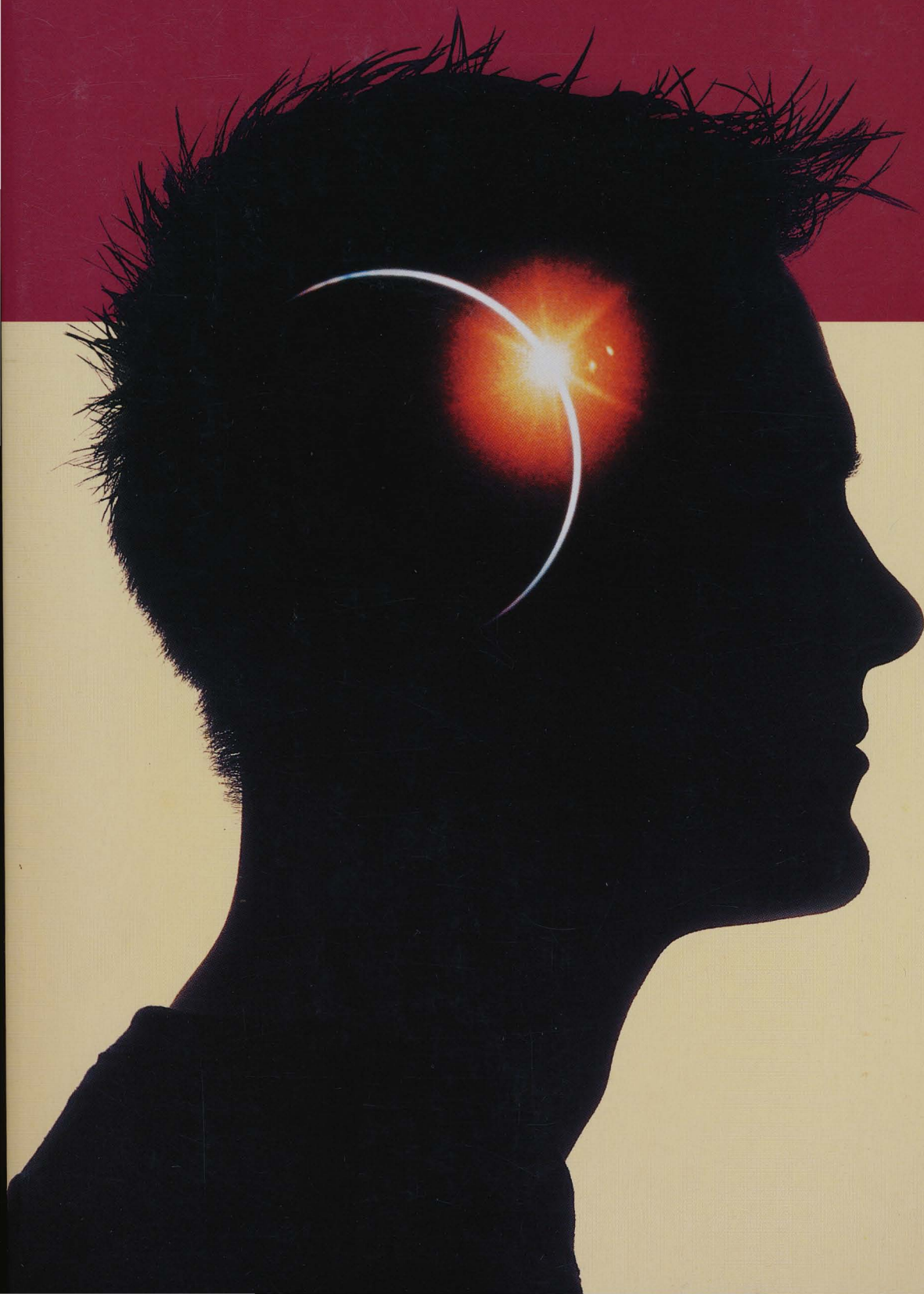
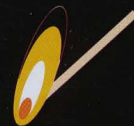


2001-2003

UNDERGRADUATE BULLETIN



**STONY
BROOK**
STATE UNIVERSITY OF NEW YORK

**THE UNIVERSITY
WITH A MIND OF
ITS OWN**



2001-2003 Undergraduate Bulletin

Shirley Strum Kenny, President

Undergraduate Bulletin Volume XXVII

The information in this publication, which pertains to academic years 2001-2002 and 2002-2003, is accurate as of Spring 2001.

Circumstances may require that a given course be withdrawn or that alternate offerings be made.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 University at Stony Brook is subject to the policies promulgated by the Board of Trustees of the State University of New York. Fees and charges are set forth in accordance with such policies and may well change in response to alterations in policy or actions of the legislature during the two-year period covered by this publication. The University reserves the right to change its policies without notice.

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(631) 632-6280

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For more information contact:
Assistant ADA Coordinator
Disabled Student Services
133 Humanities Building
University at Stony Brook
Stony Brook, NY 11794-5328
(631) 632-6748/9, V/TDD

Student Responsibility

Students are responsible for reviewing, understanding, and abiding by the University's regulations, procedures, requirements, and deadlines as described in official publications including this *Undergraduate Bulletin*, the *Student Handbook*, and Class Schedules.

Student Consumer Information

The following information is available through the University's Website at www.ConsumerInformation.sunysb.edu: Stony Brook's academic programs, including the University faculty, instructional, laboratory, and physical facilities; student financial assistance; the University Student Conduct Code and the State University of New York's Rules for the Maintenance of Public Order; campus safety policy and crime statistics; the University alcohol and drug policy; Stony Brook's intercollegiate athletic program participation and financial support; and student retention, graduation, and placement rates.

Additional Information

For general information about undergraduate programs, or to obtain an application, please write or phone:

Office of Undergraduate Admissions
University at Stony Brook
Stony Brook, New York 11794-1901
(631) 632-6868
Fax (631) 632-9027
TDD (631) 632-6859

The general University telephone number is (631) 689-6000.



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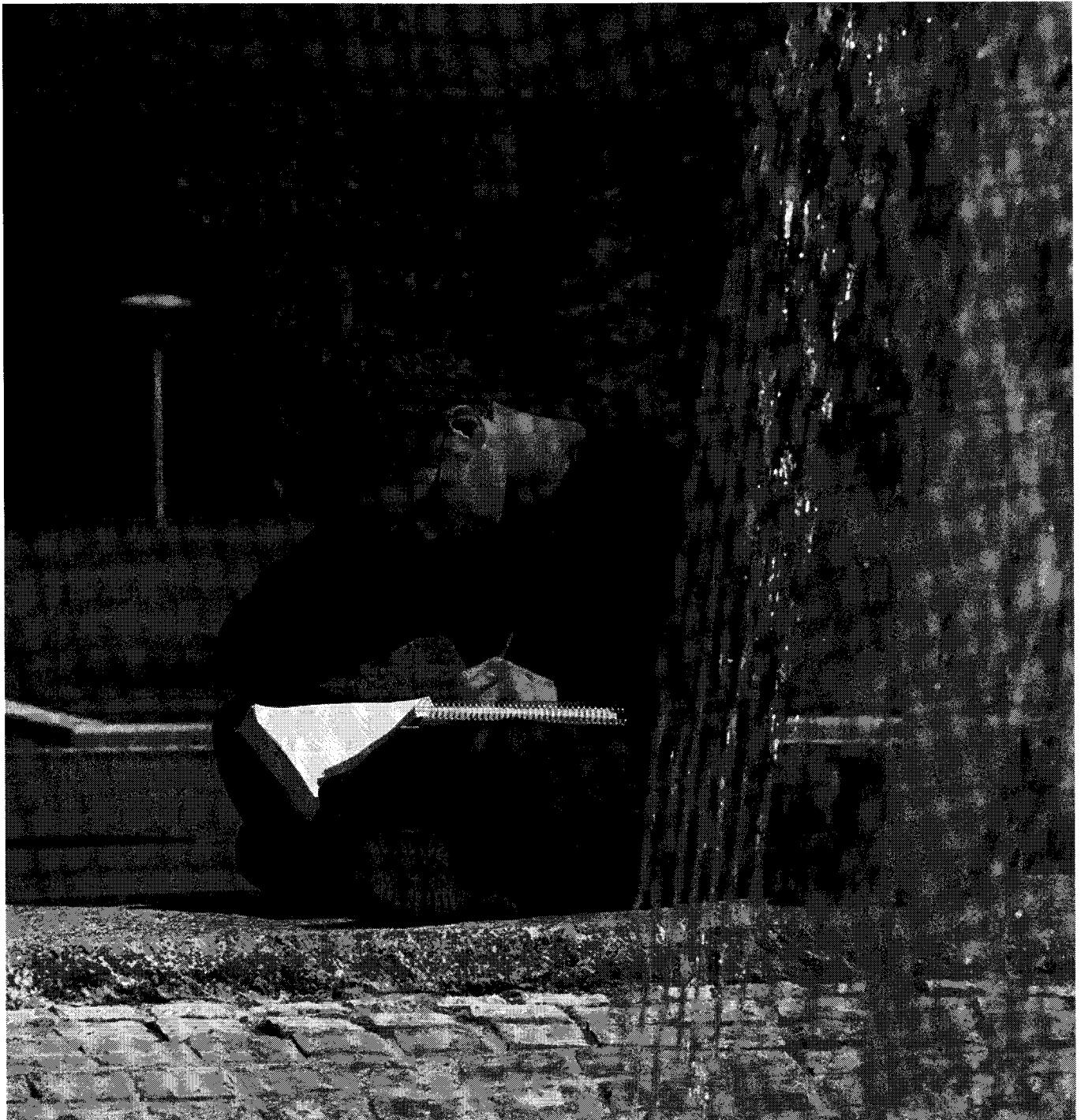
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An Introduction to Stony Brook



Stony Brook Soars: An Overview

Stony Brook is a 1,100-acre universe where world-renowned faculty have created a stimulating, highly interactive environment for undergraduate studies. With exceptional strength in the sciences, mathematics, humanities, fine arts, social sciences, engineering, and health professions, Stony Brook offers an array of challenging, career-building programs.

Established in 1957 as part of the State University of New York system, Stony Brook has grown at a prodigious rate and is now recognized as one of the nation's finest public universities. There are approximately 1,682 faculty and 19,831 students.

Stony Brook has been classified as a Type 1 research university, which is the highest distinction granted to fewer than 2 percent of all colleges and universities nationwide. This reflects Stony Brook's high volume of federally sponsored research and its emphasis on scholarship. Funding for research programs has grown faster than at almost any other university, making it the major research campus in SUNY, the largest public university system in the country.

A recent study published by Johns Hopkins University Press found Stony Brook to be one of the top public research universities in the nation. Measuring such criteria as the number of fellowships awarded and the volume of articles published by faculty in major scholarly journals, the study awarded Stony Brook high ratings in each of the major disciplinary categories. Stony Brook is quickly becoming the national model for undergraduate education at a research university.

In addition to its leading position as a research center, Stony Brook offers excellent instructional programs in a broad spectrum of academic subjects. Internationally recognized faculty members teach courses from the undergraduate to the doctoral level in more than 100 undergraduate and graduate degree programs. The academic and cultural resources of the University and the surrounding community provide a superb environment for intellectual and personal growth.

Our Surroundings

Close to the historic village of Stony Brook at the geographic midpoint of Long Island, the University campus lies about 60 miles east of Manhattan and 60 miles west of Montauk Point, convenient both to New York City's urban vitality and cultural attractions and the tranquil countryside and beautiful seashore of eastern Suffolk County. It is only a short drive to some of New York State's richest farmland and fishing grounds, the spectacular Atlantic beaches at Fire Island, the elegant resorts of the Hamptons, the craggy bluffs and natural harbors along Long Island Sound, and the picturesque village greens and gracious old homes of the North Shore towns. The internationally recognized research facilities of Brookhaven National Laboratory and Cold Spring Harbor Laboratory are nearby. And a two-hour train ride will bring you to the heart of one of the most exciting cities in the world.

The Campus

Ongoing campus beautification has created an atmosphere that encourages students and faculty to interact. The new fountain in the center of the six-acre Academic Mall has become a focal point for social activity. Surrounding the fountain are lawns, shrubs, gardens, trees, and a brook that cascades down steps leading to the campus's main entrance. A nature preserve, bicycle paths, park benches, an apple orchard, and a duck pond are interspersed among the spacious plazas, modern laboratories and classroom buildings, a performing arts center, and the rising walls of the new Asian American Cultural Center, being built with a major gift from Charles B. Wang, founder and CEO of Computer Associates.

At the center of West Campus stands the Frank Melville, Jr. Library, which holds more than 2 million bound volumes and some 3 million in microformat; around the library 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, the Stony Brook Union, Indoor Sports Complex, and other service build-

ings. The Museum of Long Island Natural Sciences, located in the Earth and Space Sciences Building, displays dioramas of Long Island's natural landscape and special temporary exhibits.

The Student Activities Center features a food court and dining hall, study and assembly areas, and an auditorium. The center provides a focal point for the extracurricular activities that are an important part of life on campus. By the end of 2001, there will be two large multi-purpose rooms, an expanded wellness center, and an art gallery.

Stony Brook's Staller Center for the Arts provides superb performing arts facilities, where artists of international stature appear. The Staller Center also houses the departments of Theatre Arts, Music, and Art. A broad plaza (where outdoor concerts are held) connects the Melville Library, Stony Brook Union, and the Staller Center.

Encircling the academic buildings are six residential quadrangles, each with living space for about 1,000 students. The quads are made up of three to five coeducational "colleges," or residence halls, each housing 200 to 400 students. About 60 percent of the undergraduate student body lives on campus. The quads are the basic social units for this on-campus population, providing residence halls, study and social space, and dining facilities. There is a 240-unit complex of one-, two- and three-bedroom apartments near the Health Sciences Center, and a 220-bed apartment building on the southwest corner of campus.

Rising dramatically above the wooded East Campus is the Health Sciences Center, which provides academic and support areas for five professional schools and University Hospital, a 504-bed facility that admitted its first patients in 1980 and has since become a nationally significant teaching hospital. (A recent study ranked it as one of the top 15 teaching hospitals in the country.) Also on the East Campus is the Long Island High Technology Incubator, an important link to local business, which opened its doors to 20 start-up companies in biotechnology and other high-technology fields in October, 1992.

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. Across Nicolls Road lies more student housing, and the 350-bed Long Island State Veterans Home, which was completed in the fall of 1991.

(See the map on page 396 of this *Bulletin*.)

Stony Brook Students

Undergraduates at Stony Brook can choose from over 50 majors, offered through the College of Arts and Sciences, the College of Engineering and Applied Sciences, the Health Sciences Center, Marine Sciences Research Center, and the W. Averell Harriman School for Management and Policy.

The University's enrollment for 2000 was 19,831. Currently there are 13,527 undergraduate and 6,574 graduate students at Stony Brook. Many students are also enrolled part-time in late afternoon and evening courses offered by several departments and by the School of Professional Development.

The majority of Stony Brook's undergraduates—95 percent—come from New York State; 52 percent of these are from Nassau and Suffolk counties and 36 percent from New York City. At any one time more than 100 Stony Brook students are studying abroad in approved exchange programs spread across the globe, in countries such as France, Poland, Italy, Bolivia, Jamaica, Spain, Germany, England, and Korea. International students representing some 75 countries are attending Stony Brook.

The overwhelming majority of first-time, full-time Stony Brook students are still in attendance after their first year. Many students who do not remain full-time return for continued study at a later date, while others go on to another college. Approximately 55 percent of each incoming freshman class graduates 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 the highest standards in all of its programs. Its record of placing graduates in the nation's best

graduate and professional schools shows that these standards are being maintained, and that an educational experience of high quality is available to the broad and diverse student body at Stony Brook.

Stony Brook Faculty

The vast majority of Stony Brook's 1,682 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. It was the productivity and high quality of our faculty that helped earn Stony Brook a ranking among the best public universities in the country. The faculty-student ratio is about one faculty member for every 18 students.

Eminent faculty members include numerous internationally recognized scholars. Many have earned high honors in their fields, such as Einstein Professor C.N. Yang, a Nobel laureate in Physics; John Milnor in Mathematics, winner of the prestigious Fields Medal; and MacArthur fellows John Fleagle, professor of Anatomical Sciences, Paul Adams, professor of Neurobiology and Behavior, Patricia Wright, associate professor of Anthropology, and Daniel Monk, assistant professor of Art. Pulitzer-prize-winning poet Louis Simpson in English and Obie-winning poet, playwright, and activist Amiri Baraka in Africana Studies—these are only some of the best-known. Other eminent faculty members include: 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, Gerald E. Brown in Physics, James Glimm in Applied Mathematics and Statistics, Benjamin Chu in Chemistry, Lorne Mendell in Neurobiology and Behavior, Robert Sokal in Ecology and Evolution, Edward Reich in Pharmacological Sciences, H. Blaine Lawson, Jr. in Mathematics, Janos Kirz in Physics, Iwao Ojima in Chemistry, Theodosios Pavlidis in Computer Science, Felix Rapaport in Surgery, and Louis Ripa in Children's Dentistry; Distinguished Professors Emeriti Lewis Coser in Sociology, Jacob Bigeleisen in Chemistry, Seymour Cohen in Pharmacology, and Charles Rosen in Music; Distinguished Teaching Professors

Norman Goodman in Sociology, Elof Carlson in Biological Sciences, Barbara Eling in Germanic and Slavic Languages and Literatures, Stanley Alexander in Dental Medicine, Judith Tanur in Sociology, Alan Tucker in Applied Mathematics and Statistics, Jonathan F. Levy in Theatre Arts, and Shi Ming Hu in Social Sciences Interdisciplinary; Distinguished Teaching Professors Emeriti John Truxal in Technology and Society, Rose Zimbaro in Theatre Arts, and Homer Goldberg in English; Distinguished Service Professors Robert Cess in the Marine Sciences Research Center, Norman Goodman in Sociology, Lester Paldy in the Center for Science, Mathematics, and Technology Education, Velio Marsocci in Electrical Engineering, Barry Coller in Medicine and Pathology, Robert Lieberman in Earth and Space Sciences, Peter Paul in Physics, Eli Seifman in Social Sciences Interdisciplinary; and Distinguished Service Professors Emeriti Sidney Gelber in Philosophy, 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 11 members of the American Academy of Arts and Sciences, 12 members of the National Academy of Sciences, and three members of the National Academy of Engineering. More than 300 scholars from 40 countries pursue research here and teach at Stony Brook throughout the year.

The 1994 Middle States Reaccreditation Report observes that "Stony Brook has been strikingly successful in developing its research enterprise." In 1998-99, Stony Brook generated \$112 million in annual research activity from sources outside Long Island. Nearly 1,900 sponsored projects are being pursued, including scientific studies, training programs, public-service projects, educational activities, and library support. Among the hundreds of subjects currently under examination by faculty and students are cancer, arthritis, diabetes, lasers, semi-conductor 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 and their solutions.

Academic Programs

The broad range and high quality of the programs at Stony Brook offer undergraduates the opportunity to pursue both traditional and innovative courses of study. In their major areas, students 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. There are frequent opportunities for undergraduates to collaborate with faculty in research projects and creative activities.

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 Business Administration in Technology Management, M.B.A.; 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.

The Schools and Colleges

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 using the resources of two or more departments are offered, as well as programs leading to provisional certification in secondary education. The Diversified Education Curriculum

ensures that, in addition to concentration in their chosen major, students build a firm base of academic skills while being exposed to diverse cultural traditions. Independent study and research are available and encouraged. Living/learning centers, where students share living and study space with like-minded peers, 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 range of programs that provide students with opportunities to find work in industry or proceed to graduate study in a variety of fields. The four undergraduate engineering (B.E.) degree programs offered by the college are accredited by the Accreditation Board for Engineering and Technology, Inc. These programs give the student latitude to plan a course of study 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 pages 122-124 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*, available by writing or telephoning the Health Sciences Center Office of Student Services, University at Stony Brook, Stony Brook, NY 11794-8400; (631) 444-2111.

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 to be one of the leading coastal oceanography institutions in the world and is also the focus for the study of atmospheric sciences and meteorology at Stony Brook. The Center hosts five institutes, including the Institute for Terrestrial and Planetary Atmospheres and the Waste Reduction and Management Institute. The Center offers an undergraduate degree program in meteorology/atmospheric and ocean sciences, as well as 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.

Graduate Study at Stony Brook

The *Graduate School* offers advanced degree programs in many fields leading to the master's and doctoral degrees. Stony Brook's advanced graduate programs are internationally recognized and consistently receive exceptionally high ratings from external evaluation agencies and scholarly studies. The graduate programs at Stony Brook are among the best in the nation. Stony Brook ranks in the top three of the nation's public research universities and is among the top 25 institutions funded by the National Science Foundation. Stony Brook was the first public university in New York State to be recognized by the Carnegie Foundation as a "Type I Research" university—the highest classification, and a distinction granted to fewer than 2 percent of all colleges and universities nationwide. External support for research has grown to an annual

sum of more than \$125 million, and according to a recent National Science Foundation study, the campus has one of the most rapidly growing research funding volumes of all universities in the country. Award-winning 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. Students in the humanities, arts, and social sciences will also find exciting opportunities to work with scholars and artists who are world leaders in their respective areas.

Graduate study is offered in 40 different degree program areas as well as in the five schools of the Health Sciences Center and the School of Professional Development. For a full listing of graduate programs of study, consult the *2000-2002 Graduate Bulletin*, available from the Graduate School, University at Stony Brook, Stony Brook, NY 11794-4433; (631) 632-7040, or on the web at www.grad.sunysb.edu.

The *School of Professional Development (SPD)* 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, biology, chemistry, physics, or social studies, and the Master of Professional Studies (M.P.S.) with a concentration in human resource management and waste management. In addition, SPD offers advanced graduate certificate programs in educational computing, human resource management, industrial management, information systems management, operations research, software engineering, waste management, environmental and occupational health and safety, coaching, school administration and supervision, and school dis-

trict 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 students who do not intend to pursue 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, call or write the SPD Office, N-201 Ward Melville Social and Behavioral Sciences Building, University at Stony Brook, Stony Brook, NY 11794-4310; telephone (631) 632-7050; fax (631) 632-9046; Website www.sunysb.edu/spd.

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 programs establish additional requirements and deadlines for graduate admissions. Address any inquiries concerning graduate admission requirements to the specific program.

Financial Assistance

Financial assistance through the University may be available to graduate students in the form of teaching 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.

In fall 1999, a full assistantship had a minimum salary of \$10,255 for the academic year, 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. Funds permitting, these are five-year fellowships subject to satisfactory academic progress. 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. Typically, 20 Turner Fellowships are available each academic year.

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 myriad 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 facili-

ties 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; Carol M. Baldwin Breast 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 India Studies; 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 Cell and Developmental Biology, 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. The University is a partner in Brookhaven Science Associates, which is now managing Brookhaven National Lab.

Academic Journals and Periodicals

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*; *Gradya*; *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*.

The Campus and the Community

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. As the public university center for Nassau and Suffolk counties and the metropolitan New York region, Stony Brook serves the complex,

growing Long Island economy through research into local problems; by participating in 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. Excluding the state and county governments, the University is Long Island's second largest employer, with almost 12,000 people on the campus payroll. It is the largest single-site employer in Suffolk County. The University generates more than \$2.5 billion annually in direct and indirect economic impact on the region.

An important educational center for the Island, Stony Brook also provides a social and cultural focal point, making art, theatre, music, and film available to the local community. Several hundred concerts, lectures, films, theatre productions, art exhibits, and sports events on 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. The University offers a specialized referral center for health care, multiple recreational opportunities, and a broad range of other services for individuals and groups in the public and private sectors. 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 Friends of the Staller Center for the Arts and the University Hospital Auxiliary.

Technology, Research, and Industry

The University is an active partner with business on Long Island, a principal regional resource for high-technology research collaboration and a source of technical support for public-policy challenges. The campus houses several active and innovative centers that work with local business. The Long Island High-Technology Incubator provides a protected setting for 20 start-up technology companies. The 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 collabora-

tion, and technology transfer. It has helped its partner companies create 1,400 jobs in this booming field. The Long Island Research Institute (LIRI) works to develop new technologies and attract research programs to the area. 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 develop 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. Recently, 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.

Education

Stony Brook plays an important role in local education as well. 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 Center for Excellence and Innovation in Education plays an important role on Long Island 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 region, and is widely recognized as a symbol of Stony Brook's commitment to teacher education, educational research, and development.

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.

Health Care

The University Hospital and Medical Center serves the health care needs of Long Island residents and trains 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. 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 electro-

physiological 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 600,000 patients a year through its ambulatory care programs. In 1999, it had more than 27,000 inpatient discharges. The Emergency Room receives more than 43,000 visits annually.

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 has 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 more than 550 residents and fellows in 50 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. 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.

Campus Activities

Cultural Activities on Campus

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 First Lady Hillary Rodham Clinton, performer Rita Moreno, 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 Melville 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.

Generally, 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 every 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. More than 200 recitals and concerts are given with no admission charge. Highlights of past seasons

include performances by Billy Joel, Ray Charles, the Martha Graham Dance Company, MOMIX, the Vienna Choir Boys, 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 for events at the Staller Center, 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 a place 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.

Student Organizations and Activities

Student Polity, the undergraduate student government organization, and its related groups, particularly the Student Activities Board, sponsor many campus activities. In recent years, popular student-sponsored concerts have featured Fishbone, Red Hot Chili Peppers, Patra, KRS, Ani DiFranco, Phish, and Jimmy Cliff.

Student Polity funds more than 100 student interest clubs and organizations, which 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.

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; and *Stony Brook*

Shelanu, a newspaper published by the B'nai Brith Hillel Foundation.

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.

Athletics

The Stony Brook athletic program has taken itself on a long journey, which culminated in fall 1999 with its arrival to NCAA Division I. The process of achieving Division I status was set forth in 1988 when Stony Brook upgraded its lacrosse and women's soccer programs to Division I. Now the University's entire athletic program is at the Division I level. Stony Brook offers 19 intercollegiate athletic teams. Seventeen of those men's and women's teams compete in the America East Conference.

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. During 1999-2000, for instance, the women's basketball team had its most successful season ever with an 18-10 record. It was also the team's first year in Division I competition. The baseball team also had a stellar record in 2000, finishing 30-11.

Religious Centers on Campus

The Interfaith Center is the representative organization for chaplains and campus ministry 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 page 75 for more information regarding this law.

