are explored. The course considers how artistic, societal, political, and technological developments are tied to the economics, properties, and availability of materials. Faculty and other experts provide an overview of the sources and uses of materials, ranging from the fine arts and industrial design to biomedical applications and high-performance engineering systems. Engineering background not required.
Fall, 3 credits

ESM 221 Introduction to Chemistry of Solids
Introduction to the synthesis, structure, properties, and applications of solid materials. Topics include preparation and characterization of solids (introduction to X-ray diffraction), thermal decomposition, crystal structure, crystal defects, and solid-state properties that influence chemical reactivity. Crosslisted with CHE 221.
Prerequisites: CHE 132 or 142 or 198; MAT 131 or 141 or 126
Fall, 3 credits

ESM 302 Introduction to the Crystalline State
A laboratory/lecture course introducing the concept that crystallography is based on a few easily understood ideas. These provide a working knowledge of crystal geometry and the ability to interpret X-ray powder photographs and electron diffraction patterns. Course includes structures and lattices, planes and directions, crystal geometry, atomic coordinates, stereographic projections, X-ray Laue photographs, the reciprocal lattice, and electron diffraction.
Prerequisite: Permission of instructor
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: ESC 301 or ESG 302
Fall, 3 credits

ESM 325 Diffraction Techniques and Structure of Solids
X-ray diffraction techniques are emphasized. 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
Spring, 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 absorption/desorption processes.
Prerequisite: ESG 281 or PHY 251
Spring, 3 credits (not offered in 1995-96)

ESM 334 Materials Engineering
The selection and use of engineering materials. Metals, ceramics, polymers, and composite materials are reviewed relative to properties, microstructures, and applications in diverse industries. Includes the processing and design of materials and materials systems.
Prerequisite: ESG 332
Fall, 4 credits

ESM 335 Mechanical Properties of Materials
An integrated review of the response of solid matter to stress with emphasis on the importance of microstrucure. Elasticity, anelasticity, plasticity, and fracture are analyzed from the bases of interatomic bonding and dislocation theory. Crystalline materials are emphasized but amorphous solids are included in the topics covered.
Prerequisites: ESG 332; AMS 261 or MAT 203; ESM 302
Spring, 4 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 338 Engineering Ceramics: Properties, Processing, and Microstructures
The development, synthesis, properties, applications, and machining methods of

advanced ceramics. Includes the mechanical, electrical, superconducting, magnetic, thermal, chemical, and optical properties and their relationship to processing, to characterization of microstructures, and to technological (including biological) applications.
Prerequisite: CHE 132 or 142 or 198
Fall, 3 credits

ESM 339 Thin Film Processing of Advanced Materials
Crosslisted with ESG 339. (For course description and prerequisites, see ESG 339.)
Spring, 4 credits

ESM 350 Structure and Electronic Properties of Solids
A laboratory course. Crystallographic properties of solids are studied by X-ray and electron-diffraction experiments and microstructural properties by light and electron microscopy. Electronic properties are investigated by conductivity, dielectric, and optical-absorption measurements.
Prerequisites: ESG 332; CHE 199; PHY 132 or 142 or 126, 127; ESM 302
Corequisite: ESG 333
Spring, 2 credits

ESM 353 Biomaterials: Manufacture, Properties, and Applications
The engineering characteristics of materials, including metals, ceramics, polymers, composites, coatings, and adhesives, that are used in the human body. Emphasizes the need of materials that are considered for implants to meet the material requirements specified for the device application (e.g., strength, modulus, fatigue and corrosion resistance, conductivity) and to be compatible with the biological environment (e.g., nontoxic, noncarcinogenic, resistant to blood clotting if in the cardiovascular system).
Prerequisite: ESG 332
Spring, 3 credits

ESM 355 Materials and Processes in Manufacturing Design
The design of mechanical and electrical systems, materials selection, and fabrication processes are surveyed and shown to be essential components of manufacturing engineering. The mechanical and thermal processing of a wide range of metallic and nonmetallic materials is reviewed. Modern computer-based materials selection, advanced processing methods, and automation are explored.
Prerequisite: ESG 332 or 333
Spring, 3 credits

ESM 369 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 450 Phase Changes and Mechanical Properties of Materials
A laboratory course. Phase diagrams and microstructural changes in solids are investigated by thermal experiments. Other experiments demonstrate the mechanical properties of ductile and brittle materials.
Prerequisite: ESG 332
Fall, 2 credits

ESM 475 Undergraduate Teaching Practicum
Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives 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

ESM 488 Cooperative Industrial Practice
A design engineering course oriented toward both research/development and manufacturing technology. Students work in actual industrial programs carried out cooperatively with companies established as university incubators or with regionally located organizations. Supervised by a committee of faculty and industry representatives to which students report.
Prerequisite: Permission of department
Fall and spring, 3 credits

ESM 499 Research in Materials Science
An independent research project with faculty supervision. Permission to register requires a B average in all engineering courses and the agreement of a faculty member to supervise the research. May be repeated, but only three credits of research electives (AMS 487, CSE 487, ESE 499, ESM 499, ESC 499, EST 499, ISE 487) may be counted toward technical elective requirements.
Fall and spring, 3 credits

Department of Mechanical Engineering

Chairperson: Fu-Pen Chiang

Undergraduate Program Director: Edward E. O'Brien

Faculty

Fu-Pen Chiang, Professor, Ph.D., University of Florida: Experimental stress analysis; solid mechanics.

Q. Jeffrey Ge, Assistant Professor, Ph.D., University of California, Irvine: Mechanical design; kinematics; robotics; CAD/CAM; computer graphics.

Stewart Harris, Professor, Ph.D., Northwestern University: Physics of fluids; environmental engineering.

Piesen S. Huang, Assistant Professor, Ph.D., University of Michigan: Optical measurement; coordinate measurement systems; precision engineering.

Thomas F. Irvine, Jr., Professor Emeritus, Ph.D., University of Minnesota: Heat transfer; thermodynamics.

Imin Kao, Assistant Professor, Ph.D., Stanford University: Robotics; control; neural networks; computer integrated manufacturing.

John Kincaid, Professor, Ph.D., Rockefeller University: Statistical mechanics and thermodynamics.

Alan S. Kushner, Professor, Ph.D., University of Maryland at College Park: Solid and computational mechanics.

Foluso Ladeinde, Assistant Professor, Ph.D., Cornell University: Fluid mechanics and heat transfer in material processing; computational fluid dynamics.

Toshio Nakamura, Associate Professor, Ph.D., Brown University: Solid mechanics; computational fracture mechanics.

Edward E. O'Brien, Professor, Ph.D., The Johns Hopkins University: Fluid mechanics; chemically reactive flows; turbulence.

Vishwanath Prasad, Professor, Ph.D., University of Delaware: Heat transfer; transport processes.

Surya Raghu, Assistant Professor, Ph.D., Yale University: Fluid dynamics; acoustics; flow modification.

Jahangir Rastegar, Associate Professor, Ph.D., Stanford University: Mechanical design.

James Tasi, Professor, Ph.D., Columbia University: Mechanics of solids.

Lin-Shu Wang, Associate Professor, Ph.D., University of California, Berkeley: Thermodynamics.

Affiliated Faculty

Robert D. Cess, Marine Sciences Research Center
George Stell, Chemistry

Adjunct Faculty
Estimated number: 4

Teaching Assistants
Estimated number: 15

Mechanical engineering is a broad discipline with roots in the Industrial Revolution. It is characterized by such subjects as mechanics, heat transfer, energy conversion, power generation,

design, and manufacturing. The technical bases for these areas include all of the engineering sciences, especially solid mechanics, fluid mechanics, thermodynamics, and kinematics. Considerable expertise in both analysis and synthesis is required of the student. Analytical and computational skills are fostered by course requirements in science and mathematics. Proficiency in synthesis and design are developed through course requirements, experimental laboratories, and design activities that permeate the curriculum, beginning in the first semester with an introduction to the profession, its goals, and its methods. Project work appropriate to the student's development in a subdiscipline is assigned in many of the subsequent courses in the sophomore, junior, and senior years to progressively enhance the student's facility with design and design methodology.

To encourage the development of student creativity, the mechanical engineering program emphasizes the use of open-ended problems, modern design theory and methodology, the formulation of problem statements and specifications, and the consideration of alternate solutions and their feasibility. Six of the required courses in the program have major design content; they are listed below in item 8 of the requirements for the major. Many of the technical electives are also design oriented. The last two required courses, ESC 440 and 441, compose a capstone senior design activity that is a major experience in devising a system, component, or process to meet a desired need. The project may originate in local industry, the University's School of Medicine, or faculty and student interests.

The degree requirements listed below are designed to give students broad preparation for work in industry. To ensure the effectiveness of the program for this purpose, the department maintains close contact with local high-technology industry, both formally and informally. By choosing appropriate technical electives a student may also prepare for graduate studies in a mechanical engineering discipline or closely related field. Today's engineer must have a knowledge of economics and the life sciences in order to apply his or her expertise to the solution of socio-humanistic problems. Provision is made in the curriculum for courses and project work in these areas. The mechanical engineer must be flexible and individualistic. Careers may involve many of the following activities in almost any existing industry from aeronautics and automobiles to pharmaceuticals and textiles: research, development, design, testing, manufacturing, marketing, and administration.

Requirements for the Major in Mechanical Engineering

The major in mechanical engineering leads to the Bachelor of Engineering degree. The following courses, totaling approximately 110 credits, are required:

1. *Mathematics:*
   MAT 131, 132
   AMS 236
   AMS 261 or MAT 203
   AMS 361 or MAT 303
   Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:
   MAT 124, 126, 127, *or*
   MAT 125, 126, 127, *or*
   MAT 141, 142
2. *Natural Sciences:*
   PHY 131, 132
   PHY 251 or ESG 281
   CHE 198 and 199
   Notes:
   a. The physics course sequence PHY 125, 126, 127 *or* 141, 142 is acceptable in lieu of PHY 131, 132.
   b. The chemistry course sequence CHE 131, 132, and 133 *or* CHE 141, 142, and 143 is acceptable in lieu of CHE 198 and 199.
3. *Computer Science:*
   CSE 111 or 114
4. *Laboratories:*
   ESC 316, 317, and 417
5. *Mechanical Engineering:*
   ESC 100, 202, 260, 262, 301, 305, 309, 363, and 364
6. *Materials Science:*
   ESG 332
7. *Electrical Science:*
   ESE 271
8. *Engineering Design:*
   ESC 310, 313, 320, 411, 440, and 441
9. *Economics:*
   ECO 101 (also satisfies D.E.C. category F)
10. *Technical Electives:*
    Twelve credits in courses not specifically required, chosen in consultation with a department advisor, from ESC 323-422, 492, and 499, including either 398 or 410 or both. Three of these credits may be from approved technical electives offered by other departments (list available in department). Courses taken outside of the college for technical elective credit require prior approval of the department's Undergraduate Program Committee.
11. *Upper-Division Writing Requirement:*
    All degree candidates must demonstrate skill in written English at a level acceptable for mechanical engineering majors. The ESC student must register for the writing course ESC 300 concurrently with ESC 317 and submit two final reports written for ESC 317. Students whose writing does not meet the required standard are referred for remedial help. Detailed guidelines are provided by the department. If the standard of writing is judged acceptable, the student receives an S grade for ESC 300, thereby satisfying the requirement.

Grading

All courses taken to satisfy requirements 1 through 9 above must be taken for a letter grade. The average of the grades for the courses ESC 260, 262, 301, 305, 309, 310, 313, 316, 317, 320, 363, 364, 411, and 417 must be at least 2.0.

Transfer Credits

The above requirements were instituted in Fall 1994 and are being phased in over several years. Transfer students may substitute courses taken at their previous colleges depending on when they matriculated at Stony Brook and the transfer credit equivalence the department has awarded for their previous courses. Each transfer student should consult the department office to determine his or her status.

Sample Course Sequence in the Mechanical Engineering Major

Freshman		*Credits*
Fall		
MAT 131		4
PHY 131		4
ESC 100		3
EGC 101		3
D.E.C. course		3
	Total	17
Spring		
MAT 132		4
PHY 132		4
CHE 198		4
CHE 199		1
ESC 202		1
CSE 111		3
	Total	17

Sophomore	*Credits*
Fall	
AMS 261 or MAT 203	4
ESG 281 or PHY 251	4
ESG 332	4
ESC 260	3
AMS 236	1
Total	16
Spring	
AMS 361 or MAT 303	4
ESE 271	4
ESC 262	3
ESC 363	4
Total	15

Junior	*Credits*
Fall	
ESC 301	4
ESC 309	3
ESC 310	3
ESC 316	3
ESC 320	1
ESC 364	4
Total	18
Spring	
ESC 317	3
ESC 300	0
ESC 305	4
ESC 313	3
ECO 101	4
D.E.C. course	3
Total	17

Senior	*Credits*
Fall	
ESC 440	3
ESC 411	4
Technical elective (design with CAD)	3
Technical elective	3
D.E.C. course	3
Total	16
Spring	
ESC 441	3
ESC 417	2
Technical elective	3
Technical elective	3
Two D.E.C. courses	6
Total	17

Courses

See p. 225, Restrictions on Credits, Course Prerequisites, and Course Numbers. ESC courses do not satisfy D.E.C. requirements.

ESC 100 Introduction to Engineering: Mechanical
Introduction to the engineering experience in general and mechanical engineering in particular through lectures by faculty and invited speakers from industry, field trips, films, and laboratory demonstrations. Lectures cover creative thinking and problem solving, design team work, computer utilization, engineering ethics and legal issues, use of libraries and other sources of information, career opportunities in mechanical engineering and related fields, emerging technologies, and the cross-disciplinary nature of engineering.
Fall, 3 credits

ESC 202 Introduction to Technical Drawing and Computer-Aided Drafting
Introduces methods used to communicate design ideas through the techniques of freehand technical sketching and computer-aided drafting of engineering drawings.
Prerequisite: ESC major
Fall and spring, 1 credit

ESC 210 Introduction to Numerical Methods for Engineering Design
Introduces fundamental concepts of engineering design and defines quantitative models of engineering problems. Includes functional variables and cost-performance trade-offs as well as application of computers and numerical methods to perform design trade-off studies. Also introduces probability and statistics with application to engineering problems.
Prerequisites: CSE 111 or 114; MAT 132 or 142 or 127; PHY 132 or 142 or 126, 127
Fall, 3 credits (not offered in 1996-97)

ESC 259 Particle 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; moments about points and lines; 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. Not for mechanical engineering major credit.
Prerequisite: PHY 131 or 141 or 125
Pre- or corequisite: AMS 261 or MAT 203
Fall, 4 credits

ESC 260 Engineering Statics
A review of vector algebra. Concept of force. Equilibrium of particles. Moments about points and lines, couples and equivalent force systems. Equilibrium of rigid bodies. Analysis of simple structures such as trusses, frames, and beams. Centroids, centers of gravity, and moments of inertia. Dry friction with applications to wedges, screws, and belts. Method of virtual work, potential energy, and stability.
Prerequisite: PHY 131 or 141 or 125
Corequisite: AMS 261 or MAT 203
Fall, 3 credits

ESC 262 Engineering Dynamics
Vectorial kinematics of particles in space, orthogonal coordinate systems. Relative and constrained motions of particles. Dynamics of particles and the systems of particles, equations of motion, energy and momentum methods. Collisions. Two- and three-dimensional kinematics and dynamics of rigid bodies. Moving frames and relative motion. Free, forced, and damped vibrations of particles and rigid bodies.
Prerequisites: AMS 261 or MAT 203; ESC 259 or 260
Spring, 3 credits

ESC 300 Writing in Mechanical Engineering
See Requirements for the Major in Mechanical Engineering, Upper-Division Writing Requirement. Satisfactory/Unsatisfactory grading only.
Prerequisites: ESC major; upper-division standing
Corequisite: ESC 317
Spring, 0 credits

ESC 301 Thermodynamics
Variables that describe the thermodynamic state of a system or control volume, including absolute temperature, internal energy, enthalpy, and entropy are introduced, and basic principles governing the transformations of energy, especially heat and work, are developed. Underlying principles are used to analyze and solve problems related to thermodynamic systems and to determine the changes in properties of the systems and surroundings implied by changes in inputs, configuration, or constraints.
Prerequisites: AMS 261 or MAT 203; PHY 131 or 141 or 125
Fall, 4 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.
Prerequisites: ESC 301 and 364; CSE 111 or 114
Spring, 4 credits

ESC 309 Numerical Methods for Engineering Analysis
Solving nonlinear equations, systems of linear equations, interpolation/extrapolation, curve fitting integration, and differential equations. Special emphasis on the implementation of numerical methods in FORTRAN computer programs to solve computation problems that arise in the engineering design process. Not for credit in addition to ESC 210.
Prerequisites: CSE 111; AMS 261 or MAT 203; AMS 361 or MAT 303
Fall, 3 credits (not offered in 1995-96)

ESC 310 Kinematics and Dynamics of Machinery
Application of analytical and numerical methods to kinematic analysis and design of mechanisms. The course covers concepts of degrees of freedom, and graphical, analytical, and numerical techniques of position, velocity, acceleration, and force analysis as applied to linkage mechanisms. Geometrical designs of gears and kinematic analysis of gear trains, cam design, flywheel design, and balancing of rotors and mechanisms are introduced.
Prerequisites: CSE 111 or 114; ESC 262
Spring, 3 credits

ESC 313 Fundamentals of Computer-Aided Design
A first course in computer-aided design, introducing the finite element method and computer graphics in mechanical engineering. Concepts of discretization, solution of discrete equations. Boundary conditions and constraints. Application to simple engineering systems involving stress analysis, fluid mechanics, and heat transfer. Discussion of more realistic engineering problems and the role of surface generation, solid modeling, mesh generation, and visualization. Fundamentals of computer graphics. Involves software development and use of commercial CAD tools.
Prerequisites: ESC 363, 309, and 364
Spring, 3 credits (not offered in 1995-96)

ESC 316 Mechanical Engineering Laboratory I
The spatial and temporal resolution of modern instrumentation and sensors that are particular to mechanical engineering. Concepts of Fourier analysis and frequency responses are discussed together with sampling of data. Students are to learn and operate instruments for measuring temperature, pressure, flow velocity, displacement, angle, acceleration, and strain. Includes design project. Laboratory fee required.
Prerequisites: MAT 303 or AMS 361; ESC 363; AMS 236
Corequisites: ESC 301 and 364
Fall, 3 credits (not offered in 1995-96)

ESC 317 Mechanical Engineering Laboratory II
Hands-on experience in solid and fluid mechanics and heat transfer. Emphasis is on the understanding of fundamental principles as well as familiarity with modern experimentation. Lectures at the beginning of the course provide background information and theories of experimentation. Student groups perform four experiments each in solid mechanics and in fluid mechanics and heat transfer. Report writing is an integral part of the course, with emphasis on design of experiment, interpretation and presentation of data, error analysis, and conclusions. Laboratory fee required.
Prerequisites: ESG 316 and 364
Corequisite: ESC 300
Spring, 3 credits

ESC 320 Engineering Design Methodology and Optimization
The general process of engineering design as a systematic and disciplined process. Covers materials related to the formulation of design specifications and criteria; conceptual design and evaluation of the design options; and creativity in design.
Prerequisite: MAT 303 or AMS 361
Corequisite: ESC 309
Fall, 1 credit (not offered in 1995-96)

ESC 323 Internal Combustion Engine
Introduces different types of internal combustion engines and their operations. Topics include the innovative concept of gas generator-expander engine; thermodynamics fundamentals; fuel-air cycle analysis; engine combustion and emission processes; engine operating characteristics. Includes both the relevant fundamental concepts and the extensive practical knowledge base on which engine research, development, and design depend.
Prerequisites: ESC 305 and 398
Fall, 3 credits (not offered in 1995-96)

ESC 325 Manufacturing Processes
The relationship between product design and manufacturing. Material properties and influence. Introduction to traditional and nontraditional manufacturing processes and their capabilities and limitations. Measurement inspection, reliability, and quality control. Economic impact of modern process engineering.
Prerequisite: ESG 332
Fall, 3 credits

ESC 342 Introduction to Experimental Stress Analysis
The concepts of three-dimensional stress and strain, their transformation laws, and their mutual relationships are discussed in detail. Results from theory of elasticity as pertinent to experimental stress analysis are also 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 is demonstrated. Students form small groups and each group is assigned different laboratory projects to gain experience in various experimental stress analysis methods.
Prerequisite: ESC 363
Fall, 3 credits

ESC 350 Energy Conversion and Alternate Energy Technologies
Energy conversion principles, principal energy sources, and energy storage systems. Production technologies of useful energy and useful work with emphasis on technologies based on energy sources other than fossil or nuclear fuels, including direct energy conversion technologies (fuel cells, batteries, hybrid electric vehicles, and MHD generators), solar energy (solar thermal energy and photovoltaics), and wind energy.
Prerequisite: ESC 301
Fall, 3 credits (not offered in 1995-96)

ESC 355 Applied Stress Analysis
A study of linear elastic solids with emphasis on internal stress analysis. Simple boundary value problems at plane structures are analyzed with various solution techniques. Major topics are stress and strain tensors, linear elasticity, principle of virtual work, torsion, stress functions, stress concentration, elementary fracture, and plasticity.
Prerequisite: ESC 363
Spring, 3 credits

ESC 363 Mechanics of Solids
Stress and deformation of engineering structures and the influence of the mechanical behavior of materials. Concepts of stress and strain, constitutive relations, analysis of statically indeterminate systems, study of simple bars and beams, and stability conditions. Emphasis on force equilibrium, elastic response of materials, geometric compatibility, Mohr's circle, stresses and deflections in beams, and torsion and buckling of rods. Design for bending, shear, and combined states of stress.
Prerequisite: ESC 260
Spring, 4 credits

ESC 364 Introduction to Fluid Mechanics
Fundamental properties of fluids and their conservation laws with applications to the design and evaluation of flows of engineering interest. Topics include hydrostatics, surface tension, dimensional analysis and dynamic similitude, Euler's equation, rotating coordinate systems, boundary layers, lubrication, drag on immersed bodies, open channel and pipe flows, and turbomachinery.
Prerequisite: ESC 262
Fall, 4 credits

ESC 393 Engineering Fluid Mechanics
The application of the principles of fluid mechanics to important areas of engineering practice such as turbomachinery, hydraulics, and wave propagation. Prepares students for advanced coursework in fluid dynamics. Extends the study of viscous effects, compressibility, and inertia begun in ESC 364.
Prerequisite: ESC 364
Spring, 3 credits (not offered in 1995-96)

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 132 or 142 or 126, 127; CHE 198 or 131 or 141; upper-division standing
Spring, 3 credits (not offered in 1996-97)

ESC 398 Thermodynamics II
Psychrometrics and psychrometric charts. Thermodynamic considerations for the

design and performance of cooling towers, humidifiers, and dehumidifiers. Reacting mixtures, combustion, and chemical equilibrium. Thermodynamics of fluid flow, simple compression, and expansion processes. Analysis and design of gas and vapor power cycles. Cycles with reheat, intercooling, and cogeneration plants. Refrigeration cycles.
Prerequisites: ESC 301 and 364
Spring, 3 credits

ESC 410 Design of Machine Elements
Application of analytical methods, material science, and mechanics (including failure modes, wear, and creep) to problems in design and analysis of machine components. The course considers function, production, and economic factors of design as applied to mechanical components such as bearings, gears, shafting, springs, fasteners, belts, clutches, and brakes.
Prerequisites: ESC 310 and 363
Fall, 3 credits

ESC 411 System Dynamics and Control
Differential equations for physical systems and their solutions; Laplace transforms; block diagram and transfer function; system response; system analysis and stability; system compensation and design. Applications of control system theory to engineering design of dynamic systems.
Prerequisites: AMS 361 or MAT 303; ESC 262 and 363
Fall, 4 credits

ESC 412 Computer-Aided Design
Application of the computer to solution methods and design in engineering. Discusses computer graphics, geometric modeling, and finite element analysis in structural mechanics, fluid mechanics, and heat transfer. Applied stress analysis. Applied fluid mechanics and heat transfer. Includes hands-on experience in the use of CAD software packages for solid modeling, system modeling, and finite element analysis. Integrated CAD in which the analysis of fluid flow, heat transfer, and solid mechanics are combined to solve a design problem.
Prerequisites: ESC 305, 363, and 364
Fall, 4 credits

ESC 417 Mechanical Engineering Laboratory III
Study of operating principles of mechanical and thermal systems through laboratory projects. Measurement of performance and operating characteristics. Modern instrumentation and sensors, and data processing systems.
Prerequisites: ESC 305 and 317
Spring, 2 credits (beginning in 1997-98)

ESC 420 Turbomachinery and Applications
Classification of turbomachines, rotating flows, aerothermodynamic design of turbomachines, energy transfer between fluid and rotor axial and radial devices, compressible gas flow, three-dimensional effects, rotating stall and surge theory. Numerous applications and design issues. Sample devices include propellers, fans, blowers, windmills, Pelton wheels, turbines, compressors, lawn sprinklers, etc.
Prerequisite: ESC 364
Fall, 3 credits

ESC 421 Statistical Quality Control and Design of Experiments
On-line techniques that determine and control the quality of mass-manufactured products on a real-time basis by means of statistical analysis. Off-line use and applications of the design-of-experiment and Taguchi methods to optimize a product and a process design. The concept of total quality management. Histograms, tests for normality, variables and attribute control charts, orthogonal arrays, and signal-to-noise ratio arrays. Z-transform for the evaluation of the percentage of nonconforming parts, tests for special causes, Xbar-R charts, and process capability analysis. Acceptance quality level and lot-by-lot inspection. Crosslisted with AMS 421.
Prerequisite: ESC 317
Fall, 3 credits

ESC 422 Thermal System Design
Device design and system design. Quantitative data for system design including operating charcteristics of compressors, turbines, heat exchangers, piping systems, internal combustion engines, and other component equipment. Component matching and system simulation. Optimization including thermoeconomic evaluation and energy analysis. Case studies: refrigeration and air conditioning systems, combined cycles, steam-injected gas turbines.
Prerequisites: ESC 305 and 364; permission of instructor
Corequisite: ESC 398
Spring, 3 credits

ESC 440 Mechanical Engineering Design I
Design philosophy, the creative process, and general problem-solving techniques. The proper roles of imagination, analysis, estimation, and testing. Design methodology, goal setting, establishment of performance criteria, design as a decision-making process. The use of models and simulation in the design process. Students choose a senior design project and prepare a preliminary design report. Not counted as a technical elective. Laboratory fee required.
Prerequisites: ESC 309, 310, 317, and 320; ESC major; senior standing
Corequisite: ESC 411
Fall, 3 credits

ESC 441 Mechanical Engineering Design II
Formulation of optimal design problem. Modeling for compact and rapid optimization of realistic engineering problems. Necessary conditions for constrained local optimum. Introduction to optimization techniques for engineering design. Students carry out the detailed design of the senior projects chosen during the first semester. A final design report is required. Not counted as a technical elective. Laboratory fee required.
Prerequisite: ESC 440
Spring, 3 credits

ESC 475 Undergraduate Teaching Practicum
Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives 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

ESC 488 Mechanical Engineering Internship
Participation in off-campus engineering practice. Students are required to submit to the department a proposal at the time of registration and two term reports before the end of the semester. May be repeated up to a limit of 12 credits. Satisfactory/Unsatisfactory grading only.
Prerequisite: Permission of department and Office of Undergraduate Studies
Fall or spring, 3 or 9 credits

ESC 490, 491, 492 Topics in Mechanical Engineering
Treatment of an area of mechanical engineering that expands upon the undergraduate curriculum. Topics may include advanced material in a specialty, development of a specialized experimental technique, or a specific area of design. Topics may vary from semester to semester. May be repeated.
Prerequisites: Upper-division standing in a B.E. degree major; permission of department (course prerequisites vary with topic)
Schedule to be announced, 1 to 4 credits (to be assigned when course is scheduled)

ESC 499 Research in Mechanical Engineering
An independent research project with faculty supervision. Permission to register requires a B average in all engineering courses and the agreement of a faculty member to supervise the research. May be repeated, but only three credits of research electives (AMS 487, CSE 487, ESE 499, ESM 499, ESC 499, EST 499, ISE 487) may be counted toward technical elective requirements.
Fall and spring, 1 to 4 credits

Department of Technology and Society

Chairperson: Thomas T. Liao

Undergraduate Program Director: Joseph S. Hogan

Faculty

John C. Bierwirth, Stony Brook Professor, J.D., Columbia University: Foreign affairs; management; ethics; environment.

Randolph Cope, Lecturer and Graduate Studies Director, M.E.E., Polytechnic University: Engineering management; electronic systems.

David L. Ferguson, Professor, Ph.D., University of California, Berkeley: Quantitative methods; computer applications; intelligent tutoring systems; mathematics and engineering education. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1992, and the President's Award for Excellence in Teaching, 1992.

Arthur Gilmore, Lecturer Emeritus, M.S., University of Colorado: Aeronautical engineering; engineering economics.

Joseph S. Hogan, Associate Professor, Ph.D., New York University: Planetary atmospheres; climate change; environmental satellites.

Thomas T. Liao, Professor, Ed.D., Columbia University: Science education; educational technology; curriculum development. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1993, and the President's Award for Excellence in Teaching, 1993.

Lester Paldy, Distinguished Service Professor, M.S., Hofstra University: Physics; science policy and education.

Emil J. Piel, Professor Emeritus, Ed.D., Rutgers University: Technology and society issues; decision making; curriculum development.

Sheldon J. Reaven, Associate Professor, Ph.D., University of California, Berkeley: Energy-environmental issues; waste management; philosophy of science and technology.

John G. Truxal, Distinguished Teaching Professor Emeritus, Sc.D., Massachusetts Institute of Technology: Technology and society issues; automatic control systems.

Marian Visich, Jr., Professor, Ph.D., Polytechnic Institute of Brooklyn: Technology and society issues; space mechanics; aerospace propulsion.

Affiliated Faculty

Jacqueline G. Brooks, Science, Mathematics, and Technology Education

Adjunct Faculty
Estimated number: 4

Teaching Assistants
Estimated number: 10

The department focuses on the environmental and societal impacts of technological innovation from the viewpoint of the engineer, and also on the engineering concepts that underlie technological change and 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 offers two versions of the minor in technology and society. Students should arrange for an interview with the faculty of the department at the time they submit their application to enter either program to discuss the requirements listed below.

The minor for students with majors leading to the B.A. or B.S. degree may be fulfilled by satisfactorily completing six courses totaling at least 18 credits:

1. At least four EST courses.
2. Two other College of Engineering and Applied Sciences courses approved by the undergraduate program director.
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 leading to the B.E. degree may be fulfilled by satisfactorily completing six courses totaling at least 18 credits:

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 undergraduate program director. These could include SOC 315 Sociology of Technology; PHI 364 Philosophy of Technology; PHI 368 Philosophy of Science. 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. 225, Restrictions on Credits, Course Prerequisites, and Course Numbers. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

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 is made of economic, legal, and moral issues involved in the utilization of these capabilities. May not be taken for credit in addition to CSE 101. Crosslisted with CSE 100.
Spring, 3 credits

EST 102-E Weather and Climate
(Formerly ESC 102)
Introduces the nature and causes of common meteorological phenomena, severe weather occurrences, and climatic patterns. Topics include formation and movement of air masses and large-scale storms; techniques for weather prediction; weather satellites; hurricanes, tornadoes, and thunderstorms; cloud and precipitation types; the climatic history of the earth; actual and potential effect of human activities on weather and climate, and of weather and climate on humans. Crosslisted with ATM 102.
Fall, 3 credits

EST 191 Introduction to Technology Assessment (Issues, Methods, and Cases)
Multidisciplinary study of the environmental, economic, scientific, engineering, social, and ethical impacts of a technology, and of policy options for controlling them. Each class, often working as a research team and visiting area facilities, concentrates on one or two topics such as plastics and the environment, nuclear power plants, computers and privacy, recycling on Long Island, or the ozone layer and global climate.
Spring, 3 credits

EST 192 Introduction to Modern Engineering
Familiarizes students with systems and decision-making concepts of modern engineering and technology. The conceptual areas to be studied include an 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 are used.
Fall, 3 credits

EST 194-C 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.
Prerequisite: Satisfaction of entry skill in mathematics requirement
Spring, 3 credits

EST 290-H Technology, Society, and Values: Balancing Risks and Rewards
An examination of the mechanisms by which society balances risks and benefits of new technologies. The course addresses the nature of science, engineering, and technology; the progression from new scientific discoveries to new technological capabilities; the ways in which individuals and institutions draw attention to technological risks; the challenge of protecting the public from risky technologies while promoting new industries; and the roles of scientists and engineers in legal and regulatory proceedings.
Prerequisite: One D.E.C. category E course
Spring, 3 credits

EST 291-H Energy, Environment, and People
Case studies selected from topics such as radioactive wastes; Long Island's toxic wastes; Shoreham, Chernobyl, and nuclear safety; agriculture and the environment; and global resources. The course emphasizes the interplay between scientific and engineering considerations and human values and institutions.
Prerequisites: Two D.E.C. category E courses (except those designated ANP); any AMS or MAT course
Fall, 3 credits

EST 300 Computer Modeling and Experiments in Mathematics and Science Education
Focus on computer-based experimentation and modeling to enhance mathematics and science education. Students construct their own computer-enhanced experiments using probe/software systems to study the behavior of real-world systems and computer simulation software packages to model the behavior of those systems.
Prerequisite: EST/CSE 100 or CSE 101
Spring, 3 credits

EST 302 Assessment of Computer-Based Technologies
Methodologies for assessing the impact of computer-based technologies on economics, decision making, division of labor, and societal issues such as privacy and ethics. Frameworks for assessing technologies, as well as applications of standard approaches such as benefit-cost analysis. Case studies drawn from robotics, banking, automation in the U.S. postal system, and other areas.
Prerequisite: EST/CSE 100 or any CSE course
Spring, 3 credits

EST 305 Applications Software for Information Management
Introduction to the role of applications software in various types of organizations with emphasis on methods of formulating the requisite information flows to engender adequate communications, operation, and control. The importance of auditability, maintainability, and recoverability in systems design is stressed. Provides students with knowledge of basic techniques and elementary skills in representing system structure with application of the principles in practical case studies using spreadsheet and database software. Extensive interaction with applications software reinforces concepts presented.
Prerequisite: EST/CSE 100 or CSE 101
Fall and 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: MAT 123; upper-division standing
Fall, 3 credits

EST 320-H Communication Technology Systems
Emphasizes basic science and engineering concepts underlying design and usage of modern telecommunications systems. Considers effects of human factors and societal constraints on design and development of nascent technological systems. Includes the electromagnetic spectrum, analog and digital signals and resonance as well as societal considerations of government regulations, international competition, and environment.
Prerequisites: MAT 123; one D.E.C. category E course
Fall, 3 credits

EST 325-H Technology in the Workplace
A study of automation and information technologies in both manufacturing and service industries. Considers how technology is changing the work and lives of everyone from production workers to executives. Case studies are used to understand how technology can improve quality and productivity and how incorrect use produces disappointing results.
Prerequisite: Completion of D.E.C. category E
Fall or spring, 3 credits

EST 330-H Natural Disasters: Societal Impacts and Technological Solutions
A study of the physical causes of natural disasters; their societal impacts in developed and developing nations; the use of engineering, architecture, and regional planning to reduce vulnerability and loss; and the institutional mechanisms, both domestic and international, for providing cross-cultural technology transfer and post-disaster assistance. Case studies of disasters in a number of countries are included.
Prerequisites: Upper-division standing; one D.E.C. category E course
Spring, 3 credits

EST 390 Communication Skills in Engineering and Applied Science
Considers writing and speaking skills essential in business and the professions with strong emphasis on presenting technical material to nontechnical audiences such as managers, salespeople, and consumers. Students learn to tailor material to specific audiences and to write memoranda, letters, and resumés, as well as technical descriptions, short reports, and proposals. Includes oral presentations and participation in group discussions and simulations.
Prerequisites: Satisfaction of D.E.C. category A; CEAS major; upper-division standing
Fall and spring, 3 credits

EST 392 Engineering and Managerial Economics
Applications of fundamental economics principles and systems analysis to problems of planning and design in manufacturing or service sectors of industry. Includes the time value of money, analysis of various types of cash flows, development of rate of return, and benefit-to-cost ratios in their use to evaluate competing investment programs. The role of depreciation and investment tax credits on the level of corporate taxation leading to the determination of after-tax rates of return.
Prerequisite: Upper-division standing in a CEAS or economics major
Fall, 3 credits

EST 393 Production and Operations Analysis
Development of analytical techniques useful in supplying information for planning purposes in the manufacturing and service sectors. Introduction to mathematical modeling of production, inventory, distribution, and service systems using linear programming, network, and probabilistic methods. Applications of forecasting and materials requirements planning in the development of resources to meet anticipated needs. Practical, real-life case studies are used throughout with appropriate familiarization with computer uses in problem solving and simulation.
Prerequisites: Upper-division standing; ESC or ESE or ESG major
Spring, 3 credits

EST 411-H Science, Technology, and Arms Control *(Formerly EST 360/POL 361)*
A study of the application of scientific technology to national 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. Crosslisted with POL 411.
Prerequisites: Upper-division standing; one D.E.C. category E course
Fall, 3 credits

EST 412 Intelligence Organizations, Technology, and Democracy
The role of intelligence organizations in decision making through analysis of agency practices in support of U.S. national security

policy. The course also explores the roles and practices of intelligence agencies in democratic societies. Crosslisted with POL 412. Not for credit in addition to the discontinued EST/POL 358.
Prerequisites: Upper-division standing; POL 101 and 102; one D.E.C. category E course
Spring, 3 credits

EST 420 Seminar on Information-Age Society
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

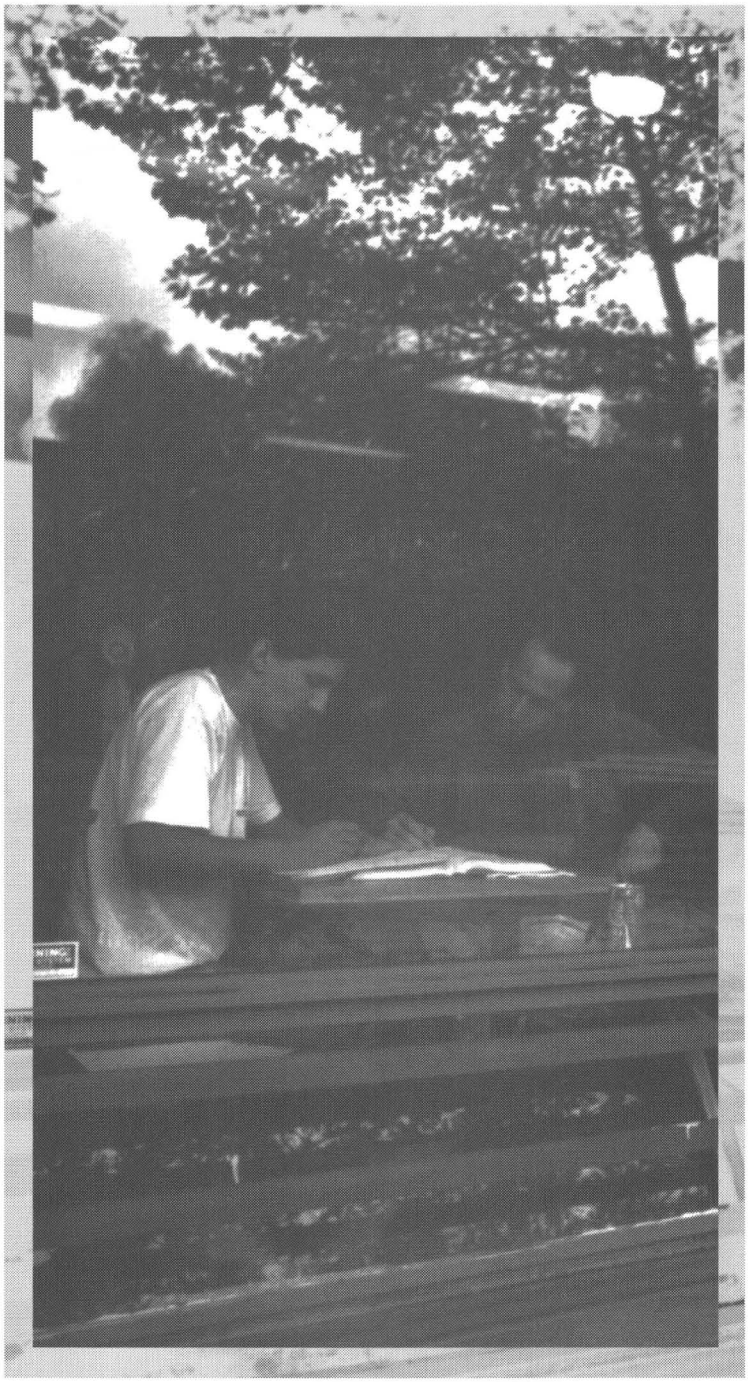
EST 421 Starting the High-Technology Venture I
Introduces engineering and applied science students to start-up and early development of a new high-technology venture. Turning a concept into a new venture. Identifying and evaluating product and market. Issues of feasibility, patents, and prototypes.
Prerequisites: CEAS major; senior standing
Fall, 3 credits

EST 422 Starting the High-Technology Venture II
Overall strategy for the start-up of the high-technology venture. Development of a business plan including consideration of product, market, competitive analysis, marketing plan, manufacturing estimates and issues, financing plan. Organization and management for early stages of the venture.
Prerequisite: EST 421
Spring, 3 credits

EST 475 Undergraduate Teaching Practicum
Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.
Prerequisites: Senior standing in the college; a minimum grade point average of 3.0 in all Stony Brook courses and a 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 requires a B average in all engineering courses and the agreement of a faculty member to supervise the research. May be repeated, but only three credits of research electives (AMS 487, CSE 487, ESC 499, ESE 499, ESM 499, EST 499, ISE 487) may be counted toward engineering technical elective requirements.
Fall and spring, 3 credits

W. Averell Harriman School for Management and Policy



Dean: Matthew J. Sobel

Director of Undergraduate Studies: Eugene A. Feinberg

Faculty

Stanley M. Altman, Associate Professor, Ph.D., Polytechnic Institute of Brooklyn: Health care management and policy; finance.