Baptist Campus Ministries is an organization of the Southern Baptist Convention. B'nai Brith 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 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. The Islamic Society of North America addresses the social needs and spiritual development of Muslim students. The Protestant Campus Ministry 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 on the second floor of the Stony Brook Union. Students are invited to visit, ask questions, and participate.

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:

Director of Affirmative Action
Administration Building 294
University at Stony Brook
Stony Brook, NY 11794-0251
Telephone: (631) 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:

Assistant ADA Coordinator
Disabled Student Services
133 Humanities Building
University at Stony Brook
Stony Brook, NY 11794-5328
(631) 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 not be improperly restricted and may be subject only to reasonable time, place, and manner restrictions, and other lawful regulation. 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) are 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

The University Student Conduct Code defines acceptable community behavior. For a resident student, this means 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, one 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 Director of Judicial Affairs, 347 Administration Building, or call (631) 632-6705.

Parking and Traffic

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 Long Island Rail Road commuter lot. There is also a commuter parking lot by the Health Sciences Center. Bus service is available from the commuter lots to the West Campus. Parking is also available in three parking garages, located by the Administration Building, the Health Sciences Center, and the University Hospital.

Two new lots, the Centers for Molecular Medicine Lot and the Earth and Space Sciences Lot, offer metered and long-term parking. Students can obtain a parking permit online at www.parking.sunyusb.edu.

[sunyusb.edu](http://www.sunyusb.edu). Parking Services offers a motorists assistance program, Monday through Friday, 8:00 a.m. to 3:00 p.m. Staff are equipped to jump-start cars, help if keys have been locked in cars, and assist with slow-leaking tires. For further information, call (631) 632-AUTO.

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. Commuter parking is also available in the Administration and Health Sciences Center garages after 4:30 p.m.

Commuter express buses leave the South P Lot every five minutes between 7:30 a.m and 6:30 p.m. After 6:15 p.m., there is one bus every 15 minutes until 9:00 p.m., Monday through Friday. The University also provides access service to persons with disabilities.

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.

University Police

The University Police have jurisdiction over the 1,100-acre campus and its buildings. While officers are not specifically assigned to residence halls, those halls are part of regular campus patrols. Trained officers are available to respond and assist around the clock throughout the year.

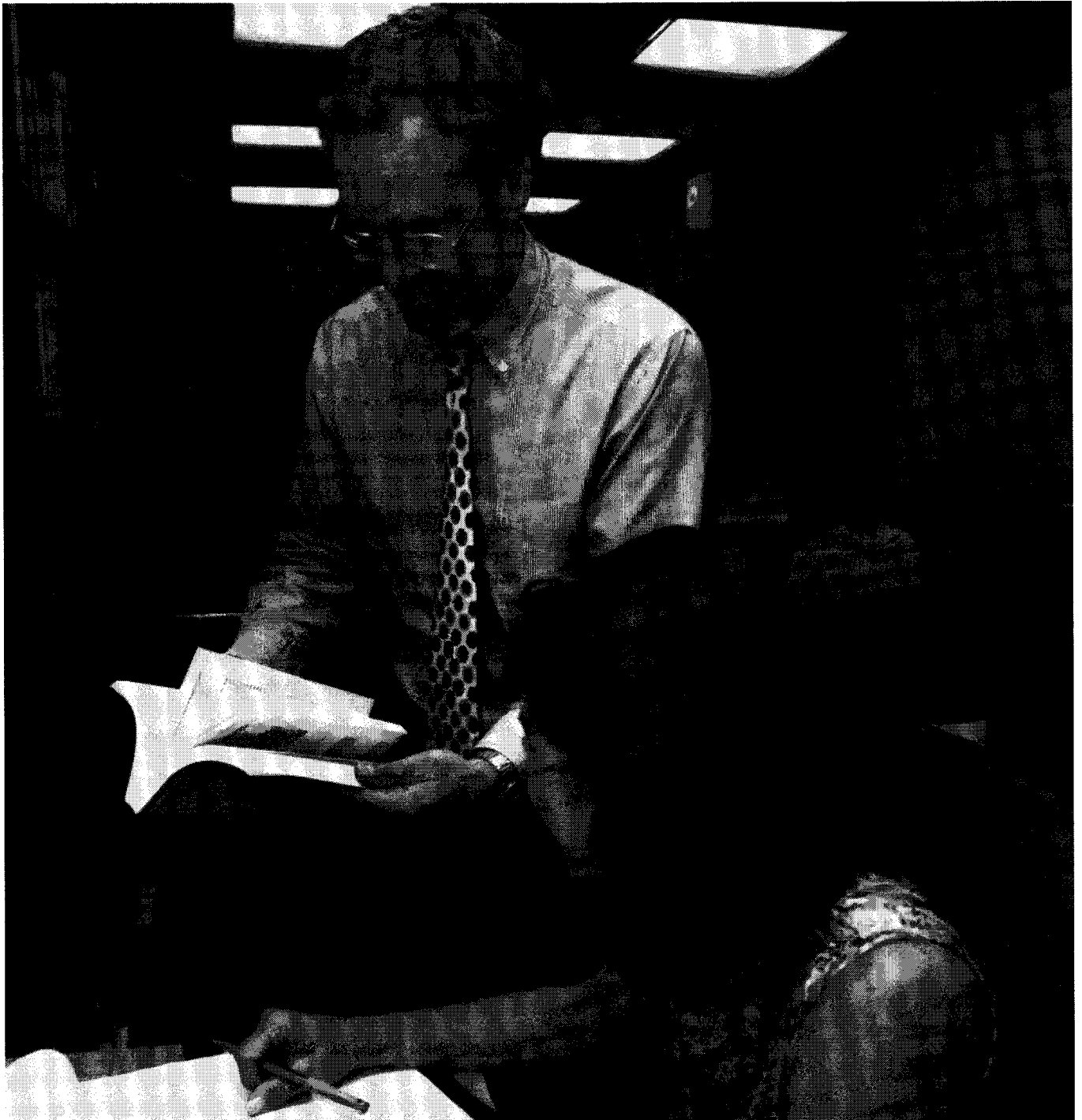
The members of the University Police are committed to community policing and are actively involved in campus activities. The goal of the Campus Relations Team is to educate the campus community on such topics as personal safety, risk awareness, crime prevention (including date and acquaintance rape prevention), drug and alcohol risk awareness, and many other community safety issues. They accomplish their mission through formal and informal talks, new student orientation programs, and the creation and distribution of pamphlets and posters across the campus.

The Office of Community Affairs may be reached at 632-7786.

In case of an emergency, call 632-3333.



Student Services



Academic Support Services

Offices and programs that provide academic advice, tutoring, and additional academic support to students:

Academic Advising Center
College of Engineering and Applied Sciences Undergraduate Office
English as a Second Language Intensive English Center
Mathematics Learning Center and Calculus Resource Room
Undergraduate Academic Affairs
Undergraduate Transfer Office
Writing Center

Academic Advising Center

The Academic Advising Center, located on the second floor of the main library, is open Monday, Wednesday, Thursday, and Friday from 9:00 a.m. to 5:00 p.m. and Tuesday, 9:00 a.m. to 7:00 p.m. Students are served on both a walk-in basis and by appointment.

The Academic Advising Center provides academic advising on general education requirements and academic rules and regulations. Advisors help students plan their course schedules and academic programs and counsel students who need clarification of the University's academic policies and regulations. Pre-law and pre-graduate and undergraduate health professions advisors are also located in the Center.

In coordination with the Office of New Student Programs, the Center coordinates USB 101, a one-credit extended orientation course for entering students taught by University faculty and staff.

The Center sponsors several outreach programs. The Mentor Program arranges for faculty and staff mentors to individual students. The Academic Peer Internship Program affords the opportunity for qualified undergraduates to serve as peer interns, advising other undergraduate students and assisting them with the development of study skills. The Achievement Support Program provides information to freshmen and sophomores about available academic services and ways to supplement these services when needed. The program assists at-risk students with study and time management skills development and demonstrates the value of departmental tutoring centers, computing and media centers, and academic advising.

The Center sponsors the Golden Key National Honor Society, which recognizes

the top 15% of juniors and seniors in all academic programs. Golden Key membership offers access to scholarships, career assistance, and leadership opportunities.

The Center is also a Student Online Access to Records (SOAR) site, where students can view and print their unofficial academic records and degree audit reports (DARTS).

College of 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 provides general academic advising and information about 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 serves as the center for the CEAS Internship Program, publicizing internship openings and assisting corporate offices with selection and placement of student interns. It also disseminates information about special scholarships available to students in the College's majors and coordinates the scholarship application and selection process.

English as a Second Language

The ESL program offers beginning, intermediate, and advanced courses that are aimed at raising students' abilities to understand, speak, read, and write standard English to the level desired of college students in the United States. For more information contact the Linguistics Department at (631) 632-7777 or (631) 632-7706.

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. The IEC program is also open to people who do not plan to enroll at Stony Brook after completing the training but who wish to improve their English for personal or professional reasons.

An applicant who meets the academic criteria for admission may be given conditional admission to the University with the provision that the applicant successfully complete one of the advanced IEC levels and be recommended by the director. The program consists of a minimum of 18 hours per week of non-credit English language courses, including reading, writing, speaking, and listening skills. Elective courses include: American Studies, Business English, Conversation, TOEFL Preparation, Grammar, and Conversation through Video. IEC students may audit University courses or, if they are in the advanced IEC level, may register for one course with the permission of the IEC director.

In the summer, IEC students attend English classes and join excursions to places of cultural and historic interest. Participants are eligible to receive a student (F-1) visa, may live on campus, and may use all University facilities.

For additional information please contact:

Intensive English Center
E-5320 Melville Library
SUNY Stony Brook, NY 11794-3390
telephone 631-632-7031
fax 631-632-6544
e-mail: iec@sunysb.edu
<http://www.sunysb.edu/iec/>

Mathematics Learning Center and Calculus Resource Room

The Mathematics Learning Center offers help to students in math and applied math courses, as well as non-math courses that require math skills. Students do not need to be in serious difficulty before they come for assistance. Assistance is provided individually and in small groups on a first-come, first-served basis. Mathematics faculty members and course TAs also offer hours. Instructors specializing in higher calculus and other more advanced courses staff the Calculus Resource Room in the Learning Center.

The Mathematics Learning Center has an extensive library of books and CD-Roms and offers Web access. The Center is located in A-125 Physics. Hours are Monday through Thursday, 10:00 a.m. to 5:00 p.m. and Friday 10:00 a.m. to 1:00 p.m.; tutors are also available some evenings. Call the Mathematics Learning Center at (631) 632-6825 for evening hours.

Undergraduate Academic Affairs

This administrative academic unit oversees a variety of academic programs that provide services to populations with special interests, abilities, needs, or circumstances. Innovative programs, specialized advising, and enrichment opportunities are offered to students who are academically talented as well as those who need academic support.

The Office of Undergraduate Academic Affairs coordinates the nominations for prestigious scholarship and fellowship opportunities outside the University. The office is also responsible for the coordination and administration of the Academic Judiciary Committee and the Committee on Academic Standing and Appeals of Arts and Sciences.

Undergraduate Transfer Office

The Undergraduate Transfer Office provides academic advice to prospective and enrolled transfer students. Advisors are available to help students plan their academic programs and course selections to ensure a smooth transition to Stony Brook. Advisors evaluate transfer credits for Diversified Education Curriculum (D.E.C.) requirements and work with academic departments to facilitate the evaluation of transfer credits for major and upper-division requirements. Advisors enter transfer credits on the Stony Brook record for both new transfer students and for continuing students.

In addition, advisors assist all students seeking advice in selecting summer school courses to be taken at other institutions. The office also has a SOAR terminal enabling students to print their degree audit reports (DARTS). Academic advising is available on a walk-in basis, by e-mail, and by telephone at (631) 632-7028.

Writing Center

The Writing Center provides free, individual help with writing to all members of the University community, including undergraduate and graduate students, faculty, and staff. Tutors assist with writing projects ranging from freshman composition essays to post-doctoral grant proposals. Tutors are trained in all aspects of writing and will address a broad range of writing issues, e.g. getting started, organization, grammar, punctuation, English as a second language, and listening to the finished product. The

Center does not provide proofreading or copyediting services.

Three types of tutoring sessions are available: weekly standing appointments with the same tutor; short-term appointments; and drop-in sessions. All tutoring sessions are 50 minutes long.

For hours of operation or to schedule an appointment, call (631) 632-7405.

Other Student Services

Offices, organizations, and facilities that provide additional services to students:

- Bookstores
- Campus Residences
- Career Center
- Center for Excellence in Learning and Teaching
- Child Care Services
- Commuter Student Affairs
- Computer Corner
- Computing Services
- Counseling Center
- Dean of Students
- Disabled Student Services
- Indoor Sports Complex
- International Student Services
- Libraries
- Off-Campus Housing
- Ombuds Office
- Stony Brook Union
- Student Activities Center
- Division of Student Affairs
- Student Health Service
- Office of Student Judiciary
- Veterans Affairs

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 Level 2 Health Sciences Center. Books are sold at the manufacturer's list price. Students should 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 of classes, 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 store also carries a full line of school and dorm living supplies, study and text preparation

materials, Stony Brook imprinted clothing and gifts, personal care items, art and engineering supplies, computer software, and greeting cards.

For more information, call the University bookstores at (631) 632-6550 (West Campus) or (631) 444-3686 (East Campus).

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. More than 40 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 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 (e.g., study skills workshops, guest lecturers, resume writing workshops). The student staff members of each residence hall serve as peer advisors, stimulate social and educational programs, report maintenance concerns, and provide important information regarding campus programs and policies to the resident students.

The University has just completed a multi-year revitalization project to upgrade all of its facilities. The revitalization project includes new furniture in bedrooms and public areas, enhancements to social and recreational facilities, modernization of the HVAC systems, and more. Further, the University is constructing four additional residences which will house approximately

500 upperclass undergraduates. The three-story buildings, scheduled for completion for Fall 2001, will be air conditioned and fully furnished, with full kitchens.

Each residential college has public lounges, laundry rooms, and recreational facilities. Every residence hall room is equipped with telephone, Ethernet, and cable television hookups, with quality television reception as well as access to more than 40 cable stations including HBO. There are also state-of-the-art fitness and computing centers located in every Quad, open free of charge to all residents. The fitness centers feature CYBEX circuits, Life Cycles, Stair Masters, and free weights. Aerobic classes are taught in most of the centers, and staff are available to develop and monitor personal fitness plans for all users. The computing centers feature Pentium PCs which run all Microsoft Office applications, provide access to electronic mail and the Internet. Trained staff are available in each center to provide technical assistance and guidance.

Several quadrangles 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 residence. Most 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, which have become increasingly popular with the residence hall population.

A large percentage of the on-campus activities takes place within the residence halls. College legislatures are student councils within each building empowered to spend the monies allotted by 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 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, three, or four 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 students in four-bedroom apartments and married couples and domestic partners 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 (631) 632-6750.

Residence Hall Billing

The Residence Hall agreement is for the full academic year, although billing is processed by the semester. Once a student accepts the key to his or her room, the student becomes financially responsible for the full housing charge for that semester. Should a student wish to cancel housing at the end of the fall semester, the student must complete a proper checkout (which includes signing out of the room and returning the room key to the Quad Office) by 8:00 p.m. on the last day of the fall semester to avoid being assessed full housing charges for the subsequent spring semester.

Career Center

The Career Center assists students and alumni with all types of career planning concerns while providing placement services and acting as a resource for information on internships and full-time, permanent employment. Individual and group consultation with students is offered. Students are also encouraged to undertake periodic critical self-examination to relate their academic expertise to their aspirations for future professional involvement and advancement. Two computerized guidance services, the Strong Interest Inventory and SIGI Plus, are also available for students to use in their career decision-making process.

Job fairs and a campus interview program hosted during the fall and spring semesters enable students to meet with

prospective employers to discuss job opportunities. The Center is partnered with JOBTRAK, Inc., which posts job vacancies online and provides a computerized interview sign-up and resume referral system giving students access to employers visiting campus. A credentials service supports students in their application for jobs or advanced study by maintaining letters of recommendation that are copied and sent directly to employers and schools.

Students are encouraged to participate in Volunteers for Community Service (VCS) to gain experience in specific career areas by working with agencies and institutions that seek volunteers.

The Internship Program provides students with the opportunity to spend a semester or summer working for pay and/or academic credit under the supervision of both University faculty and professional staff at a cooperating agency or organization. Internships require 40 hours on the job during the semester or summer for each credit earned. Zero to six credits may be earned for semester or summer internships.

Internships afford students the opportunity to apply theory to practice; to test their career intentions; to improve their 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 when seeking employment or applying to professional school.

The Job Search Preparation Program includes group workshops that assist students and alumni in writing resumes, interviewing effectively, and developing job search strategies. As part of the Career Center's Outreach Program, career counselors visit classrooms, student organizations, and academic departments when requested in order to provide career-related information.

The Career 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. There is also a growing collection of videotapes on a variety of career topics. In addition, the Career Advisory 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 offers a variety of information sheets on career planning topics that are available for students to pick up.

Students are encouraged to visit the Career Center and become familiar with the services it provides. The office, located in W-0550 Melville Library, is open weekdays, except Tuesdays, from 8:30 a.m. to 4:00 p.m. On Tuesday, the Center is open from 8:30 a.m. to 7:00 p.m. A comprehensive Website is also available to students at <http://www.sunysb.edu/careers/>. The telephone number is (631) 632-6810 (Voice/ TDD).

Center for Excellence in Learning and Teaching (CELT)

The Center for Excellence in Learning and Teaching (CELT) is a partner in the University's effort to create an exciting and fulfilling undergraduate learning experience through the promotion of a collaborative, energized, and supportive academic environment. CELT's activities include: providing information to undergraduates about academic support services; sponsoring internships for undergraduates who are interested in learning Website design and other technology applications; providing technological resources, space and support for the development of technology-based learning activities; "Spotlight on Excellence" at the CELT Website, featuring faculty, departments, and programs with innovative learning and teaching approaches; videotaping classroom instructors; developing mentoring networks for new faculty, graduate teaching assistants, and faculty; and developing partnerships within the University and between University and community entities, including local school groups, to encourage the growth of lifelong learning skills.

To learn more about the center, located in E-1337 Melville Library, visit the Website at www.celt.sunysb.edu. CELT can also be reached by telephone at (631) 632-1030 and by e-mail at celt@notes.cc.sunysb.edu.

Child Care Services

The University provides on-campus child care services for approximately 100 children ranging in age from two months to five years. Stony Brook Child Care Services is a nonprofit, nationally accredited center, providing service for University students, faculty, and staff. The Center is staffed by 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, is regarded as individual. A new center, planned for Fall 2001, will allow the CCS to accommodate 160 children and will include a kindergarten, before and after care, and a summer camp. Hours of operation vary. Fees are charged on a sliding scale based on income.

There are extensive waiting lists for the Center; interested persons should call for an application well before the service will be needed, as placement cannot be guaranteed. Call (631) 632-6930 for more information.

Commuter Student Affairs

The Office of Commuter Student Services is located in Suite 131 in the Student Activities Center and is open weekdays from 8:30 a.m. to 5:00 p.m. with extended hours on Tuesday evenings until 7:00 p.m. It offers services, programs, advocacy, and outreach on behalf of undergraduate commuter students. Programs offered include workshops in stress management, career development, academic advising, as well as various activities and receptions designed to promote faculty, staff, and commuter student interaction and communication. In addition to providing services, this office brings the commuter perspective to campus committees and to campus programs. It responds to students' requests, queries, and suggestions, intercedes on their behalf, and is pro-active for commuter students. It also facilitates the recommendations of the Commuter Student Services Advisory

Board whose membership consists of faculty, staff, and commuter students. In collaboration with campus constituencies such as the Commuter Student Association and the Department of Student Activities, the Office of Commuter Student Services actively aids and encourages commuter students to become full participants in campus life.

The Office of Commuter Student Affairs can be reached by telephone at (631) 632-7353 or by e-mail at Commuter_Services@ccmail.sunysb.edu.

Computer Corner

The Computer Corner is operated by the Faculty Student Association, the campus non-profit auxiliary service corporation, and offers educational discounts on brand-name hardware and software to University students, faculty, and staff. Analog adapters and network cards are available. Computer Corner is an authorized service provider and dealer for Apple, Dell, Hauppauge, Hewlett Packard, and Lexmark products. On-campus delivery and installation is free with the purchase of these products. The store is located in the Educational Communications Building (ECC) facing the Psychology Buildings. Store hours are Monday through Friday 9:30 a.m. to 4:00 p.m. For more information call (631) 632-7630, fax (631) 632-6329, or e-mail Computer.Corner@sunysb.edu. The Web address is www.computer.corner.sunysb.edu.

Computing Services

The University's computing environment is characterized by an ever-changing array of hardware, software, network connectivity, and consulting services. The Stony Brook Instructional Networked Computing (SINC) sites are located throughout the campus in the Melville Library (first and fifth floors), Stony Brook Union, Math Tower, Harriman Hall, Social and Behavioral Sciences, Computer Science, Engineering, Computing Center, Chemistry, Humanities, and Fine Arts buildings. These sites have a variety of computers, software, and printers. Unless machines are reserved for a class, the equipment in all SINC sites is accessible to any student during operating hours, and student consultants are available to answer user questions. At times, free classes to learn some of the common applications are offered.

Central computing provides a UNIX environment. UNIX is the multi-user system used most frequently for e-mail, Internet access, and class assignments. It also includes Java, Perl, Pascal, FORTRAN, C, and C++ software. All registered students may have an account on the IC UNIX system and may request server space for a personal Web page.

An account on the Instructional Computing UNIX system also provides access to the Internet from a home or dormitory personal computer, allowing graphical browser software such as Netscape or Internet Explorer to access Web pages, the STARS library system, and other resources. Students are required to have a network interface card (ethernet card), installed in a personal computer to access the Internet from their campus residences. The exact requirements for each residence hall are included in the housing information mailed to each student before the academic year.

Dell Pentium and Apple Macintosh personal computers are available through the Computer Store in the ECC Building.

Consulting services are provided by various offices within the Division of Information Technology. Refer to the campus phone directory for specific services. For more information about SINC sites, contact Instructional Computing, S-1460 Melville Library, at (631) 632-8050 or contact the student consultants at (631) 632-9602, or visit the Website at <http://www.sinc.sunysb.edu>.

Counseling Center

The University Counseling Center provides consultation, crisis intervention, brief psychotherapy, and group and couple's therapy for all Stony Brook students, including matriculated SPD students. Counseling services are available year-round. All information about counseling at the Center is strictly confidential, except when needed in situations where there is imminent threat or danger.

A student does not have to be confronting desperate or overwhelming difficulties in order to benefit from counseling. The Center encourages students to come in and discuss problems, even if they are not sure that counseling is what they need. For many students, dealing effectively with emotional and social issues increases their success with aca-

demically-related 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 in 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 all these issues.

The Counseling Center also has outreach programs to enhance personal growth and skills development. The most popular workshops deal with stress management, meditation, study skills, feeling better about yourself, and interpersonal communication. The programs are free for all Stony Brook students. In addition to workshops, the University Counseling Center sponsors a weekly radio show, "Taking 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 Academic Affairs, the Academic Advising Center, the academic departments, International Student Services Office, Dean of Students Office, Disabled Students Services, and the Asian American Student Center.

During the school year the Center is open on Monday, Wednesday, Thursday, and Friday from 8:00 a.m. to 5:00 p.m., and on Tuesday from 8:00 a.m. to 7:00 p.m.; during intersession, summer, and spring break it is open from 8:00 a.m. to 4:00 p.m. Appointments for an initial visit are made on a same day or next day basis by calling (631) 632-6720. In emergency situations, students will be seen right away without a scheduled appointment. The Counseling Center is located on the second floor of the Student Health Center. Any student needing a disabili-

ty-related accommodation should call the Counseling Center at (631) 632-6720.

For mental health emergencies after hours and on weekends, students should call Public Safety at (631) 632-3333 or go to the University Hospital Emergency Room. Anyone not experiencing an emergency but wanting to speak to someone after hours and on weekends can call the Response Hotline at (631) 751-7500 or the University Response Hotline at (631) 632-HOPE.

Further information about counseling services can be found on the Center's Web site at <http://www.sunysb.stuaff/counsel>.

Dean of Students

The Dean of Students provides student advocacy, co-curricular development, and administrative oversight of and support for the Interfaith Center, Polity (student government), student clubs and organizations, and student services. The Dean's office organizes campus events such as Homecoming and Family Day and oversees Commuter Student Services and Student Activities.

Disabled Student Services/ADA

Disabled Student Services (DSS) 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 environment.

Students are responsible for identifying and documenting their disability through the DSS office. DSS staff plan and implement the academic adjustments or reasonable accommodations necessary to support students' academic programs. 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 Disabilities 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. A Supported Education Program offering

individual counseling and group sessions is available for students with psychological disabilities.

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 TT. Also available are temporary handicapped parking permits, a volunteer tapping service, and the use of a computer, a reading machine, and other equipment in the Melville Library.

The office also advises STAC (Students Toward an Accessible Campus), a Polity-sponsored social and community service club for students with and without disabilities.

The 1992 Americans with Disabilities Act (ADA) requires that individuals with disabilities be afforded equal opportunity in the areas of public services and programs, employment, transportation, and communications. In compliance with the ADA's definition of disabilities, the University makes concerted efforts to provide employees with reasonable accommodations and access to services and programs.

Students who anticipate requiring assistance should notify the Disabled Student Services/ADA office as early as possible to allow time for implementing recommended services. The office is located in Room 133 Humanities Building, or call (631) 632-6748/9, V/TT.

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 4,500 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, and locker rooms. Attractive lobbies, offices, and two concession stands complete the facility.

The Pritchard Gymnasium, which is now the east wing of the Indoor Sports Complex, features seating for 1,800 for basketball and volleyball; a six-lane, 25-yard pool; eight racquetball courts; a Universal weight room; a dance studio and exercise room; and three multipurpose courts for basketball, volleyball,

badminton, or indoor soccer, available when not in use for scheduled events. The complex is 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; tennis courts; and recently renovated fields for varsity soccer, baseball, and softball. The campus recreation 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 Division I athletics 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, intercollegiate athletics, special events, or intramurals. Current times for recreation may be obtained in the Indoor Sports Complex and hours are subject to change. The Indoor Sports Complex is open Monday through Sunday from 7:00 a.m. to 11:00 p.m. It is closed on all major holidays. Hours are adjusted for winter and spring breaks.

International Services

International Services provides undergraduate and graduate students, faculty, and scholars from other countries advice and assistance on U.S. government immigration regulations and cross-cultural issues relating to study, teaching, research and living in the United States. The International Student and Scholar Advisors are the Designated School Officials (DSO) and Alternate Responsible Officers (ARO) on campus and are responsible for assisting students in obtaining and maintaining valid F-1 or J-1 immigration status in the United States. Personal advising on immigration and cross-cultural issues is available throughout the year.

International Student Advisors are available for advising Monday through Thursday from 9:30 a.m. to 4:30 p.m. on a walk-in basis and on Fridays by appointment. In addition, International Services works with community groups and student organizations to provide various programs and activities, including orien-

tations, tours, discussion groups, workshops, and other events. International Services also provides a liaison for students with the community-based Host Family Program.

To maintain valid immigration status an F-1 or J-1 international student must be enrolled full-time in an approved course of study and maintain a valid passport, Form I-94, and the Certificate of Eligibility Form I-20 or IAP-66. International students should consult an International Student Advisor upon arrival in the United States and before: 1) accepting employment, 2) traveling outside of the United States, either temporarily or permanently, 3) applying for a U.S. visa abroad, 4) transferring to another institution within the United States, 5) withdrawing from the University, 6) dropping below a full course of study, 7) changing his or her address in the United States, 8) changing to another non-immigrant or immigrant status (i.e., from F-1 to permanent resident), or 9) changing academic major or level of study.

International students transferring from other U.S. schools must have their Certificate of Eligibility, Form I-20 or Form IAP-66, processed for transfer to Stony Brook by an International Student Advisor at Stony Brook in order to maintain valid F-1 or J-1 status. This transfer process for F-1 students must be completed within the first 15 days of the start of the semester.

All new and transfer international students are required to attend a mandatory International Student Orientation Program and to meet with an International Student Advisor as soon as possible after their arrival at Stony Brook.

The International Services Office is located in the Graduate School, 2401 Computer Science Building. The telephone number is (631) 632-9559. The fax number is (631) 632-7243. International Services also has information and applications for the National Security Educational Program (NSEP) www.NSEP.org and the Deutscher Akademischer Austausch Dienst (DAAD) program for study and research in Germany <http://www.DAAD.org>.

Libraries

The Stony Brook campus houses 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, and fine arts. 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, music, and legal materials. Other facilities of note are a music listening center, an instructional computing center, and a variety of study spaces. The full range of library services, including open stack privileges and electronic resources are available to all students.

There are five science libraries. Four of these—chemistry, computer science, marine and atmospheric sciences, and mathematics/physics/astronomy—are located in departmental buildings. The Science and Engineering Library, housing collections in engineering, biology, and geosciences, is located in the Melville Library. The Health Sciences Library is located in the Health Sciences Center. The University libraries collectively contain more than two million bound volumes and three million publications in microformat. Numerous abstracting, indexing, and full-text electronic resources 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 8:00 p.m.; Saturday, 10:00 a.m. to 6:00 p.m.; and Sunday, noon to midnight. During intersession and other vacation periods, hours are generally 8:30 a.m. to 5:00 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 libraries, as well as at the main library.

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, tips for renters, listings of short-term and interim housing, bed and breakfast, hotel, and motel information, and local transportation information and maps. Call (631) 632-6770 for further information or visit the office's Website with online, interactive database at <http://och.vpsa.sunysb.edu>.

Ombuds Office

The services of the University Ombuds Office are available to all students, faculty, and staff. The office provides an informal, comfortable, receptive place to turn, for instance, 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 Ombuds Office remain confidential. Depending on the nature of the question or problem, the Ombuds Office might offer specific advice or mediation, provide information, or make the appropriate referral to facilitate resolution. The Ombuds Office is also open to those who simply need someone to listen impartially and privately and suggest a course of action.

The University Ombuds Office is located in Room 114 Humanities Building. Hours are 9:00 a.m. to 5:00 p.m. Monday through Friday. Scheduled appointments are recommended. The phone number is (631) 632-9200.

Stony Brook Union

With a 330-seat auditorium, a large two-level, multi-purpose room, a ballroom that accommodates 600, a 100-computer SINC site, meeting rooms, offices, and an art gallery displaying the works of campus and community artists, the Stony Brook Union hosts student clubs, organizations, and events.

In addition to club meetings, movies, and concerts, students use the Stony Brook Union for the video arcade, craft center, flea markets, quiet areas, and food vendors, including a pizzeria, cafeteria, deli, restaurant, and bakery.

The campus radio station, WUSB-FM (90.1), staffed by students and volun-

teers, operates from the Union. Student newspapers, the television station 3TV, student-run audio-visual services, and the Inter-Fraternity/Sorority Council all have offices in the Union. The Interfaith Ministry offices, worship space, and lounges are also located here.

Weekends at Stony Brook include concerts, plays, movies, guest lecturers, and sporting events. Recent events have included performances by Billy Joel, Eddie Murphy, Bob Dylan, and George Carlin. Craft fairs and cultural exhibits are also popular activities on campus.

The Union houses additional campus services, such as an information center with campus maps, train and bus schedules, campus telephone directories, and information about campus events such as concerts and movies. The Information Center's phone number is (631) 632-6830.

Office of Student Activities

The Office of Student Activities plans, creates, and supports co-curricular programs including Alumni Homecoming Weekend, Chillfest, Ultimate Spring Blast, and others. Advisors also help students with their own event programming, resources, facilities, and the development of leadership skills. The Office promotes the Senior Leadership Awards, coordinates crafts, wellness and leisure programs, and facilitates student media, clubs, and organizations.

Student Activities Center

Opened in 1997, the Student Activities Center, or SAC, provides the focal point for student activity on campus and hosts many student clubs and organizations. The curved windows of the Main Dining Hall, with upper and lower dining lounges, give students a panoramic view of the center of campus, from the Administration Building to the east, Harriman Hall on the west, Engineering to the south, and Chemistry to the north.

In addition to several dining facilities, the SAC includes a multipurpose state-of-the-art auditorium used for dances, movies, concerts, speakers, and other special events. The auditorium lobby overlooks a sculpture garden and courtyard. With its benches and pergola, the area is a choice spot for students to relax. Two additional large multipurpose rooms accommodate up to 700 people.

The SAC houses the Seawolves Market convenience store, a full-service bank with ATMs, a post office, a student-run print shop, and the Eugene Weidman Wellness Center, which has a dance floor, heart-strengthening machines, a juice bar, and runs a seminar series addressing the full range of human needs—physical, spiritual, cultural, philosophical, emotional, and mental. The undergraduate student government, Student Polity Association, has a suite of offices in the SAC. The Commuter Commons is a bi-level lounge with computer carrels, billiard and ping pong tables, and the office of the Commuter Student Association. The Dean of Students, Commuter Student Services, and Student Activities also have offices in the SAC. For a listing of campus activities, access the University Events Calendar at www.sunysb.edu.

Division of Student Affairs

As campus advocates for all students, the departments within the Division of Student Affairs are responsible for supporting the needs of the student body and providing a positive campus life experience for each student. The Division consists of the following offices: Campus Recreation; Campus Residences; Career Center; University Counseling; Dean of Students, which includes Commuter Student Affairs, and the Department of Student Union and Activities, on the second floor of the Student Activities Center; Disabled Student Services; Student Health Services; Student Judiciary; and Veterans Affairs. Detailed information is available in the Stony Brook *Student Handbook*, which is available in most major campus offices and in the campus bookstore.

Student Health Service

New York State Public Health Law requires that every student demonstrate proof of immunity against measles, mumps, and rubella. This law requires the University to prohibit students' future attendance if they fail to acquire or submit certification of the necessary immunizations. Compliance is mandatory; students who fail to provide proof of immunization will be prevented from registering for courses.

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 \$75 (subject to change) for full-time students and \$7.50 per credit for part-time students. The health service is open Monday through Friday, 8:00 a.m. to noon and 1:00 p.m. to 5:30 p.m. The hours during intersession and in the summer are 8:00 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 assistants, nurse practitioners, 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, health educator, psychiatrist, social worker, and massage therapist.

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 (631) 632-6054.

Office of the Student Judiciary

The Office of the Student Judiciary is responsible for investigating and adjudicating cases of alleged student misconduct (in non-academic 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 Director of Judicial Affairs, 347 Administration Building, (631) 632-6705.

Veterans Affairs

The Office of Veterans Affairs, part of the Office of the Vice President for Student Affairs, offers assistance in applying for educational benefits and completing and forwarding forms and supporting documents for eligible veter-

ans and dependents. In addition to serving as liaison between these students and Veterans Administration, the office provides certification and tuition deferment services. The office is located in Room 348 of the Administration Building. For additional information or to make an appointment for assistance, please call (631) 632-6700/1.





Admissions



The information in this chapter refers to undergraduate admission to the College of Arts and Sciences, the College of Engineering and Applied Sciences (CEAS), and the Marine Sciences Research Center (MSRC).

Transfer students and current Stony Brook students seeking admission to any of the junior-senior level undergraduate programs in the Health Sciences Center should consult the Health Sciences Center section in this *Bulletin* and the separate *Health Sciences Center Bulletin*.

Students are encouraged to submit an application for admission by July 10 for fall admission and by December 20 for spring admission.

Freshman Admission

Stony Brook evaluates applicants on an individual basis. There is no automatic cutoff in the admission process, either in grade point average, rank, or test scores. The Admissions Committee seeks to enroll the strongest and most diverse class possible. Successful applicants will typically have earned:

- a high school diploma or equivalent (a Regents diploma is preferred for New York State residents);
- a strong high school academic program that includes:
 - 3 to 4 units of mathematics (4 units required for engineering)
 - 4 units of English
 - 4 units of social studies
 - 3 units of science (4 units required for engineering)
 - 2 or 3 units of a foreign language;
- standardized test scores that indicate the promise of success in a rigorous undergraduate course of study.

Stony Brook also welcomes applications from those with special talent or exceptional ability in a particular area. SAT II scores in writing, mathematics, and a third area of the student's choice are recommended. Two letters of recommendation from counselors and teachers may be requested by the Admissions Office.

Application Procedures for Freshmen

Freshmen are generally admitted to the University rather than to a particular program. Students interested in majors in the College of Engineering and

Applied Sciences should indicate their interest on the admissions application; qualified students are admitted directly into those programs. Admission to the University does not guarantee acceptance into CEAS programs.

All applicants must submit a completed application for undergraduate admission, which is available through the Office of Undergraduate Admissions or their high school guidance office. To receive an application form, contact the Office of Admissions at (631) 632-6868 or via e-mail (admiss@mail.vpsa.sunysb.edu) or visit the Website at www.sunysb.edu/admissions.

Early Action for Freshmen

Early Action is a non-binding early application/notification program available at Stony Brook (except for upper-division HSC programs). If you are accepted for Early Action, you need not withdraw your applications at other institutions until May 1.

To apply for Early Action, your application must reach APC by November 15. You will need to indicate your desire to apply for Early Action where indicated on your application. The Office of Admissions notifies Early Action applications by January 1. If accepted for Early Action, you will have until May 1 to finalize your enrollment decision.

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 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.

Notification of Freshman Admission

Students are notified of their admission for the fall semester beginning January 15 and on a rolling basis thereafter. Notification for spring admission begins on November 1 and continues on a rolling basis thereafter. Admission to the Uni-

versity 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 Dean 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

Individuals who registered at a regionally accredited college or university after graduating from high school are eligible to transfer to Stony Brook. Applicants are required to have performed well in a strong academic program. If the applicant has earned fewer than 24 credits, high school transcripts must also be submitted.

The State University of New York is committed to offering admission to qualified graduates of university-parallel programs, i.e., A.A. and A.S. degree recipients from 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. 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.

Students interested in majors in the College of Engineering and Applied Sciences should indicate their interest on the admissions application; qualified students are admitted directly into those programs. Admission to the University does not guarantee acceptance into CEAS programs. See the alphabetical listing of Approved Majors, Minors, and Programs for admission requirements for specific majors.

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 registration. Applicants who expect to be degree recipients (A.A. or A.S.) should present evidence of receipt of the degree prior to registration for advising purposes.

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

Transfer Credit Policies

1. Transfer credit is entered on the official University transcript with the understanding that neither previous grades nor their cumulative averages are shown.
2. 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 credits completed as part of their associate degree requirements. Official proof of an A.A. or A.S. degree must be submitted by October 1 after fall semester entry or February 15 after spring semester entry.
3. 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 programs recognized by New York State's Program on Non-collegiate Sponsored Instruction and recorded on official transcripts are accepted for transfer credit and evaluated for applicability to specific Stony Brook degree requirements. Successfully completed courses from these institutions for which a grade equivalent to P or S was assigned are also accepted for transfer credit.
4. Almost all credits earned at community colleges are considered to be lower-division credit.
5. Transferred courses are reviewed individually by the Undergraduate Transfer Office for their applicability toward fulfillment of general education requirements. They must carry at least 3 semester hours of credit to be applicable to any category in the Diversified

Education Curriculum (D.E.C.). Applicants who have completed college-level study at an institution outside of the United States will have their credits evaluated for application to the University's general education requirements by the Undergraduate Admissions counselor for international students.

6. Courses satisfactorily completed elsewhere for the intended major or needed to fulfill the 39 upper-division credits requirement must be evaluated by the appropriate academic department for specific applicability. No transferred course with a grade lower than C may be counted among the 39 upper-division credits required for graduation. Forms for requesting the evaluation of specific courses for major and upper-division credit are available in the Undergraduate Transfer 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. Note: courses taken at other universities and colleges in a technology curriculum will normally *not* be transferred as equivalents to engineering or applied sciences courses.
7. 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' counselor for international students before seeking a departmental course evaluation.

Stony Brook routinely prepares tables of course equivalents for several SUNY and CUNY institutions. Students wishing additional information should consult an admissions counselor.

Special Admissions Programs

Educational Opportunity Program/ Advancement on Individual Merit (EOP/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 104 Literary Analysis and Critical Reasoning, as determined by their writing placement score. 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 summer program 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 a member of a household supported by:

- a. One or more individuals whose total annual income is from Social Security or sources other than employment and which does not exceed the applicable amount under "Category A" below; or,
- b. More than one worker whose combined total annual income does not exceed the applicable amount under "Categories B and C" below; or,
- c. Either one worker (the student) or a single parent worker whose total annual income does not exceed the applicable amount under "categories B and C" below.

Household size (including head of household)	Total Annual Income Category A	Total Annual Income Categories B and C
1	\$10,750	\$13,450
2	\$18,100	\$20,800
3	\$20,800	\$23,500
4	\$25,900	\$28,600
5	\$30,700	\$33,400
6	\$36,000	\$38,800
7	\$40,150 plus \$4,050 per add'l family member	\$42,850 plus \$4,050 per add'l family member

All applicants for admission through EOP/AIM must also be academically eligible for acceptance at the time of application. To be academically eligible, applicants typically have earned:

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 850 (minimum verbal score of 450 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 student entered. Transfers typically have a minimum grade point average of 2.30 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 (631) 632-6868. Applicants are encouraged to apply early, as there is limited space in the program.

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.

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.

Admission for Second Bachelor's Degree

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 an application for undergraduate admission, submit an official transcript indicating previous degree earned, and normally have a minimum cumulative grade point average of at least 2.50.

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.

Admission of International Students

International students interested in applying to the University should contact the Undergraduate Admissions Office directly (or visit the Website at www.stonybrook.edu/admissions) 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.

Original certified transcripts with grades from secondary school and college courses are required. These transcripts must be in the original language and accompanied by an English translation with an explanation of the marking system. Secondary school records must reflect academic achievement equivalent to the minimum for admission when converted to the American grading scale. A 2.50 grade point average is required of international 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 a grade point average of 2.50 or higher is required of transfer applicants whose secondary

school achievement fell below the standard required for freshman admission. (For transfer credit policies, see page 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 on the paper-based test or 213 on the computer-based test, or to demonstrate English proficiency by one of the following methods: SAT verbal score of 430 or higher or proof of attendance at an Intensive English Language Institute in the United States with completion of a program at the advanced level.

It is also necessary to provide financial documentation 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. Forms and details are included in the Application Packet for International Undergraduate Students.

Early completion of the application 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.

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

Admission of Students with Disabilities

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.

Admission for 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 should follow the

application procedures described elsewhere in this chapter. (Freshmen and transfer students, see page 26.)

Admission for Non-Degree Study

General Information

Non-matriculated study is available for individuals who are not ready to study for a degree or who are not interested in studying for a degree. 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. 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 2.50, or 12 credits with a cumulative grade point average of 3.00 or higher. 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 visiting students 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 grade point average of 2.50 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 2.30 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 is reviewed at the conclusion of each semester. Students earning less than a 2.00 semester grade point average are not permitted to continue.

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, Introduction to Sociology, Introduction to Psychology, and Logical and Critical Reasoning, to name 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 an average of 90 or above, should have taken honors and advanced placement courses when available, and have Regents scores in the high 80's or 90's. Participants must have the approval of 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
University at Stony Brook
Stony Brook, NY 11794-1901
(631) 632-6867

Acceptance to the College of Engineering and Applied Sciences Programs

Qualified freshman and transfer applicants to the University may be accepted directly into the applied mathematics and statistics, business management, computer engineering, computer science, electrical engineering, engineering science, information systems, or mechanical engineering majors; however, they must specify their interest at the time they apply. Admission to the University does

not guarantee acceptance into any of these eight programs. See the alphabetical listing of Approved Majors, Minors, and Programs for admission requirements for specific majors.

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. Tours are scheduled throughout the year and leave from the Undergraduate Admissions Office. It is advisable to call (631) 632-6868 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-day orientation session during which they may confer with faculty members 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.

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 Services Center, University at Stony Brook, Stony Brook, NY 11794-1351, and must

be received 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.

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 Sessions, which usually consists of two consecutive sessions, 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 sessions.

The University has an open enrollment policy during the summer. All graduates of accredited high schools or equivalency programs may attend Summer Sessions classes at Stony Brook. 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 point average is 85 or higher.

Admission to summer classes is for the Summer Sessions 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 Sessions credits taken at Stony Brook toward fulfillment of their academic requirements.

To request information about Summer Sessions, write or phone:

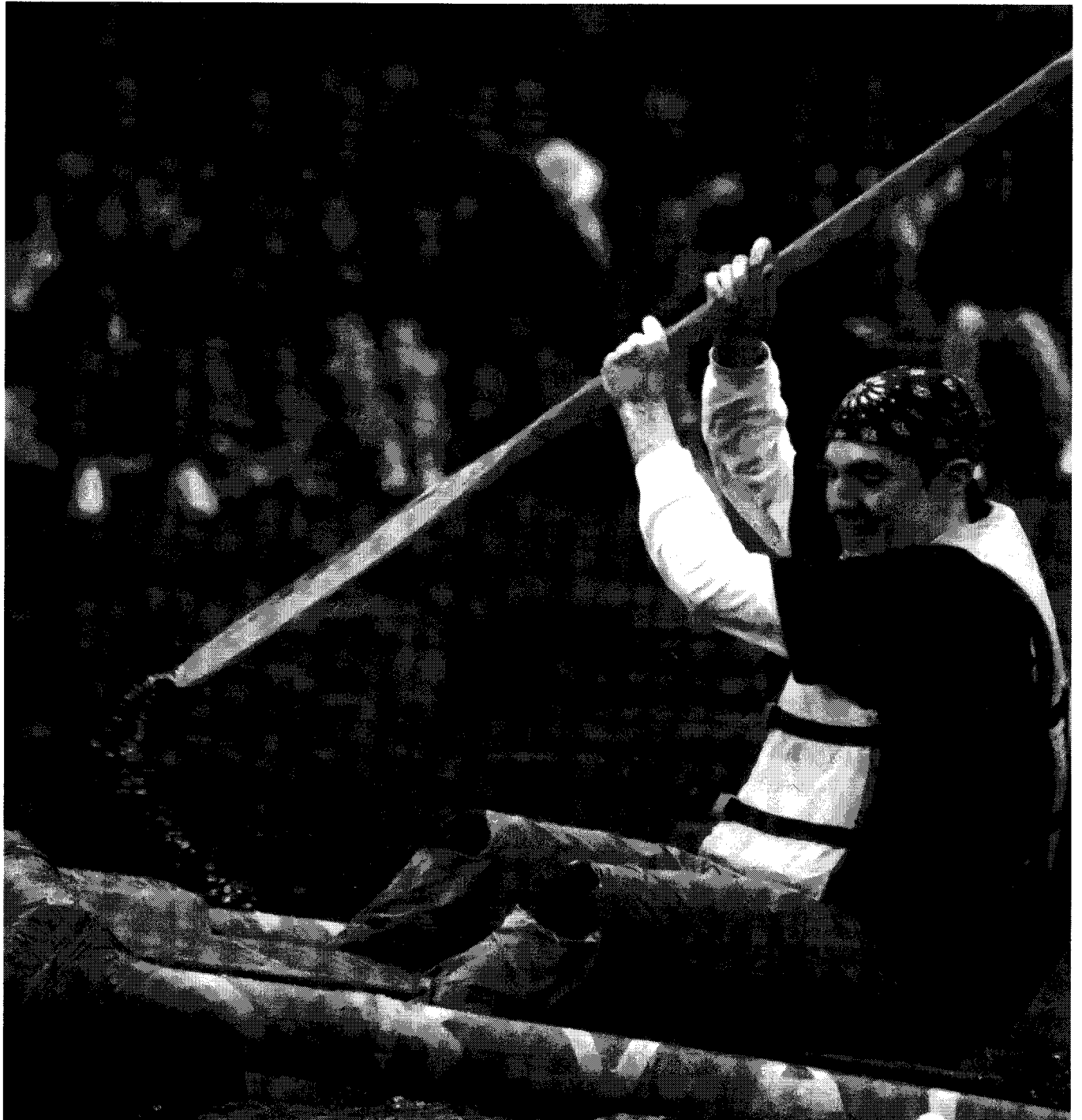
Summer Sessions Office
Humanities Building, Room 102
University at Stony Brook
Stony Brook, NY 11794-5370
(631) 632-7070

or e-mail at summerschool@notes.cc.sunysb.edu.

The Website is www.sunysb.edu/summer.



Financial Information



Students are responsible for reviewing, understanding, and abiding by the University's regulations, procedures, requirements, and deadlines as described in official publications including this *Undergraduate Bulletin*, the *Student Handbook*, and Class Schedules.

Charges are posted to the student's account upon registering for classes. It is the student's responsibility to pay his or her student account after registration. Billing statements will be sent to the student with a due date for full payment. All tuition, fees, and charges must be paid in a timely manner, regardless of whether a billing statement has been received.

Failure to satisfy this financial obligation by the due date of the billing statement will result in late fees, and will prevent students from receiving transcripts, diplomas, and certifications and from registering for future semesters. Nonpayment does not constitute official withdrawal, which must be done through the Registrar's Office. 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 page 34 under Refund of Tuition. All tuition, fees, and charges are estimated as of October 2000 and are subject to change without prior notice.

Tuition and Fees

Tuition

New York State Resident Tuition:	
Full-time student (12 credits or more)	\$1700.00/semester
Part-time student (per credit hour up to 11 credits)	\$137.00/credit
Out-of-State Resident Tuition:	
Full-time student (12 credits or more)	\$4150.00/semester
Part-time student (per credit hour up to 11 credits)	\$346.00/credit

Housing

	Each Semester
Double room	\$2534.00
Single room	\$2112.00
Specialty room (Tabler & Roth)	\$2639.00
Specialty room (Roth)	\$3167.00

Meal Plan

Each Semester (Plan #1)	\$1150.00
Plan Option #2	\$1250.00
Plan Option #3	\$1450.00
Plan Option #4	\$2000.00

Student Fees

Comprehensive Fee	
Full-time student (12 credits or more)	\$327.50/semester
Part-time student (per credit hour up to 11 credits)	\$32.35/credit
The comprehensive fee provides funding for the Student Health Center and the intercollegiate athletic program, as well as the increasing transportation and technological needs of the campus.	
Student Activity Fee¹	
Undergraduate full time	\$86.50/semester
part-time	\$7.40/credit

¹This fee is set by Student Polity (Undergraduate Student Government).

Other Student Fees

Orientation¹	
Two-part program	\$125.00
Late Registration Fee²	
All students (each occurrence)	\$30.00
Late Payment Fee³	
All students	\$30.00
Parking Permit	
All students registering their vehicles	\$5.00

¹Prices are approximate and subject to change.

²Incurred for registration on or after the first day of classes.

³Cumulative up to \$90.00/semester.

Incidental Fees

Lost Identification Card Fee	
All students	\$10.00
Returned Check Fee	
All students	\$20.00
Transcript Fee	
All students	\$5.00/each

Student Health Insurance

To be announced

Deposits

Advance Tuition Deposit	
Applies toward first-semester charges.	
Freshmen and Transfers	\$100.00
Advance Housing Deposit	
All students	\$200.00

Summer Session

Tuition

New York State Resident Tuition:	
Part-time student (per credit hour)	\$137.00/credit
Out-of-State Resident Tuition:	
Part-time student (per credit hour)	\$346.00/credit

Housing

Single room single occupancy	\$151.00/week
Double room double occupancy	\$126.00/week

Fees

College fee	\$.85 per credit
Comprehensive fee	\$77.50 per term
The comprehensive fee provides funding for the Student Health Center, as well as the increasing transportation and technological needs of the campus.	
Undergraduate student activity fee	\$15.00
Late registration fee	\$30.00
Late payment fee (if balance not paid within 7 days of registration)	\$30.00

Payment of Fees and Charges

It is the student's responsibility to pay his or her student account after registration. After registering for classes, all students will be sent a billing statement for tuition and fees with instructions for making payment. All tuition, fees and charges must be paid when due.

Tuition, fees, and other University charges assessed on each billing statement will be due in full by the due date appearing on your statement. University billing statements are sent to the permanent address on file with the Registrar's Office. The student is responsible for making sure that a correct address is on file and must inform the Registrar's Office of any change of address. Students must have proof of approved aid, waivers, or scholarships in order to properly defer payment. Without satisfactory evidence to defer, students are expected to pay charges up front and wait for reimbursement when the aid, waiver or scholarship funds are actually received. Students should apply early for any financial aid they expect to use to pay their University bill.