T. Owen Carroll, Associate Professor, Ph.D., Cornell University: Management information systems; energy policy; social policy. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974.

Jeff T. Casey, Associate Professor, Ph.D., University of Wisconsin-Madison: Organizational behavior; decision making.

Subimal Chatterjee, Assistant Professor, Ph.D., University of Pittsburgh: Marketing; consumer behavior; marketing research.

Abhijit Deshmukh, Assistant Professor, Ph.D., Purdue University: Operations management; computer-aided manufacturing; complexity issues in manufacturing.

Eugene A. Feinberg, Professor, Ph.D., Vilnius University: Operations management; operations research.

Manuel London, Professor and Director of Labor Management Studies Program, Ph.D., Ohio University: Personnel; promotion policies; management training; assessment centers.

Kathy A. Paulson, Assistant Professor, Ph.D., Purdue University: Labor economics; industrial organization; total quality management; econometrics.

George Pidot, Adjunct Associate Professor, Ph.D., Harvard University: Management information systems; public finance; expert systems.

Anne Preston, Associate Professor and Graduate Studies Director, Ph.D., Harvard University: Labor economics; nonprofit organizations.

Matthew Procelli, Lecturer, part time, M.B.A., Hofstra University: Human resources; employee relations.

Laura O. Robinson, Assistant Professor, Ph.D., Columbia University: Finance; entrepreneurship; industrial organization; financial institutions; corporate finance.

Thomas Sexton, Associate Professor, Ph.D., State University of New York at Stony Brook: Operations research; statistics; health care management.

Darko Skorin-Kapov, Assistant Professor, Ph.D., University of British Columbia: Network optimization; management information systems.

Jadranka Skorin-Kapov, Associate Professor, Ph.D., University of British Columbia: Management science; mathematical programming with applications; artificial intelligence.

Susan A. Slotnick, Assistant Professor, Ph.D., Carnegie-Mellon University: Operations management; management information systems; applications of expert systems to manufacturing operations.

Matthew J. Sobel, Professor, Ph.D., Stanford University: Operations management; operations research.

Harry Weiner, Associate Professor, S.M., Massachusetts Institute of Technology: Redesign of organizational structure to improve programmatic capabilities.

Gerrit Wolf, Professor, Ph.D., Cornell University: Decision and organizational behavior.

Affiliated Faculty

Michael Barnhart, History
Donald P. Harrington, Radiology
Lee E. Koppelman, Political Science
Alan Leiken, Health Technology and Management
Lorna McBarnette, Health Technology and Management
Robert Nathans, Physics
Gary Schloss, Computer Science
Mark Schneider, Political Science
John T. Scholz, Political Science
Michael Taksar, Applied Mathematics and Statistics
Paul E. Teske, Political Science
George Tyson, Neurological Surgery
Dieter Zschock, Economics

Adjunct Faculty
Estimated number: 8

The W. Averell Harriman School for Management and Policy offers undergraduate students a major and a minor in business management. The school provides students with the skills and knowledge for managing business enterprises, as well as for managing nonprofit agencies or public policies in government. The program covers computers and quantitative decision making, the ways in which organizations work financially, operationally, legally, and behaviorally, and the functions and strategies organizations play in society.

Business Management Major

This major provides training in general management for those students who intend to enter the job market directly after receiving their bachelor's degree. Students learn the basic techniques and skills of management that are essential to a modern economy.

Requirements for the Major

The major in business management (BUS) leads to the Bachelor of Science degree. (Students in this major must complete the same University and Diversified Education Curriculum requirements as students in the College of Arts and Sciences.) All courses must be taken for a letter grade.

Completion of the major requirements entails 46 to 52 credits.

A. Required Courses

1. Data Management:
   BUS 340 Management Information Systems
   One of the following:
   AMS 315 Data Analysis
   ECO 320 Mathematical Statistics
   PSY 322 Advanced Statistics
2. Modeling for Managers:
   AMS 201 Matrix Methods and Models
   BUS 349 Management Science
3. Operations Management:
   BUS/ECO 214 Managerial Accounting
   BUS 346 Operations Management
4. Finance:
   One of the following:
   ECO 301 The Theory of the Firm and Markets
   ECO 303 Intermediate Microeconomic Theory
   One of the following:
   BUS 355 Investment Analysis *or*
   ECO 389 Corporate Finance
5. Human Resources:
   One of the following:
   BUS 347 Business Ethics
   BUS 351 Introduction to Personnel Management
   PSY 309 Psychology of Work
   PSY 313 Organizational Behavior Management
   SOC 381 Sociology of Organizations
6. Business Environment:
   BUS 440 International Management
   POL 319 Business Law
7. Strategic Management:
   BUS 348 Principles of Marketing
   BUS 441 Business Policy, Formulation, and Administration

B. Electives

One of the following groups:

1. Economics and Finance
   Three of the following in addition to courses chosen in Group A.4:
   BUS 339 The Nonprofit Sector: Institutions, Policy, and Practice
   BUS 353 Entrepreneurship
   BUS 355 Investment Analysis
   ECO 305 Intermediate Macroeconomic Theory
   ECO 321 Econometrics

ECO 325 International Economics
ECO 326 Economics of American Industry
ECO 360 Money and Banking
ECO 368 Modern Portfolio Theory
ECO 370 Theory of Financial Markets
ECO 383 Public Finance
ECO 387 Stabilization Policy, Business Cycles, and Forecasting
ECO 389 Corporate Finance

2. Organizational Theory and Behavior
   Two of the following, in addition to course chosen in Group A.5:
   BUS 339 The Nonprofit Sector: Institutions, Policy, and Practice
   BUS 347 Business Ethics
   BUS 351 Introduction to Personnel Management
   BUS 353 Entrepreneurship
   POL 364 Organizational Decision Making
   PSY 313 Organizational Behavior Management
   SOC 381 Sociology of Organizations
   SOC 383 Sociology of Business
3. Labor Markets and Human Resources
   Two of the following, in addition to course chosen in Group A.5:
   BUS 353 Entrepreneurship
   ECO 237 Economics of Industrial and Labor Relations
   ECO 318 Economics of Manpower Planning
   ECO 337 Advanced Labor Theory
   PSY 309 Psychology of Work
   SOC 370 Work and the Professions
   SOC/WNS 371 Gender and Work
4. Operations and Technology
   Two of the following:
   AMS 341 Operations Research I: Deterministic Models
   AMS 342 Operations Research II: Stochastic Models
   CSE/ISE 305 Principles of Database Systems
   EST 305 Applications Software for Information Management
   EST 392 Engineering and Managerial Economics
5. Language and International Commerce
   One of the following groups:
   France
   FRN 320 Business French
   FRN 390 French Civilization
   Italy
   ITL 320 Business Italian
   ITL 390 The Italian Scene
   Germany
   GER 300 German Civilization
   GER 338 History of the German Language
   Spanish America
   SPN 303 Practical Spanish
   SPN 392 The Culture and Civilization of Spanish America

C. Upper-Division Writing Requirement
All undergraduate majors in the school must demonstrate their ability to communicate ideas related to business and management in written English. Majors fulfill this requirement by obtaining their Harriman faculty advisor's evaluation of S (Satisfactory) on a portfolio of written work comprising four documents: (1) a resumé; (2) a letter of application for a real job advertised in a newspaper or other medium; (3) a memorandum describing the results of an analysis or similar topic appropriate to a business organization; (4) a report that relates to business.

Work on the portfolio should begin in the first semester of the junior year, and the requirement must be completed during that year.

Notes:
1. In planning the time required to complete the major, students should be aware that many elective courses in business management have substantial prerequisites not explicitly required for the major.
2. One or more of the following courses may be substituted for required courses with the approval of the director of undergraduate studies: BUS 341, 342 Special Topics in Management, BUS 487 Independent Research, and BUS 488 Internship.
3. Business management majors should take BUS 340 and 349 no later than their junior year.

Acceptance into the Major

Prospective Freshmen

Prospective freshmen wishing to enroll in the business management major must specify their interest at the time they apply to the University. Qualified freshmen are accepted into the major simultaneously with their admission to the University. During their freshman and sophomore years they complete D.E.C. categories A through G and pursue a preparatory program consisting of the following:

MAT 123 or higher (or a score of level 4 or higher on the Mathematics Placement Examination)
ECO 101
BUS/ECO 114
SOC 105 or 106 or PSY 103 or 104
AMS 102

Currently Enrolled Students and Prospective Transfer Students

Students who have not been accepted into the business management major as freshmen and prospective transfer students may apply during their sophomore year to enter the major at the beginning of the junior year. They must have earned at least 56 credits with a G.P.A. of 3.0 or higher, including satisfaction of D.E.C. categories A through G, and completed the courses listed above with a grade of C or higher.

Lower-division students intending to apply for acceptance to the major may declare the business management area of interest (GBM) to assure that they receive information and advice about preparing for acceptance.

Business Management Minor

The business management 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 in their undergraduate program.

The requirements for this minor are relatively extensive; they include specific advanced courses in economics, political science, and a choice among several other social sciences; 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.

Requirements for the Minor

The minor requires 22 credits.

1. BUS 340 Management Information Systems *or* AMS 102 Elements of Statistics
2. ECO 301 The Theory of the Firm and Markets *or* ECO 303 Intermediate Microeconomic Theory
3. BUS 349 Management Science
4. Three of the following courses:
   BUS/ECO 114 FInancial Accounting
   BUS/ECO 214 Managerial Accounting
   BUS 346 Operations Management
   BUS 347 Business Ethics *or* POL 319 Business Law
   BUS 348 Principles of Marketing

BUS 351 Introduction to Personnel Management *or* POL 364 Organizational Decision Making *or* PSY 309 Psychology of Work *or* PSY 313 Organizational Behavior Management *or* SOC 381 Sociology of Organizations
BUS 353 Entrepreneurship
BUS 355 Investment Analysis *or* ECO 389 Corporate Finance *or* ECO 383 Public Finance *or* ECO 360 Money and Banking *or* ECO 368 Modern Portfolio Theory *or* ECO 370 Theory of Financial Markets
BUS 440 International Management

5. BUS 441 Business Policy, Formulation, and Administration *or* BUS 488 Internship

Notes:

1. All courses must be taken for a letter grade.
2. One or more of the following courses may be substituted for required courses with the approval of the director of undergraduate studies: BUS 341, 342 Special Topics in Management, BUS 487 Independent Research, and BUS 488 Internship.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some courses indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

BUS 114 Financial Accounting *(Formerly PAM 114)*
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. Crosslisted with ECO 114.
Fall and spring, 3 credits

BUS 214 Managerial Accounting *(Formerly PAM 214)*
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. Crosslisted with ECO 214.
Prerequisite: BUS/ECO 114
Fall and spring, 3 credits

BUS 339 The Nonprofit Sector: Institutions, Policy, and Practice *(Formerly PAM 339)*
An examination of the legal regulations that define the nonprofit sector, its magnitude, its scope, and policy issues such as the effect of government actions on charitable giving, and revenue accumulation in the form of sales, business activity, and fund-raising. A comparison of labor markets and firms in the nonprofit and for-profit sectors will be made.
Prerequisite: ECO 101
Spring, 3 credits (not offered in 1995-96)

BUS 340 Management Information Systems *(Formerly PAM 340)*
An introductory course in management information systems (MIS). Its objectives are to develop a basic understanding of the concepts and techniques needed in analyzing, designing, and managing these systems, and to explore the applications of computers and information technology to improve the efficiency and effectiveness of individuals, groups, and organizations.
Prerequisites: Upper-division standing; AMS 102 or MAT 123 or higher or passing the Mathematics Placement Examination at level 4 or higher
Fall and spring, 3 credits

BUS 341, 342 Special Topics in Management *(Formerly PAM 341, 342)*
An advanced course treating specific issues in the theory and practice of management. May be repeated for different topics.
Prerequisites: Upper-division standing; completion of D.E.C. categories C and F; at least one other course to be specified when the topic is announced
Schedule to be announced, 3 credits

BUS 346 Operations Management *(Formerly PAM 346)*
Analysis and design of manufacturing service systems. Topics include project management, production scheduling, inventory management, quality control, and congestion management.
Prerequisite: BUS 349
Fall and spring, 3 credits

BUS 347 Business Ethics *(Formerly PAM 347)*
An introduction to traditional ethical theories and their application to business. A basis for understanding how ethical issues in business arise, and some strategies to control or resolve them, are derived from an examination of the work of philosophers and other writers relating to business ethics. Recent business case studies enable students to develop their own perspectives.
Prerequisites: Upper-division standing; SOC 105 or 106 or PSY 103 or 104
Fall, 3 credits

BUS 348 Principles of Marketing *(Formerly PAM 348)*
Basic marketing concepts and their applications. Issues include strategy, market segmentation, individual consumer behavior, marketing research, promotion, pricing, and international marketing. The emphasis is on analysis of the challenges facing business with respect to all relevant constituencies, including the company in general, managerial colleagues across functional areas, consumers, stockholders, and government.
Prerequisite: BUS/ECO 114
Fall and spring, 3 credits

BUS 349 Management Science *(Formerly PAM 349)*
An introduction to modeling in management and policy analysis. The course treats the basic concepts of management science and offers different models in quantitative decision making, demonstrating the applicability of such models in business. Not for credit in addition to ECO 348.
Prerequisites: Upper-division standing; AMS 102 or MAT 123 or higher or passing the Mathematics Placement Examination at level 4 or higher
Fall and spring, 3 credits

BUS 351 Introduction to Personnel Management *(Formerly PAM 351)*
Major trends in personnel management, including problems and issues faced by organizations and individuals in times of change. Responsibilities of the human resources department and the roles that every manager plays, both as a supervisor and as a client of the human resources department, are studied. Topics include human resources forecasting and planning, job design, employee selection, test development and validation, equal employment opportunity laws and judicial rulings, performance appraisal, compensation, benefits, career development, safety, and labor relations.
Prerequisite: PSY 103 or 104 or SOC 105 or 106 or ECO 101
Spring, 3 credits

BUS 353 Entrepreneurship
The essential qualities of new and growing enterprises are examined. Examples of both successful and failed new ventures are given by entrepreneurs. Students develop a business plan for their own business and present it to venture capitalists for their expert analysis.
Prerequisites: BUS/ECO 114; two D.E.C. category F courses; upper-division standing
Fall or spring, 3 credits

BUS 355-F Investment Analysis
The theoretical and empirical study of financial markets. Topics include portfolio selection, asset pricing, market efficiency, valuation of fixed income securities, options and futures pricing.
Prerequisites: AMS 102; ECO 301 or 303
Fall, 3 credits

BUS 440 International Management *(Formerly PAM 440)*
Analysis of international competition, markets, cross-cultural relations, and change and stability in various countries and in the global economy. Managerial techniques for U.S. firms in international settings are included.
Prerequisites: BUS 349 or ECO 348; BUS 355 or ECO 389; BUS 347 or PSY 309 or 313 or SOC 381
Fall and spring, 3 credits

BUS 441 Business Policy, Formulation, and Administration *(Formerly PAM 441)*
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: BUS 340; BUS/ECO 114; POL 319; BUS 347 or 351 or PSY 309 or 313 or SOC 381
Fall and spring, 3 credits

BUS 475 Undergraduate Teaching Practicum I *(Formerly PAM 475)*
The student assists the instructor of a business management course by conducting office hours, participating in class discussions and business games, preparing case studies, reading and criticizing written work, and presenting selected topics in the classroom. The student receives regularly scheduled supervision from the instructor. Satisfactory/Unsatisfactory grading only.
Prerequisites: Grade of A or A– in the course in which the student is to assist; upper-division standing; permission of director of undergraduate studies
Fall and spring, 3 credits

BUS 476 Undergraduate Teaching Practicum II *(Formerly PAM 476)*
The continuation on a more advanced level of training in the techniques of organization and management in the teaching of business management courses. Students are expected to assume greater reponsibility in such areas as leading discussions, analyzing results of tests that have already been graded, and observing teaching. Students may not serve as teaching assistants in the same course twice. Satisfactory/Unsatisfactory grading only.
Prerequisites: BUS 475; permission of director of undergraduate studies
Fall and spring, 3 credits

BUS 487 Independent Research *(Formerly PAM 487)*
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 a faculty member. May be repeated.
Prerequisite: Permission of instructor and Harriman School
Fall and spring, 1 to 6 credits

BUS 488 Internship *(Formerly PAM 488)*
Participation in local, state, national, or international private enterprises, public agencies, or nonprofit institutions. Students are required to submit a written proposal, progress reports, and a final written report on their experience to the client, to the faculty sponsor, and to the school. Satisfactory/Unsatisfactory grading only.
Prerequisites: Business management major or minor; permission of instructor, director of undergraduate studies, and Office of Undergraduate Studies
Fall and spring, 3 to 6 credits

Health Sciences Center

This chapter provides an overview of Stony Brook's Health Sciences Center and lists the courses and the minor open to West Campus students. Complete information about all other Health Sciences Center courses and Health Sciences majors, as well as admission and graduation requirements, is published in the Health Sciences Center Bulletin.

Overview

The Health Sciences Center (HSC) consists of five professional schools and University Hospital, the major teaching facility for the educational programs of the Health Sciences Center. The schools—Dental Medicine, Health Technology and Management, Medicine, Nursing, and Social Welfare—offer professional education to approximately 1,900 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.

The Health Sciences Center has four primary objectives. It seeks to increase the supply and proficiency of health professionals in fields of demonstrated regional, state, and national need; to provide health care of sufficient variety and quality to enable professional education and related research to occur; to sustain an environment in which research in health and related disciplines can flourish; and to emerge as a regional resource for advanced education, patient care, and research in broad areas of health.

The nature of the Health Sciences Center calls for close cooperation in the support of the academic, scientific, and administrative functions common to the programs and needs of more than one school. This constitutes an important integrative force in the intellectual life of the HSC. Of special importance are the center-wide activities of the Division of Media Services, the Division of Laboratory Animal Resources, the Health Sciences Center Library, and the Office of Student Services.

University Hospital serves the health care needs of the residents of Long Island and provides training for health-care professionals. Opened in 1980, the 504-bed hospital uses the very latest in medical knowledge and technologies to meet the needs of its patients. The hospital offers highly specialized services and serves many regional roles. Each year the hospital provides training for about 400 medical residents in 38 specialty programs, including general dentistry and the subspecialties of medicine.

Although University Hospital provides a hospital teaching environment for students, the Health Sciences Center also utilizes 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.

At present, more than 2,000 skilled professionals from the Long Island region have faculty appointments and participate in the schools of the HSC. All Health Sciences Center students, as part of their clinical training or fieldwork, 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, as well as courses offered on a non-matriculated basis. The Health Sciences 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 Health Technology and Management offers bachelor's degree programs in cytotechnology, medical technology, physical therapy, physician assistant, and respiratory care, and anticipates offering a program in occupational therapy. Bachelor's 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 Health Technology and Management, Nursing, and Social Welfare. Doctoral degree programs are offered in anatomical sciences (functional morphology), cellular and molecular pharmacology, molecular pathology, molecular physiology and biophysics, biochemistry, cell biology, microbiology, neurobiology and behavior, and oral biology and pathology.

Admissions Procedures

Admission to all Health Sciences Center programs is by formal application only and is selective because enrollment for each program is limited. Admissions are generally conducted for the fall only. Each school of the Health Sciences Center is responsible for determining its own admissions policy and for selecting its own students.

Admissions 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, where applications for all undergraduate programs should be obtained in the fall preceding the year of anticipated admission.

Undergraduate Eligibility

All Health Sciences Center professional baccalaureate programs begin in the upper division. (See School of Health Technology and Management, p. 264, for four-year options in medical technology and respiratory care.) To be eligible for consideration, students must have completed 57 college credits or their equivalent before matriculating in the program to which they seek admission. All programs require specific course prerequisites. Most undergraduate programs are full time. Part-time studies are offered by the registered nurse program in the School of Nursing.

The Basic Baccalaureate Accelerated Program in the School of Nursing is designed for college graduates who have a non-nursing bachelor's degree. To be eligible for consideration, students must have a B.S. or B.A. degree and specific course prerequisites. This is a full-time program, running from July 1 through June 30.