Payments made by check or money order must be made payable to Stony Brook University, and sent to P.O. Box 619, Stony Brook, NY 11790. Any payment that fails to clear is subject to a \$20 handling fee and may be subject to a \$30 late payment fee. Payments made by return mail should include the bottom portion of the statement (to ensure proper credit to the account), and sent in the return-addressed envelope provided with the bill. Mailed payments must be postmarked by the due date to avoid the late payment fee. Students are encouraged to pay by mail or by telephone in order to avoid lines at the Bursar. All payments should include the student's University ID number for prompt and proper credit.

Payment may also be made with Visa, MasterCard, Discover, and American Express. Payment with a credit card may be made by using the Automated Telephone System at (631) 632-1100 with a touch-tone phone. Listen to the recorded directions and choose option #4.

Students registering on or after the first day of classes shall be required to pay a late registration fee of \$30. The late registration period ends at the close of the second week of classes.

Failure to pay the amount due by the billing due date will result in an automatic assessment of the incremental late payment fee of \$30. Incremental late payment fees, up to a total of \$90 per semester, will be assessed on all accounts not completely paid by the due dates indicated on each successive account statement. Students should apply early for any financial aid in order to have their account paid before the university billing due dates. Late fees will not be removed based on pending financial aid.

The Office of Student Accounts offers a Time Option Payment Program (TOPP). This program allows for the budgeting of expenses on a monthly basis. This is not a loan of any sort; therefore, no interest will be charged. There is an annual processing fee to help defray the administrative expenses of the program. For more information please contact the Student Accounts office at (631) 632-2455.

Students failing to meet financial obligations incurred at Stony Brook are not eligible to continue at the University or participate in room selection. No student may receive a degree, certificate of completion, or transcript until all charges due to the University or any of its related divisions are paid in full. Delinquent accounts will be transferred to private collection agencies and/or the New York State Attorney General's Office for collection and are subject to additional interest and/or collection charges.

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).

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. 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 remind-

ed 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), and Federal Pell Grants: 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. 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 Services before coming to the Office of Veterans Affairs to request a deferment.

4. 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.

5. 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 Business Office in order to receive deferment.

6. New York Higher Education Services Corporation Loans (NYHESC):

After filing the required loan forms, the student will receive the Notice of Loan Guarantee 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 Refunds, Student Accounts Office, University at Stony Brook, Stony Brook, NY 11794-1301.

Refund of Pre-Enrollment 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 pre-printed 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 Services.

After the first day of classes, pre-enrollment tuition deposits will be forfeited.

Refund of Housing Deposits

Each student is required to pay a \$200 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. After the first day of classes, housing deposits will be forfeited.

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:

Academic Year:

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

Six-Week Summer Session:

Withdrawal during	Liability
First week	0%
Second week	70%
Third week	100%

Five-Week Summer Session:

Withdrawal during	Liability
First week	0%
Second week	70%
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 Registrar's Office.

After 100 percent liability, a student is liable for tuition and all fees in full. Students who register for courses and who do not file the appropriate withdrawal or do not drop before the end of the fourth week of classes are liable for their full charges.

Note: Non-attendance of classes does not classify as an official withdrawal, and does not relieve the student of his or her financial obligation, or entitle the student to a refund.

More information can be found in the University's Refund Policy publication, which is available in the Office of Student Accounts.

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 Registration-Related Fees

During 0 percent liability, refunds will be processed for registration-related fees (except the college fee), such as the comprehensive fee, student activity fee, and specific course fees, such as engineering or physical education laboratory fees. After 0 percent liability, all fees are due in full.

Students who register for courses and who do not file the appropriate withdrawal or do not drop before the end of the fourth week of classes are liable for their full charges.

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 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 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 Meal Plan Fee

Students wishing to cancel their meal plan contract must do so through the Campus ID/Meal Plan Office. On notifi-

cation from this office, the Office of Student Services will credit the account and prepare a refund if appropriate.

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 his or her tuition and fees provided the student has made a written request to the Office of Student Accounts within one year after the end of the term that the money was paid to the University.

Other Expenses

Food

All resident students will be enrolled in a Resident Meal Plan unless they have previously completed two semesters of study at Stony Brook, reside in a designated cooking area, and select the Resident Cooking Program as a dining Option on their Room Selection/Meal Plan Application. Failure to select a dining option or an invalid selection of cooking will result in an enrollment on the Standard Advantage Meal Plan. All students who reside in residence hall areas designated as mandatory meal plan areas must enroll in a Resident Meal Plan regardless of class status or tenure at Stony Brook.

For more up-to-date 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), (631) 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.

Food Service

The University, through a food service contractor, provides several meal plan options. There are three dining halls located in the resident areas. Kelly and H dining halls offer all-you-can-eat breakfast, lunch, and dinner. Also offered in Kelly is a Taco Bell Express and a 24-hour deli. In addition to the dining halls, USB Dining offers several other eater-

ies. Roth Food Court houses the kosher dining room and offers traditional meals as well as alternatives such as Burger King, Deng Lee's Chinese Cuisine, Seawolves Sub Shop, Changing Scenes, and USB Delivery. The Student Activities Center offers a wide array of food, as does the Humanities Cafe. The Student Union houses the End of the Bridge restaurant, the Union Deli, Stony Snacks, Bleacher Club, and Papa Joe's.

There are other independently-run student-operated eating establishments on campus which do not accept the meal plan. These student-operated establishments offer everything from snacks to complete meals. Hours of operation vary by location and it is best to inquire at orientation or before arriving on campus.

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 \$1,188 for nine months. This figure is used for computing the basic student aid budget.

Travel Expenses

The average estimated expense is \$700 for nine months on campus for a student residing in a dorm. The average estimated expense is \$2,066 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 SUNY Study Abroad programs 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 Service

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 average price per month for a furnished room is \$350 to \$450. 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 \$350 to \$550 per month plus a percentage of the utility costs.

Apartment listings cover those available in standard apartment 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-\$600 per month. A studio apartment in one of the apartment facilities usually costs between \$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-\$950 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 \$850 to \$2,200 per month, not including utilities. The price depends on the number of rooms in the house, the condition of the house, and its proximity to 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), and Educational Opportunity Program (EOP). The office also manages the Federal Pell Grant, Federal Family Education Loan (FFEL) Program, the New York State Tuition Assistance Program (TAP), and the New York State Aid for Part-Time Study (APTS) Program. These programs are described below, together with other sources of 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 (FAFSA), the Express Tuition Assistance Program Application (ETA), and the Aid for Part-Time Study (APTS) application. Application forms and information about application guidelines and deadlines are available at the Office of Financial Aid and Student Employment, 230 Administration Building, (631) 632-6840. (Note: the ETA is mailed directly to the students after filing the FAFSA; please see the New York State Programs section for further information about the application process for a Tuition Assistance Program [TAP] Grant.)

Note: Students should be aware that the University will implement all changes in standards and/or policies that are prescribed by the federal and state regulations governing financial aid administration.

FEDERAL PROGRAMS

Application Procedures

Students may apply for funding through the federal programs in one of the following ways:

- Complete and mail a paper FAFSA to the federal processor;
- Complete an electronic FAFSA on the Internet at www.fafsa.ed.gov;
- Complete a Renewal FAFSA and mail it to the federal processor or file it electronically on the Internet at www.fafsa.ed.gov.

Within four to six weeks, the applicant will receive a document called a Student Aid Report (SAR) indicating his or her Expected Family Contribution (EFC). This EFC is used to determine the applicant's eligibility for one or more of the federal programs.

The information contained in the SAR will be transmitted electronically to Stony Brook if the applicant included the institution's Title IV School Code (002838) on the FAFSA. This information is necessary in order to provide a financial aid award package to the student. The Office of Financial Aid and Student Employment notifies each student of his or her award package through an award letter. The student must complete and sign the letter and return it with any other requested documentation to the Office of Financial Aid

and Student Employment before awards can be accepted.

If the student's application is selected for verification, he or she will be requested to provide additional documentation to substantiate the accuracy of the information filed on the FAFSA. This documentation must be compared to the SAR data and corrections made (if necessary). Finally, the Office of Financial Aid and Student Employment must be in receipt of the data from a correct and valid SAR before payment of awards can be made.

Requirements and Responsibilities of Recipients

In order to receive financial assistance through any of the federal programs, the student must: 1) be a citizen, permanent resident alien, or other eligible resident of the U.S.; 2) be matriculated into a degree program; 3) register with Selective Service, if required; and 4) not owe refunds of any awards made previously through one or more of the federal programs, 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 (i.e., tuition, fees, books, and living expenses).

The student must maintain satisfactory academic progress. Federal regulations specify that academic progress be measured each year (following the spring semester). Eligibility for assistance from the Federal Pell Grant, Federal SEOG, Federal Perkins Loan, Federal Work-Study, and Federal Stafford Loan programs is contingent on the candidate's meeting "quality" and "quantity" standards:

- The law specifies that by the end of the second academic year, the student must have either a minimum g.p.a. of 2.00 or academic standing consistent with the requirement for graduation from his or her program of study.
- In addition, a full-time undergraduate student in a four-year program must successfully earn a minimum of 20 credits per year in order to complete his or her program in a maximum of six years. Incomplete (I), No Record (NR), Failure (F), Unsatisfactory (U), No Credit (NC), and Academic Dishonesty (Q) grades do not count as earned credits. The student may make

up credits during the summer session(s) if he or she has not earned the required number by the completion of the spring semester. However, payment for the summer courses must be made by the student.

Further information about academic progress as a condition of federal student aid can be obtained by contacting the Office of Financial Aid and Student Employment.

"Emancipated" or "Independent" Student Status

The designation of independent status refers only to whether or not a student is required to report parental income when applying for financial aid. 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:

- 24 years of age or older by December 31 of the award year;
- a veteran of the U.S. armed forces;
- enrolled in a graduate or professional program (beyond a bachelor's degree);
- married;
- a ward of the court;
- having legal dependents other than a spouse.

Note: Independent status under the federal definition does not necessarily ensure independent status for state aid programs. See "Independent Student Status," page 38.

Federal Pell Grant

Selection of Recipients and Allocation of Awards

The Federal Pell Grant Program is an entitlement program. Eligibility and award amount are based on need. Financial need is determined by a formula applied to all applicants. The formula 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.

The applicant must be pursuing a first bachelor's degree and enrolled for at least three credits in an approved postsecondary institution.

Award Schedule

Currently, awards range from \$400 to \$3,750. The award amount will be affected by the cost of attendance at a particular institution and the student's enrollment status. The Pell award is not duplicative of state awards.

Federal Supplemental Educational Opportunity Grant (FSEOG)*Selection of Recipients and Allocation of Awards*

The applicant must be 1) in exceptional financial need and 2) pursuing a first bachelor's degree.

Award Schedule

Awards range from \$100 to \$1,000, and are made on a funds-available basis. Priority is given to Pell Grant recipients. In addition, students must apply by the priority deadline in order to be considered. (Contact the Office of Financial Aid for further details.)

Federal Perkins Loan*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. Awards are made on a funds-available basis. Students must apply by the priority deadline in order to be considered. (Contact the Office of Financial Aid and Student Employment for further details.)

Award Schedule

Annual loan limits are established at \$3,800 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 and undergraduate study combined.

Actual Federal Perkins Loans are limited based on annual allocations and collections, and presently average \$1,500 per year at Stony Brook.

Repayment

The current interest rate, payable during the repayment period, is five percent on the unpaid principal. Repayment begins nine months after the last date of enrollment 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. Information on loan cancellation provisions for borrowers who go into certain fields of teaching or specified military duty is available through the Office of Financial Aid.

Federal Work-Study Program (FWS)*Selection of Recipients and Allocation of Awards*

The FWS program provides part-time employment to undergraduate and graduate students who need the income to help meet the costs of postsecondary education.

The University at Stony Brook strives to make employment reasonably accessible to all its eligible students who have financial need. In the event that more students are eligible for FWS than there are funds available, preference is given to students who applied by the priority deadline. (Contact the Office of Financial Aid and Student Employment for further details.)

Award Schedule

The Office of Financial Aid and Student Employment provides recipients of an FWS allocation with a listing of the available FWS positions. Students may work up to 20 hours each week. Hourly wage rates are variable and currently range from \$5.15 to \$12.00 per hour for undergraduate students.

Note: Students interested in participating in Stony Brook's Community Service Program (a program that provides students with the opportunity to serve the public interest while earning Federal Work-Study wages) should contact the Office of Financial Aid and Student Employment.

Federal Family Education Loan Program (FFEL) Subsidized and Unsubsidized Federal Stafford Loans*Selection of Recipients and Allocation of Awards*

Stafford Loans are either subsidized or unsubsidized.

- A subsidized loan is awarded on the basis of financial need. The federal government pays interest on the subsidized loan until the student begins repayment.
- An unsubsidized loan is not awarded on the basis of need. The student is charged interest from the time the loan is disbursed until it is paid in full. If the student allows the interest to accumu-

late, it will be capitalized (i.e., the interest will be added to the principal amount of the loan and will increase the repayment total). If the student pays the interest as it accrues on a monthly basis, the total of principal plus interest repaid will be lower.

To be eligible for a Federal Stafford Loan, a student must be enrolled at least half time in an approved program of study.

Loan Schedule

A student may borrow up to a total of \$2,625 in a subsidized and/or unsubsidized loan for the first year of undergraduate study, \$3,500 for the second year, and \$5,500 for subsequent undergraduate study. Independent undergraduates can apply for an additional \$4,000 in an unsubsidized loan for each of their first two years of study, and \$5,000 annually for the remaining years.

A graduate student may borrow a total of \$3,500 in a subsidized and/or unsubsidized loan per class year. Graduate students may apply for an additional \$10,000 in an unsubsidized loan for each year of graduate study.

The total debt a student can have outstanding from all Stafford Loans combined is:

- \$23,000 as a dependent undergraduate student;
- \$46,000 as an independent undergraduate student (no more than \$23,000 of this amount may be in subsidized loans); or
- \$138,500 as a graduate or professional student (no more than \$65,500 of this amount may be in subsidized loans). The graduate debt limit includes any Stafford Loans received for undergraduate study.

Repayment of Subsidized Loans

A student may borrow at a relatively low interest rate (currently the treasury bill rate plus 2.3 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.

The following regulations governing repayment apply:

- 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.
- The standard repayment period is ten years.
- The maximum period of a loan, from date of the original note, may not exceed 15 years, excluding authorized deferments of payments.
- Repayment in whole or part may be made at any time without penalty.

Repayment of Unsubsidized Loans

The terms of the unsubsidized loan are the same as those for the subsidized loan (see above), 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. (The interest rate is currently the treasury bill rate plus 1.7 percent during in-school periods and 2.3 percent during repayment with a cap of 8.25 percent.)

Federal Parent Loan for Undergraduate Students (FPLUS)

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

NEW YORK STATE PROGRAMS

Note: Where any question of eligibility exists, the student or prospective student should contact New York State Higher Education Services Corporation (HESC) at (518) 474-5642.

Tuition Assistance Program (TAP)

Application Procedures

To apply for TAP, students should begin by completing the Free Application for

Federal Student Aid (FAFSA) and mailing it to the federal processor. (Forms are available at any financial aid office or high school guidance office.) Upon receipt of the student's FAFSA, the federal processor will send income and demographic data to New York State Higher Education Services Corporation (HESC) if the following two conditions are met: 1) the student is a New York State resident and 2) he or she listed at least one New York State institution on the FAFSA. HESC will send the student a pre-printed Express TAP Application (ETA). The student should check the information on the form, make any necessary changes (including the addition of Stony Brook's undergraduate TAP code: 0875), sign and return the ETA to HESC.

HESC determines the applicant's eligibility and mails an award certificate directly to the applicant indicating the amount of the grant.

Requirements and Responsibilities of Recipients

In order to receive an award through the Tuition Assistance Program, the applicant must: 1) be a New York State resident and a U.S. citizen, permanent resident alien, paroled refugee, or conditional admittant to the United States; 2) be enrolled full time and matriculated in an approved New York State postsecondary institution and program; 3) be charged a tuition of at least \$200 per year; and 4) declare a major by the first day of class of his or her junior year.

In addition, the New York State Education Department has issued academic guidelines governing eligibility for the Tuition Assistance Program. Under these regulations, students must

meet minimum academic achievement requirements in order to receive payment of awards.

According to these regulations, 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.

A student who does not meet these minimum standards for any one semester will be ineligible to receive an award payment for the following semester. However, a waiver of the minimum achievement standards may be granted under certain extenuating circumstances. Students who do not meet the requirements will receive notification in the mail as to their next appropriate course of action.

"Independent" Student Status

The designation of independent status for TAP applicants refers only to whe-

Standard Satisfactory Academic Progress Only for the Purpose of Determination of Eligibility for State Student Aid										
Semester Calendar Bachelor's 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	21	33	45	60	75	90	105
With at Least This Grade Point Average	0	1.1	1.2	1.3	2.0	2.0	2.0	2.0	2.0	2.0

ther or not a student is required to report parental income and is contingent upon the following criteria. Applicants must be:

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; or
 - b. claimed as a dependent by parents on their federal or state income tax returns; or
 - 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 listed in 2, above, and additionally 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 the student's family, resulting in relinquishment of parental 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; or
4. honorably discharged from military service, regardless of age.

Note: Independent status under the state definition for the Tuition Assistance Program does not necessarily ensure independent status for federal aid programs. See "Emancipated" or "Independent" Student Status," page 38.

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.

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 (taken from the New York State tax return[s] filed in the year previous to the academic award year). All income data are subject to verification by the New York State Department of Taxation and Finance.

Currently, awards at Stony Brook for undergraduate study range from a minimum of \$100 to a maximum of \$3,425.

Aid for Part-Time Study Program (APTS)

Application Procedures

The student must complete an Aid for Part-Time Study application and submit it to the Office of Financial Aid by the last day of the add/drop period for the semester in which he or she is seeking an award. Signed photocopies of New York State tax returns from the base year (i.e., the year previous to the academic year: 2000 tax returns for the 2001-2002 academic year) must be submitted with the application.

Requirements and Responsibilities of the Recipient

Applicants must: 1) be working toward an undergraduate degree or enrolled in a registered certificate program; 2) enroll as a part-time student for a minimum of three credits, but less than 12; 3) maintain good academic standing; 4) be a resident of New York State; 5) be either a U.S. citizen, permanent resident alien, or refugee; 6) meet the income limits (see below); 7) not have used up Tuition Assistance Program (TAP) eligibility; 8) have a tuition charge of at least \$100 per year; and 9) not be in default of a Federal Family Education Loan.

Selection of Recipients and Allocation of Awards

Awards are made to applicants who meet the criteria in the preceding section and are determined to have financial need according to the following formula:

1. The family income (i.e., net taxable income of student and parents) of students who were claimed as tax dependents by their parents in the base year must not exceed \$50,550.
2. The family income (i.e., net taxable income of student and spouse) of independent students with no tax dependents cannot exceed \$34,250.
3. The family income (i.e., net taxable income of student and spouse) of independent students with tax dependents (not including the student and spouse) must not exceed \$50,550.

Award Schedule

APTS awards cannot exceed the cost of tuition and are determined each semester by dividing the total program allocation by the number of qualified applicants who complete the application process by the deadline.

Educational Opportunity Program (EOP)

Educational Opportunity Program (EOP) funds are allocated on the basis of need to undergraduate students enrolled in Stony Brook's Advancement on Individual Merit (AIM) Program.

The AIM program 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 and the University at Stony Brook.

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
W-3520 Library
University at Stony Brook
Stony Brook, NY 11794-3375
Telephone: (631) 632-7090

Division of Military and Naval Affairs (DMNA) Education Incentive Program

Application Procedures

The student must complete a Recruitment Incentive and Retention Program application at his or her guard unit. The unit commander or other authorized representative determines and certifies (if eligible) the applicant's eligibility for this program. If certified, the applicant brings the certificate of eligibility to the Office of Veterans Affairs at Stony Brook in order to register for classes. The student should call (631) 632-6700 for an appointment.

Note: This is a newly instituted program; procedures are subject to change. Further inquiries about the program should be directed to DMNA at 1-800-356-0552.

Requirements and Responsibilities of Recipients

Participants in this program must be members of the Army/Air Guard or NY Naval Militia in good standing, having successfully completed initial active duty training, naval enlisted code training, or a commissioning program. The program is limited to undergraduate study.

The student must be matriculated and enrolled for a minimum of six credit hours per semester. Participants must be in good academic standing. Good academic standing is determined by the campus and is defined as not being on academic probation.

Participants are required to apply first for all available financial aid. Proof of application must be presented to DMNA.

Students must sign a statement of rights and responsibilities.

Selection of Recipients and Allocation of Awards

The Education Incentive Program allows an eligible guard or militia member to receive a tuition voucher equal to the amount of tuition costs remaining after all other student aid, except loans, is applied against the undergraduate in-state annual tuition of SUNY institutions up to \$3400 per academic year.

Award Schedule

The voucher amount is the current cost of tuition (excluding the college fee) at the institution up to SUNY's current tuition minus any grants received through the Federal Pell Grant, New York State TAP, New York State Aid for Part-Time Study, or ACES (Army Continuing Education System) program or from any other source. Benefits received under the Montgomery G.I. Bill Act of 1984 shall not be considered educational aid for purposes of this program.

OTHER NEW YORK STATE PROGRAMS

- **Child of Veteran Award Supplement**
- **Persian Gulf Veterans Tuition Award Supplement**
- **Vietnam Veterans Tuition Award Supplement**
- **Memorial Scholarships for Families of Deceased Police Officers and**
- **Firefighters Supplement**
- **Child of Deceased Correction Officer Award Supplement**

Application Procedures

Students who believe they may be eligible for one of the programs listed above should request an application from the New York State Higher Education Services Corporation by calling (518) 474-5642 or writing to the following address: NYSHESC, Division of Grants and Scholarships, 99 Washington Avenue, Albany, NY 12255.

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, Administration Building room 348, for applications, information, and assistance. Call (631) 632-6700 for an appointment.

Services Provided:

- Assistance in completion of forms.
- Forwarding of forms and supporting documentation to appropriate agency.
- Assistance in procuring a full or partial deferment of tuition, fees, and charges.
- Mediation between the student and the Veterans Administration to resolve

problems, such as underpayment of benefits or non-receipt of payment.

- Referral to resources and services both on and off campus.
- Counseling services to veterans and their dependents. Students are invited to make an appointment to discuss academic or career concerns.
- Coordination of a VA workstudy program.

Suggestions:

- If the student is making an initial application for VA benefits, he or she should bring a certified copy of his or her DD-214 (keep the original in a safe place) to the Office of Veterans Affairs.
- The student should maintain records of correspondence with the Veterans Administration, including a log of all payments received (including the date the check was issued, the amount, and the period for which payment was intended).
- The student should make arrangements for alternative means of payment of educational expenses (i.e., financial aid, loans, etc.) in the event that VA benefits are not received by the expected date.

The Montgomery G.I. Bill—Chapter 30

Eligibility for this program requires individuals to have served for two or three years of continuous active duty after July 1, 1985 and to have contributed \$100 per month for the first 12 months of service. Entitlement accrues at the rate of one month for each month of active duty up to 36 months. Applications and benefits are processed through the V.A. Regional Office in Buffalo, NY. An eligible veteran generally has ten years from date of discharge or release from active duty in which to use these benefits.

Post-Vietnam-Era Veterans Educational Assistance Program (VEAP)—Chapter 32

VEAP is a voluntary contributory program for persons who served between January 1, 1977 and June 30, 1985. Under this program, the appropriate branch of the military will match the individual's contribution on a two-to-one basis. The maximum period of entitlement is 36 months.

Survivors and Dependents Educational Assistance—Chapter 35

This program provides benefits to the spouses and children of veterans deemed

“100-percent service disabled” and to the surviving spouses and children of veterans who died in service. Forty-five months of entitlement are permitted under this program.

Vocational Rehabilitation for Disabled Veterans—Chapter 31

Vocational rehabilitation is intended to help the service-disabled veteran select, prepare for, and secure employment that is compatible with his or her interests, abilities, physical capabilities, and goals. Entitlement may be provided for up to 48 months. An eligible veteran generally has 12 years from the date of discharge or release from active duty in which to use these benefits.

Selected Reserve Educational Assistance Program—Chapter 1606

This program provides benefits to individuals enlisting, re-enlisting, or extending their enlistment with the Selected Reserve or National Guard for six or more years of service. Entitlement is for a maximum of 36 months or the equivalent in part-time training.

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 and Student Employment. Students should specify that they are seeking information on Student Employment (or Student Assistance) and not Federal 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. Contact the FSA Student Staffing Resources for additional information.

Parents' Affiliation

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.

Scholarships and Grants from Private Sources

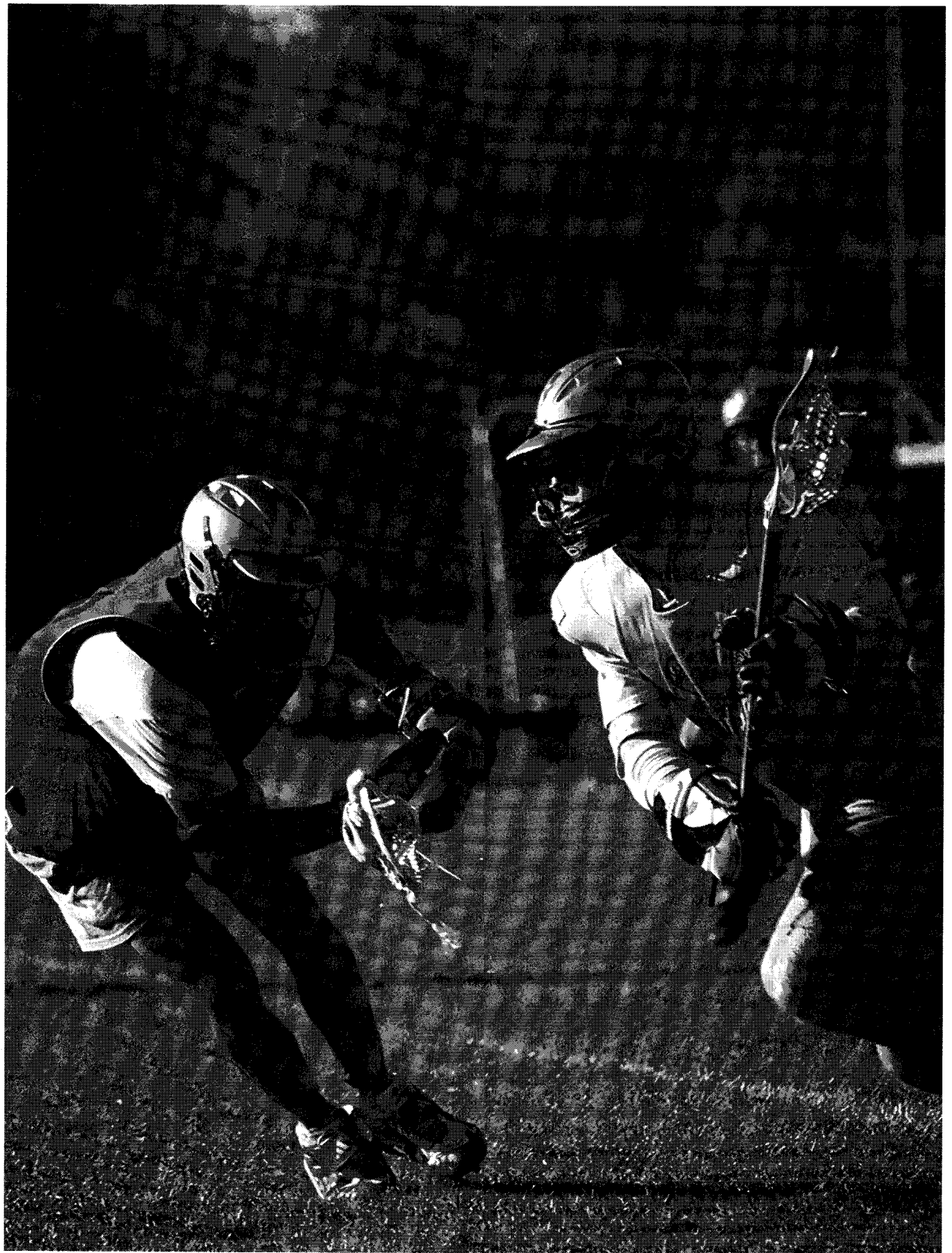
Many private student aid programs are available. Awards may be based on need, need plus criteria, or criteria alone. Students are encouraged to investigate scholarships for which they may be eligible. Among the criteria for which a grant or scholarship may be awarded are academic achievement, artistic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

Job Locator Service

The Career Center 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 Office of Financial Aid and Student Employment.