Applications for all undergraduate programs 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.

Application forms and academic advisement about prerequisites for admission and course and program content is available from each school and from the Office of Student Services.

Health Sciences Center Academic Calendars

Health Sciences Center courses may consist of one *semester* or one or more *modules* as determined by the faculty of each school. Semesters are the traditional academic periods of late August or early September to December (fall) and January to May (spring); modules are academic periods of approximately five weeks in length.

Semesters are used for all courses in the West Campus, the School of Social Welfare, and the graduate program in the School of Health Technology and Management, as well as for most courses in the schools of Dental Medicine, Medicine, and Nursing. Modules are used exclusively for courses in the undergraduate programs of the School of Health Technology and Management and for some basic sciences courses.

For registration purposes, a single module is designated by a number; for example, module 1 is expressed as modular code 1. A series of modules is designated by a letter; i.e., the sequence of modules 1, 2, and 3 is expressed as modular code G. Letters are also used to designate semester codes: the fall semester code is A; the spring semester code is B. Generally the sequence of modules 1, 2, and 3 (modular code G) is comparable to the fall semester; modules 4, 5, 6, and 7 (modular code T) correspond to the spring semester.

Modular dates, including the beginning and ending dates, add/drop periods, and the modular codes required for course registration, are contained in the table of modular dates provided in the *Health Sciences Center Bulletin* and in the Health Sciences Center academic calendar published by the Office of Student Services.

School of Dental Medicine

Although its program is primarily for post-baccaulareate students, the School of Dental Medicine also offers research opportunities for elective credit to undergraduate students enrolled in courses of study in all departments of the University. To register for these courses, listed below, West Campus students should have earned a minimum of 57 University credits. Permission of the instructor is required for all courses.

Dental Health

HDH 301 Independent Readings and Research
The student conducts 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 392 (Health Care Delivery); approval of department chairperson
Fall and spring, 3 credits

Oral Biology and Pathology

HDO 320, 321 Oral Biology Research I, II
The student conducts 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 juniors. A copy of the student's transcript must be submitted with the application.
Prerequisite for HDO 320: Permission of department; BIO 152 or 172 and CHE 132 and 134 or 142 and 144 recommended
Prerequisite for HDO 321: HDO 320
Fall and spring, 4 credits each semester

HDO 420, 421 Oral Biology Research III, IV
The student conducts 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. These courses are offered for seniors in Arts and Sciences. A copy of the student's transcript must be submitted with the application.
Prerequisite for HDO 420: Permission of department; BIO 152 or 172 and CHE 132 and 134 or 142 and 144 recommended
Prerequisite for HDO 421: HDO 420
Fall and spring, 4 credits each semester

Periodontics

HDP 320, 321, 322 Introduction to Periodontal Research
The student is taught various techniques and procedures used in current periodontal research. The student is expected to undertake a small research project implementing these techniques.
Prerequisites: CHE 132 and 134 or 142 and 144; BIO 152 or 172; permission of instructor
Fall (320), spring (321), and summer (322), 1 to 4 credits each semester

HDP 420, 421, 422 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. May be repeated up to a maximum of eight credits.
Prerequisites: HDP 320, 321; permission of instructor
Fall (420), spring (421), and summer (422), 2 to 4 credits each semester

---

School of Health Technology and Management

Although undergraduate students enter the Health Sciences Center programs at the junior level, the School of Health Technology and Management offers students interested in medical technology or respiratory care the opportunity to begin their studies in their freshman year. Freshman applicants who have been admitted to the University and who have accepted the offer of admission may be eligible. The faculty reviews the files of all freshmen who specify an interest in the four-year medical technology or respiratory care major to determine their eligibility.

Medical Technology Four-Year Program

The Medical Technology Department offers a four-year program in clinical laboratory science that enables students to declare a lower-division major in medical technology (HAG) as freshmen. During the freshman and sophomore years, lower-division medical technology majors must fulfill the entrance requirements for the upper-division program, which are:

- EGC 101 Writing Workshop
- BIO 151 Principles of Biology: From Organisms to Ecosystems
- BIO 152 Principles of Biology: From Molecules to Organisms
- CHE 131, 132 General Chemistry
- CHE 133, 134 General Chemistry Laboratory
- CHE 321 Organic Chemistry
- HAD 210 Introduction to Clinical Laboratory (grade of A required)
- MAT 123 Introduction to Calculus
- Humanities and Fine Arts (6 credits)
- Social and Behavioral Sciences (6 credits)

Recommended courses:

- HBM 320 Microbiology
- AMS 102 Elements of Statistics

After successful completion of the requirements in this pathway, students are advanced to the upper-division medical technology program. Further information may be obtained from the Medical Technology Department.

Since students in this program take all their courses except HAD 210 on West Campus, they are expected to follow Diversified Education Curriculum requirements in choosing courses, beyond those listed above, to complete each semester's schedule.

Respiratory Care Four-Year Program

The Respiratory Care Department offers a four-year program in respiratory care that enables students to declare a lower-division major in respiratory care (HAI) as freshmen. During the freshman and sophomore years, lower-division respiratory care majors must fulfill the entrance requirements for the upper-division program, which are:

- EGC 101 Writing Workshop
- BIO 151 Principles of Biology: From Organisms to Ecosystems
- BIO 152 Principles of Biology: From Molecules to Organisms
- CHE 131, 132 General Chemistry
- CHE 133, 134 General Chemistry Laboratory
- HBM 320 Microbiology
- MAT 123 Introduction to Calculus
- PHY 121, 122 Physics for the Life Sciences *or* PHY 117, 118 Physics and Biological Systems
- HAT 210 Introduction to Respiratory Care (grade of A required)
- Humanities and Fine Arts (6 credits)
- Social and Behavioral Sciences (6 credits)

Recommended course:

- AMS 102 Elements of Statistics

After successful completion of the requirements in this pathway, students are advanced to the upper-division respiratory care program.

Since students in this program take all their courses except HAT 210 on West Campus, they are expected to follow Diversified Education Curriculum

requirements in choosing courses, beyond those listed above, to complete each semester's schedule.

Courses

HAD 210 Introduction to the Clinical Laboratory Sciences
Defines basic clinical laboratory sciences terminology and application. Introduces the specialities within the clinical laboratory sciences profession including microbiology, hematology, chemistry, immunohematology, and immunology and their roles in patient care. Reviews professional organizations and licensures. Examines employment opportunities. Visitation of clinical laboratories included.
Prerequisite: Permission of instructor
Fall, 1 credit

HAT 210 Introduction to Respiratory Care
Introduces the science of respiratory care. Discusses current trends in professional practice. Students observe clinical practice at a variety of affiliated health care facilities. This course is specifically designed for lower-division students considering a major in respiratory care.
Fall or spring, 1 credit

School of Medicine

Although its program is primarily for post-baccalaureate students, the School of Medicine offers a minor, courses for elective credit, and the Scholars for Medicine Program for West Campus undergraduate students.

Scholars for Medicine Program

The Scholars for Medicine Program is a collaborative effort of the School of Medicine and the West Campus colleges to encourage and stimulate academic breadth among the most talented premedical students at Stony Brook. Each year, up to ten qualified Stony Brook sophomores interested in a career in medicine may be nominated by the premedical advisory office for consideration for the program.

Exceptionally well qualified students with varied interests and specific plans for the years preceding medical school are offered admission.They are, however, required to maintain their solid academic standing and to take the Medical College Admissions Test. With a medical school position in hand, participants in the Scholars for Medicine Program are able to pursue a wider variety of courses and experiences than the general premedical student intent on strengthening his or her premedical resumé. The junior and senior course of study and participation in special projects are further encouraged through the Scholars for Medicine advisory program and participation in the Scholars for Medicine Lecture/Seminar Series, which is mandatory for students accepted to the program.

Only sophomores at Stony Brook are eligible to apply for the Scholars for Medicine Program. Students who transfer into the sophomore class are eligible to apply if they have been enrolled at Stony Brook for at least two semesters prior to the time the early selection process is complete. Each applicant must complete—at Stony Brook—by the end of the sophomore year at least a year of chemistry and a year of biology, as well as the writing requirement (D.E.C. category A). Given the limited number of places available, only students whose credentials exhibit a notable level of academic excellence are likely to be chosen to participate. Individuals concentrating on any academic area are eligible. Preference is given to residents of New York State.

Further information about the Scholars for Medicine Program is available in the Center for Academic Advising.

Minor in Health and Society

Minor Coordinator: Peter Williams, Preventive Medicine

The health and society minor (HSO), offered through the Department of 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, which requires 18 credits, 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 requirement A before taking HMC/SOC 200.

Requirements for the Minor

A. Any two individual courses from among the following: BIO 101, 102; HIS 237, 238; HUM 121, 123; PHI 104, 109
B. HMC/SOC 200
C. Any two individual courses from among the following: HIS 323; HMC 331, 361; PHI 368, 370; SOC 353, 392 (Health Care Delivery and Health and Illness sections only); WNS/HIS 316, 333
D. HMC 486 or 487 (Students are permitted to take this only after completing A, B, and C above.)

Notes on the Minor

1. Courses numbered 200 and higher have prerequisites in the department of origin; for some, the prerequisites may be waived upon petition.
2. Students may *not* substitute BIO 151, 152 or 171, 172 for the courses indicated in part A.
3. Three credits of P/NC are allowed but requirement D must be satisfied with a letter grade.

Additional information and advice regarding the minor can be obtained by contacting the minor coordinator or an advisor in the Center for Academic Advising.

Courses

To register for School of Medicine courses numbered 300 and higher, West Campus students should have earned a minimum of 57 University credits. Permission of the instructor is required for all courses.

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

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 provides an introduction to techniques of illustration utilizing as subject matter the skeleton, prosection, and cadaver dissection. Details of human anatomy are often discussed by comparison of humans with other vertebrates. Lectures precede each laboratory/studio class and involve proportion, topographic and surface anatomy, bone-muscle relationships and human movement, comparative forms of visceral organs, and the comparative anatomy of humans and higher primates. Crosslisted with ARS 355.
Prerequisite: ARS 152 or BIO 101 or 151 or 171
Fall, 3 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 juniors and seniors. May be repeated.
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 juniors and seniors. May be repeated.
Prerequisites: Laboratory experience; permission of supervising instructor
Fall (398) and spring (399), 2 to 4 credits each semester

Health and Society

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. Practicing physicians or other health care professionals present clinical cases to emphasize such topics as allocation of scarce resources, issues of dying and refusing treatment, confidentiality, and cultural factors and disease. Discussion focuses on the social, historical, ethical, and humanistic import of the cases. Crosslisted with SOC 200.
Fall or spring, 3 credits

HMC 331-G Legal and Ethical Issues in Health Care
Introduces students to some of the major ethical and legal doctrines that affect health care professionals. The doctrines are 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 are expected to take part in class discussions and do readings.
Prerequisite: One D.E.C. category B course
Fall or spring, 3 credits (not offered in 1996-97)

HMC 361-G Literature and Medicine
Exploration of major themes of medical care and illness as presented in works of poetry, prose, and drama. Themes include personal and ethical dilemmas confronted by doctors; special characteristics and discourse of the medical setting; the experience of being ill; philosophical, social, and spiritual dimensions of the clinical encounter; and the search for meanings in medical events.
Prerequisite: One course in literature or HMC/SOC 200
Spring, 3 credits (not offered in 1995-96)

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 that deal with problems in contemporary health care. Primarily for pre-health students 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

Microbiology

HBM 320 General Microbiology
A study of the molecular structure, functional anatomy, energetics, genetics, and pathogenic mechanisms of microbial organisms, with an emphasis on bacteria and viruses. Nonspecific and specific host defenses and the control of microorganisms are also covered. Satisfies the microbiology requirement for admission to nursing, veterinary, and optometry professional schools.
Prerequisites: CHE 112 or 132; BIO 231; permission of instructor; CHE 131 and 133 or 141 and 143 recommended
Spring, 3 credits

HBM 321 General Microbiology Laboratory
Designed to complement the lecture material of HBM 320, the optional laboratory covers basic and applied microbiological methods. Students are introduced to methods for isolating pure cultures, microscopy and staining, quantitation of bacteria, and determination of sensitivity to antimicrobial agents. This laboratory is limited to pre-veterinary, -optometry, and -nursing students.
Prerequisites: CHE 112 or 132; BIO 231; permission of instructor; CHE 131 and 133 or 141 and 143 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 juniors and seniors. May be repeated.
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 juniors and seniors. May be repeated.
Prerequisites: Laboratory experience; permission of supervising instructor
Fall (398) and spring (399), 2 to 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 or 171, 172; permission of instructor
Modules 3 through 6, 3 credits

HBP 390 Basic Mechanisms in Pathology
Biochemical mechanisms underlying human diseases, including connective tissue, macromolecules, inflammation, coagulation mechanisms, fibrinolysis, immunological defenses, and cancer.
Prerequisite: BIO 361
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 juniors and seniors. May be repeated.
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 juniors and seniors. May be repeated.
Prerequisites: Laboratory experience; permission of supervising instructor
Fall (398) and spring (399), 2 to 4 credits each semester

Pharmacological Sciences
Arts and Sciences students may receive no more than a total of 6 credits in a single semester of any combination of HBH courses numbered 393 through 399. HBH courses do not satisfy requirements for the pharmacology major.

HBH 393, 394 Topics in Pharmacology
Tutorial readings in pharmacology with periodic conferences, reports, and examinations arranged with the instructor. Open to juniors and seniors. May be repeated.
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. Open to juniors and seniors. May be repeated. May not be taken for credit in addition to BCP 487.
Prerequisites: Laboratory experience; permission of supervising instructor
Fall (398), spring (399), and summer (396), 1 to 6 credits each semester

Physiology and Biophysics

HBY 350 Physiology
The normal functioning of human tissues and organs and their regulation by the nervous and endocrine systems. Special emphasis is given to physiological control systems and the preservation of the constancy of the internal environment. Lectures, conferences, demonstrations.
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 3, 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 juniors and seniors. May be repeated.
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 juniors and seniors. May be repeated.
Prerequisites: Laboratory experience; permission of supervising instructor
Fall (398) and spring (399), 2 to 4 credits each semester

School of Nursing

Although its upper-division courses are open only to students accepted into its professional programs, the School of Nursing offers two courses to lower-division students who may be interested in nursing as a career. See the *Health Sciences Center Bulletin* for entrance and major requirements for the upper-division professional program.

Courses

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.
Spring, 1 credit

HNI 290 Introduction to Nursing
An introduction to nursing for students who are considering a career in nursing. The student is oriented to the nature and scope of the profession of nursing, settings where nursing is practiced, and selected skills basic to nursing practice.
Fall, 2 credits

School of Social Welfare

Although its courses are open primarily to students accepted into its professional program, the School of Social Welfare opens a few of its courses to West Campus students. See the *Health Sciences Center Bulletin* for entrance and major requirements for the upper-division social work program. The courses listed below are offered in the semester indicated, but not necessarily each year. Upper-division West Campus students may take these courses with the permission of the instructor and the School of Social Welfare's Office of Student Services.

Courses

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 351 Law and Social Change
Introduces students to the interrelationship of the legal process in the United States and the profession of social work, including the legal process in general and social welfare law in particular. Focuses on the implication for effective practice of social work.
Prerequisite: Permission of instructor
Fall or spring, 3 credits

HWC 361 Implications of Racism on Social Welfare
Examines personal and institutional racism in the United States and the effect racism has on the delivery of services to individuals who do not fit the traditional "American model." Examines the historical relationship between racism and social welfare policies, programs and practice, and contemporary strategies for change.
Fall or spring, 3 credits

HWC 363 The Politics of Homelessness
Analyzes homelessness as an issue of social policy, including its history, recent causes, and current demographics; emphasizes the political and economic context that has made it a major social problem.
Spring, 3 credits

Marine Sciences Research Center

Acting Dean and Director: J. Kirk Cochran

Director of Undergraduate Studies: Robert M. Cerrato

Faculty

Josephine Y. Aller, Research Associate Professor, Ph.D., University of Southern California: Marine benthic ecology; invertebrate zoology; marine microbiology; biogeochemistry.

Robert C. Aller, Professor, Ph.D., Yale University: Marine geochemistry; marine animal-sediment relations.

Henry J. Bokuniewicz, Professor and Associate Dean for Education, Ph.D., Yale University: Near-shore transport processes; coastal sedimentation; marine geophysics.

Malcolm J. Bowman, Professor, Ph.D., University of Saskatchewan: Oceanography of coastal waters; water quality modeling; microstructure and turbulence.

Vincent T. Breslin, Assistant Professor, Ph.D., Florida Institute of Technology: Metal leachability from combustion residues; trace metal geochemistry.

V. Monica Bricelj, Associate Professor, Ph.D., State University of New York at Stony Brook: Molluscan physiological ecology; benthic ecology.

Bruce J. Brownawell, Assistant Professor, Ph.D., Massachusetts Institute of Technology: Biogeochemistry of organic pollutants in seawater and groundwater.

Edward J. Carpenter, Professor, Ph.D., North Carolina State University: Nitrogen cycling; phytoplankton ecology.

Robert M. Cerrato, Associate Professor, Ph.D., Yale University: Benthic ecology; population and community dynamics.

Robert D. Cess, Distinguished Professor, Ph.D., University of Pittsburgh: Radiative transfer and climate modeling; greenhouse effect; nuclear winter theory; atmospheric structures of Mars, Saturn, and Jupiter.

Andre Y. Chistoserdov, Assistant Professor, Ph.D., Institute of Genetics and Selection of Industrial Organisms: Marine microbiology; marine biotechnology and bioremediation.

J. Kirk Cochran, Professor and Associate Dean for Research, Ph.D., Yale University: Marine geochemistry; use of radionuclides as geochemical tracers; diagenesis of marine sediments.

Daniel C. Conley, Assistant Professor, Ph.D., University of California, San Diego: Sediment transport; wave boundary layers; near-shore processes.

David O. Conover, Professor, Ph.D., University of Massachusetts-Amherst: Ecology of fishes; fishery biology.

Elizabeth M. Cosper, Research Associate Professor, Ph.D., City University of New York: Phytoplankton physiology and ecology; resistance of microalgae to pollutants.

Robert K. Cowen, Associate Professor, Ph.D., University of California, San Diego: Fishery oceanography; near-shore fish populations; fish ecology.

Nicholas S. Fisher, Professor, Ph.D., State University of New York at Stony Brook: Marine phytoplankton physiology and ecology; biogeochemistry of metals; marine pollution.

Roger D. Flood, Associate Professor, Ph.D., Massachusetts Institute of Technology: Marine geology; sediment dynamics; continental margin sedimentation.

Jane Lee Fox, Professor, Ph.D., Harvard University: Planetary upper atmospheres.

Marvin A. Geller, Professor and Director of Institute for Terrestrial and Planetary Atmospheres, Ph.D., Massachusetts Institute of Technology: Atmospheric dynamics; stratosphere dynamics; ozone behavior.

Valrie A. Gerard, Associate Professor, Ph.D., University of California, Santa Cruz: Marine macrophyte ecology and physiology.

Sultan Hameed, Professor and Coordinator of Atmospheric Sciences Program, Ph.D., University of Manchester: Climate change.

Cindy Lee, Professor, Ph.D., University of California, San Diego: Marine geochemistry of organic compounds; organic and inorganic nitrogen cycle biochemistry.

Darcy J. Lonsdale, Associate Professor, Ph.D., University of Maryland at College Park: Zooplankton ecology with special interest in physiology; life history studies.

Glenn R. Lopez, Professor, Ph.D., State University of New York at Stony Brook: Benthic ecology; animal-sediment interactions.

Kamazima Lwiza, Assistant Professor, Ph.D., University College of North Wales: Coastal ocean circulation; tides and tidal fronts; mixing.

James E. Mackin, Associate Professor, Ph.D., University of Chicago: Geochemistry of suspended sediment/solution interactions.

John L. McHugh, Professor Emeritus, Ph.D., University of California, Los Angeles: Fishery management; fishery oceanography; whales and whaling.

Steven G. Morgan, Assistant Professor, Ph.D., University of Maryland at College Park: Marine ecology.

Charles Nittrouer, Professor, Ph.D., University of Washington: Geological oceanography, continental margin sedimentation.

Akira Okubo, Professor, Ph.D., The Johns Hopkins University: Oceanic diffusion; animal dispersal; mathematical ecology.

Hartmut Peters, Assistant Professor, Ph.D., Kiel University: Circulation of coastal and estuarine waters.

Donald W. Pritchard, Professor Emeritus, Ph.D., University of California, San Diego: Estuarine and coastal dynamics; coastal zone management.

Frank J. Roethel, Lecturer, Ph.D., State University of New York at Stony Brook: Environmental chemistry; behavior of coal waste in the environment; solution chemistry.

Sergio A. Sanudo-Wilhelmy, Assistant Professor, Ph.D., University of California, Santa Cruz: Chemical oceanography; coastal geochemistry; metal cycling in aquatic systems.

J.R. Schubel, Professor Emeritus, Ph.D., The Johns Hopkins University: Coastal sedimentation; suspended sediment transport; coastal zone management.

Mary I. Scranton, Professor, Ph.D., Massachusetts Institute of Technology: Marine geochemistry; biological-chemical interactions in seawater.

Gordon Taylor, Assistant Professor, Ph.D., University of Southern California: Marine microbiology; microbial ecology; plankton trophodynamics; marine biofouling.

Prasad Varanasi, Professor, Ph.D., University of California, San Diego: Planetary spectroscopy.

Duane E. Waliser, Assistant Professor, Ph.D., Academia Sinica: Atmospheric dynamics; climate modeling.

Dong Ping Wang, Professor, Ph.D., University of Miami: Coastal ocean dynamics.

Peter K. Weyl, Professor Emeritus, Ph.D., University of Chicago: Coastal zone planning; physical oceanography.

Robert E. Wilson, Associate Professor, Ph.D., The Johns Hopkins University: Estuarine and coastal ocean dynamics.

Peter M.J. Woodhead, Research Professor, B.S., University of Durham: Behavior and physiology of fish; coral reef ecology; ocean energy conversion systems.

Charles F. Wurster, Associate Professor Emeritus, Ph.D., Stanford University: Effects of chlorinated hydrocarbons on phytoplankton communities.

Jeannette Yen, Associate Professor, Ph.D., University of Washington: Marine zooplankton ecology.

Minghua Zhang, Assistant Professor, Ph.D., Academia Sinica: Atmospheric dynamics; climate modeling.

Affiliated Faculty

Robert L. deZafra, Physics
William H. Greene, Medicine
Herbert Herman, Materials Science and Engineering

Lee E. Koppelman, Political Science
Jeffrey Levinton, Ecology and Evolution
William J. Meyers, Earth and Space Sciences
Sheldon Reaven, Technology and Society
Lawrence B. Slobodkin, Ecology and Evolution

Teaching Assistants
Estimated number: 13

The Marine Sciences Research Center (MSRC) is the center for research, undergraduate and graduate education, and public service in the marine sciences for the State University of New York system. In addition, MSRC features five distinguished institutes: the Living Marine Resources Institute, the Coastal Ocean Action Strategies Institute, the Institute for Urban Ports and Harbors, the Waste Management Institute, and the Institute for Terrestrial and Planetary Atmospheres. Three features distinguish MSRC from other leading oceanographic institutions: a clear focus on the coastal ocean, a persistent effort to integrate the marine and atmospheric sciences, and a commitment to translate the results of research into forms readily usable by decision makers in resolving important environmental and management problems.

MSRC offers an undergraduate major in atmospheric sciences/meteorology, a minor in marine sciences, and a certificate program in waste management. In addition, MSRC offers joint five-year programs with the Department of Earth and Space Sciences and with the College of Engineering and Applied Sciences, leading 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 these joint five-year programs should consult with their undergraduate departmental advisor and with the graduate studies director of MSRC.

MSRC offers a number of marine and atmospheric science courses that are geared toward both non-science and science majors. The first-year graduate courses at MSRC are, with the permission of the instructor and subject to University limits (see p. 77), available for advanced undergraduate students. MSRC offers opportunities to undergraduates for research and training in marine sciences, atmospheric sciences, and waste management.

Further information can be obtained from the *Graduate Bulletin* and from the graduate studies director of the Marine Sciences Research Center.

Requirements for the Major in Atmospheric Sciences/Meteorology

The major in atmospheric sciences/meteorology leads to the Bachelor of Science degree.

Completion of the major requirements entails approximately 65 credits.

A. *Required Departmental Courses:*
ATM 205 Introduction to Atmospheric Sciences
ATM 345 Theoretical Meteorology
ATM 346 Dynamic Meteorology
ATM 348 Atmospheric Physics
ATM/ESC 397 Air Pollution and Its Control
MAR 333 Coastal Oceanography
MAR 340 Environmental Problems and Solutions
MAR 350 Introduction to Ocean Physics

B. *Required Courses in Mathematics and Related Sciences:*
GEO 122 Physical Geology *or* GEO 102 The Earth *and* GEO 112 Physical Geology Laboratory
MAT 131, 132 (see note, below)
MAT 203 or 205 or AMS 261
MAT 303 or 305 or AMS 361
CHE 131, 132 *or* 141, 142
PHY 125, 126, 127 *or* 131, 132 *or* 141, 142
PHY 251
PHY 306

C. *Upper-Division Writing Requirement:*
All students majoring in atmospheric sciences/meteorology must submit two papers from required departmental courses (term papers, laboratory reports, or independent research papers) to the director of undergraduate studies for evaluation by the end of the junior year. If this evaluation is satisfactory, the student has fulfilled the upper-division writing requirement. If it is not, the student must fulfill the requirement before graduation.

Note: The following alternate beginning calculus sequences may be substituted for major requirements or prerequisites: MAT 124, 126, 127 *or* 125, 126, 127 *or* 141, 142 *or* 131, 132. Equivalency for MAT courses achieved by earning the appropriate score on the Mathematics Placement Examination is accepted as fulfillment of the requirement without the necessity of substituting other credits. For detailed information about the various calculus sequences, see alphabetical listing, Mathematics, p. 160, especially "Beginning Mathematics Courses" and the course descriptions.

Minor in Marine Sciences

The minor in marine sciences (MAR) is open to students who either wish to prepare themselves for future graduate education in marine sciences or who are preparing for a career in a marine-related field. The minor, which is interdisciplinary in nature, provides a foundation in marine aspects of biology, chemistry, geology, and physics for the undergraduate. Intended primarily for science majors, the minor assumes completion of basic courses in mathematics, physics, chemistry, biology, or geology. It requires 18 credits:

A. MAR 101 or 104
B. At least 15 credits from the following: All upper-division MAR courses (with a maximum of three credits each from MAR 487 and MAR 488), BIO 343, or BIO/GEO353

Note: No more than three credits of Pass/No Credit will be accepted toward the minor.

Courses

See p. 77, Course Credit and Prerequisites, and p. 78, Undergraduate Numbering System. The letter tag on some course numbers indicates which D.E.C. category the course satisfies. A course without a letter tag does not satisfy any D.E.C. category.

Marine Sciences

MAR 101-E 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-E 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-E Marine Microbiology and Microbial Ecology
Introduction to the evolution, diversity, and importance of the microbial flora of the sea. Lectures highlight the physiological distinctions and ecological functions of each of the major microbial groups (viruses, bacteria, fungi, protozoans, algae). Particular emphasis is 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 or detoxification are also discussed.
Prerequisites: BIO 151, 152 or 171, 172; CHE 132 or 142
Spring, 3 credits

MAR 303 Long Island Marine Habitats
The study of six representative marine environments around Long Island. Students visit the sites on Saturday field trips, measuring environmental parameters and identifying common plants and animals. Using qualitative and quantitative methods in the field and in two weekly laboratory sessions, the class determines major factors that control the biological community in each habitat.
Prerequisites: BIO 151, 152 or 171, 172 or 113; CHE 111 or 131; upper-division standing
Fall, 4 credits (not offered in 1996-97)

MAR 304-E Waves, Tides, and Beaches
A survey of water waves and tides, including both a description of the phenomena and the basic theory of waves and sediment transport. This background forms the basis for a description of shore processes including beaches, shoreface dynamics, and coastal erosion. Areas of current research are also discussed.
Prerequisites: MAR 101 or 104; PHY 122 or 126 or 132 or 142; MAT 127 or 132 or 142
Fall, 3 credits

MAR 305 Experimental Marine Biology
Students design and conduct experiments in the laboratory and at local field sites, collect and analyze data, and use scientific literature to interpret and present results in papers and oral presentations.
Prerequisites: Upper-division standing; BIO 152 or 172; BIO 351 or 353; CHE 132; BIO 305 or AMS 110 recommended
Spring, 3 credits (not offered in 1996-97)

MAR 318-E Engineering Geology and Coastal Processes
Fundamental concepts of soil, sediment and rock mechanics, and the physics of surficial processes. Application is made to problems of geotechnical and coastal engineering. Topics include consolidation, loose boundary hydraulics, slope stability, underground excavations and beach and tidal inlet stability, and channel sedimentation. Crosslisted with GEO 318.
Prerequisites: GEO 122 or 102/112; MAT 127 or 132 or 142
Fall, 3 credits

MAR 333-H 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 the impacts of society on the Coastal Ocean.
Prerequisites: MAT 124 or 125 or 131 or 141 or passing the Mathematics Placement Examination at level 4 or higher; MAR 104 or two courses chosen from among BIO 151, 152, 171, 172, CHE 131, 132, 141, 142, GEO 102/112, 122, PHY 121 through 142
Spring, 3 credits

MAR 334-E Remote Sensing in Oceanography
A study of the theory of remote sensing and its application in the field of oceanography. A discussion of the interaction of electromagnetic radiation with rough surfaces and the atmosphere is followed by a treatment of sensors and platforms. The remainder of the course is devoted to data processing techniques involved in remote sensing.
Prerequisites: MAT 333 or 104; PHY 132 or 142 or 126, 127
Fall, 3 credits

MAR 335 Primary Productivity in the Sea
A review of classic and current research on primary production by marine phytoplankton and macroalgae. Topics include photosynthesis and growth, nutrients, temporal and spatial variability, competition, and predation. May not be taken for credit in addition to the discontinued MAR 337.
Prerequisites: CHE 132 or 142; BIO 152 or 172; one upper-division BIO course as approved by the instructor; CHE 322 or 332 recommended
Fall, 2 credits (not offered in 1995-96)

MAR 340-H Environmental Problems and Solutions
A detailed examination of the scientific, social, and legal aspects of important environmental problems, including global climate change, the depletion of atmospheric ozone, acid rain, rain forests and the loss of biodiversity, and energy conservation, as well as case histories of problems such as the use of DDT, environmental carcinogens, and lead poisoning.
Prerequisites: Upper-division standing; one D.E.C. category E course in chemistry or biology
Fall, 3 credits

MAR 350 Introduction to Ocean Physics
An introduction to hydrodynamics, contemporary ideas on ocean circulation, and the application of acoustics and optics to ocean technologies.
Prerequisite: PHY 132 or 142 or 126, 127
Pre- or corequisite: MAT 303 or AMS 361
Fall, 2 credits

MAR 366-E Marine Plankton
An introduction to the biology of the plant and animal plankton present in the sea. Techniques of collection, enumeration, and identification of phytoplankton and zooplankton are described. Life histories are studied and factors that influence seasonal changes in species and biomass are examined.
Prerequisites: BIO 151, 152 or 171, 172
Fall, 3 credits

MAR 371 Introduction to Tropical Marine Ecology
An examination of coral reefs, seagrass beds, and mangroves and the physical and biological parameters that influence them at the LaParguera Marine Station, Puerto Rico. Through morning lectures and afternoon and evening field and laboratory studies students are introduced to the general features of tropical marine systems, including a description of the oceanographic setting, formation of reefs, species diversity, and productivity, as well as more specific aspects of the biology, behavior, and ecology of the fish, invertebrates, and plants associated with these tropical marine habitats and communities. Students participate in group projects designed to demonstrate the interplay of physical and biological processes in shaping these communities.
Prerequisites: BIO 151, 152 or 171, 172; PHY 122 or 126 or 127 or 132 or 142 or CHE 132 or 142; permission of instructor
Winter intersession, 3 credits

MAR 390-H Development of Aquaculture
A comprehensive, interdisciplinary description and analysis of the culture of aquatic organisms for human use. The course covers both marine and freshwater aquaculture of plants, shellfish, and finfish. Basic principles of aquaculture are illustrated with specific examples of organisms cultured for staple and luxury foods, biochemicals, wastewater treatment, etc. The development of aquaculture as an industry and its role in managing aquatic resources are covered. While much of the course material is biological, economic, social, and legal aspects of natural resource allocation are also emphasized.
Prerequisite: BIO 113 or 115 or MAR 104
Fall, 3 credits (not offered in 1996-97)

MAR 395 Topics in Marine Environmental Sciences
A focused study of a specific topic in marine environmental sciences. Topics vary and might include social and scientific aspects of the marine environment. May be repeated as the topic varies.
Prerequisites: MAR 104; one upper-division MAR course
Schedule to be announced, 3 credits

MAR 410 Modeling Techniques for Marine Geochemistry
The mathematical modeling techniques used by marine geologists and geochemists. The theories of advection, diffusion, and reaction of chemical species in the marine environment are developed. Model equations are solved for a variety of chemical species and marine environments.
Prerequisites: CHE 301; MAT 127 or 132 or 142; MAR 333
Spring, 3 credits (not offered in 1996-97)

MAR 413 Marine Biochemistry
Survey of biochemical features and adaptations characteristic of the marine biota. Specific topics to be discussed include salinity, temperature and pressure adaptations, calcification and silicification, marine natural products and toxins, bioluminescence, and photosynthetic light adaptation.
Prerequisite: BIO 361
Spring, 3 credits

MAR 475 Teaching Practicum in Marine Sciences
A practicum in the techniques of teaching marine sciences courses. Each student assists a faculty member in a regularly scheduled class. The student may be required to attend all classes and meets with the faculty member at regularly scheduled times. Students may assist in laboratories, hold recitation or review sessions, propose

questions for examinations, and review already graded assignments. Satisfactory/Unsatisfactory grading only.
Prerequisites: Upper-division standing; permission of instructor and department
Fall and spring, 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.
Prerequisite: Permission of instructor and of MSRC Undergraduate Studies Committee
Fall and spring, 1 to 3 credits

MAR 488 Internship
Participation in research at off-campus laboratories or in the activities of public and private agencies and organizations. Students are required to submit to the department a proposal at the time of registration and a report at the end of the semester. May be repeated up to a limit of 12 credits. Satisfactory/Unsatisfactory grading only.
Prerequisites: MAR 333; permission of instructor, department, and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

Atmospheric Sciences/Meteorology

ATM 102-E Weather and Climate
Introduces the nature and causes of common meteorological phenomena, severe weather occurrences, and climatic patterns. Topics include formation and movement of air masses and large-scale storms; techniques for weather prediction; weather satellites; hurricanes, tornadoes, and thunderstorms; cloud and precipitation types; the climatic history of the earth; and actual and potential effect of human activities on weather and climate, and of weather and climate on humans. Crosslisted with EST 102.
Fall, 3 credits

ATM 205-E 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.
Prerequisites: PHY 121 or 126 or 131 or 141; MAT 126 or 131 or 141
Fall, 3 credits

ATM 237-H Current Topics in World Climate and Atmosphere
An exploration of current concerns about the greenhouse effect, acid rain, and global ozone loss, in a format accessible to non-science majors. The social and political steps being taken to limit global atmospheric pollution and climate change are discussed. Not for major credit. Crosslisted with PHY 237.
Prerequisite: One D.E.C. category E course; satisfaction of entry skill in mathematics requirement
Fall or spring, 3 credits

ATM 247-E Weather Prediction
The application of principles of thermodynamics and fluid dynamics, and empirical knowledge of the ways weather systems operate to develop principles of weather forecasting. Operational weather products such as weather maps, National Weather Service model predictions, and station data are used to analyze the behavior of past weather systems as well as to make real-time weather predictions.
Prerequisite: ATM 205
Spring, 3 credits

ATM 305-E Global Atmospheric Change
An application of chemical principles to the analysis and prediction of climate changes on earth. The course analyzes climates that have occurred in the earth's past and uses this information to infer climate changes that are likely to occur in the near and distant future. Topics covered include atmospheric chemistry, paleoclimates, greenhouse warming, ozone changes, and urban pollution.
Prerequisites: MAT 127 or 132 or 142; CHE 132 or 142; PHY 132 or 142 or 126, 127
Spring, 3 credits

ATM 345-E 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.
Prerequisite: ATM 205
Fall, 3 credits

ATM 346-E Dynamic Meteorology
Introduction to the structure and dynamics of the large-scale atmospheric motions that are responsible for weather and climate. Topics 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.
Prerequisite: ATM 205
Spring, 3 credits

ATM 348-E 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.
Prerequisite: PHY 132 or 142 or 126, 127
Fall, 3 credits (not offered in 1995-96)

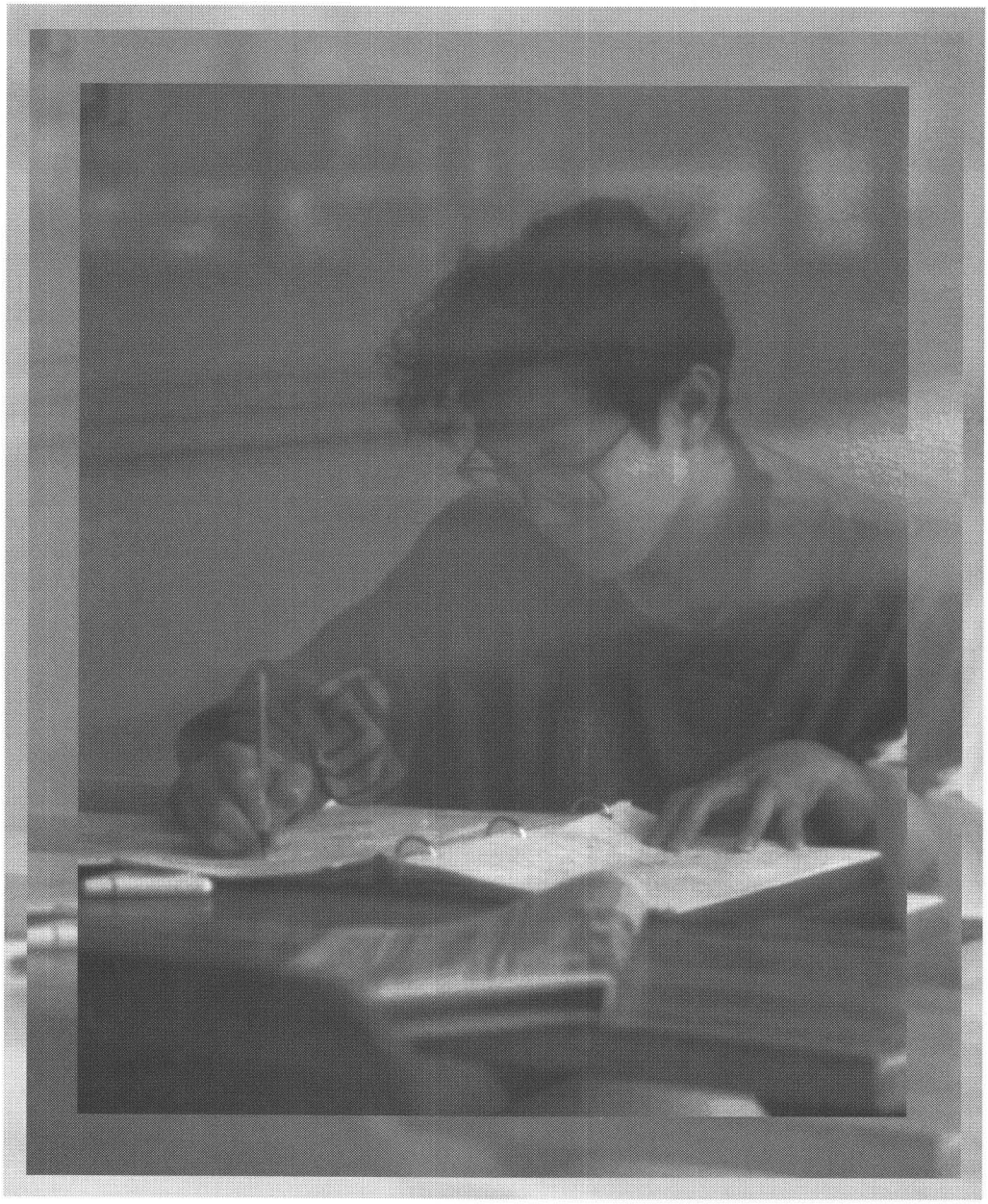
ATM 397-E Air Pollution and Its Control
A detailed introduction to the causes, effects, and control of air pollution. The pollutants discussed include carbon monoxide, sulfur oxides, nitrogen oxides, ozone, hydrocarbons, and particulate matter. The emissions of these gases from natural and industrial 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 132 or 142 or 126, 127; CHE 131 or 141 or 198; upper-division standing
Spring, 3 credits (not offered in 1996-97)

ATM 447 Senior Tutorial in Atmospheric Sciences
Independent readings in advanced topics to be arranged prior to the beginning of the semester. Weekly conferences are held with a faculty member. May be repeated once.
Prerequisite: Permission of instructor and MSRC Undergraduate Studies Committee
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 MSRC Undergraduate Studies Committee 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 MSRC Undergraduate Studies Committee
Fall and spring, 1 to 3 credits

ATM 488 Internship
Participation in research at off-campus laboratories, including the National Weather Service. Students are required to submit to the department a proposal at the time of registration and a report at the end of the semester. May be repeated up to a limit of 12 credits. Satisfactory/Unsatisfactory grading only.
Prerequisites: ATM 345 and 346; permission of instructor, department, and Office of Undergraduate Studies
Fall and spring, 3 credits

Directories



Directories

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 compose 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.