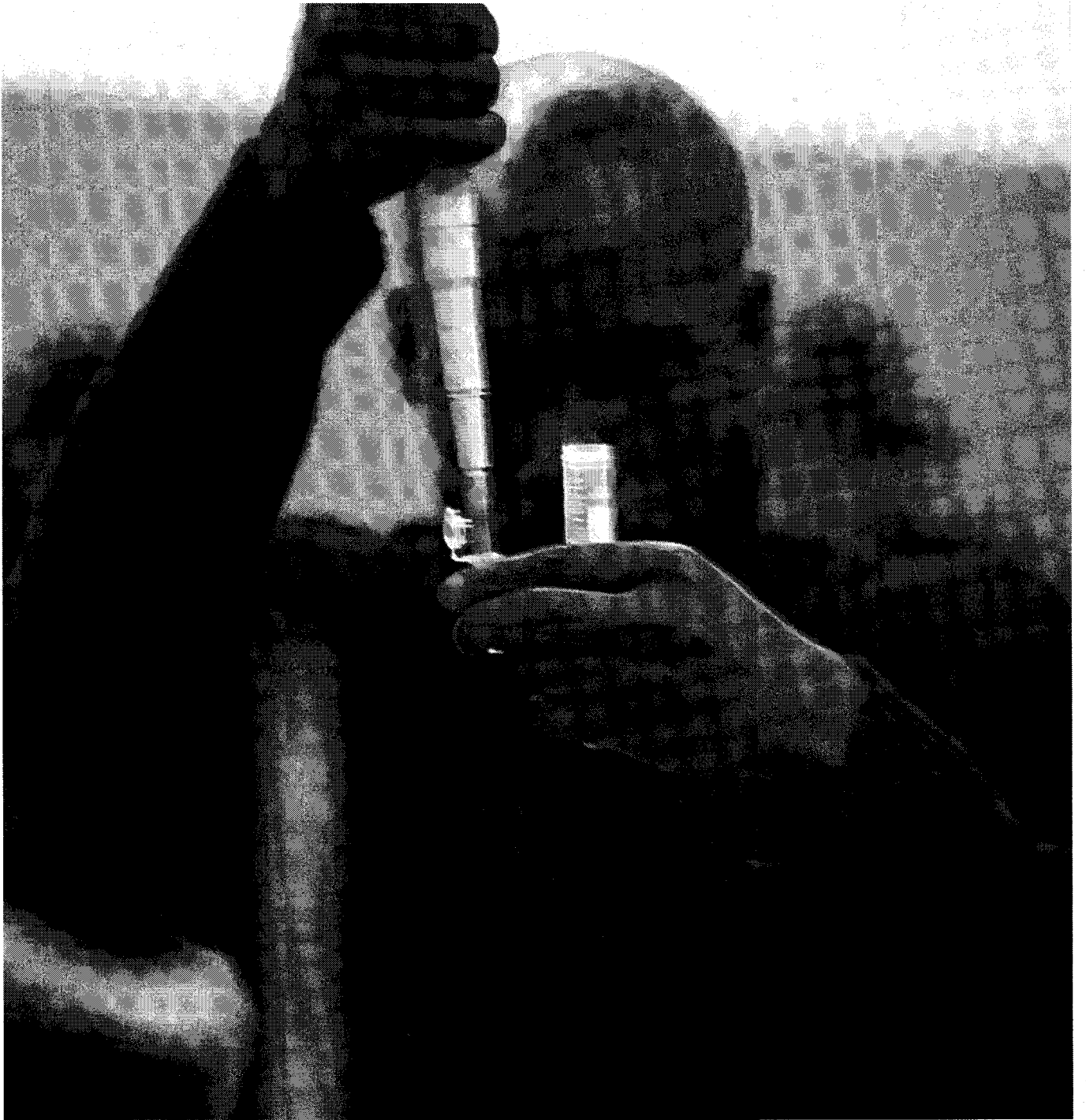
Professional Associations

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.





Scholarships and Awards



Scholarships

The University awards scholarships to selected students based on merit and/or need. For information on need-based scholarships, contact the Office of Financial Aid and Student Employment at (631) 632-6840. For further information on any of the merit scholarship programs listed below, contact the Office of Undergraduate Admissions at (631) 632-6868 or the Director of Scholarships, 291 Administration Building, (631) 632-6712, or visit the Website at www.sunysb.edu/scholarships.

Honors College

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 receive Honors College scholarships after being admitted to the Honors College, which requires (both for first year and for transfer students) a separate application. The minimum Honors College scholarship is \$2,000 for one year.

For detailed information and application forms, contact Laurie Fiegel, director of the Honors College, at (631) 632-4378 or visit their Website at <http://www.honors.sunysb.edu>. Applications can be downloaded from the Website.

Presidential Scholarships

This is a merit-based scholarship program designed to recognize the academic and leadership accomplishments of incoming freshmen and transfer students in the fall semester. Qualitative and quantitative criteria are equally considered in awarding Presidential Scholarships in the amount of \$2000 per year for up to four years for freshmen and \$1000 per year for up to two years for transfer students.

For additional information and specific criteria for these scholarships, contact Robert Pertusati in the Office of Undergraduate Admissions at (631) 632-6868.

WISE—Women in Science and Engineering

Awards in the amount of \$2,000 are available for the first year of study. Students must apply for admission to the WISE program and are selected on the basis of their potential and interest in science (including social science), mathematics, or

engineering. For further information, students may contact Lois Rowman or Dolores Bilges at (631) 632-6947/6948, or they may contact the program by e-mail at projectwise@notes.sunysb.edu or view the Website at <http://wise.sunysb.edu>.

College of Engineering and Applied Sciences Scholarships

The College of Engineering and Applied Sciences (CEAS) administers a number of scholarships ranging from \$500 to full tuition awards for incoming freshmen and continuing students enrolled in one or more of the college's seven majors (computer engineering, electrical engineering, engineering science, mechanical engineering, computer science, information systems, and applied mathematics and statistics).

Funded by a variety of private and corporate donors, there are different eligibility requirements for the different scholarships although, in general, entering freshmen should have a high school average not less than 90 and continuing students should have a cumulative g.p.a. not less than 3.00.

Scholarship opportunities for continuing CEAS students are announced at the end of the fall semester, with an application deadline in January and selection of recipients in April, for scholarship support in the subsequent academic year. For the most recent information, students may contact the CEAS Undergraduate Student Office at (631) 632-8381, or visit the Website at <http://ceas.sunysb.edu>.

The Louis Stokes Alliance for Minority Participation (LSAMP) program is sponsored by the National Science Foundation. The program provides both academic support and stipends to minority students planning to major in science, math, engineering and technology who maintain a 3.00 cumulative g.p.a. For this program, a minority student is defined as being of African American, Latino/Hispanic, Native American, Alaskan Native, Hawaiian Native, or American Pacific Islander heritage. Interested students should contact Paul Siegel at (631) 632-8716.

The Computer Science, Engineering, and Math Scholarship Program (CSEMS), funded by the National Science Foundation, is a two-year program that provides comprehensive academic and scholarship support for bachelor's and master's

degree students in computer science, applied mathematics, electrical and mechanical engineering and materials science. Students must be low-income with preference given to women, underrepresented minorities, students with disabilities, and transfer students. Students interested in this program should contact Lucy Gluck at (631) 632-9888

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. Scholarships are available for both the academic year and the summer. Students interested in this scholarship should contact Judy Nimmo in the Department of Biochemistry and Cell Biology at (631) 632-9750.

Music Scholarships

The Department of Music offers a limited number of competitive scholarships to incoming freshmen and transfer students. Students may compete for scholarships in performance, composition, history, or theory.

For more information, call the Director of Undergraduate Studies, Department of Music, at (631) 632-7330.

Nominations for State, National, and International Scholarships and Fellowships

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 Post-graduate 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, call Rosemary Effiom, Office of Undergraduate Academic Affairs, at (631) 632-7080.

University Association Scholarships

These scholarships are awarded to returning students and students attaining a 3.50 cumulative g.p.a. who have also dedicated themselves to University service and other volunteer experiences. They are awarded to seniors based on grades and activities from the junior year and excellent recommendations.

Athletic Scholarships

Stony Brook's athletic program offers aid based on merit and/or need in all of its 19 varsity sports. For more information, students may call the Athletic Office at (631) 632-7205.

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.

Valedictory Awards

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. It is the most prestigious service award the University presents to a graduating senior. The award represents the University's recognition of particularly outstanding service contributions to the development of academic and student life on the campus.

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 Valedictorian 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.

Academic Awards

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.

Alumni Association Commuter Student Award

This award is presented to a commuter student who has demonstrated academic excellence and leadership through participation in campus life.

Alumni Association Legacy Award

This award is presented to a student who is the child of an alumnus/alumna and demonstrates academic success and leadership in the campus community.

Alumni Association Returning Student Award

This award is presented to a returning student who has demonstrated academic excellence and leadership through participation in campus life.

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.

Departmental Awards

Astronomy—Sherman Raftenberg Award for the outstanding student majoring in astronomy; Chemistry—CRC Freshman Award, Emerson Award to Outstanding Junior, American Institute of Chemists' Senior Award, Sei Sujishi Prize, Outstanding Chemistry Senior Award, Outstanding Engineering Chemistry Senior Award; English—Naomi Stampfer Scholarship, Lillian E. Kahn Award, Homer Goldberg Scholarship; French—French Embassy Cultural Services Awards to outstanding graduating majors; Geology—Myron Fuller Award for an outstanding student, Oliver A. Schaeffer Award; 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; Mathematics—Applied Mathematics Scholarship to outstanding mathematics major, Robert Frey Scholarship to outstanding transfer student majoring in mathematics, Thomas Jefferson Scholarship to a student with average grades but extreme financial need, John McClave Scholarship for an academically talented math major; Mechanical Engineering—Richard S. L. Lee Award; Music—Edith Salvo Award for the outstanding student in the Department of Music, Elizabeth Ball Kurz Award for students planning a career in 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.

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.

Edward Lambe Science Teaching Award

This award is presented annually to a student preparing for a career in science teaching.

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 the appreciation of religious values.

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 non-academic 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.

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.

Martin Buskin Memorial Award

This award is presented annually to the student who most exemplifies the qualities of journalistic integrity, scholarship, and deep concern for education.

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.

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.

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 academics and who has demonstrated a concern for the Black and Latino communities.

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.

Outstanding Student Achievement Awards

The Office of Special Programs presents this award to Educational Opportunity Program (EOP) seniors who graduate with a cumulative g.p.a. of 3.00 or higher.

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, Class of '74.

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.

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.

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 biological sciences in recognition of outstanding academic accomplishments.

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.

Richard B. Moore Scholarship

This award, established by the Stony Brook Foundation and Joyce Moore Turner to honor the memory of the distinguished civil rights activist and historian, provides annual recognition to a Stony Brook student of African heritage who has demonstrated outstanding academic achievement.

Single Parent Awards

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

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.

Stewart Harris Undergraduate Award

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

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.

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.

Service Awards**Alumni Association Student Employee Award**

This award is presented to a student employed on campus in recognition of contributions to the university community and academic excellence.

Ashley Schiff Alumni Association Award

This award is presented to a student who has made significant contributions to conserving and preserving the natural environment.

Babak Movahedi Senior Leadership Award

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

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.

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, Latina, or Native American woman completing the freshman year who has shown a high level of commitment to community service and scholastic achievement.

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.

Elizabeth 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.

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.

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.

Faculty-Student Association Joseph Attonito, 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.

Larry Roher Undergraduate Entrepreneurial Achievement Award

This award established by Larry Roher, Class of '79, is awarded to a deserving student who has served in a managerial and leadership role either on campus or off campus and has pursued entrepreneurial and innovative activities.

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.

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.

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.

Scholastic Achievement Incentives for Non-Traditional Students (S.A.I.N.T.S. Awards)**African Student Union Akuwasi Owusu-Baah Award**

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

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.

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.

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 an outstanding upper-division African American, Latino, or Native American student who has demonstrated a high level of commitment to community service.

Undergraduate Excellence Recognition Certificates

These certificates, presented annually by the offices of the President, Student Affairs, and Undergraduate Academic Affairs, 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.



Degree Requirements



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. General education courses provide breadth of knowledge within a balanced liberal arts framework. Electives give students freedom to choose courses that enhance their educational goals beyond the basic requirements set by the faculty.

General education requirements help students to place the more specialized parts of their undergraduate study, their major and pre-professional 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 history affect 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 lives. 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.

State University of New York General Education Curriculum

The Trustees of the State University of New York have established a fundamental curriculum with specified learning outcomes that all students in colleges and universities in the state university system must have satisfied upon graduation. Stony Brook's Diversified Education Curriculum has been reviewed and, in the best judgment of the faculty, incorporates these outcomes and expands upon them to ensure that Stony Brook's graduates will have the intellectual skills and understanding necessary to flourish in their future professional and personal lives. The Diversified Education Curriculum requirements are detailed in the University Degree Requirements section later in this chapter.* The SUNY general education curriculum specifies learning outcomes in the following areas:

Mathematics

Students must show competence in arithmetic, algebra, geometry, data analysis, and quantitative reasoning.

Stony Brook's Entry Skill 1 Basic Mathematics Competence meets this learning outcome. Note that students must also satisfy category C of the Diversified Education Curriculum, Mathematical and Statistical Reasoning.

Basic Communication and Critical Thinking Competency

Students must identify, analyze, and evaluate arguments as they occur in their own or others' work; develop well-reasoned arguments; produce coherent texts within common college-level written forms; demonstrate the ability to revise and improve such texts; research a topic, develop an argument, and organize supporting details; develop proficiency in oral discourse; and evaluate an oral presentation according to established criteria.

Stony Brook's D.E.C. category A, English Composition, and the upper-division writing requirement and other major requirements, meet these learning outcomes.

Foreign Language

Students must demonstrate basic proficiency in the understanding and use of a foreign language and knowledge of the distinctive features of cultures associated with that language.

Stony Brook's Entry Skill 3, Elementary Foreign Language Competence, meets these learning outcomes. Students must complete two semesters of an elementary foreign language if they have not earned an 85 or higher on the Regents examination in a foreign language.

Information Management

Students must perform the basic operations of personal computer use; understand and use basic research techniques; and locate, evaluate, and synthesize information from a variety of sources.

Stony Brook's faculty expect that all students will acquire these skills early in their education at the University. D.E.C. and major requirements reinforce skills necessary to be successful in the 21st century.

Natural Sciences

Students must show understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis and application of data, concepts, and models in one of the natural sciences.

Stony Brook's D.E.C. category E, Natural Sciences, meets this learning outcome. Note that Stony Brook students must complete two category E courses and must also complete category H—Implications of Science and Technology.

Social Sciences

Students must demonstrate understanding of the methods of social scientists in exploring social phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical and interpretive analysis and knowledge of major concepts, models and issues of at least one discipline in the social sciences.

Stony Brook's D.E.C. category F, Social and Behavioral Sciences, meets this learning outcome. Note that most Stony Brook students must complete two Category F courses.

American History

Students must demonstrate knowledge of a basic narrative of the political, economic, social, and cultural history of the United States, including knowledge of the unity and diversity of American society; knowledge of common institutions in American society and how they have affected different groups; and an understanding of America's evolving relationship with the rest of the world.

Stony Brook's D.E.C. category K, The American Experience in Historical Perspective, meets these learning outcomes. Students in bachelor of arts or bachelor of science degree programs must complete one category K course. Note that because Stony Brook's category K courses are typically at the 300 level, providing both a broad introduction to U.S. history and advanced approaches to particular issues, many courses that satisfy the SUNY American history requirement do not in themselves satisfy D.E.C. category K.

*Some courses and requirements were still being developed and evaluated in discussion with SUNY at the time of this printing. Supplements to this *Bulletin*, printed each semester, include all changes to courses and requirements.

Western Civilization

Students must demonstrate knowledge of the development of the distinctive features of the history, institutions, economy, society, culture, etc., of western civilization, and relate its development to that of other regions of the world.

Stony Brook's D.E.C. category I European Traditions meets this learning outcome. Students must complete one category I course.

Other World Civilizations

Students must demonstrate knowledge of the distinctive features of the history, institutions, economy, society, culture, etc., of a non-western civilization.

Stony Brook's D.E.C. category J, The World Beyond European Traditions, meets this learning outcome. Students must complete one category J course.

Humanities

Students must demonstrate knowledge of the conventions and methods of at least one of the humanities in addition to those encompassed by other knowledge areas required by the SUNY general education curriculum.

Stony Brook's D.E.C. categories B, Interpreting Texts in the Humanities, and G, Humanities and Fine Arts, satisfy this learning outcome. Note that all Stony Brook students must complete one category B course and most students must complete two category G courses.

The Arts

Students must demonstrate understanding of one of the principal forms of artistic expression and the creative process inherent to that art form.

Stony Brook's D.E.C. category D, Understanding the Fine and Performing Arts, meets this learning outcome. Most students must complete one category D course.

Note to Transfer Students:

Students transferring to Stony Brook from other SUNY institutions should consult the Transfer Credit Policies section in the Academic Policies and Regulations chapter of this *Bulletin* for details on how their courses apply to Stony Brook's Diversified Education Curriculum.

Note on Courses Satisfying D.E.C. Categories

A student's general education record

may not be changed retroactively. The University may change the D.E.C. category of a course, but for a particular student, the course will count only toward the requirement it fulfilled at the time the student took the course.

University Degree Requirements

Note: The Degree Audit Report and Tracking System (DARTS) provides a computer-generated report indicating each student's progress toward fulfilling degree requirements. The report is designed to be a helpful advisory tool and is not an official evaluation of a student's progress.

Credit Hour Requirement

Bachelor of Arts degree: Completion of at least 120 hours of passing work.

Bachelor of Science degree: Completion of at least 120 credit hours of passing work.

Bachelor of Engineering degree: Completion of at least 128 credit hours of passing work.

Restrictions on the number of credits that may be counted toward graduation requirements are stated under "Limits on Course Credits and Grading Options" in the Academic Policies and Regulations chapter. Among the kinds of courses with restrictions are independent study, activity-related courses, developmental, and repeated courses.

Liberal Arts and Sciences Requirement

State education guidelines require students to complete a minimum number of credits in the liberal arts and sciences. Stony Brook degree requirements are structured so that students satisfy this requirement by completing the other requirements for the degree.

Residence Requirement

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

Notes:

1. Special restrictions apply to students earning a Bachelor of Engineering degree. Refer to the section "Additional Requirements/Restrictions for the B.E. Degree" below for details.

2. Credits earned in Study Abroad programs—except those sponsored by Stony Brook—do not count toward residency.
3. Credits earned in National Student Exchange programs do not count toward residency.

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

A minimum cumulative grade point average of 2.00 is required for all academic work at Stony Brook. (Note: Grades from other institutions are not included in the Stony Brook g.p.a.)

Major Requirement

Each candidate for a degree must satisfy the requirements of a declared major. Major requirements are detailed in the Approved Majors, Minors, and Programs chapter of this *Bulletin*. Students must officially declare a major by the end of the freshman year.

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 "Transfer Credit Policies" in the Academic Policies and Regulations chapter.

General Education Requirements: Entry Skills and Diversified Education Curriculum

Candidates for degrees in the College of Arts and Sciences, the W. Averell Harriman School of Policy and Management, and the Marine Sciences Research Center must have satisfied Entry Skill 1—Basic Mathematics Competence, Entry Skill 2—Basic Writing Competence, Entry Skill 3—Elementary Foreign Language Competence, and the Diversified Education Curriculum for these students detailed in this chapter.

Candidates for degrees in Applied Mathematics and Statistics, Computer Science, and Information Systems, and candidates for the Bachelor of Engineering degree must have satisfied Entry Skill 1—Basic Mathematics Competence, Entry Skill 2—Basic Writing Competence, and the Diversified Education Curriculum for these students detailed in this chapter.

Additional Requirements/ Restrictions for the B.E. Degree

Residence Requirement

At least seven engineering courses (those with the designator ESE, ESG, ESM or MEC) and/or approved technical elective courses must be completed in the College of Engineering and Applied Sciences at Stony Brook. For the majors in computer, electrical, and mechanical engineering, at least five of the seven courses must be offered by the department of the student's major. ESE, ESG, MEC 440 and 441 must be taken at Stony Brook.

The following courses may not be used to meet this requirement: ESE 211, 314, and 324; ESG 217, 312, and 316; MEC 200, 316 and 317; and ESE, ESG and MEC 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.

Entry Skills

All students in the College of Arts and Sciences, W. Averell Harriman School of Policy and Management, and Marine Sciences Research Center are expected to show basic competence in mathematics, writing, and a foreign language. Students directly admitted to the majors in the College of Engineering and Applied Sciences (excluding business management) must show basic competence in mathematics and writing.

Skill 1: Basic Mathematics Competence

Students should be able to formulate and solve mathematical problems arising in their university work.

Basic Mathematics Competence may be satisfied before entering Stony Brook in any of the following ways:

1. By having passed, while in high school, the New York State Regents Examination in Sequential Mathematics III with a score of at least 75;
2. By having achieved a score of 530 or higher on the SAT II in mathematics;

or a score of 560 or higher on the mathematics portion of the SAT I; or a score of 56 or higher on the mathematics portion of the PSAT; or a score of 23 or higher on the American College Testing (ACT) Test in Mathematics;

3. By having received a score of 3 or higher on an AP examination in calculus or statistics;
4. By having satisfied the SUNY general education requirement in mathematics.

All entering students who have not achieved basic mathematics competence must satisfy the requirement in one of the following ways:

- By scoring at placement level 3 or higher on the mathematics placement examination during their first year at Stony Brook. (This examination is offered during freshman and transfer orientations, in the first week of each semester, and before advance registration for the following semester.) Students who do not attain the proficiency-level score must enroll in the appropriate course during their first year on this campus.
- By earning a grade of C or higher in the developmental class MAP 103 or in a transferred course of at least three credits evaluated by Stony Brook as equivalent to MAP 103. Credit toward graduation will not be given for such transferred courses taken after matriculation.
- By passing a Stony Brook course that meets the mathematics requirement of the Diversified Education Curriculum.
- By receiving credit for any transfer course evaluated as satisfying the mathematics requirement of the Diversified Education Curriculum. 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 University placement test 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.
- 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.

- By obtaining Challenge credit for any MAT or AMS course.

Skill 2: Basic Writing Competence

All entering students must take the University's writing placement examination, a diagnostic placement test. This exam may be taken only once. Students satisfy Skill 2 by scoring level 3 or higher on the University's writing placement examination or by having passed with a grade of C or higher a college composition course judged equivalent to WRT 101 or 102 or 103 or by receiving a score of 3, 4, or 5 on the AP English Language and Composition examination or the AP English Language and Literature examination. Students must begin satisfaction of writing competence in the first year and must take writing courses in sequence in successive semesters until the D.E.C. A English Composition requirement is satisfied.

Notes:

1. College courses taken while the student was in high school can only be considered for equivalency to WRT 101 or 102 or 103 if taken on the college campus.
2. Transfer students who have passed with a C or higher a course equivalent to WRT 101 or 102 or 103 need not take the placement examination.

Note: Satisfaction of the SUNY general education requirement in basic communication and critical thinking does not satisfy Stony Brook's basic writing competence requirement.

Skill 3: Elementary Foreign Language Competence

Because of the increasing globalization of culture, society, and the economy, students should have an elementary knowledge of a foreign language. Students achieve foreign language competence before entering Stony Brook in any of the following ways:

- A third-year high school Regents examination score of 85 or higher;
- A score of 530 or higher on the SAT II in a foreign language;
- A grade of 85 or higher on a third-level high school foreign language course

(for students from New York state whose high schools do not offer the Regents examination and for out-of-state students);

- Submitting secondary school transcripts and transcripts from previously attended universities that show a total of two years of formal language study in an institution where the language of instruction is other than English.

All entering students who have not achieved entry-level foreign language competence are urged to complete this requirement early in their academic careers. Students achieve foreign language competence at Stony Brook in one of the following ways:

- Enrolling in and passing with a letter grade of C or higher the second semester of an elementary foreign language course numbered 101 or 112, or enrolling in and passing a foreign language course at the intermediate level or higher;
- Obtaining equivalent transfer credit for a foreign language course numbered 101 or 112 or higher;
- Passing a Stony Brook Challenge examination for a foreign language course numbered 101 or 112 or higher.

Notes:

1. Students who have scored between 75-84 on a third-year high school Regents examination, who have earned a grade of 75-84 on a third-level high school foreign language course, or who have earned a 500-520 on the SAT II in a foreign language and plan to satisfy the foreign language entry skill requirement by continuing their study in that language generally register for the second semester course (112) of that language if the previous coursework was completed within the last few years.
2. Literature and culture courses taught in English translation under the auspices of the foreign language departments do not satisfy the elementary foreign language competence requirement.
3. Students who received transfer credit for a foreign language course under the auspices of a college while in high school must attain the acceptable score on one of the standardized examinations listed above unless the course was taken on the campus of an accredited

college and taught by a member of the college faculty.

4. No credit is awarded for Stony Brook Challenge examinations taken to fulfill the elementary foreign language competence requirement unless the student meets the requirements outlined in "Guidelines for the Stony Brook Challenge Program," available in the Academic Advising Center.
5. Students who know a language not offered at Stony Brook may satisfy the elementary foreign language competence requirement through the Challenge Examination Program by meeting the "Guidelines for the Stony Brook Challenge Program," although no credit will be awarded.
6. Satisfaction of the SUNY general education requirement in foreign language does not satisfy Stony Brook's elementary foreign language competence requirement.

The Diversified Education Curriculum (D.E.C.)

D.E.C. courses are noted in the Course Descriptions listings at the back of this *Bulletin*; the D.E.C. category letter (A through K) is tagged to the course number (e.g., WRT 103-A). Courses with a D.E.C. category tag that are taken for the major can also be used to satisfy the appropriate D.E.C. category.

Important notes:

- All courses offered to satisfy D.E.C. requirements must be taken for a letter grade. Courses taken under the Pass/No Credit option will not satisfy D.E.C. requirements.
- A course is assigned to one D.E.C. category only and will satisfy only that category.
- If no letter tag appears after a course number, that course may not be used to satisfy any D.E.C. requirement.
- Coursework completed while registered for independent study courses (including directed readings and research courses) may not be used to satisfy any D.E.C. requirements.
- College courses taken while the student was in high school can only be evaluated for applicability to D.E.C. categories if the courses were taught on the college campus.
- AP, CLEP subject examinations, RCE, or Challenge credit, or other approved credit by examinations with appropriate scores, may be used to satisfy one course in each of the categories E, F, and G. Course credit by examination may not be used in any other category except students may use AP credit for the first course of category A and for category C.
- Transferred courses must carry at least 3 semester hours of credit to be applicable to any category.
- Courses transferred from SUNY institutions meeting SUNY general education requirements do not necessarily satisfy D.E.C. categories. See the section "Application of Transfer Credits to General Education Requirements" in the Academic Policies and Regulations chapter for details.

D.E.C. Requirements for Students with Majors in the College of Arts and Sciences, W. Averell Harriman School of Policy and Management, and Marine Sciences Research Center

Students are encouraged to visit the Academic Advising Center for a formal review of their D.E.C. requirements at least two semesters prior to their expected date of graduation. Students can use these pages to record courses used toward these requirements.

University Skills

The first group of requirements—D.E.C. categories A-D—focuses on ways of learning essential to the entire academic experience and subject matter intrinsic to liberal learning.

Category A English Composition 2 courses

A WRT 101, WRT 102

The ability to communicate effectively in written English is essential to success both in the University and in society. Students satisfy this requirement by passing WRT 101—Introductory Writing Workshop and WRT 102—Intermediate Writing Workshop A or WRT 103—Intermediate Writing Workshop B.

Notes:

1. A score of 4 or 5 on the University's writing placement examination or a score of 3, 4, or 5 on the AP English/Comp or English/Lit examination satisfies the first course of the two course requirement.
2. Students must begin completion of category A during their first year at Stony Brook and must take writing courses in sequence until the requirement is satisfied.
3. All transfer and rematriculated students who have passed, with a grade of C or higher, a composition course judged equivalent to WRT 102 or WRT 103 will have satisfied this requirement.
4. Once matriculated, the student must complete Category A at Stony Brook.

Category B Interpreting Texts in the Humanities 1 course

B PHI 104, PHI 103

Category B courses help students develop skills of interpretation and analysis that will enable them to examine subject matter critically, not only in the humanities, but in all other college courses.

Category C Mathematical and Statistical Reasoning 1 course

C CSE 113

Category C courses help students understand and use quantitative skills and ideas critical to higher education.

Notes:

1. The course offered for category C must be passed with a letter grade of C or higher.
2. A score of 4 or 5 on the AP mathematics examination or a score of 6 or higher on Stony Brook's mathematics placement examination satisfies category C.

Category D Understanding the Fine and Performing Arts 1 course

D ARS 154

Category D courses acquaint students with the works of creative artists and performers and their artistic medium, such as art, music, or theatre. The basic terminology, analytical tools used to interpret one of the arts, and representative works in a particular field are examined. Such exposure is essential to intellectual growth and the development of a humanist foundation from which to approach other disciplines.

Disciplinary Diversity

The second group of requirements—D.E.C. categories E-G—exposes students to the modes of thinking, methods of study, and subject matter of major branches of knowledge—natural and physical sciences, social and behavioral sciences, and arts and humanities.

Category E Natural Sciences 2 courses

E AST 101, PHYS 101

Category E courses expand students' knowledge about objects and processes observable in nature, whether animate as in the biological sciences, or inanimate as in the physical sciences of chemistry or physics.

Category F Social and Behavioral Sciences 2 courses

F PSY 103, GOV 303

Category F courses focus on individual and group behavior within society. These disciplines use methods such as historical analysis of documents, or survey and interview data, to observe and analyze human activity and society.

Category G Humanities 2 courses

G PHI 380, _____

Category G courses examine disciplines and methods that express the way people view the human condition.

Expanding Perspectives and Cultural Awareness

The final group of requirements—D.E.C. categories H-K—challenges students to confront their own perceptions of the world and the people in it. Courses in these categories build on study in the earlier categories.

Category H Implications of Science and Technology 1 course

H EST 330

Category H courses are designed to help students understand the social and global implications of science and technology and to examine examples of the impact of science, culture, and society on one another.

Category I European Traditions 1 course

I UKS 249

Category I courses consider the Western cultural tradition through specialized study of a European nation or area from one or more viewpoints (e.g., historical, artistic, social, political).

Category J The World Beyond European Traditions 1 course

J JNH 340

Category J courses increase students' understanding of a nation, region, or culture that is significantly different from the United States and Europe in at least one respect.

Category K The American Experience in Historical Perspective 1 course

K PHI 378

Category K courses study the diverse society of America from a historical perspective. The focus may be on one group and its relation to the whole of U.S. society or on the interactions of several groups within our culture.

**D.E.C. Requirements
for Students with Majors in
Applied Mathematics and Statistics,
Computer Science, Information
Systems or Those Pursuing a
Bachelor of Engineering Degree**

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. Students can use these pages to record courses used toward these requirements.

University Skills

The first group of requirements—D.E.C. categories A-C—focuses on ways of learning essential to the entire academic experience and subject matter intrinsic to liberal learning.

**Category A English Composition
2 courses**

A _____, _____

The ability to communicate effectively in written English is essential to success both in the University and in society. Students satisfy this requirement by passing WRT 101—Introductory Writing Workshop and WRT 102—Intermediate Writing Workshop A or WRT 103—Intermediate Writing Workshop B.

Notes:

1. A score of 4 or 5 on the University's writing placement examination satisfies the first course of the two course requirement.
2. Students must begin completion of category A during their first year at Stony Brook and must take writing courses in sequence until the requirement is satisfied.
3. All transfer and rematriculated students who have passed, with a grade of C or higher, a composition course judged equivalent to WRT 102 or WRT 103 will have satisfied this requirement.
4. Once matriculated, the student must complete Category A at Stony Brook.

**Category B Interpreting Texts in the
Humanities
1 course**

B _____

Category B courses help students develop skills of interpretation and analysis that will enable them to examine subject matter critically, not only in the humanities, but in all other college courses.

**Category C Mathematical and
Statistical Reasoning
1 course**

C _____

Category C courses help students understand and use quantitative skills and ideas critical to higher education.

Notes:

1. The course offered for category C must be passed with a letter grade of C or higher.
2. A score of 4 or 5 on the AP mathematics examination or a score of 6 or higher on Stony Brook's mathematics placement examination satisfies category C.

Disciplinary Diversity

The second group of requirements—D.E.C. categories E-G—exposes students to the modes of thinking, methods of study, and subject matter of major branches of knowledge—natural and physical sciences, social and behavioral sciences, and arts and humanities.

**Category E Natural Sciences
2 courses**

E _____, _____

Category E courses expand students' knowledge about objects and processes observable in nature, whether animate as in the biological sciences, or inanimate as in the physical sciences of chemistry or physics.

**Category F Social and Behavioral
Sciences
1 course**

F _____

Category F courses focus on individual and group behavior within society. These disciplines use methods such as historical analysis of documents, or survey and interview data, to observe and analyze human activity and society.

**Category G Humanities
1 course**

G _____

Category G courses examine disciplines and methods that express the way people view the human condition.

**Expanding Perspectives and
Cultural Awareness**

The final group of requirements—D.E.C. categories H-K—challenges students to confront their own perceptions of the world and the people in it. Courses in these categories build on study in the earlier categories.

**Category H Implications of Science
and Technology
1 course**

H _____

Category H courses are designed to help students understand the social and global implications of science and technology and to examine examples of the impact of science, culture, and society on one another.

**Category I European Traditions
1 course**

I _____

Category I courses consider the Western cultural tradition through specialized study of a European nation or area from one or more viewpoints (e.g., historical, artistic, social, political).

**Category J The World Beyond
European Traditions
1 course**

J _____

Category J courses increase students' understanding of a nation, region, or culture that is significantly different from the United States and Europe in at least one respect.

Notes:

1. In choosing courses to satisfy D.E.C. I and J, students should choose one with a humanities designator and one with a social and behavioral sciences designator.
2. 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.

**Category K The American Experience
in Historical Perspective
1 course**

K _____

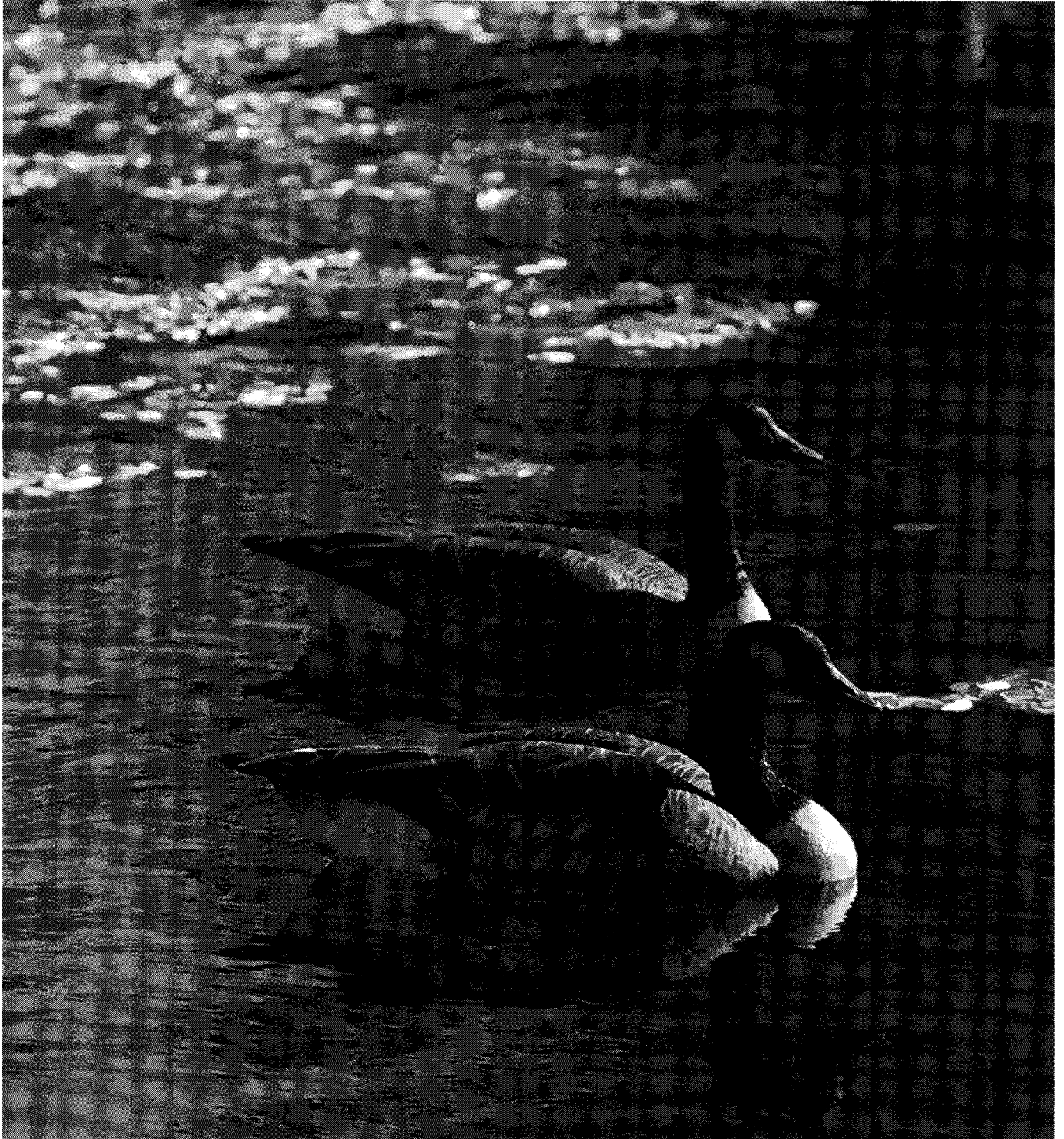
Not required for students seeking the Bachelor of Engineering degree.

Category K courses study the diverse society of America from a historical perspective. The focus may be on one group and its relation to the whole of U.S. society or on the interactions of several groups within our culture.





Academic Policies and Regulations



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Students are responsible for reviewing, understanding and abiding by the University's regulations, procedures, requirements, and deadlines as described in official publications including this *Bulletin*, the *Student Handbook*, and Class Schedules. The information in this section applies to students on the West Campus (College of Arts and Sciences, College of Engineering and Applied Sciences, W. Averell Harriman School of Policy and Management, and Marine Sciences Research Center) in undergraduate programs and to those planning to apply to programs in the Health Sciences Center.

Registration for Classes

Students should register for classes as soon as they are eligible to do so. With the assistance of an academic advisor, each student selects a group of courses. The student must register for classes each semester in accordance with instructions issued by the Registrar's Office and published in the semester Class Schedule booklet as a prerequisite to class attendance. It is the student's responsibility to see that the program conforms with academic regulations and meets degree requirements.

Before registering for the first time at the University, all new students 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. Incoming transfer students attend sessions at which they discuss the applicability of their previous coursework to Stony Brook's graduation requirements, including their planned major department. At the conclusion of orientation, students register for the coming semester.

Continuing students register each semester either via telephone through the University's automated telephone system or in person at the Registrar's Office. Advance registration begins in November for the following spring and in April for the following fall. All continuing students should advance register. Final registration takes place during the week before and through the first ten days of classes. Full-time students may enroll for up to nineteen credit hours each semester, but during the period of advance registration are temporarily

limited to a maximum of seventeen credits. Registration priority is based on class standing, which is defined by the number of credits completed: freshman, 0-23; sophomore, 24-56; junior, 57-84; senior, 85 or more. Registration instructions are published in the semester Class Schedule booklet each semester and confirmation of students' course programs is available by telephone, at on-campus SOAR (Student Online Access to Records) sites, or on the Web at www.sunysb.edu/www/studinfo.html.

After registering, students are billed and payment is due on the date indicated on the bill. Payment can be made through the University's automated telephone system, which also provides information to students on their individual accounts and on financial aid.

Note: Nonpayment of tuition by registered students does *not* constitute official withdrawal from the University. Students must officially withdraw in person through the Academic Advising Center, the Engineering and Applied Sciences Undergraduate Student Office, or in writing through the Registrar's Office to avoid financial liability.

Late Registration

Students who have not registered prior to the start of classes are considered to be registering late and are assessed a late registration fee. See the fee information in the Financial Information chapter for full details. The late registration period corresponds to the add/drop period. See the "Add/Drop Period" entry below for additional information on registering for courses after the start of classes.

Add/Drop Period

The add/drop period begins on the first day of classes and ends at the close of business on the tenth day of the semester. Many courses require students to have permission to register after the course has closed or after the start of classes. Permission requirements for individual courses are noted in the semester Class Schedule. All courses require students to have permission to register during the second week of classes.

For courses that require permission, students must obtain the appropriate signature on an Enrollment Adjustment Form, available in the Registrar's Office,

advising offices, and department offices, and take the signed form to the Registrar's Office or department office for processing. If the course is closed, students may request permission to add from the instructor or department office. Departments have different waitlist procedures and some do not offer waitlists; students should consult the department office for information.

Students may drop most courses using the automated telephone registration system. Some courses require permission to drop; these are noted with the course entry in the semester Class Schedule booklet. In addition, some freshman-level courses in mathematics, chemistry, and physics have an extended add/drop period, usually ending after the administration of the first exam, which allows students who perceive they are in a class that is too advanced to drop down to the appropriate level course.

See the entries "Course Load and Course Withdrawal" and "Withdrawing from the University" later in this chapter for more information on dropping and withdrawing from individual courses and withdrawing from all courses (withdrawing from the University).

After the tenth day of classes, students may only add a course following procedures, established by the appropriate faculty Committee on Academic Standing and Appeals (CASA), for petitioning for an exception to the deadline, described in "Petitioning for Exceptions" later in this chapter. Students may drop a course by telephone or in person after the first ten class days, but full-time students (those registered for 12 or more credits) must maintain at least 12 registered credits. A "W" (withdrawal) will be recorded on the transcript. (See "Course Load and Course Withdrawal" below.) Students granted permission to make changes in registration after deadlines stated in the academic calendar will be assessed a fee.

First-Week Attendance

Students are expected to attend all classes from the first day of the semester on. Those who do not attend, during the first five days of the semester, a class for which they are registered risk losing their right to remain in the course. A faculty member has the prerogative of de-registering students not in atten-

dance, particularly if others are seeking to add the course. To avoid an NR (No Record) on the transcript, students must take responsibility for dropping a course by telephone or by submitting a Registration Adjustment form before the end of the ninth week of classes.

Full-Time/Part-Time Status

Full-time enrollment status is an eligibility requirement for most forms of financial aid, health insurance coverage, and intercollegiate athletics, and provides priority status for on-campus housing. Full-time or part-time status is determined on the basis of the number of credits for which a student is enrolled after 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, full time. Students are responsible for determining the implications of changing their enrollment status.

Course Load and Course Withdrawal

Full-time matriculated students—that is, those students who seek to earn a degree from the University—normally register for 12 to 19 credit hours per semester. Requests for permission to register for more than 19 credits must be submitted to the appropriate Committee on Academic Standing and Appeals.

After the tenth class day in the semester through the ninth week, a full-time student may withdraw from a course providing that full-time status (a minimum of 12 registered credits) is maintained. A mark of “W” will appear on the transcript indicating withdrawal. Part-time students may withdraw from a course and will receive a mark of “W.”

After the tenth class day, full-time students who wish to drop one or more classes and thereby carry fewer than 12 credits (an “underload”) must petition the appropriate Committee on Academic Standing and Appeals. Approval for an underload, granted for the current semester, is allowed only in emergency situations. Before requesting an underload, the student should determine the consequences of dropping below 12 credits for scholarships, loans, and intercollegiate athletic eligibility. Students with approved underloads will be charged at the full-time tuition rate. Students who

have chronic difficulties that make full-time study inappropriate should only register for 11 or fewer credits (part-time status).

After the ninth week of classes, a student who wishes to withdraw from a course may do so only by withdrawing from the University.

Students officially withdraw from a course by using the Automated Telephone System or by submitting a Registration Adjustment form to the Registrar's Office. Students withdrawing from all their courses (withdrawing from the University) may do so in writing or in person at the Registrar's Office.

Notes:

1. Non-attendance or notification of the instructor alone does not constitute official withdrawal.
2. Citizens of other countries who are in the U.S. 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 International Services. International students holding other visas should consult International Services.

Final Examinations

The academic calendar provides five days each semester for a Final Examination Period. The last examination of the course, whether comprehensive or covering only a portion of the material, must be given during the Final Examination Period at the time designated for the course. Exceptions may only be granted by the dean of the faculty member's college for compelling academic reasons. Unit exams may only be given during the last three class periods if a final examination is also given during the Final Examination Period.

University Graduation Requirements

All candidates for any of the bachelor's degrees conferred must satisfy all University graduation requirements as detailed in the Degree Requirements chapter in this *Bulletin*.

Liberal Arts and Sciences Requirements

State education guidelines require students to complete a minimum number of credits in the liberal arts and sciences.

Stony Brook degree requirements are structured so that students satisfy this requirement by completing the other requirements for the degree.

Bachelor of Arts degree: Completion of at least 90 credits in liberal arts and sciences courses.

Bachelor of Science degree: Completion of at least 60 credits in liberal arts and sciences courses.

Bachelor of Engineering degree: Completion of at least 30 credits in liberal arts and sciences courses.

Non-liberal arts and sciences courses are detailed in the “Limits on Course Credits and Grading Options” section of this chapter.

Grading and the Grading System

Either a letter grade or status report is assigned each semester for every course for which a student is registered after the second week of classes.

The term “letter grade” refers to A through F and in certain circumstances to S grades.

A	(superior work)
A-	
B+	
B	(good work)
B-	
C+	
C	(satisfactory work)
C-	
D+	
D	(minimum passing work)
F	(failing work)
I	(incomplete)
NC	(no credit)
NR	(no record)
P	(pass)
Q	(academic dishonesty)
R	(pending completion of second semester of a year-long course)
S	(satisfactory work)
U	(unsatisfactory work)
W	(withdrawal)

All courses used to meet Diversified Education Curriculum requirements and courses used to meet major requirements, including, in engineering majors, the technical electives, must be taken for a letter grade. Students should consult the "Requirements for the Major" section of their major for any exceptions to this policy.

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 assigned. 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 disabling 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 graduation cannot be changed to any other grade subsequent to receiving a degree.

Incomplete (I)

If circumstances beyond the student's control inhibit the student's ability to complete the work for a course on time, the student is responsible for informing the instructor of the circumstances immediately. At the discretion of the instructor, a temporary report of I (Incomplete) may be assigned, signifying that the student has been granted additional time to complete the requirements for the course. After granting an I, the instructor will set a date for completion of the requirements. That date will be no later than November 1 for courses begun the preceding spring semester or summer session and no later than March 15 for courses begun the preceding fall semester.

Students may not complete coursework for which an Incomplete was assigned by auditing or registering again for a subsequent offering of the course. If the instructor determines that circumstances merit it, the instructor may request an extension of the original Incomplete by written notification to the Registrar. This extended deadline will be no later than the last day of classes of the semester following the one in which the course was taken. Longer extensions for extraordinary reasons must be approved by the appropriate dean. If the work is not satisfactorily completed by the applicable or extended deadline, the final grade of I/F, U, or NC, as appropriate, will be as-

signed. The grade of I/F will be averaged as F when computing the grade point average (g.p.a.) or determining other measures of the student's academic standing.

Pass/No Credit Option (P/NC)

Within the specific limits noted below, 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 letter grade is A through D, or as NC (No Credit) if the reported letter grade is F. Neither P nor NC is calculated into the grade point average (g.p.a.). Students may elect this option through the ninth week of classes.

The following provisions reflect the intent of this option, which is to encourage students to explore other and sometimes less familiar areas of study.

1. Courses graded P may not be used to satisfy general education requirements.
2. 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 (A through D or S).
3. Election of the P/NC option is limited to the end of the ninth week of the semester as specified in the academic calendar in the Class Schedule each semester. After the date specified in the academic calendar, no changes either to or from the P/NC option may be made.
4. The P/NC option may be elected only once for a given course.
5. Full-time students (those registered for 12 or more credits) may not take more than two courses per semester under the P/NC option. Part-time students (those registered for 11 or fewer credits) may not take more than one course per semester under the P/NC option.
6. The Registrar does not communicate to the instructor of a course the names of students who elect the P/NC option.
7. Majors and minors in the College of Arts and Sciences have specific restrictions on the use of the P/NC option to satisfy their requirements. Refer to the specific major or minor requirements in the Approved Majors, Minors, and Programs chapter of this *Bulletin* for details.

Students in the College of Engineering and Applied Sciences may not take any courses in the major, including technical electives, under the P/NC option. Only Open Electives may be taken under the P/NC option.

8. 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.
9. If a student re-takes a course with a grade recorded as P, the student will not receive credit for the re-taken course and the grade will not count toward the student's credit load, semester g.p.a., or cumulative g.p.a., unless the grade assigned by the instructor for the course taken as P/NC was C- or lower.
10. Students may not petition to change a course to letter-graded after the deadline for changing courses to or from the P/NC option has passed.
11. Certain courses may not be taken under the P/NC option, such as developmental courses, and are so noted in the *Bulletin* course descriptions.

See also "Limits on Course Credits and Grading Options" later in this chapter.

No Record (NR)

Students are responsible either for completing the required work in or withdrawing from every course for which they have 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 attended, the instructor will assign a report of NR (No Record). An NR may not be assigned for any other reason. If the student was actually in the class, the student must ask the instructor to correct the record by submitting a grade to replace the NR to the appropriate Committee on Academic Standing and Appeals. If the student was not actually in the class and receives a report of NR, the student must petition the appropriate Committee on Academic Standing and Appeals for a retroactive withdrawal from the course.

Grades of NR which have not been replaced by a final grade or by a W by the end of the ninth week of the fall semester (for spring NR grades) or by the end of the ninth week of the spring semester (for fall NR grades) will be converted to one of the following grades:

N/F for letter-graded courses, N/U for courses graded A-C/U or S/U, or N/C for courses taken under the Pass/No Credit option. The grade of N/F will be treated as a failure for the purposes of academic standing and will be averaged as an F when the student's g.p.a. is computed.

Q Grade

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. Students who have a single finding of dishonesty may have the Q replaced by a letter grade determined by the instructor after satisfactory completion of a non-credit seminar addressing issues of academic dishonesty unless the applicable academic judiciary committee determines otherwise. Rescinded Q grades may be reinstated if there is a new finding of academic dishonesty.

Registered (R)

Some courses, chiefly senior honors projects numbered 495-496, are designated year-long courses. The final grade and credits for the course are assigned only after completion of both semesters. Instructors 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 semester. 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.