More than 400,000 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 nontraditional paths to a degree. Of the total enrollment, approximately 36 percent of the students are 25 years of age 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 exhaust 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 training in a wide diversity of conventional career fields, such as business, engineering, law, medicine, teaching, 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 that include the environment, 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 EOCs, two-year colleges, four-year campuses, and university and medical centers, the University offers more than 4,000 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. They provide local industry with trained technicians in a wide variety of occupational curricula, and offer transfer options to students who wish to go on and earn advanced degrees.

The University passed a major milestone in 1985 when it graduated its one-millionth alumnus. The majority of SUNY graduates pursue careers in communities across the state.

State University is governed by a board of trustees, appointed by the governor, that 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 33 to 40 percent of their operating costs and 50 percent 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

State University College at Brockport
State University College at Buffalo
State University College at Cortland
State University of New York Empire State College
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

State University of New York Health Science Center at Brooklyn
State University of New York Health Science Center at Syracuse
State University of New York College of Optometry at New York City
Health Sciences Center at SUNY at Buffalo*
Health Sciences Center at SUNY at Stony Brook*

Colleges of Technology and Colleges of Agriculture and Technology

State University of New York College of Technology at Alfred
State University of New York College of Technology at Canton
State University of New York College of Agriculture and Technology at Cobleskill
State University of New York College of Technology at Delhi
State University of New York College of Technology at Farmingdale
State University of New York College of Agriculture and Technology at Morrisville

*The Health Sciences Centers at Buffalo and Stony Brook are operated under the administration of their respective university centers.

State University of New York College of Technology at Utica/Rome** (upper-division and master's programs)
Fashion Institute of Technology at New York City***

Specialized Colleges

State University of New York College of Environmental Science and Forestry at Syracuse
State University of New York Maritime College at Fort Schuyler

Statutory Colleges****

New York State College of Agriculture and Life Sciences at Cornell University
New York State College of Ceramics at Alfred University
New York State College of Human Ecology at Cornell University
New York State School of Industrial and Labor Relations at Cornell University
New York State 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

**This is an upper-division institution authorized to offer baccalaureate and master's degree programs.

***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 campus of independent universities.

Board of Trustees

Frederic V. Salerno, B.S., M.B.A.
Chairperson
Rye

Arnold B. Gardner, A.B., LL.B.
Vice Chairperson
Buffalo

Richard A. Berman, B.B.A., M.B.A., M.H.A.
New York City

Roderick G.W. Chu, B.S., M.B.A.
New York City

Judith Lasher Duken, B.S., M.S., C.A.S.
Plattsburgh

Hazel N. Dukes, B.A.
Roslyn Heights

John L.S. Holloman, Jr., B.S., M.D.
East Elmhurst

Alan V. Iselin, B.A.
Albany

Miles L. Lasser, A.B., LL.B., C.P.A.
Jamestown

Thomas Dixon Lovely, B.A., M.A.
Garden City

Nancy H. Nielsen, A.B., M.S., Ph.D., M.D.
Orchard Park

Rosemary C. Salomone, B.A., M.A., Ed.M., Ph.D., J.D., LL.M.
Rye

N. Theodore Sommer, B.A., J.D.
Binghamton

William F. Weitz, B.A.
Albany

Officers of Administration

Thomas A. Bartlett, Ph.D.
Chancellor

Joseph C. Burke, Ph.D.
Provost

William H. Anslow, B.A.
Senior Vice Chancellor for Finance and Management

Irving Freedman, Ph.D.
Vice Chancellor for Capital Facilities

James W. Hall, Ph.D.
Vice Chancellor for Educational Technology

Sanford Levine, J.D.
University Counsel and Vice Chancellor for Legal Affairs

Frank G. Pogue, Jr., Ph.D.
Vice Chancellor for Student Affairs and Special Programs

Cornelius Foley, Ph.D.
Secretary of the University

STATE UNIVERSITY OF NEW YORK AT STONY BROOK

Members of the Council

Subject to the powers of State University trustees defined by law, the operations and affairs of the 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 March 1, 1995.

Aaron B. Donner
Chairperson
Bay Shore
James L. Larocca
Huntington
Harry A. Marmion
Southampton
Richard Don Monti
Lloyd Harbor
Greta M. Rainsford
Hempstead
Jeffrey A. Sachs
Manhattan
Claudia Solin
Setauket
Ena D. Townsend
Central Islip
Eliana Villar
Westbury
Roger W.Walker
Wainscott

Officers of Administration

All positions are correct as of March 1, 1995.

Shirley Strum Kenny, Ph.D.
President

Bryce Hool, Ph.D.
Provost and Executive Vice President for Academic Affairs

Naji Abumrad, M.D.
Acting Dean, School of Medicine

Stan Altman, Ph.D.
Advisor to the President on Health Finance

Peter Baigent, B.Ed.
Associate Vice President for Student Affairs

Frances Larry Brisbane, Ph.D.
Dean, School of Social Welfare

Paul W. Chase, Ph.D.
Dean of Students

Ceil Cleveland, M.A.
Vice President for University Affairs

J. Kirk Cochran, Ph.D.
Acting Dean and Director, Marine Sciences Research Center

Ronald G. Douglas, Ph.D.
Vice Provost for Undergraduate Studies

Paul J. Edelson, Ph.D.
Dean, School of Professional Development and Continuing Studies

Karol K. Gray, B.A.
Controller

Gail Habicht, Ph.D.
Associate Provost

Carl E. Hanes, Jr., B.S.C.
Deputy to the President for Special Projects

Alan L. Ingle, Ed.D.
Assistant Vice President for Facilities Operations

Edward S. Katkin, Ph.D.
Acting Dean, Social and Behavioral Sciences

Eugene Katz, Ph.D.
Dean, Biological Sciences

Irwin Kra, Ph.D.
Dean, Physical Sciences and Mathematics

Richard Kramer, Ph.D.
Dean Pro Tem, Humanities and Fine Arts

Theresa LaRocca-Meyer, M.S., P.D.
Dean, Enrollment Planning and Management

Richard Laskowsi, Ph.D.
Dean, Division of Physical Education and Athletics

Manuel London, Ph.D.
Deputy to the President

Mark Maciulaitis, M.S.
Budget Director

Michael Maffetone, Ph.D.
CEO and Director, University Hospital, and Chief Administrative Officer, University Medical Center

Craig Malbon, Ph.D.
Vice President for Research

George Marshall, M.S.
Assistant Vice President for Institutional Services

Lawrence Martin, Ph.D.
Vice Provost for Graduate Studies

Gary Matthews, M.S.W.
Special Assistant to the President for Affirmative Action and Employment Opportunity and Interim Director of University Human Resources

Judy F. Matuk, M.S.
University Coordinator for Research Compliance

Lorna S. McBarnette, Ph.D.
Dean, School of Health Technology and Management

Lenora McClean, Ed.D.
Dean, School of Nursing

Robert McGrath, Ph.D.
Associate Provost

James McKenna, Ph.D.
Dean, International Programs

Ernest McNealey, Ph.D.
Associate Vice Provost for Special Programs

Daniel Melucci, M.S., C.P.A.
Associate Vice President for Finance and Management

George Meyer, M.A.
Assistant Vice President for Presidential Initiatives

Lynn King Morris, Ph.D.
Director, Foreign Student Affairs

D. Terence Netter, M.A., L.S.T., M.F.A.
Director, Staller Center for the Arts

J. Howard Oaks, D.M.D.
Vice President for Health Sciences

Burton Pollack, D.D.S., J.D.
Dean, School of Dental Medicine

Frederick R. Preston, Ed.D.
Vice President for Student Affairs

Richard Reeder, B.A., B.E.
Acting Vice Provost for Computing and Communications

Sheila Reilly, M.A.
Assistant Vice President for Health Sciences

Yacov Shamash, Ph.D.
Dean, College of Engineering and Applied Sciences

John Brewster Smith, Ph.D.
Dean, Library Services and Director of Libraries

Harry P. Snoreck, M.S.
Vice President for Campus Services

Matthew Sobel, Ph.D.
Dean, W. Averell Harriman School for Management and Policy

Emily Thomas, M.S.
University Planning Coordinator

Glenn H. Watts, M.A.
Vice President for Finance and Management

Office of Undergraduate Studies

Ronald G. Douglas, Ph.D.
Vice Provost for Undergraduate Studies

Ernest C. McNealey, Ph.D.
Associate Vice Provost for Undergraduate Studies

Sandra A. Burner, M.A.
Assistant Vice Provost and Director, Center for Academic Advising

R. David Bynum
Assistant Vice Provost and Director of Graduate Health Professions

Donna Di Donato, M.A.
Director, Honors College

Alfreda James, M.Ed.
Assistant Vice Provost for Undergraduate Studies

Elaine Kaplan, M.P.A.
Assistant Vice Provost and Director, Transfer Student Program

Patricia Long, M.A.
Assistant Vice Provost and Director, Undergraduate Evening Studies

Howard Miller, Ph.D.
Assistant Vice Provost for Special Programs and Director, EOP

Johanna O'Brien, M.A.L.S.
Assistant Vice Provost and Director, Transfer Office

Warren Randall, M.A.
Assistant Vice Provost and Director for Educational Resources and Services

Lucia Rusty
Assistant Vice Provost for Special Programs

Rhoda Selvin, M.A.
Assistant Vice Provost and Director, Undergraduate Academic Publications and Administrative Services

William Wiesner, Ph.D.
Assistant Vice Provost for Undergraduate Studies

Directors of Student Services

Darylynn Bachman, M.B.A.
Director of Residential Administrative Services

Rachel Bergeson, M.D.
Director, Student Health Service

Anne Byrnes, Ph.D.
Director of University Counseling Center

James Keene, M.S.
Director, Department of Career and Developmental Services

Gigi Lamens, M.S.
Director of Admissions

Gary G.S. Mis
Associate Dean of Students and University Hearing Officer

Lynn King Morris, Ph.D.
Director, Foreign Student Services

Norma E. Murphy
Director of Student Accounts

Catherine Rehman, B.A.
Bursar

Monica Roth, M.S.W.
Director, Disabled Student Services

Richard Solo, Ph.D.
Director, New Student Programs

Jerrold L. Stein, M.A., M.B.A.
Director of Residential Programs

William Strockbine, M.A./L.S.
University Registrar

Fred Tokash, M.B.A.
Director of Residential Operations

Ana Maria Torres, M.A.
Director, Health Sciences Center Student Services and Director, Financial Aid and Student Employment

Carmen Vazquez, M.S.W.
Director, Stony Brook Union and Activities

Emeriti Faculty

Emeriti faculty are retired members of the University faculty.

Alfred Adler
Professor
Mathematics

Asano Albertson
Associate Librarian
Library

Per Alin
Professor
History

Edward Ames
Professor
Economics

Edgar Anderson, Jr.
Associate Professor
Allied Health Professions

Leonard Andors
Clinical Associate Professor
Dental Medicine

Werner Angress
Professor
History

William Ash
Professor
Biochemistry and Cell Biology

Harold Atkins
Professor
Radiology

Leonard Auerbach
Associate Professor
Theatre Arts

Edward Baylor
Professor
Marine Sciences

Abraham Berlad
Professor
Mechanical Engineering

Konrad Bieber
Professor
French and Italian

Jacob Bigeleisen
Distinguished Professor
Chemistry

Beverly Birns
Professor
Social Sciences Interdisciplinary

Francis Bonner
Professor
Chemistry

Peter Bretsky
Professor
Earth and Space Sciences

William Bruehl
Professor
Theatre Arts

Linette Brugmans
Professor
French and Italian

Martin Canin
Lecturer
Music

Herbert Carleton
Professor
Materials Science

Pedro Carrasco
Professor
Anthropology

Harry Hart Carter
Professor
Marine Sciences

Aaron Carton
Professor
Linguistics

Leopoldo Castedo
Professor
Art

Sheldon Chang
Professor
Electrical Engineering

Ernesto Chinchilla-Aguilar
Professor
History

Vincent Cirillo
Professor
Biochemistry and Cell Biology

Catherine Clark
Librarian
Library

Lewis Coser
Distinguished Professor
Sociology

Rose Coser
Professer
Sociology

Ernest Courant
Professor
Institute for Theoretical Physics

Edward Czerwinski
Professor
Germanic and Slavic Languages and Literatures

Antonio de Nicolas
Professor
Philosophy

Daniel Dicker
Professor
Applied Mathematics and Statistics

Max Dresden
Professor
Physics/Institute for Theoretical Physics

Leonard Eisenbud
Professor
Physics

David Erdman
Professor
English

Frank Erk
Professor
Biochemistry

Louis Faron
Professor
Anthropology

Arnold Feingold
Professor
Physics

Edward Fiess
Associate Professor
English

Edward Fischel
Professor
Medicine

Thomas Flanagan
Distinguished Professor
English

James Fowler
Assistant Professor
Ecology and Evolution

David Fox
Professor
Physics

Harold Friedman
Professor
Chemistry

Harry Fritts
Professor and Chairperson
Medicine

Kenneth Furst
Associate Librarian
Library

Leonard Gardner
Lecturer
English

Sidney Gelber
Distinguished Service Professor
Philosophy

Irving Gerst
Professor
Applied Mathematics and Statistics

Arthur Gilmore
Lecturer
Technology and Society

Bentley Glass
Distinguished Professor
Biochemistry and Cell Biology

David Glass
Professor
Psychology

David Glazer
Lecturer
Music

Paula Brown-Glick
Professor
Anthropology

Homer Goldberg
Distinguished Teaching Professor
English

Myron Good
Professor
Physics

Gerald Green
Associate Professor
Family Medicine

Bernard Greenhouse
Professor
Music

Harvey Gross
Professor
Comparative Studies

Oscar Haac
Professor
French and Italian

Howard Harvey
Associate Professor
English

Patrick Heelan
Professor
Philosophy

Jack Heller
Professor
Computer Science

Charles Hoffmann
Professor
Economics

Thomas Irvine
Professor
Mechanical Engineering

Estelle James
Professor
Economics

Harry Kalish
Professor
Psychology

Herbert Kaye
Associate Professor
Psychology

James Kleege
Associate Professor
Art

George Koras
Professor
Art

Jan Kott
Professor
Comparative Studies

Leonard Krasner
Professor
Psychology

Jack Kreiselman
Lecturer
Music

Marvin Kristein
Associate Professor
Economics

Marvin Kuschner
Distinguished Service Professor
Pathology

Norman Laidlaw
Professor
French and Italian

Eric Lampard
Professor
History

Pedro Lastra
Professor
Hispanic Languages and Literature

Billy Jim Layton
Professor
Music

Robert Lee
Associate Professor
History

John Lessard
Professor
Music

Richard Levin
Professor
English

Marvin Levine
Professor
Psychology

Sumner Levine
Professor
Materials Science and Engineering

William Lister
Professor
Mathematics

Jack Ludwig
Professor
English

Jackson Main
Professor
Psychology

Elizabeth Mallon
Assistant Professor
Science, Mathematics and Technology
Education

John McHugh
Professor
Marine Sciences

Leonard Meiselas
Professor
Medicine

Emil Menzel
Professor
Psychology

Robert Merriam
Associate Professor
Neurobiology and Behavior

Ruth Miller
Professor
English

Carl Moos
Associate Professor
Biochemistry and Cell Biology

H. William Morrison
Associate Professor
Psychology

Herbert Muether
Professor
Physics

Paul Newlin
Associate Professor
English

Yoshiharu Okaya
Professor
Chemistry

Robert Olson
Professor
Medicine

Daniel O'Neil
Assistant Professor
Germanic and Slavic

Joseph Pequigney
Professor
English

Louis Peterson
Associate Professor
Technology and Society

Emil Piel
Professor
Technology and Society

T. Alexander Pond
Professor
Physics

John Pratt
Associate Professor
History

Donald Pritchard
Professor
Marine Sciences

John Ramsey
Associate Professor
Physical Education

Monica Riley
Professor
Biochemistry

Elias Rivers
Distinguished Professor
Hispanic Languages and Literature

Hannah Robinson
Senior Assistant Librarian
Library

Thomas Rogers
Associate Professor
English

Vera Rony
Lecturer
Labor Management Studies

Charles Rosen
Distinguished Professor
Music

Melville Rosen
Professor
Family Medicine

Martin Rosenfeld
Professor
Allied Health Professions

Ferdinand Ruplin
Associate Professor
Germanic and Slavic Languages and Literatures

John Russell
Associate Professor
Germanic and Slavic Languages and Literatures

Georgina Sabat-Rivers
Professor
Hispanic Languages and Literature

Howard Sachs
Assistant Professor
Medicine

Jacob Schleikorn
Associate Professor
Allied Health Professions

Jerry R. Schubel
Distinguished Service Professor
Marine Sciences

Leslie Seigle
Professor
Materials Science and Engineering

Bernard Semmel
Professor
History

Henry Silsbee
Professor
Physics

Louis Simpson
Distinguished Professor
English

Melvin Simpson
Professor
Biochemistry and Cell Biology

Leif Sjoberg
Professor
Germanic and Slavic

Robert Sokal
Distinguished Professor
Ecology and Evolution

Leon Sokoloff
Professor
Pathology

Charles Staley
Associate Professor
Economics

John Stamm
Professor
Psychology

Judah Stampfer
Professor
English

Martin Stern
Professor and Chairperson
Dental Medicine

Robert Sternfeld
Professor
Philosophy

Martin Stone
Professor
Obstetrics/Gynecology

Elvira Strasser
Professor
Mathematics

Peter Szusz
Professor
Mathematics

William Taylor
Professor
History

Victorino Tejera
Professor
Philosophy

John Thompson
Professor
English

Leslie Thompson
Associate Professor
Physical Education

John Toll
Professor
Physics

Martin Travis
Professor
Political Science

William Treanor
Associate Professor
Allied Health Professions

John Truxal
Distinguished Teaching Professor
Technology and Society

Bernard Tunik
Associate Professor
Neurobiology and Behavior

W. Burghardt Turner
Assistant Professor
History

William J. Turner
Professor
Psychiatry and Behavioral Science

Joseph Tursi
Professor
French and Italian

Bernard Tursky
Professor
Political Science

Doris Tweedy
Senior Assistant Librarian
Library

Eugene Vinegrad
Lecturer
Mathematics

Marian Visich
Professor
Technology and Society

Lucy Vogel
Associate Professor
Germanic and Slavic Languages and Literatures

Henry von Mechow
Professor
Physical Education

Catherine von Schon
Associate Librarian
Library

Walter Watson
Professor
Philosophy

Arthur Weisberg
Professor
Music

Herbert Weisinger
Professor
English

Ruben Weltsch
Senior Assistant Librarian
Library

Peter Weyl
Professor
Marine Sciences

Robert White
Associate Professor
Art

Mark Whitney
Professor
French and Italian

Lee Wilcox
Professor
Physics

Doris Williams
Associate Librarian
Library

George Williams
Professor
Ecology and Evolution

Jay Williams
Professor
Political Science

Alice Wilson
Associate Professor
English

Charles Wurster
Associate Professor
Marine Sciences

Everett Wyers
Professor
Psychology

C. H. Yang
Professor
Mechanical Engineering

Index

A

Academic Advising 30,48,52
Center for 16,48
Engineering and Applied Sciences Undergraduate Student Office.....16
Health Professions 49
Academic Calendars.....262, 286
Academic Dishonesty 55
Academic Grievances.....56
Academic Honors.....56
Academic Information, General 46
Academic Minor 53
College of Arts and Sciences.....76
Academic Programs.....8
Academic Publications.....9
Academic Standing.....55
Academic Standing and Appeals, Committees on 48
Acceptance to College of Engineering and Applied Sciences Programs.....28,223
Accreditation 9,223
Activities, Campus.....12
Activities, Student Participation in University-Sponsored.....56
Activity-Related Courses, Limits on.....77
Actuarial Science 228
ADA (Americans with Disabilities Act) 2,14,22
Address, Change of 59
Administration, Officers of (SUNY).....275
Stony Brook 276
Admission.....24
Acceptance to College of Engineering and Applied Sciences Programs.....28,223
Advanced Placement Credit 29
Advanced Standing by Examination.....29
Bachelor's Degree Program, Second.....26,29
Challenge Program for Advanced Credit 29,54
College-Level Examination Programs.....29
Disabled Students.....28
Dual Degree/Joint Admissions.....26
Early Admission from High School.....26
Foreign Students 28
Freshman 25
Graduate Programs.....9
Harriman School for Management and Policy, W. Averell 25
Health Sciences Center 262,264,267
Marine Sciences Research Center 25
Medicine, Scholars for 265
Non-Degree Study 29
High School Students: Young Scholars Program 30
Visiting Students 29
Notification of Freshman 26
Nursing, School of.....267
Part-Time Matriculation 28
Undergraduate Evening Study 28
Special Programs.....25,27
AIM.....27
Returning Students 28
Summer Session 29
Transfer 26
Two-Year College Graduates.....26
Advanced Credit, Challenge Program for 29,54
Advanced Placement Credit 29
Advanced Standing by Examination 29
Advanced Writing Courses, see Writing Basic Competence Requirement
Advancement on Individual Merit (AIM) Program.....22,27,38
Advising, Academic 48
Affirmative Action 2,14
AFH Courses 79
Africana Studies 79
AFS Courses.....79
AIM, see Advancement on Individual Merit
AIM Courses.....74
American Sign Language.....160
AMS Courses.....229
Anatomical Sciences.....265
Ancient Greek.....108
ANP Courses 86
ANT Courses 83
Anthropology, Department of 81
Application Procedures
For New Freshmen 26
For Transfer Students.....26
Applied Mathematics and Statistics, Department of 227
Applied Sciences, College of Engineering and, see Engineering and Applied Sciences, College of
Applied Sciences, Programs in Engineering and 223
Arabic 169
ARB Courses 169
Archaeology 103
Areas of Interest 51
Declaration of 51
Selection of.....51
ARH Courses.....88
ARS Courses 91
Art, Department of 87
Art History and Criticism 87
Studio Art.....88
Arts and Sciences, College of.....8,75
Degree Programs.....76
Degree Requirements 76
Independent Study.....76
Majors, Departmental.....76
Majors, Interdisciplinary or Interdepartmental.....76
Special Programs.....76
Assistantships, Undergraduate Teaching 76
AST Courses.....116
Astronomy/Planetary Sciences.....113,116
Astrophysics 187
Athletic Fee.....32
Athletics 12,17,181
ATM Courses.....272
Atmospheric Sciences/Meteorology 270
Attendance, First Week 47
Auditing 48
Awards 38,42
Awards, Departmental.....45

B

Baccalaureate, Candidates for Second.....26,29,53
Bachelor's Degree Credit Options 54
Bachelor's Degrees, Sequential.....53
Bachelor's Degrees, Two Simultaneous.....53,224
Bachelor's/Master's Degree Programs, see Political Science Department, Harriman School, individual listings in the College of Engineering and Applied Sciences, and Undergraduate Courses of Study
Background.....6
Baruch Science and Engineering Living/Learning Center.....20,70
BCH, see Biochemistry Major
BCP Courses 176
Behavioral Neuroscience
Center for 93
Curriculum.....93
BIO Courses 97
Biochemistry and Cell Biology, Department of 93
Biochemistry Major.....95
Biological Sciences, Division of 93
Biology Major.....96
Biology Minor.....97
Biology Teacher Preparation Program.....97
Biomedical Engineering 245
Biophysics 266
Board of Trustees (SUNY) 275
Books and Supplies 34
Bookstores.....19
BSE Courses 71
BUS Courses 259
Business Management Major.....257
Business Management Minor.....259
Bus Pass Fee.....32

C

Calculus Resource Room.....19
Calendars, Academic.....262,275
Campus Activities.....12
Campus and Community Ties 10
Campus Community Advocate (Ombuds Office) 16
Campus Description.....6
Campuses (SUNY) 274
Campus Life Time 12
Campus Map.....287
Campus Residences 20
Campus Telephone Directory 59
Career Development Office.....16
Caribbean Studies, Latin American and 156
CASHE Program.....39
CBN Courses.....93
Cell Biology, Department of Biochemistry and 93
Center for Academic Advising 16
Centers and Institutes, Special 10
Challenge Program for Advanced Credit.....29,54
Challenge Program for Credit by Examination.....29,54
Change of Address 59
Changes in Regulations and Course Offerings.....59
CHE Courses.....103
Chemistry, Department of 101
Chemistry Teacher Preparation Program.....103
CHI Courses 107
Child and Family Studies.....106
Child Care Services.....23
Chinese Studies 106
Classical Civilization Minor.....107
Classics and Classical Languages 107
Class Status.....49
CLS Courses 108
Clubs and Organizations.....12
CNH Courses 107
CNS Courses.....107
College Fee 32
College-Level Examination Programs 29
College of Arts and Sciences, see Arts and Sciences, College of

College of Engineering and Applied Sciences, see Engineering and Applied Sciences, College of
Committees on Academic Standing and Appeals 48
Community Ties 10
Commuter Student Association 21
Comparative Studies, Department of 108
Comparative Studies in Literature 109
Composition, see Writing Basic Competence Requirement
Computer Engineering 237
Computer Science, Department of 230
Computing Facilities 231
Computing Services 17
Conduct Code, Student 14
Contents 3
Continuing Studies, School of Professional Development and, see Professional Development and Continuing Studies, School of
Cooking Fee, Refund of 34
Counseling Center 21
Course Credit and Prerequisites 77
Course Load
College of Arts and Sciences 47
College of Engineering and Applied Sciences 226
Course Numbers
College of Arts and Sciences 78
College of Engineering and Applied Sciences 225
Course Offerings, Changes in 59
Course Registration 47
Change in 47
Courses, Permission to Take, see Graduate Courses, Permission to Take
Courses, Renumbered 78
Courses, Repeatable 77
Courses, Repeating 47
Courses of Study, Undergraduate, see inside front and back covers
Creative Writing Courses, see EGL Courses
Credit Hour Requirement 61
for the B.E. Degree 225
Credit Options, Bachelor's Degree 54
Credit Requirement, Upper-Division 62
Credits, Restrictions on 225
Restrictions on Transfer 225
Cross Registration 54
CSE Courses 233
CSL Courses 110
Cultural History 83

D

Dance Minor 111
DARTS, see Degree Audit Report and Tracking System
Day Care, see Child Care Services
Dean's List 56
Deferment of Payment 33
Deferred Enrollment 26
Degree Audit Report and Tracking System 49
Degree Programs
College of Arts and Sciences 76
College of Engineering and Applied Sciences 223
Degree Requirements
College of Arts and Sciences 76
College of Engineering and Applied Sciences 224
Marine Sciences Research Center 270
University 61
W. Averell Harriman School for Management and Policy 257
Degrees with Distinction 56
Dental Health 264
Dental Medicine, School of 264
Departmental Awards 45
Departmental Honors Programs 56
Departmental Major 76
Deposit, Housing 32
Refund of 33
Deposit, Tuition 32
Refund of 33
Deposit Policy, Pre-Enrollment 28
Refund of 33
Design Minor 88
Developmental Courses 78
Directories 273
Disabled Student Services 22
Disabled Students 28
Admission 28
Vocational Rehabilitation for 39
Disciplinary Diversity Requirements 62
Diversified Education Curriculum 61,62
Details of Categories 65
Disciplinary Diversity Requirements 62
Entry Skills Requirements 62,63
Expanding Perspectives and Cultural Awareness Requirements 63
University Skills Requirements 62
Dormitories, see Campus Residences
Double Degrees (two bachelor's degrees) 53,224
Double Majors 53,224

E

Earth and Space Sciences
Department of 111
Major in 113
Earth Science Teacher Preparation Program 114
East European Languages 139
ECO Courses 118
Ecology and Evolution, Department of 94
Economics, Department of 117
Educational Opportunity Program (EOP) 22,27,38
EEL Courses 139
EGC Courses 124
EGL Courses 124
Elective Courses
Open Electives 225
Technical Electives 225
Electrical Engineering, Department of 236
"Emancipated" or "Independent" Student Status 35
Emeriti Faculty 278
Employment Opportunities, Student 39
Engineering, Interdisciplinary Program in Science and 70
Engineering, Materials Science and, Department of 243
Engineering, Women in Science and (Project WISE) 74
Engineering and Applied Sciences, College of 8,222
Acceptance to 28,223
Accreditation 223
Course Prerequisites 225
Degree Requirements 224
Diversified Education Curriculum Requirements 224
Double Majors 224
Grading 225
Internships Program 223
Programs in 223
Restrictions on Credits 225
Restrictions on Transfer Credits 225
Simultaneous Bachelor's Degrees 224
Time Limits 226
Undergraduate Student Office ... 16,48,223
Engineering and Applied Sciences Undergraduate Student Office ... 16,48,223
Engineering Chemistry 121
Engineering Geology 112
Engineering Science 244
English, Department of 121
English as a Second Language 23,127
English Center, Intensive 23
English Teacher Preparation Program 123
Enrichment Courses 74
ENS Courses 128
Entry Skills Requirements 25,62,63
Environmental Geoscience 112
Environmental Science Minor 128
Environmental Studies Living/Learning Center 128
EOP, see Educational Opportunity Program
Equal Opportunity and Affirmative Action 2,14
Equivalent Opportunity/Religious Absences 57
ESC Courses 250
ESE Courses 238
ESG Courses 246
ESL Courses 127
ESM Courses 247
ESS, see Earth and Space Sciences Major
EST Courses 253
Evening Studies Office, Undergraduate Transfer and 16,48
Evening Study, Undergraduate 28
Evolution, Department of Ecology and 94
Examinations 48
Expanding Perspectives and Cultural Awareness Requirements 63
Expenses, Other 34
EXT Courses 73

F

Faculty, Emeriti 278
Faculty and Research 7
Faculty-Student Association 39
Family Studies, Child and 106
Federal Programs for Financial Aid, see Financial Aid
Federated Learning Communities (FLC) 70
Fees (see also Tuition) 32
Athletic 32
Deferment of 33
Housing 33
Laboratory 226
Payment of 32
Final Examinations 48
Financial Aid (see also Scholarships and Awards) 35
Federal Programs
Federal Parent Loans for Undergraduate Students (FPLUS) 37
Federal Pell Grant 35
Federal Perkins Loan 36
Federal Stafford Loans 36
Federal Supplemental Educational Opportunity Grant (FSEOG) 35
Federal Work-Study Program 36

Graduate Study 9
State Programs
Educational Opportunity Program (EOP) 38
Regents Awards for Children of Deceased or Disabled Veterans 38
Tuition Assistance Program (TAP) 37
Veterans Administration Educational Benefits
Montgomery G.I. Bill 39
Post-Vietnam-Era Veterans Educational Assistance Program (VEAP) 39
Selected Reserve Educational Assistance Program 39
Survivors' and Dependents' Educational Assistance 39
Vocational Rehabilitation for Disabled Veterans 39
Financial Assistance, Other 39
Financial Information 31
FLA Courses 129
FLC Courses 70
Food Expenses 34
Foreign Language, Entry Skill in 25,62,64
Foreign Languages Secondary Teacher Preparation Program 128
Foreign Literature and Culture Courses Offered in English 129
Foreign Students
Admission 28
Regulations 23,47,57,59
Foreign Student Services 23
Regulations 23,47,57,59
Foreign Study, see Study Abroad
French and Italian, Department of 130
French Language and Literature Major 131
French Minor 132
French Teacher Preparation Program 132
Freshman Admission 25
Freshman Seminars and Honors Courses 69,76
FRN Courses 133
Full-Time/Non-Matriculated Status, see Visiting Students
Full-Time/Part-Time Status 48

G

General Academic Information 46
General Education 61
General Statement (SUNY) 274
GEO Courses 114
Geological Oceanography Concentration 113
Geology, Engineering 112
Geology Major 112
Geology Minor 114
GER Courses 137
German 136
Teacher Preparation Program 137
Germanic and Slavic Languages and Literatures, Department of 135
Germanic Languages, Selected 132
Germanic Languages and Literature Major 135
G.I. Bill, see Montgomery G.I. Bill
Golden Key Honor Society 56
Government, Student 12
Grade Point Average 51
Requirement 61
Grade Reports 51
Grading System 49
Graduate Courses, Permission to Take
College of Arts and Sciences 77
College of Engineering and Applied Sciences 225
Graduate Programs, Admission to 9
Graduate School 9
Admission 9
Graduate Study 9
Financial Assistance 9
Graduation, Application for 57
Graduation Requirements, University 49
Grants from Private Sources 40
Grievances, Academic 56
GRK (Ancient Greek) Courses 108
Gymnasium 17

H

HAD Courses 265
Harriman, W. Averell School for Management and Policy 8,256
HAT Courses 265
HBA Courses 265
HBH Courses 266
HBM Courses 266
HBP Courses 266
HBW Courses 154
HBY Courses 266
HDH Courses 264
HDO Courses 264
HDP Courses 264
Health and Society Minor 265
Health Insurance 21,32
Health Professions Advising, see Academic Advising
Health Sciences Center 8,261
Admission to 262
Overview 262
Program Offerings 262
Undergraduate Eligibility 262
Health Service, Student 21
Health Technology and Management, School of 264
Hebrew 154
High School Students: Young Scholars Program 30
HIS Courses 144
Hispanic Languages and Literature, Department of 139
History, Cultural 183
History, Department of 142
HMC Courses 266
HNI Courses 267
HON Courses 69
Honors, Freshman Courses 69,76
Honors College 68
Scholarships 42
Honor Societies 56
Honors Programs, Departmental 56
Housing
Advance Deposit 32
Refund of 32
Fees 32
Housing, see Campus Residences
Housing Service, Off-Campus 21,34
HUE Course 130
HUF Courses 129,130
HUG Courses 129
HUI Courses 129,130
HUL Course 130
Human Sexual and Gender Development 148
Humanities, Interdisciplinary Program in 149
HUM Courses 151
HWC Courses 267

I

Identification Cards 32
Incoming Student Seminars, see also Freshman Seminars and Honors Courses 69,76
"Independent" or "Emancipated" Student Status 35
Independent Study, College of Arts and Sciences 76
Limits on 77
Indoor Sports Complex 17
Infirmary, see Student Health Service
Information Systems 241
Institutes and Centers, Special 10
Instruction or Research, Use of Laboratory Animals in 58
Intensive English Center 23
Interdisciplinary or Interdepartmental Major 76
Interdisciplinary Program in Science and Engineering 70
Interdisciplinary Program in Social Sciences 205
Interdisciplinary Program in the Humanities 149
International Programs 23
International Relations 191
International Studies 151
Internship Programs 73,223
Introduction to Stony Brook 5
ISE Courses 242
Italian Language and Literature Major 132
Italian Minor 133
Italian Teacher Preparation Program 132
ITL Courses 134

J

Japanese Studies 152
JDH Courses 155
JDS Courses 155
JNH Courses 153
JNS Courses 153
Job Locater Service 40
Journalism 153
JPN Courses 152
JRN Courses 153
Judaic Studies 154
Judiciary, Office of the Student 23

K

KIS Courses 152
KOR Courses 156
Korean Studies 155
KRH Courses 156
KRS Courses 156

L

Laboratory Animals, Use of in Research or Instruction 58
Laboratory Fees 226
LAC Courses 157
LAN Courses 160
Latin American and Caribbean Studies Minor 156
LAT (Latin) Courses 108
LBR Course 74
Leave of Absence 57
LHD Courses 149
Libraries 18
LIN Courses 159

Linguistics
Department of 157
Hispanic 141
Romance 130
LIRACHE, see Cross Registration
Living/Learning
Centers....20,70,128,148,151
Loans, See Financial Aid
Loans to Parents....37
Location....6

M

MAE Courses....167
Major, Academic
Addition of a Second....51
Departmental....76
Double Majors....53,224
Interdisciplinary or
Interdepartmental....76
Limitation of Acceptance into....51
Requirement....61
Selection and Change of....51
Major Requirements, Fulfillment of....61,78
Management and Policy, W. Averell
Harriman School for, see Harriman,
W. Averell School for Management
and Policy
Manufacturing Engineering....245
Map, Campus....287
MAP Courses....164
MAR Courses....270
Marine Sciences Minor....270
Marine Sciences Research Center....8,268
MAT Courses....164
Materials Science and Engineering,
Department of....243
Mathematics, Department of....160
Secondary Teacher Preparation
Program....166
Mathematics, Entry Skill in....25
Mathematics Basic Competence
Requirement....62,63
Mathematics Learning Center....19
Meal Plans....34
Refund of Fee....34
Mechanical Engineering,
Department of....248
Media Arts Minor....167
Medical Clearance for Participants
in Physical Education....182
Medical Technology....264
Medicine, School of....265
Medieval Studies (MES) Minor....168
Meteorology....270
Microbiology....266
Middle Eastern Studies Minor....168
Mid-Semester Advisory Grades....50
Minor, Academic....53,76
Declaration of....53
Montgomery G.I. Bill....38
MTD, Multidisciplinary Studies Major....169
MUS Courses....171
Music, Department of....169
MVL Course....168

N

National Student Exchange....54
Neurobiology and Behavior,
Department of....94
Non-Degree Study....29
High School Students: Young
Scholars Program....30
Non-Matriculated Status....29
Full-Time....29
Part-Time....29
Visiting Students....29
Numbering System, Undergraduate
Course
College of Arts and Sciences....78
College of Engineering and Applied
Sciences....225
Nursing, School of....262,267
Admission to....267

O

Oceanography, Geological....113
Off-Campus Housing Service....21, 34
Officers of Administration (SUNY)....275
(Stony Brook)....276
Ombuds Office, see Campus Community
Advocate
Open Electives....225
Optics (OPT) Minor....175
Oral Biology and Pathology....264
Orientation/Academic Advising
Program....30,32

P

Parent Loan for Undergraduate
Students (FPLUS), Federal....37
Parking and Traffic....7,14
Part-Time/Full-Time Status....48
Part-Time Matriculation....28
Part-Time Non-Matriculated Students....29
Part-Time Non-Matriculated Study for
High School Students....30
Pass/No Credit Academic Record
Option....50
Pathology....264
Payment of Fees and Charges....32
Deferment of....33
PEC Courses....182
Pell Grant, Federal....35
Performance Courses, Limits on....78
Periodontics....264
Perkins Loan, Federal....36
Pharmacological Sciences,
Department of....175
Pharmacology Major....175
Phi Beta Kappa....56
PHI Courses....178
Philosophy, Department of....177
PHY Courses....187
Physical Anthropology....82
Physical Education....181
Medical Clearance for Participants....182
Physical Education Courses,
Limits on....78
Physical Therapy....262
Physician Assistant....262
Physics, Department of....185
Teacher Preparation Program....187
Physics of Materials....187,246
Physiology and Biophysics....266
Planetary Sciences....113
POL Courses....191
Policy, W. Averell Harriman School for
Management and, see Harriman, W.
Averell School for Management
and Policy
Polish....139
Political Science, Department of....190
Polity (Student Government)....12
POR Courses....140
Portuguese....140
Post-Vietnam-Era Veterans
Educational Assistance Program
(VEAP)....39
Pre-Health Professions, Pre-Law,
see Academic Advising
Prerequisites
College of Arts and Sciences....77
College of Engineering and Applied
Sciences....225
Instructor's Prerogatives....77
Prime Time for Students....49
Professional Development
and Continuing Studies, School of....8
Project WISE (Women and Science
in Engineering)....42, 74
PSH Courses....139
PSY Courses....198
Psychology, Department of....195
Public Affairs, B.A./M.A. Program....191
Public Order, Maintenance of....14

Q

Quality Standard....55
Quantity Standard....55

R

Readmission....57
Records, Student Educational....59
Refund Policy....28,33
Regents Awards for Children of
Deceased or Disabled Veterans....38
Registration....47
Change in....47
Registrations, Multiple for the Same
Course....47,48
Regulations, Changes in....59
Religious Absences....57
Religious Studies....201
Remedial Courses....78
Renumbered Courses....78
Repeatable Courses....77
Repeating Courses....47
Research and Faculty....7
Research Involving Human Subjects....58
Research Involving Safety
Considerations....58
Research or Instruction, Use of
Laboratory Animals in....58
Residence Life, see Campus Residences
Residence Requirement....61
For the B.E .Degree....225
Respiratory Care....264
Restrictions on Credits....225
Restrictions on Transfer Credits....225
Retaking Courses....47
Returning Students....28
Returning Student Services Network....22
Returning to the University....57
RLS Courses....202
Romance Linguistics....130
RUS Courses....138
Russian....136,138
Teacher Preparation Program....137
Russian Language and Literature
Major....136

S

Sanskrit Courses....202
Satisfactory/Unsatisfactory Grading....50
Scholars for Medicine Program....265