Satisfactory/Unsatisfactory (S/U)

Some courses are designated as S/U grading and students will not receive a letter grade (A through F) for them. Students may not elect to take such courses under the Pass/No Credit option. S/U grading is not calculated into the grade point average (g.p.a.). 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.

Withdrawal (W)

A mark of W is recorded when the student withdraws from a course after the first ten days of classes. The W is used to indicate that the student withdrew after the end of the add/drop period. The W is not calculated into the grade point average (g.p.a.).

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

The following grade reports are not calculated into the g.p.a.:

P, NC, N/C, NR, R, S, U, W

Grades for courses transferred from other institutions do not affect the grade point average. Grades earned in developmental courses are not calculated in the cumulative g.p.a. Following is an example of a grade point average calculated for one semester:

Calculate the Quality Points for each course by multiplying the Point Value of the grade by the total number of Credits for the course

Grade	Point Value	Course Credits	Quality Points
A	4.00	3	12
B	3.00	4	12
C+	2.33	3	6.99
D	1.00	3	3
F	0.00	3	0
Total		16	33.99

Next, calculate the g.p.a. by dividing the total Quality Points by the total number of Credits Attempted (including F grades).

$$33.99 / 16 = 2.12$$

$$\text{Semester g.p.a.} = 2.12$$

Semester Grade Reports

Grade reports are prepared shortly after the conclusion of each semester and are accessible by telephone. Note: Although credit for repeated courses is included in the total semester credits, only credit for approved repeated courses will ultimately count toward graduation. See the entries "Retaking Courses" and "Repeatable Courses" later in this chapter for more information.

Class Standing

A student's class standing is based on the number of credits earned before the beginning of each semester, as follows:

U1 Freshman	0-23 credits
U2 Sophomore	24-56 credits
U3 Junior	57-84 credits
U4 Senior	85 credits or more

Academic Standing, Support, and Retention

All students are required to maintain a minimum cumulative grade point average of 2.00 to remain in good academic standing.

Academic standing is reviewed at the end of each semester.

Stony Brook is committed to helping students who are at risk academically. The following retention system is designed to identify and provide academic support for these students.

Academic Warning Level 1

Students who are in good academic standing but whose semester g.p.a. falls below 2.00 will receive a letter of warning and will be encouraged to contact an academic advisor.

Academic Warning Level 2

First semester students

First semester students whose g.p.a. is below 2.00 will receive a letter of warning and will be *required* to contact an academic advisor who must approve the student's schedule for the following semester. Students who fail to consult an academic advisor will be blocked from making changes to their schedules.

Academic Standing Levels and Actions

Grade Point Average	Academic Standing Notice	Action Recommended or Required
2.00 or higher	None	None
	Warning Level 1	Advising recommended
below 2.00	Warning Level 2	Advising required
	Probation	Advising required
	Suspension	Advising/Petition required
	1st Reinstatement	Contract required
	2nd Reinstatement	Advising required
	Dismissal	Appeal to dean

Continuing Students

Continuing students in good academic standing whose semester g.p.a. is below 2.0 for two consecutive semesters will receive a letter of warning and will be *required* to contact an academic advisor who must approve the student's schedule for the following semester. Students who fail to consult an academic advisor will be blocked from making changes to their schedules.

Probation

Students whose cumulative g.p.a. falls below 2.00 will be placed on probation and will be *required* to contact an academic advisor who must approve the student's schedule for the following semester. Students who fail to consult an academic advisor or who fail to register for the approved schedule will be de-registered.

Suspension

Students on probation who fail to achieve good academic standing the following semester will be suspended. Students may petition for reinstatement by completing a petition form and submitting it to the appropriate Committee on Academic Standing and Appeals.

First Reinstatement

Students who have been suspended and have had their petition for reinstatement approved will have their reinstatement noted on their academic records. Reinstated students may be asked to sign a contract agreeing to conditions for reinstatement.

Second Reinstatement

Students who fail to achieve good standing in the semester following their rein-

statement will have this noted and will be *required* to contact an academic advisor who must approve the student's schedule for the following semester. Students who fail to consult an academic advisor or who fail to register for the approved schedule will be deregistered.

Dismissal

All reinstated students remain on probation. Conditions may be attached to the student's reinstatement. Students who fail to meet the conditions for reinstatement or who fail to achieve a 2.00 cumulative g.p.a. within two semesters of reinstatement will be dismissed.

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, Regents College Examinations, and Stony Brook's own Challenge Program. (See below for details.) 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 be used to satisfy the first course of category A and category C. Credit by examination does not count toward the University's residence requirement.

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.

Advanced Placement Credit

Advanced placement credit may be awarded to students who have completed advanced placement courses in secondary school and who have taken the appropriate CEEB advanced placement examination. Students must request that their test scores be forwarded to Stony Brook. Students who score at least a 3 on a subject area examination will receive three general elective credits; however, each academic department determines the minimum test score required for academic credit in a particular subject. For advanced placement credit equivalency, see page 77.

College-Level Examination Programs

The University awards credit for the Regents College examinations and for the CLEP (College-Level Examination Program) subject examinations only. Credit is not awarded for the CLEP general examinations. The scores received must be equivalent to a grade of C.

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 page 74.)

Transfer Credit Policies

1. Transfer credit is entered on the official University transcript. Grades received for transferred courses are not shown nor are they included in the calculation of the student's cumulative grade point average at Stony Brook.
2. 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 credit completed as part of their associate degree requirements. Official proof of an A.A. or A.S. degree must be submitted by October 1 if the student enters the University in the fall semester or by February 15 if the student enters the University in the spring semester.
3. 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

evaluated individually. Credits for all courses passed with a letter grade of C or higher at regionally accredited institutions or recognized by the Program on Noncollegiate Sponsored Instruction of the State of New York and recorded on official transcripts are accepted and evaluated for applicability to specific Stony Brook degree requirements. Credits for successfully completed courses from these institutions for which a grade equivalent to P or S was assigned are also accepted.

4. Almost all credits earned at community and technical colleges are considered to be lower-division credit.
5. Transfer courses are reviewed individually by the Undergraduate Transfer Office for their applicability toward fulfillment of general education requirements. Applicants who have completed college-level study at an institution outside of the United States will have their credits evaluated for application to the University's general education requirements by the Undergraduate Admissions counselor for international students.
6. Courses satisfactorily completed elsewhere toward the intended major or needed to fulfill the 39 upper-division credits requirement must be evaluated by the appropriate academic department for specific applicability. No transferred course with a grade lower than C may be counted among the 39 upper-division credits required for graduation. Forms for requesting the evaluation of specific courses for major and upper-division credit are available in the Undergraduate Transfer 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.
7. Courses taken at other universities and colleges in a technology curriculum will normally *not* be transferred as equivalents to engineering or applied sciences courses.
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 counselor for international

al students before seeking a departmental course evaluation.

9. Courses offered by regionally accredited colleges *in the high school* and completed while the student was in high school will be evaluated for general elective credit upon receipt of an official college transcript.
10. Courses offered by regionally accredited colleges *on the college campus* and completed while the student was in high school will be evaluated for transfer credit according to the guidelines in the "Application of Transfer Credits to General Education Requirements" section below.

Students wishing additional information should consult the Undergraduate Transfer Office.

Application of Transfer Credits to General Education Requirements

Transferred courses must carry at least 3 semester hours of credit to be applicable to any Entry Skill or D.E.C. category.

College of Arts and Sciences, Marine Sciences Research Center, and W. Averell Harriman School of Policy and Management

1. All Entry Skills requirements may be met either through a specified examination, through courses taken at Stony Brook, or through transfer of equivalent courses. Satisfaction of these requirements will be evaluated at the time of matriculation.
2. All students may satisfy D.E.C. categories A through K by transferring from regionally accredited colleges and universities coursework that meets the criteria of the category. Survey and introductory courses will not satisfy categories I, J, and K.
3. Categories I and J may also be satisfied by transfer of six credits of college-level study abroad in a geographic area appropriate to the category.
4. A course evaluated to be equivalent to a Stony Brook course will satisfy the category of the Stony Brook course.

Note: Once matriculated at Stony Brook, students may not satisfy D.E.C. category A by transfer.

College of Engineering and Applied Sciences

1. All Entry Skills requirements may be met either through a specified examination, through courses taken at Stony Brook, or through transfer of equivalent courses. Satisfaction of these requirements will be evaluated at the time of matriculation.
2. All students may satisfy D.E.C. categories A through G and I through K by transferring from regionally accredited colleges and universities coursework that meets the criteria of the category. Survey and introductory courses will not satisfy categories I, J, and K. (Candidates for the B.E. degree are not required to complete D.E.C. category K.)
3. All students must satisfy D.E.C. category H at Stony Brook.
4. Categories I and J may also be satisfied by transfer of six credits of college-level study abroad in a geographic area appropriate to the category.
5. A course evaluated to be equivalent to a Stony Brook course will satisfy the category of the Stony Brook course.

Notes:

- Once matriculated at Stony Brook, students may not satisfy D.E.C. category A by transfer.
- To satisfy D.E.C. categories I and J, one course must be in the humanities disciplines and one course must be in the social and behavioral sciences disciplines.

Study at Other Institutions After Matriculation

Students who wish to transfer credit from other institutions after matriculation at Stony Brook must study at a regionally accredited institution and earn a grade of C or higher in any course taken. In addition, if the student plans to transfer courses from an institution for which printed transfer equivalencies are not available (i.e. published Transfer Credit Guides and printed transfer equivalency sheets), the student must secure prior formal approval from the University. The Undergraduate Transfer Office maintains Transfer Credit Guides to selected schools with course equivalencies to Stony Brook offerings. These Guides are available at the Transfer Office or on their Website at

www.sunysb.edu/admissions/transguide.html. Forms for securing prior approval are also available in the Undergraduate Transfer Office. Students must arrange to have official transcripts sent to the University upon completion of courses taken.

Currently enrolled students in the College of Arts and Sciences should consult with the Undergraduate Transfer Office before taking general education or elective courses elsewhere. Students who plan to transfer courses toward major requirements should get prior approval from the major department. Engineering and Applied Sciences students must receive a departmental advisor's approval before taking a course elsewhere.

Summer Study Elsewhere

To ensure that courses will be fully acceptable for transfer credit, students planning to take summer courses elsewhere should discuss their plans in advance with both the appropriate departmental academic advisor and Stony Brook's Undergraduate Transfer Office. If the student plans to transfer courses from an institution for which printed transfer equivalencies are not available, the student should secure prior approval for courses toward major requirements from the major department, and for courses toward general education requirements and elective credit from the Transfer Office. After the University receives an official transcript indicating that the student has completed the courses with grades of C or higher, appropriate transfer credit will be noted on the student's academic record.

Undergraduate Course and Curricular Numbering System

- 100-199 Introductory courses; appropriate for and generally taken by freshmen (U1 standing).
- 200-299 Intermediate courses; appropriate for and generally taken by sophomores (U2 standing).
- 300-399 Upper-division courses; appropriate for and generally taken by juniors and seniors (U3 and U4 standing).
- 400-499 Upper-division major courses, seminars, directed readings and research, and teaching practica; appropriate for and generally taken by juniors and seniors. A

few 400-level courses for seniors only are so noted.

Courses with hyphenated numbers (e.g., HIS 495-496) are year-long courses. Students will not be awarded credit for either course unless they complete both semesters.

Renumbered Courses

The notation ("formerly ABC ###") after a course number and title indicates that the course designator or number has been changed. Courses renumbered from lower-division (100-200) to upper-division (300-400) level may not be used retroactively to satisfy the 39 upper-division credit requirement of the University unless specifically noted in the course description.

The newly renumbered or designated courses may not be repeated for credit.

Enrichment Courses

These courses are restricted to specific groups of students. AIM 102 and 104 are open to students in the EOP/AIM program only. LBR 150 is available to freshmen or sophomore or transfer students with fewer than 30 credits, and provides advanced training in using the library. USB 101 and its equivalents (e.g., EAS 101), one-credit courses for first-semester freshmen and transfer students, introduce students to the Stony Brook academic environment. See the descriptions of each of these courses in the Course Descriptions chapter of this *Bulletin*.

Multiple Registrations for the Same Course

Repeatable Courses

Certain courses note in their descriptions that they "may be repeated once" or "may be repeated as the topic changes." Students may repeat such courses within those restrictions and receive credit each time. All grades for such repeatable courses are computed in the student's grade point average. Only courses stating in the description that they may be repeated may be taken more than once for credit.

Retaking Courses

A student may register again in a course for which C- or lower or a non-passing grade (e.g., Unsatisfactory or No Credit)

has been previously recorded. Each grade appears on the student's academic transcript and is included in the computation of the grade point average and the semester credit load, but credit for the re-taken course will not count toward satisfaction of graduation requirements, whether the course was first taken at Stony Brook or elsewhere.

A student may register again in a course for which a grade of C or higher has been previously recorded, but the student will not receive credit for the re-taken course and the grade will not count toward the student's credit load, semester g.p.a. or cumulative g.p.a. This regulation also applies if the student had elected the P/NC option and the grade assigned by the instructor was a C or higher.

Mutually Exclusive Courses

Mutually exclusive courses are courses whose content is so similar that students who have taken one will be repeating the material if they take the other. Such courses are identified in their *Undergraduate Bulletin* descriptions with the notation "not for credit in addition to ABC ###." Students risk losing both credits and grade for registration in the second of two courses that are designated mutually exclusive.

Crosslisted Courses

Crosslisted courses are courses offered under the auspices of two or more departments and are identified by the notation "crosslisted with ABC ###" in the *Undergraduate Bulletin* and in the Class Schedule. Crosslisted courses may also be indicated with a slash, such as AFH/PHI 379 or HIS 334/WST 336. The title, course description, prerequisite(s), and credit hours for crosslisted courses are identical. A crosslisted course is taught by the same instructor and meets in the same location and at the same time as the course with which it is crosslisted. Students may register under either designator but may not repeat the course by enrolling a second time under the other designator.

Coscheduled Courses

Coscheduled courses are upper-division undergraduate courses that are taught at the same time and in the same location as graduate courses. The undergraduate and graduate versions of the course must have separate requirements as described in the syllabi for the courses and sepa-

rate grading policies for undergraduate and graduate students.

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. Matriculated students who wish to audit a course must first obtain permission from the instructor. Senior citizens must arrange to audit courses through the School of Professional Development and Continuing Studies. An auditor does not receive academic credit for the course, nor does the University maintain any record of the auditor's attendance in the course.

Individual instructors may establish policies for auditors in their courses. In general, auditors are expected to refrain from participating in class discussions and from turning in or asking for grading of homework, term papers, or examinations. After the end of the add/drop period, the student may not change status in a course from auditor to registered.

Course Prerequisites

Students should meet the prerequisites to a course before taking the course. Prerequisites indicate the type of knowledge through specific course work that a student should have acquired or the level of academic maturity or acceptance to a specific program that a student should have achieved before taking a course. Completion of the prerequisites may be in progress at the time the student advance registers for the following semester. Faculty members have the option to de-register any student not meeting the prerequisites to a course. Students who believe they have satisfied the prerequisites to a course through transfer work or through other study or experience should seek permission of the instructor before registering. Permission of the instructor supercedes stated prerequisites. Certain courses may be taken only with the permission of the instructor or of the department; this is listed as a prerequisite to the course.

Advisory prerequisites indicate the type of knowledge a student should have in order to do better in a course than would be expected without that knowledge. Students electing to take a course without satisfying the advisory prerequisite should expect to have to work harder

and not do as well as students who have completed the advisory prerequisite.

Limits on Course Credits and Grading Options

There are limits on the number of credits from certain courses that can be applied toward the 120 required for the B.A. or B.S. degree or the 128 required for the B.E. degree. Listed below are the maximum number of credits that can be applied toward the total number of credits required for a degree:

Independent study **30 credits**
273, 287, 444-449, 484-489

Internships **12 credits**

PEC (physical education) **10 credits**
(only 4 credits may be at the 100-level)

Activity-related courses **9 credits**
AFS 283, LHD 307, LHD 308,
PSY 283, SSI 283

Undergraduate teaching practica
CAS students **6 credits**
CEAS students **7 credits**

Maximum number of credits earned in non-liberal arts and sciences courses
B.A. candidates **30 credits**
B.S. candidates **60 credits**
B.E. candidates **90 credits**

The following courses are non-liberal arts and sciences courses:

ARS 154
BUS 210, 214, 348
MUS individual instrument or voice instruction courses
Student teaching courses numbered 451, 452, and 454
THR 244, 295, 296, 301-307, 340
PEC 100-level courses
ESE, ESG, ESM, and MEC courses
HAD, HAN, HAS, HBA, HBM,
HDH, HDO, HDP, HNI courses
HWC fieldwork courses

Credits by approved examinations **30 credits**
Approved examination programs are: Advanced Placement examinations, College Level Examination Program subject examination, Regents College examinations, Stony Brook Challenge examination.

Graduate courses **6 credits**

Developmental courses **0 credits**
AIM 102, MAP 101, and MAP 103 are developmental courses

Repeated courses **0 credits**

Courses are not repeatable unless specifically noted as repeatable in the *Undergraduate Bulletin* course description. See the entries "Retaking Courses" and "Repeatable Courses" earlier in this chapter for more information.

Restrictions on Credits Earned with a Grade of P

Students must complete at least 100 credits of the 120 required for the B.A. or B.S. or of the 128 credits required for the B.E. degree with a letter grade. Courses taken under the Pass/No Credit option will not satisfy general education requirements.

Minimal Undergraduate Student Responsibilities

By accepting responsibility for their education, students enhance the development of their academic, social, and career goals. It is expected that students accept responsibility for their academic choices as part of their educational experience at Stony Brook. Services are available to assist students with academic advising, long-range goals, and career explorations. Students themselves are responsible for reviewing, understanding, and abiding by the University's regulations, procedures, requirements, and deadlines as described in official publications including the University's *Bulletins*, the *Student Handbook*, and Class Schedules.

Responsibilities in the Classroom

Students are expected to:

- attend class regularly unless other arrangements are made;
- arrive for class on time and leave the classroom only at the end of class;
- engage in class discussions and activities when appropriate;
- exhibit classroom behavior that is not disruptive of the learning environment;
- secure in a closed container (and not, for example, wear on a belt or around the neck) and turn off (and not, for example, simply set to vibration mode) electronic communication devices, including cellular phones, beepers, speakers, and headphones during an examination.

Course Responsibilities

Students are expected to:

- observe the requirements for the course and consult with the instructor if prerequisites are lacking;
- obtain and understand the course syllabus;
- keep up with the coursework and take all scheduled examinations;
- address any conflicts in syllabus and exam scheduling with the instructor as soon as possible;
- review all graded material and seek help if necessary;
- as soon as possible notify the instructor of any disabilities that might interfere with completion of course work;
- fairly and thoughtfully complete the course evaluation form.

Academic Progress

Students are expected to take an active part in assessing their academic progress each semester, and to monitor their progress towards completion of graduation requirements. They are expected to:

- review academic policies and procedures described in the current *Undergraduate Bulletin* and its Supplements;
- know basic University, college, and departmental graduation requirements in their chosen majors and minors so they may plan completion of these requirements;
- maintain personal copies of a tentative degree plan, progress reports, general educational material, and transfer credit evaluations until after graduation;
- see that any academic records from other universities are transferred and received by all the appropriate offices (Admissions and Undergraduate Transfer Office) for evaluation.

Interactions with Faculty, Instructors, and other Students

Students are expected to:

- understand the concept of academic honesty and adhere to its principles;
- be respectful and polite to all instructors and other students;
- be familiar with and abide by the University's sexual harassment policies

as well as University policies regarding consensual relationships between instructors and students;

- consult the Student Conduct Code about other aspects of student conduct in and out of the classroom.

Minimal Instructional Responsibilities

Instructors at Stony Brook have teaching responsibilities that involve a broad range of methods. The following list of responsibilities does not define good teaching; it defines only a minimal set of conditions and practices that faculty members and teaching assistants are expected to observe in performing their teaching functions.

Classroom and Conference Responsibilities

- Instructors must meet their classes regularly and promptly, at times and places scheduled.
- Classes should be canceled only for the most serious reasons, and students should be given advance notice, if at all possible, of instructors' absences.
- Instructors must schedule and maintain regular office hours to meet their students' needs, minimally three hours per week, at times to suit the schedules of as many students as possible.
- Office hours should be announced in class and posted outside instructors' offices and in department offices.
- Instructors should be available for appointments with students who are unable to meet with them during regularly scheduled office hours.
- Instructors are responsible for careful supervision and classroom preparation of teaching assistants assigned to their courses.
- The policy on electronic devices, described in the section Minimal Student Responsibilities, shall be announced before each course examination.

Course Definition and Requirements

- Instructors must adhere to the course descriptions in the *Undergraduate Bulletin*.
- Prerequisites that are not stated in the *Bulletin* or the Supplement or the Class Schedule may not be imposed.

- A written syllabus that clearly defines the content, goals, and requirements of each course must be distributed at the beginning of the course, made readily available throughout the Add/Drop period, and kept on file in the department office. The syllabus should include the Provost's Americans with Disabilities Act statement and information about examination dates and times, the policy on make-up exams, office hours, and the basis for the final grade.
- Instructors must conduct any teaching and course evaluation survey that has been approved by their departments or the College or University Senates. The results of class evaluations should be used in periodic reviews and revision, when appropriate, of the course.

Assessment of Student Performance

- Homework assignments, examinations, and term papers should be evaluated and returned promptly. Written comments, explaining the instructor's criteria for evaluation and giving suggestions for improvement, should be provided.
- Instructors are responsible for providing students with appropriate and timely notification about their academic performance in a course. An examination or other assessment measure should be administered, graded, and returned to students before the end of the ninth week of classes.
- Examinations and term papers submitted at the end of the term should be graded and either returned to students or retained for one semester.
- Instructors must observe the Final Examination Schedule that appears in each semester's Class Schedule booklet. Instructors of courses taught on the semester schedule may only give a unit exam in class during the last week of the semester if a final examination is also given during the Final Examination Period.

Professional Conduct and Interaction with Students

- Instructors must report all suspected occurrences of academic dishonesty to the Academic Judiciary Committee (CAS) or the Committee on Academic Standing and Appeals (CEAS).
- Instructors should always be aware that in teaching and advising they represent the University. They are bound

by the University's sexual harassment policies. Instructors are also bound by University policies that prohibit any consensual relationships with students that might compromise the objectivity and integrity of the teacher-student relationship. Examples include romantic, sexual, or financial relationships.

- Instructors should strive to maintain the privacy and confidentiality of students' examinations, homework, and final grades.
- In dealing with students, instructors should be polite, helpful, and fair. They should take into account the wide range of cultural factors and physical challenges that can affect learning, and should attempt to help students overcome any disadvantages.

Committees on Academic Standing and Appeals (CASA)

Undergraduate students whose declared major is in the College of Engineering and Applied Sciences (CEAS) should make requests in matters outlined below to the Committee on Academic Standing and Appeals of CEAS. (Declared CEAS majors include applied mathematics and statistics, business management, computer engineering, computer science, electrical engineering, engineering science, information systems, and mechanical engineering.) See also the entry "Petitioning for Exceptions" below.

All other students, including those whose declared major is in the College of Arts and Sciences, those who have not declared a major (indicated by GEN on the student's record), and those who have declared an area of interest (e.g., pre-business GBS, pre-computer science GCS, pre-nursing GNS) should make requests in matters outlined below to the Committee on Academic Standing and Appeals of the College of Arts and Sciences. See also the entry "Petitioning for Exceptions" below.

Both committees operate under faculty legislation and consider exceptions to regulations pertaining to such matters as registration changes, course loads, and academic standing. The CEAS committee also deals with academic dishonesty and academic grievances. Note: Not all exceptions to regulations or deadlines are petitionable. Changing to or from the P/NC option after the deadline published in the academic calendar is not petitionable.

In exceptional circumstances, students may petition the appropriate Committee on Academic Standing for permission to withdraw from a course after normal deadlines. Students who obtain permission to add or drop courses after the normal deadlines will be charged \$15 for each program change form processed by the Registrar. Students who, because of extraordinary situations beyond their control, are granted permission to withdraw from all courses and who will not be in attendance during the semester are not charged a fee.

The Committee on Academic Standing and Appeals of the appropriate college considers all petitions for reinstatement in cases of academic suspension. (See the section "Academic Standing for All West Campus Undergraduates" earlier in this chapter.) Students who are granted reinstatement will be assessed a \$50 processing fee.

Petitioning for Exceptions

Students are responsible for reviewing, understanding, and abiding by the University's regulations, procedures, requirements, and deadlines as described in official publications including this *Undergraduate Bulletin*, the *Student Handbook*, and class schedules.

Occasionally extraordinary circumstances necessitate that a student request an exception to an academic regulation or deadline. These may include exceptions to registration processing dates and exceptions to regulations on academic standing. Students must file a petition with the appropriate Committee on Academic Standing and Appeals. See the entry "Committees on Academic Standing and Appeals (CASA)" above. *Note that changing to or from the P/NC option after the deadline published in the academic calendar is not petitionable.*

Most petitions for exceptions must be accompanied by documentation demonstrating why the student was unable to comply with the regulation or deadline for which the student is requesting an exception. Ignorance of deadlines or regulations is insufficient cause to grant an exception.

Written information about academic regulations, guidelines, and procedures may be obtained from the Engineering and Applied Sciences Undergraduate Student Office, where petitions are filed, for students with majors in CEAS. All other

students should consult the Academic Advising Center or, for EOP/AIM students, the Office of Special Programs, and file petitions with the Office of Undergraduate Academic Affairs.

Academic Dishonesty

Intellectual integrity is the cornerstone of all academic and scholarly work. Therefore the University views any form of academic dishonesty with the utmost seriousness. 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. The judiciary committee of each college has jurisdiction over all courses offered in that college. Either committee may inform pre-professional committees about any findings of academic dishonesty which, in its judgment, are of sufficient seriousness. Information about the procedures for hearings and other functions of these committees dealing with academic dishonesty is available in the Office of Undergraduate Academic Affairs and in the Engineering and Applied Sciences Undergraduate Student Office.

Scholarly and Scientific Misconduct

While most cases of academic dishonesty may be under the jurisdiction of the judiciary committees, students involved in allegations of scholarly or scientific misconduct as defined below are subject to the campus policy and procedure for investigating such allegations as filed in compliance with the requirements of the Public Health Service's Office of Research Integrity.