Scholarships 39,40
Freshman 25
Honors College 25
Presidential 25
University 25
Scholarships and Grants from Private Sources 40
Scholarship Search Service 39
School of Professional Development and Continuing Studies (SPD), see Professional Development and Continuing Studies, School of
SCI Courses 204
Science and Engineering, Interdisciplinary Program in 70
Science and Engineering, Women in (Project WISE) 42,74
Science, Mathematics, and Technology Education 204
Sciences, College of Arts and, see Arts and Sciences, College of
Science Teacher Preparation Program 204
Second Baccalaureate Candidates 26,29,53
Selected East European Languages 139
Selected Reserve Educational Assistance Program 39
Selection of Major, See Major, Academic
Selection of Minor, see Minor, Academic
Semester Grade Reports 51
Semester Registration 47
Change in 47
Sigma Beta 56
Sigma Xi 56
Sign Language, see American Sign Language
SKT Courses 202
Slavic Languages and Literatures 135,138
SLN Courses 160
SLS Course 208
SOC Courses 210
Social and Cultural Anthropology 82
Social Sciences, Interdisciplinary Program in 205
Social Studies Secondary Teacher Preparation Program 207
Social Welfare, School of 252,267
Socio-Legal Studies Minor 208
Sociology, Department of 208
Spanish 139
Teacher Preparation Program 140
Spanish Language and Literature Major 139
Spanish Language, Culture, and Literature Minor 140
Special Centers and Institutes 10
Special Programs, College of Arts and Sciences 76
Special Programs, Office of 22
SPN Courses 140
Sports Complex, Indoor 17
SSI Courses 205
Stafford Loans, Federal 36
State Programs of Financial Aid, see Financial Aid
State University of New York
Board of Trustees 275
Campuses 274
General Statement 274
Officers of Administration 275
Statistics, Applied Mathematics and, Department of 227
Stony Brook Council 276
Stony Brook Union 18
Student Activity Fee 32
Refund of 34
Student Affairs Vice Presidential Executive Area 19
Student Conduct Code 14
Student Educational Records 59
Student Employment Opportunities 39
Student Government (Polity) 12
Student Health Service 21
Student Judiciary, Office of the 23
Student Participation in University-Sponsored Activities 56
Students 7
Student Services 15
Student Services, Directors of 277
Studio Art 88
Studio Courses, Limits on 78
Study Abroad 55,75,133,137,140,178
Expenses of 34
Study at Other Institutions 54
Summer Session
Admission 29
Tuition and Fees 32
Summer Study Elsewhere 54
Supplemental Educational Opportunity Grant (FSEOG), Federal 35
Survivors' and Dependents' Educational Assistance 39

T

TAP, see Tuition Assistance Program
Tau Beta Pi 56
Teacher Preparation Programs 76
Biology 97
Chemistry 103
Earth Science 114
English 123
Foreign Languages Secondary 128
French 132
German 137
Italian 132
Mathematics Secondary 166
Physics 187
Russian 137
Science 204
Social Studies Secondary 207
Spanish 140
TESOL 158
Teaching Assistantships, Undergraduate 76
Teaching Practica, Undergraduate 77
Technical Electives 225
Technology and Society, Department of 253
Telephone Directory, Campus 59
TESOL Teacher Preparation Program 150
Theatre Arts, Department of 213
THR Courses 214
Time Limits for B.E. and B.S. Degrees 226
Time Option Payment Plan 32
Tours 30
Traffic and Parking 14
Transcripts 51
Fees 32
Transfer and Evening Studies Office, Undergraduate 16,48
Transfer Credit Policies 27,63
Transfer Credits, Application of to the Diversified Education Curriculum 63
Transfer Credits, Restrictions on 225
Transfer Student Admission 26
Travel Expenses 34
Tuition (see also Fees) 32
Advance Deposit 32
Refund of 33
Deferment of 33
Payment of 32
Tuition Assistance Program (TAP) 37
Two-Year College Graduates, see Admissions

U

Uncommonly Taught Languages 160
Undergraduate Course Numbering System
College of Arts and Sciences 78
College of Engineering and Applied Sciences 225
Undergraduate Courses of Study, see inside front and back covers
Undergraduate Evening Study 28
Undergraduate Research and Creative Activities Program (URECA) 72
Undergraduate Studies, Office of 277
Undergraduate Teaching Assistantships 76
Practica 77
Undergraduate Transfer and Evening Studies Office 16,48
University Counseling Center 21
University Degree Requirements 61
University Graduation Requirements 49
University Scholarships 25
University Skills Requirements 62
University-Sponsored Activities, Student Participation in 56
University Studies 60
Upper-Division Credit Requirement 62
Upper-Division Writing Requirement 62
URECA Program 72
URE Courses 73
USB Courses 74

V

Veterans, Deceased or Disabled, Regents Award for Children of 38
Veterans Administration Educational Benefits 38
Veterans Affairs, Office of 22
Visiting Students 29
Visiting the Campus 30
Vocational Rehabilitation for Disabled Veterans 39

W

W. Averell Harriman School for Management and Policy 8,256
Withdrawal 57
WNH Courses 219
WNS Courses 219
Women in Science and Engineering (Project WISE) 42,74
Women's Studies Minor 218
Work-Study, see Financial Aid, Federal Programs
Writing Center 19
Writing Competence Requirement, Basic 62,64
Writing Requirement, Upper-Division 62

Y

Young Scholars Program 30

The Health Sciences Center academic calendar is published separately. Health Technology and Management (undergraduate) and Basic Sciences students see HSC academic calendar for modular course dates.

1995 Summer Session:

Term I: May 22 - July 7
Term II: July 10 - August 18

ACADEMIC CALENDAR

Fall Semester 1995

August 21-25, Monday-Friday: Final registration and payment (or proper deferral) of fees for students not previously registered

August 28, Monday: Classes begin; late registration begins with $30.00 late fee assessed.

August 30, Wednesday: Senior Citizen Auditor Program registration (telephone 632-7059 for information).

September 1, Friday: Last day for students to drop a course without tuition liability.

September 4, Monday: Labor Day (classes not in session).

September 11, Monday: End of late registration period. Last day for undergraduate students to add a course. Last day for students to drop a course without a W (Withdrawal) being recorded. Last day for undergraduate students to change status to or from full-time/part-time.

September 22, Friday: Last day for undergraduates to file for December graduation clearance. Undergraduate students file application at the Office of Records/ Registrar. Last day for May graduation candidates to file degree application at Office of Records and receive notification before advance registration for spring semester.

September 25-26, Monday-Tuesday: Rosh Hashanah recess.

October 4, Wednesday: Yom Kippur. Classes not in session. No classes after 4:30 p.m. Tues., October 3. Evening class makeup date December 12.

October 9, Monday: Columbus Day (classes in session).

October 16, Monday: Mid-semester advisory grades mailed to U1-U2 students in 100- and 200-level courses.

October 27, Friday: Last day for undergraduates to withdraw from a course or change courses to or from Pass/No Credit.

November 1, Wednesday: Last day for removal of Incomplete grades from spring semester and Summer Session. Last day for undergraduates to withdraw from the University and still be eligible to return next semester.

November 7, Tuesday: Election Day (classes in session).

November 8-16, Wednesday-Thursday: Prime Time for Students. (Intensive academic advising period. Formal student evaluation of instructors and courses.)

November 11, Saturday: Veterans Day (Saturday classes in session).

November 13, Monday: Advance registration for spring semester (schedules for undergraduate students announced prior to registration).

November 22, Wednesday: Thanksgiving recess begins at close of classes.

November 27, Monday: Classes resume.

December 11, Monday: Last day of daytime classes.

December 12, Tuesday: Reading day; no classes until 4:30 P.M.

December 13, Wednesday: Final examinations begin.

December 19, Tuesday: Final examinations end; fall semester ends. Last day for departments to submit Completion Statement for December master's and doctoral degree candidates.

Spring Semester 1996

January 16-19, Tuesday-Friday: Final registration and payment (or proper deferral) of fees for students not previously registered. Schedule announced prior to registration.

January 22, Monday: Classes begin; late registration begins with $30.00 late fee assessed.

January 24, Wednesday: Senior Citizen Auditor Program registration (telephone 632-7059 for information).

January 26, Friday: Last day for students to drop a course without tuition liability.

February 2, Friday: End of late registration period. Last day for undergraduate and CED/GSP students to add a course. Last day for all students to drop a course without a W (Withdrawal) grade being recorded. Last day for undergraduates to change status to or from full-time/part-time.

February 9, Friday: Last day for students to file applications for May and August graduation and be included in the May Commencement Program booklet (August applicants are invited to participate in the May ceremonies). The names of those who file later will not appear in the printed program. Undergraduates file at the Office of Records/Registrar, graduate students at the Graduate School, SPD students at the School of Professional Development and Continuing Studies, Health Sciences students at the HSC Office of Student Services.

February 16, Friday: Last day for graduate students (except CED/GSP) to add or drop a course.

February 19, Monday: Presidents' Day (classes in session).

March 13, Wednesday: Mid-semester advisory grades mailed to U1-U2 students in 100- and 200- level courses.

March 15, Friday: Last day for removal of Incomplete grades from the fall semester. Last day for undergraduates to withdraw from the University and still be eligible to return next semester.

March 22, Friday: Last day for undergraduates to withdraw from course or change courses to or from Pass/No Credit. Last day for CED/GSP stuidents to withdraw from one or all courses.

March 27-29, Wednesday-Thursday: Prime Time for Students. (Intensive academic advising period. Formal student evaluation of instructors and courses.)

April 1-5, Monday-Friday: Spring recess.

April 8, Monday: Classes resume.

April 8, Monday: Advance registration for fall semester (schedules for undergraduate and graduate students announced prior to registration).

April 22, Monday: Registration begins for Summer Session with fees payable at time of registration.

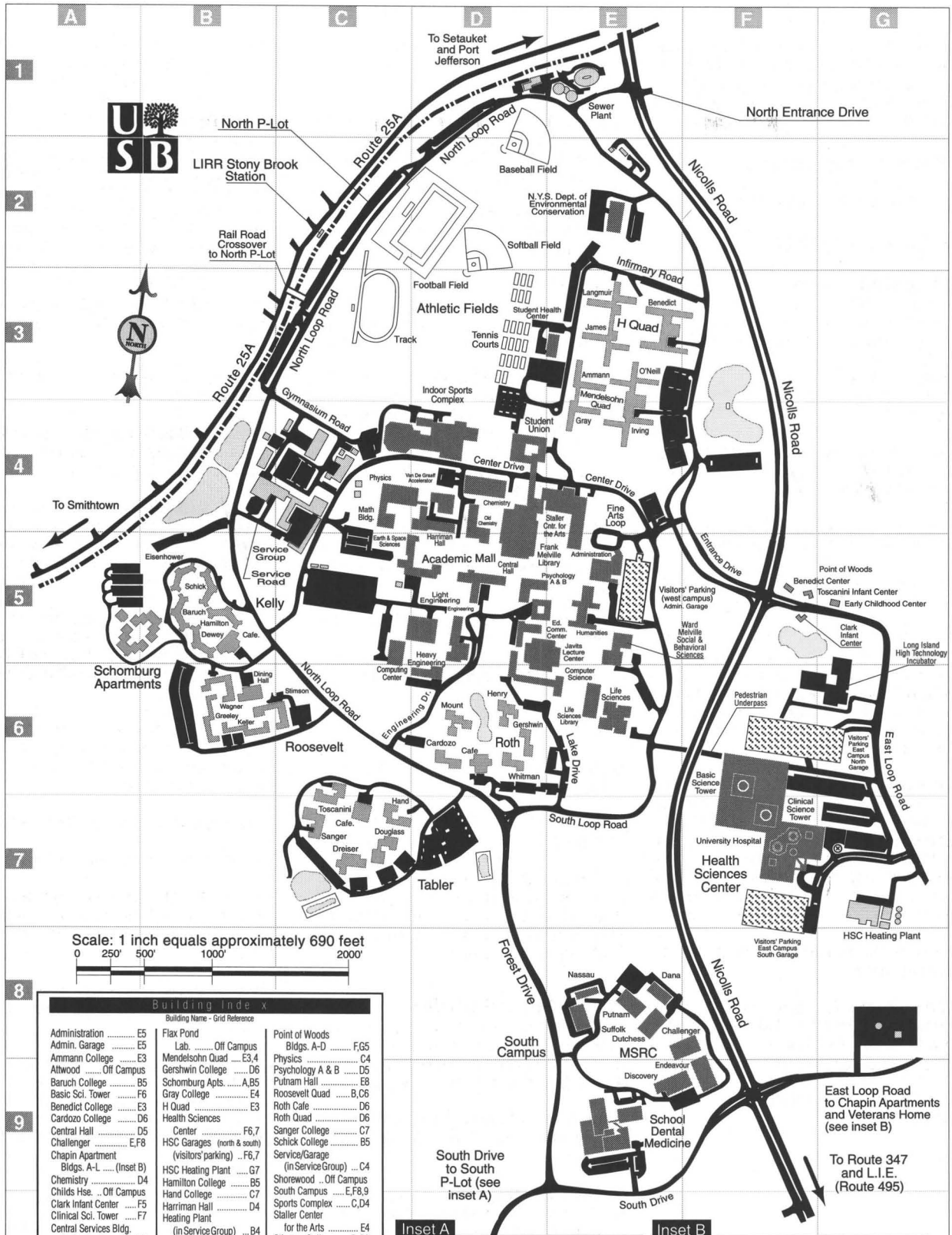
May 3, Friday: Last day of classes; last day to withdraw from the University (SPD/GSP students must have SPD approval). Last day for graduate students to submit theses and dissertations to Graduate School for May graduation.

May 6, Monday: Final examinations begin.

May 10, Friday: Final examinations end; spring semester ends.

May 12, Sunday: Commencement.

May 17, Friday: Last day for departments to submit completion statements for May master's and doctoral degree candidates.



Building Index

Building Name - Grid Reference

- Administration E5
- Admin. Garage E5
- Ammann College E3
- Attwood ..... Off Campus
- Baruch College B5
- Basic Sci. Tower F6
- Benedict College E3
- Cardozo College D6
- Central Hall D5
- Challenger E,F8
- Chapin Apartment Bldgs. A-L ..... (Inset B)
- Chemistry D4
- Childs Hse. .. Off Campus
- Clark Infant Center F5
- Clinical Sci. Tower F7
- Central Services Bldg. (in Service Group) ... B4
- Computer Science D6
- Computing Ctr. C5
- Dana Hall E8
- Dental Medicine, School of E9
- Dewey College B5
- Discovery Hall E,F9
- Douglass College C7
- Dreiser College C7
- Dutchess Hall E8
- Early Childhood Center G5
- Earth & Space Sciences C4,5
- Ed. Communication Center D5
- Eisenhower College ... B5
- Electric Sub Station (see Commissary) ... C4
- Endeavour F9
- Engineering D5
- Flax Pond Lab. ..... Off Campus
- Mendelsohn Quad E3,4
- Gershwin College D6
- Schomburg Apts. A,B5
- Gray College E4
- H Quad E3
- Health Sciences Center F6,7
- HSC Garages (north & south) (visitors' parking) .. F6,7
- HSC Heating Plant G7
- Hamilton College B5
- Hand College C7
- Harriman Hall D4
- Heating Plant (in Service Group) ... B4
- Heavy Engineering D6
- Henry D6
- Humanities E5
- Irving & O'Neill E3,4
- James College E3
- Javits Lecture D,E5
- Keller College B6
- Kelly Cafeteria B5
- Kelly Quad B5
- Langmuir College E3
- Library D4,5
- Life Sciences E6
- Life Sciences Library .. E6
- Light Engineering D5
- Marine Sci. Research Ctr. (MSRC) E8
- Math Building C4
- Mount College D6
- N.Y.S. Dept. of Env. Conservation E2
- Nassau Hall E8
- Old Chemistry D4
- Point of Woods Bldgs. A-D F,G5
- Physics C4
- Psychology A & B D5
- Putnam Hall E8
- Roosevelt Quad B,C6
- Roth Cafe D6
- Roth Quad D6
- Sanger College C7
- Schick College B5
- Service/Garage (in Service Group) ... C4
- Shorewood .. Off Campus
- South Campus E,F8,9
- Sports Complex C,D4
- Stalker Center for the Arts E4
- Stimson College B,C6
- Student Health Ctr. E3
- Student Union D4
- Suffolk Hall E8
- Tabler Cafeteria C7
- Tabler Quad C6,7
- Toscanini College ... C6,7
- University Hospital F7
- Van de Graaff Accelerator D4
- L.I. State Veterans Home ..... Inset B
- Visitors' Parking (west campus) E5
- Visitors' Parking (HSC garages) F6,7
- Wagner College B6
- Ward Melville Social & Behavioral Sci. E5
- Warehouse (in Service Group) ... C4
- Whitman College D6

revised 1/14/94

Latin (see Classics and Classical Languages)

Latin American and Caribbean Studies (Minor) 156

Linguistics, 1505, B.A. (see also Minors) 158

Manufacturing Engineering (complementary to degree program) 245

Marine Sciences (Minor) 270

Materials Science (Minor) 246

Materials Science and Engineering (complementary to degree program) 245

* **Mathematics, 1701, B.S.** (see also Minors) 162

Mathematics Teacher Preparation 166

Mechanical Engineering, 0910, B.E. 248

Media Arts (Minor) 167

Medical Technology, 1223, B.S. (see also *Health Sciences Center Bulletin)* 264

Medieval Studies (Minor) 168

Microbiology (complementary to degree program) 266

Middle Eastern Studies (Minor) 168

Minors
- Africana Studies 79
- Anthropology 82
- Applied Mathematics and Statistics 228
- Art History 88
- Biology 97
- Business Management 259
- Child and Family Studies 106
- Chinese Studies 106
- Classical Civilization 107
- Comparative Studies in Literature 110
- Computer Science 233
- Dance 111
- Design 88
- English 123
- Environmental Science 128
- Federated Learning Communities 70
- French 132
- Geology 114
- German 136
- Health and Society 265
- History 143
- Human Sexual and Gender Development 148
- International Studies 151
- Italian 132
- Japanese Studies 152
- Journalism 153
- Judaic Studies 154
- Korean Studies 155
- Latin American and Caribbean Studies 156
- Linguistics 158
- Marine Sciences 270
- Materials Science 246
- Mathematics 162
- Media Arts 167
- Medieval Studies 168
- Middle Eastern Studies 168
- Music 171
- Optics 175
- Philosophy 178
- Political Science 191
- Religious Studies 202
- Russian 137
- Socio-Legal Studies 208
- Spanish Language, Culture, and Literature 140
- Studio Art 88
- Technology and Society 253
- Theatre Arts 214
- Women's Studies 218

Multidisciplinary Studies, 4901, B.A. 169

Music, 1005, B.A. (see also Minors) 170

Nursing, 1203, B.S., (see also *Health Sciences Center Bulletin*) 262

Optics (Minor) 175

Oral Biology and Pathology (complementary to degree program) 264

Pathology (complementary to degree program) 264

Periodontics (complementary to degree program) 264

Pharmacological Sciences (complementary to degree program) 266

Pharmacology, 0409, B.S. 175

Philosophy, 1509, B.A. (see also Minors) 177

Physical Education (complementary to degree program) 181

Physical Therapy, 1212, B.S., (see also *Health Sciences Center Bulletin*) 262

Physician Assistant, 1299, B.S., (see also *Health Sciences Center Bulletin*) 262

* **Physics, 1902, B.S.** 186

Physics of Materials (see Physics or Materials Science and Engineering)

Physiology and Biophysics (complementary to degree program) 266

Polish (complementary to degree program) 139

Political Science, 2207, B.A. (see also Minors) 190

Portuguese (complementary to degree program) 140

Psychology, 2001, B.A., B.S. 196

Religious Studies (Interdisciplinary Major), **1510, B.A.** (see also Minors) 201

Respiratory Care, 1299, B.S. (see also *Health Sciences Center Bulletin*) 264

***Russian Language and Literature, 1106, B.A.** (see also Minors) 136

Sanskrit (complementary to degree program) 202

Science and Engineering, Interdisciplinary Program in (Baruch Living/Learning Center, complementary to degree program) 70

Science Teacher Preparation 204

***Social Sciences** (Interdisciplinary Major), **2201, B.A.** 205

Social Studies (Secondary Teacher Preparation) 207

Social Work, 2104, B.S. (see also *Health Sciences Center Bulletin*) 267

Socio-Legal Studies (Minor) 208

Sociology, 2208, B.A. 209

* **Spanish Language and Literature, 1105, B.A.** (see also Minors) 139

Studio Art, 1002, B.A. (see also Minors) 88

Study Abroad (complementary to degree program) 71

Teacher Preparation and Certification in:
- Biology 97
- Chemistry 103
- Earth Science 114
- English 123
- Foreign Languages Secondary 128
  - French 132
  - German 137
  - Italian 132
  - Russian 137
  - Spanish 140
- Mathematics 166
- Physics 187
- Social Studies 207
- Teaching English to Speakers of Other Languages 158

Technology and Society (Minor) 253

Theatre Arts, 1007, B.A. (see also Minors) 214

Uncommonly Taught Languages (see Linguistics)

Undergraduate Research and Creative Activities Program (complementary to degree program) 72

Women's Studies (Minor) 218

* Teacher Preparation courses offered

Undergraduate Admissions Office
State University of New York at Stony Brook
Stony Brook, NY 11794-1901