Scholarly and scientific misconduct are defined as:

1. Fabrication, falsification, plagiarism, or other serious deviation from accepted practices in proposing, carrying out, or reporting results of scholarly activities; and

2. Retaliation of any kind against a person who reported or provided information about suspected or alleged misconduct and who has not acted in bad faith. This definition is not meant to include actions involving honest error or honest differences in interpretations or judgments of data.

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, other requirements for credit, and any other academic matters. While such grievances are most often brought by students against instructors, the committees 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) or 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 students or others have unsuccessfully pursued other avenues of redress, such as discussion with the instructor and department chairperson. Grievances should be put in writing, including all 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 Academic Affairs or the Engineering and Applied Sciences Undergraduate Student Office.

Student Online Access to Records (SOAR)

The SOAR system provides direct, immediate access to selected parts of individual student academic records. Students may view and print their unofficial grade report, their degree audit report (DARTS), their current course registration, and course registration for the next semester. Students may also check their registration status and review the mailing addresses that the University has on file for them.

Students log on to SOAR at the Student Services/Registrar counter, the Academic Advising Center, the CEAS Undergraduate Student Office, EOP/AIM, Undergraduate Transfer Office, and the Health Sciences Center Student Services Office. Many applications, such as registration information, transcript request status, and degree audit information, are available under the SOAR designation on the University's home page at www.sunysb.edu.

Degree Audit Report and Tracking System (DARTS)

The Degree Audit Report and Tracking System (DARTS) provides a computer-generated report indicating each student's progress toward fulfilling degree requirements. The report is designed to be a helpful advisory tool and is not an official evaluation of a student's progress.

Academic Advising

Academic advising involves exploring a student's life goals and vocational aims to develop each student's program choice. Advisors begin with these broader issues to help new and continuing students select courses and plan appropriate schedules. Advisors can help students to clarify their values and can help relate students' interests and abilities to their educational and career plans. Advisors can help students adjust to new learning styles required at a large university, such as lecture classes, team teaching, and laboratory instruction. Students are responsible for understanding and abiding by the University's policies, requirements, regulations, and deadlines, and advisors can help explain them.

The Academic Advising Center offers advising to all College of Arts and

Sciences students. Advisors explain academic regulations, help students select courses and plan their academic programs, explore majors and minors, and advise students concerning procedures for petitioning for exceptions to University regulations and procedures. Advisors are available on a walk-in basis and by appointment. Students may also e-mail their advising questions to Advising@sunysb.edu, or go to the Center's Website, accessed through the University's home page. The Center also coordinates the orientation of new students. Only advisors in major and minor departments and programs can provide official advising on their major's or minor's requirements.

The Undergraduate Transfer Office advises new transfer students through their first semester at Stony Brook and evaluates transferred credits toward the University's general education requirements. Students planning to take courses elsewhere after matriculation at the University should review their course selections with the Transfer Office prior to enrollment.

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 registering 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 provide special opportunities for students to talk with faculty members about individual courses, major and minor requirements, and the appropriateness of the academic field for certain career choices.

Selection 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, incoming freshmen are encouraged but not required to declare one of several areas of interest for which an advisor's signature is not required. These areas of interest are listed on the Declaration of Major form which is used for officially declaring an area of interest, major, minor, secondary education option, addition of major or minor, and change of major or minor. The forms are also available from the Registrar's Office and the Academic Advising Center.

New freshmen who do not wish to declare an area of interest will remain in the GEN (general program) category. Those who have declared an area of interest may change to another area of interest.

By officially declaring an area of interest, the student indicates his or her preference, but it does not guarantee a place in any major that has limited acceptance.

Academic Major

All students are required to declare and complete the requirements of an academic major prior to receiving a degree.

Students are awarded a Bachelor of Arts (B.A.), a Bachelor of Science (B.S.), or a Bachelor of Engineering (B.E.) degree. Each academic major description states which degree is awarded. Students wishing to explore possible majors should review in this *Bulletin* the requirements and descriptions of the ones they are considering and then discuss their academic plans with an advisor in the department sponsoring the major or an advisor in the Academic Advising Center, or, for freshmen enrolled in USB 101 or its equivalents (e.g., EAS 101), their section instructor.

All majors offered include in their *Bulletin* entry a definition of the discipline and the goal of the major as well as general information about careers pursued by students who have completed the major. The entry includes a list detailing the requirements for the major plus a suggested sequence of courses over eight semesters that includes major and general education requirements.

Major departmental programs consist of study concentrated in one of the academic departments of the College of Arts and Sciences, College of Engineering and Applied Sciences, and Marine Sciences Research Center, allowing students to explore in some depth the content, methods, and achievements of a given academic discipline. An interdisciplinary or interdepartmental major enables the student to investigate an area of interest 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.

All majors, minors, and programs offered through the College of Arts and Sciences, the College of Engineering and Applied Sciences, and the Marine Sciences Research Center are described in detail with their requirements and appear in alphabetical order in the chapter "Approved Majors, Minors, and Programs." The department chairperson, the undergraduate director, the administrative assistant or undergraduate secretary, the office location, phone number, e-mail address for student questions, and Web address are listed in the header to each major program entry. Finally, because Stony Brook offers many minors appropriate to students in various majors, minors of particular interest to students in each major are listed as well.

Students should declare a major, or area of interest, as soon as possible to receive academic advising and information provided by major departments and programs.

Most forms of financial aid also require that the student have an officially declared major in order to be considered for eligibility.

Declaration and Change of Major in the College of Arts and Sciences

The Declaration of Major form, available in the Registrar's Office, is used officially to declare a major; the signature of a departmental advisor is required for all majors in the College of Arts and Sciences.

Students must declare a major before registering for the first semester of the sophomore year if they have not already done so. New transfer students who matriculate as sophomores, juniors, or seniors must declare a major during their first semester at Stony Brook.

Academic departments advise students about the courses and major(s) in their departments and sign students into the majors. The signed Declaration of Major form must be submitted to the Registrar's Office for processing.

New transfer students who have 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 at any time before graduation. Students should discuss the change with an advisor in the desired program, obtain the appropriate signature on the Declaration of Major form, and submit the form to the Registrar's Office for processing.

Declaration and Change of Major in the College of Engineering and Applied Sciences

All programs in the College of Engineering and Applied Sciences currently limit the number of students accepted. 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.

Qualified freshman and transfer applicants who have specified their interest in Applied Mathematics and Statistics, Business Management, Computer Engineering, Computer Science, Electrical Engineering, Engineering Science, Information Systems, or Mechanical Engineering may be accepted directly into one of these majors upon admission to the University. Admission to the University, however, does not guarantee either immediate or future acceptance into the major for which the student applied.

Requirements for acceptance of continuing students into a major are listed with each major. Transfer students are urged to contact the appropriate undergraduate program director as early as possible.

Students planning on a major in the College of Engineering and Applied Sciences should consult the Undergraduate Student Office in CEAS for advising on appropriate course selection.

Health Sciences Center Majors

With the exception of the major in Health Science, all majors in the Health Sciences Center undergraduate programs (School of Nursing, School of Social Welfare, School of Health Technology and Management) are limited-admission, junior/senior level programs. Qualified freshmen who indicate an interest in certain undergraduate majors offered through the Health Sciences Center on their application to the University are conditionally accepted directly into the major shortly after they are admitted.

While students may declare their intention to major in Health Science at any time through completion of the Declaration of Major form, students may not seek admission to any other HSC program by using this form. Further, declaring an area of interest related to one of these majors does not guarantee later acceptance. Continuing and transfer students who wish to enter one of the upper-division programs in the Health Sciences Center must formally apply for admission to that program after completing the course and credit requirements described in the Health Sciences Center chapter of this *Bulletin* and must be formally accepted. Students wishing to pursue the major in Health Science, described in the Approved Majors, Minors, and Programs chapter of this *Bulletin*, may do so at any time and may advance to the senior year courses upon completion of specified requirements.

When Major Requirements Change

When major requirements are changed, continuing students have the option of fulfilling the new requirements or of fulfilling those specified in the *Undergraduate Bulletin* and supplements to the *Undergraduate Bulletin* 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 supplements to the

Undergraduate Bulletin 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.

Academic Minor

Although students are not required to complete a minor in order to graduate, many minors are available for those wishing to develop another area of specialization without the full depth of an academic major. An academic minor is a specified sequence of courses totaling between 18 and 24 credits and requiring at least nine credits of upper-division work. It does not lead to a degree.

Participation in a minor is optional and includes not only completing the required sequence, but consulting the director of the minor initially and as work in the minor proceeds. Many major departments also offer a minor in the discipline; the requirements for the minor are described with the corresponding major program entry. In addition, interdisciplinary minors that draw on courses from a variety of disciplines are described in the alphabetical listings of Approved Majors, Minors, and Programs. Minor entries include the name and academic affiliation of the minor director and additional information such as office location, phone number, and e-mail and Web addresses where available.

To assist students in selecting optional minors, a listing is included in the header of each major program, indicating minors of particular interest to students with that major. A maximum of three minors may be noted on a student's transcript.

For further information, consult the relevant minor director or the Academic Advising Center.

Declaration of Minor

The Declaration of Minor form, available from the Registrar's Office and the Academic Advising Center, is used officially to declare a minor; the signature of the minor director is required. Students may have up to three declared minors recorded on their University transcript. Minors are not noted on diplomas.

Double Majors

When a student officially declares and completes two majors (a double major), the student receives one baccalaureate degree upon graduation. The student must fulfill the graduation requirements of the degree-granting college when specifying B.A. or B.S. or B.E. The University does not officially recognize triple majors.

Double majors may be composed of any two majors (except Multidisciplinary Studies) within the College of Arts and Sciences or with one major in the College of Engineering and Applied Sciences and one in Arts and Sciences or with one major in the Health Sciences Center's School of Health Technology and Management and one in Arts and Sciences or in the College of Engineering and Applied Sciences. Students who wish to complete two majors must obtain the approval of the two departments or programs involved. The number of credits taken to fulfill the requirements of both must total at least 60. Students should submit a Declaration of Major form to add a second major when both majors are in the College of Arts and Sciences. Students must be formally accepted through direct admission or application to majors in the College of Engineering and Applied Sciences and in the School of Health Technology and Management, except the major in Health Science.

Double Majors for Students in the College of Engineering and Applied Sciences

Approved combinations of two majors leading to a Bachelor of Engineering degree are an engineering major (computer engineering, electrical engineering, mechanical engineering, or engineering science) with applied mathematics and statistics or business management or computer science or information systems or any 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 business management or computer science or information systems, or applied mathematics and statistics or business management 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.)

Double Degrees

Under certain circumstances, a student who pursues majors in two of the three largest academic units offering bachelor's degrees may receive two degrees simultaneously.

Bachelor of Engineering and Bachelor of Arts or of Science

Qualified students may be granted permission to earn double degrees at the undergraduate level. This is permissible only if one of the majors leads to a Bachelor of Arts or Bachelor of Science degree offered in the College of Arts and Sciences and the other leads to a Bachelor of Engineering degree offered in the College of Engineering and Applied Sciences.

Written approval to undertake a double degree must be obtained from the Engineering and Applied Sciences Undergraduate Student Office and from the Academic Advising Center, subject to review by the Office of Undergraduate Academic Affairs.

In addition to meeting all of the Diversified Education Curriculum requirements, including those requirements specific to either College, and all other graduation requirements, the candidate for a double degree must earn a total of 144 credits and must fulfill the requirements of the Bachelor of Engineering degree and the requirements of the Bachelor of Arts or the 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 formally admitted to each unit. Written approval to undertake this curriculum must be obtained from the dean of the Health Sciences school in which the student is formally enrolled and from the Academic Advising Center, subject to review and final authorization by the Office of Undergraduate Academic Affairs. The double degree consists of a Bachelor of Science degree from the Health Sciences Center and either a

Bachelor of Arts or Bachelor of Science or Bachelor of Engineering from a West Campus program.

The double degree will be awarded 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) the area of specialization of the West Campus program is fundamentally different from that of the Health Sciences Center program.

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.

Second Bachelor's Degree Program

A student who has completed the requirements for and received a bachelor's degree from Stony Brook or another accredited institution and who wishes to earn a second degree from a West Campus program 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. Of these 36 credits, 21 must be at the upper-division level (courses numbered 300 or higher), primarily from courses chosen for the major. Students also are required to fulfill the "Expanding Perspectives and Cultural Awareness" portion of the Diversified Education Curriculum that is described in the Degree Requirements chapter. Coursework completed for the first bachelor's degree, whether taken at Stony Brook or elsewhere, does not count toward completing these requirements. Sequential bachelor's degree students who wish to qualify for degrees with distinction must complete 55 credits in coursework at Stony Brook toward the second degree. All sequential bachelor's degree candidates must have completed, with a C or higher, courses judged equivalent to Stony Brook's general education requirements in English composition and mathematics or complete these courses at Stony Brook. For purposes of registration and academic standing, matriculated candidates for a second baccalaureate will be treated as seniors.

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 Registrar's Office at least ten days before the transcript is needed. A form for this purpose is available from the Registrar, but requests may also be made by letter or facsimile transmission. Information concerning transcript requests also is available on the University Website at www.sunysb.edu. The charge for transcripts is \$5 per copy; payment should be made to the Bursar's Office. If submitted 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 released unless required by law. Students may, however, request only the undergraduate or only the graduate record. Transcripts will be issued only if the student's financial record shows no outstanding obligation. Students also may view their transcripts using the SOAR system on campus or through the Web.

Academic Honors

Selection of students for honors is based primarily on University records and recommendation and not on application. Some of the disciplinary national honor societies require application and have established criteria for eligibility. Interested students should approach the relevant department or program.

Honor Societies

Besides the annual awards listed in the Scholarships and Awards chapter, 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 most recent 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 who has, through research achievements, shown a marked aptitude that is expected to lead to the fulfillment of the requirements for full membership may be nominated by a faculty member or department 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 3.30 g.p.a. at Stony Brook. The campus chapter adds 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), Pi Tau Sigma (Mechanical Engineering), 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 college compiles a Dean's List of undergraduate students who constitute approximately the top 20 percent of their class. Each full-time student must have completed in that semester at least 12 credits for a letter grade (includ-

ing 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. Part-time students must have earned at least six credits in a semester of letter-graded work (not including S or P grades). The grade point average cutoffs are as follows: seniors, 3.40; juniors, 3.30; sophomores, 3.20; and freshmen, 3.10.

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), have letter grades assigned to at least 80 percent of their coursework, and attain the requisite g.p.a. in the class. The levels of distinction are *summa cum laude*, *magna cum laude*, and *cum laude*, and constitute approximately the 98th percentile, the 93rd percentile, and the 85th percentile, respectively, of all students. 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

Students must declare their intention to seek departmental honors and must carry out required academic activities to earn this distinction. Honors requirements are described in the Approved Majors, Minors, and Programs chapter in the listing of each department that offers honors. For students who qualify, this honor is indicated on their diploma and on their permanent academic record.

Application for Graduation

To become a candidate for graduation, a student must file an "Application for Degree" form with the Registrar's Office. May, July, and August candidates who wish to be included in the May Commencement Program must file by the previous February.

Deadlines: December and January candidates—end of the third week of the candidate's final semester.

May candidates—end of the second week of the candidate's final semester.

July and August candidates—end of the second week of the last summer term for which they are registered.

Exact deadlines appear in the academic calendars printed in the Class Schedule during the academic year and in the Summer Session Catalog.

Time Limits on Completion of Degrees in the College of Engineering and Applied Sciences

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.

Withdrawal from the University

Students who wish to officially withdraw from the University must complete and submit a "Withdrawal from the University" form to the Academic Advising Center or the Engineering and Applied Sciences Undergraduate Student Office. Forms are available from these offices and from the Registrar's Office. The date on which the form is filed, not the date of last class attendance, is considered the official date of withdrawal.

Note: Non-attendance does not constitute official withdrawal. Notification of the student's instructors does not constitute official withdrawal. Non-payment of tuition and fees does not constitute official withdrawal.

Students who submit withdrawal forms after the first ten class days but not later than the last day of classes in a semester

will be assigned a withdrawal (W) for each course. Withdrawal after the last day of classes does not relieve students of financial obligation.

Foreign students on an F-1 or J-1 visa must consult with International Services before withdrawing from the University.

Leave of Absence and Returning to the University

At the time they withdraw from the University, students have the option of indicating whether they intend to return. This "leave of absence" may be canceled if the student attends another college while on leave from Stony Brook and fails to maintain a C average at that institution. A student in that situation should consult a Stony Brook admissions counselor at the earliest opportunity.

1. 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 the one in which they withdrew if:
 - a. the student leaves in good academic standing;
 - b. there has been no previous withdrawal;
 - c. the student has no disciplinary action pending or in force.
2. College of Arts and Sciences students who have not been enrolled at Stony Brook for four consecutive semesters and have not earned any Stony Brook credits will be assigned a new matriculation date and will be responsible for the academic requirements in effect at the time of their return. These rematriculated students will be required to meet with an academic advisor before registering for classes upon their return. Note: Summer terms are not considered to be semesters and credits earned during the summer do not count toward maintaining matriculation.
3. 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 before registering for classes.

4. Educational Opportunity Program students must obtain clearance for re-admission from the EOP/AIM Office and meet with their AIM counselor.
5. Prior to registering for classes, all foreign students returning to the University must obtain a visa clearance from International Services.

Academic Renewal Policy

Students who, for financial or personal reasons, have not been enrolled at the University for at least ten consecutive semesters and who, after rematriculation, complete at least 12 (but no more than 24) credit hours in good academic standing, may be eligible for academic renewal. Under this policy, the student's cumulative grade point average will be re-initialized and calculated based on course grades earned as of the date of rematriculation, although the original grades and g.p.a. remain on the transcript. In order to qualify for graduation, students must earn a minimum of 36 credits and a cumulative g.p.a. of 2.00 at Stony Brook after re-initialization of the cumulative g.p.a. Those who wish to be considered for degrees with distinction must earn at least 55 credits at Stony Brook after re-initialization of the cumulative g.p.a. For advice about eligibility, students should speak with an advisor in the Academic Advising Center.

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.

Certain restrictions apply:

1. No student may take a Challenge examination in a course that is a prerequisite for a course already passed.
2. Credit may be accumulated through the Challenge Program for no more than five courses. (Up to 30 credits by exam may be applied toward the degree through a combination of Challenge and approved external examinations.)

3. Challenge credit:

- a. may not be used to fulfill the University residence requirement (36 credits earned at the University after achieving junior standing);
- b. may not be used to satisfy the 55 credits in residence required of candidates for degrees with distinction;
- c. may not be used to fulfill Diversified Education Curriculum requirements except for one course in each of the three D.E.C. Disciplinary Diversity categories (E, F, and G).

Written guidelines describing in detail the Challenge Program's procedures, regulations, and fees are available in the Academic Advising Center.

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. 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. More information on this option is available from the Registrar's Office. See also the description of the National Student Exchange and Study Abroad programs in the Special Academic Opportunities chapter.

Student Participation in University-Sponsored Activities

By their participation in campus-related activities such as research conferences, dramatic or musical performances, intercollegiate athletic competitions, or leadership meetings, students make contributions to the University. In recognition of the students' commitment both to their regular academic programs and to related activities, the University makes every effort to accommodate unique situations.

Students are responsible for presenting a printed copy of semester obligations to all their professors at the beginning of the semester to alert them to activities

that may present conflicts. Instructors are required to make arrangements for students to complete examinations, quizzes, or class assignments early or late if the student's participation in a University-related activity results in the student's absence from the class when such work is due. Some events occur only by invitation during the semester, and instructors should make accommodations for these students.

Student Educational Records

The Federal Family Educational Rights and Privacy act of 1974, as amended, sets out requirements designed to protect the privacy of students concerning their records maintained by the campus. FERPA affords students certain rights with respect to their education records. These rights include:

- The right to inspect and review the student's education records within 45 days of the day the University receives a request for access.
- The right to request the amendment of the student's education records that the student believes are inaccurate or misleading.
- The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent to school officials with legitimate educational interests, including but not limited to administrative, academic, or support personnel (including law enforcement and health services); University attorneys, auditors, or collection agents; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. Upon request, the University discloses education records without consent to officials of another school in which a student seeks or intends to enroll.
- The right to file a complaint with the U.S. Department of Education concerning alleged failures by State University to comply with the requirements of FERPA. The Office's address is: Family Policy Compliance Office, U.S. Department of Education, Washington, D.C. 20202

In addition, the University of Stony Brook is authorized to release

"Directory Information" concerning students. Directory Information includes: student's name, addresses (including email), telephone numbers, date and place of birth, major field of study, class, participation in officially recognized activities and sports, weight and height of members of athletic teams, likenesses used in University publications, dates of attendance, degrees and awards received and previous institutions attended.

Currently enrolled students have the right to have this directory information withheld from the public if they so desire. Forms requesting the withholding of directory information are available at the Registrar's Office, 2nd floor of the Administration Building. At least 10 days should be allowed for processing of these requests.

Change of Address

To ensure prompt receipt of registration materials, grade reports, and other important University communications, students should report off-campus mailing address changes to the Registrar's Office either in person by showing appropriate identification or through the Registrar's Website. 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 International Services. Degree candidates should inform the Registrar's Office of any address changes.

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 requirements which he or she may have missed because of such absence on any particular day or days. No fees of any kind shall be charged by the institution for making available to the said student such equivalent opportunity.
4. If registration, classes, examinations, study, or work requirements are held on Friday after 4:00 p.m. 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.
7. 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.

8. 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

Experiments conducted by Stony Brook personnel, 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 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 or 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, 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 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.

Changes in Regulations and Course Offerings

The courses of study, academic requirements and regulations, and other information contained in this *Bulletin* are limited to policies in effect at the date of publication. The University reserves the right to change academic requirements and regulations or to change or cancel any course for whatever reason it may deem appropriate. New and revised courses, new and revised majors and minors, and changes in academic requirements and regulations are reported in the Supplement to the *Undergraduate Bulletin*, published each semester in the Class Schedule booklet.

University at Stony Brook Advanced Placement Credit

Advanced placement credit is granted to students who have taken the appropriate CEEB advanced placement examination. Students must request that their test scores be forwarded to Stony Brook's Undergraduate Admissions Office. While each academic department determines the minimum test score required to receive equivalency for a Stony Brook course, a score of three results in two general elective credits.

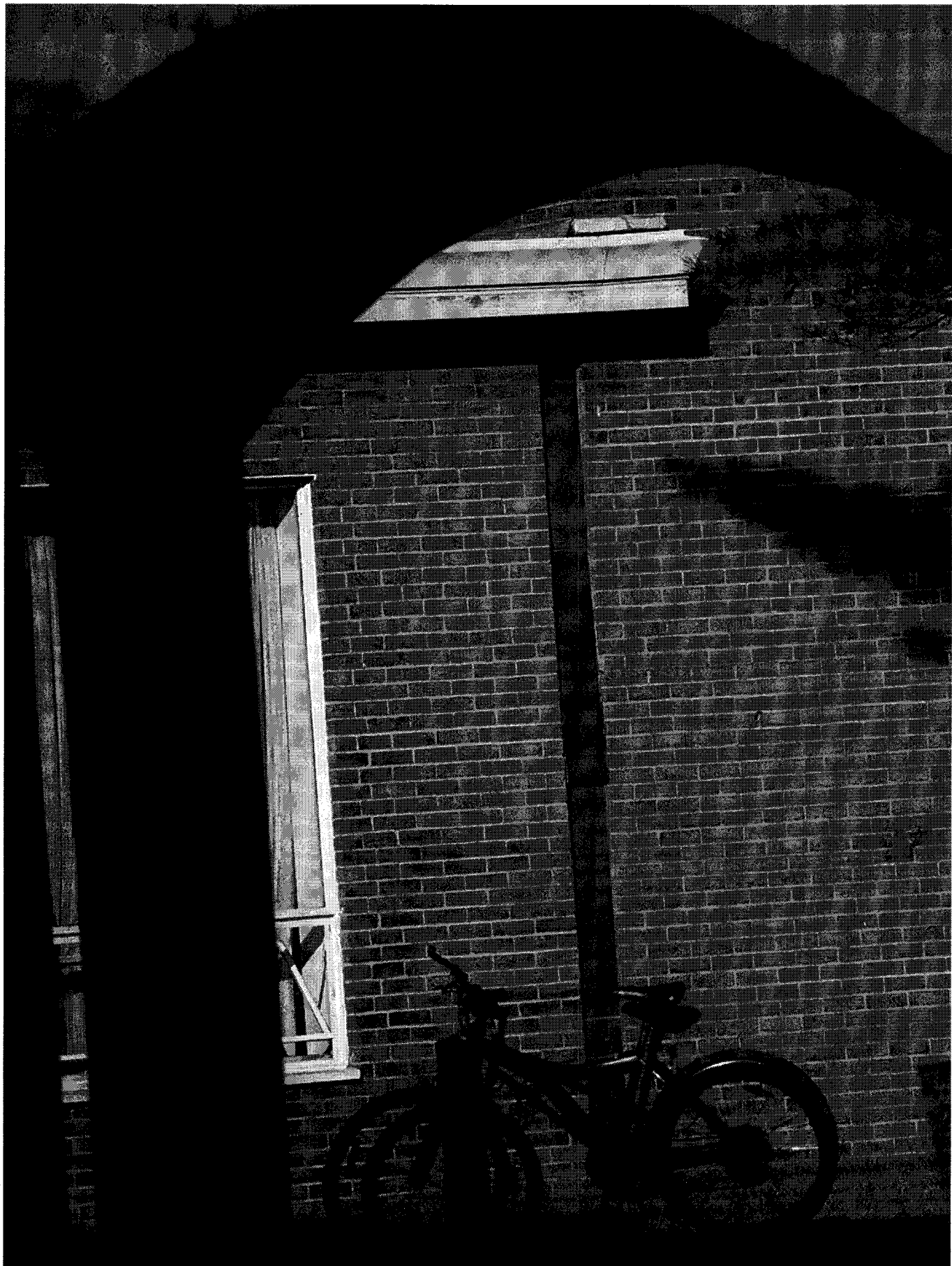
The table lists available AP exams, the relevant scores, and Stony Brook equivalency and applicability to degree requirements. AP credit may apply to: Entry Skill 1 Basic Mathematics Competence; Entry Skill 2 Basic Writing Competence; Entry Skill 3 Elementary Foreign Language Competence; the first course required for D.E.C. category A English Composition; D.E.C. category C Mathematics and Statistical Reasoning; and one course each in D.E.C. categories E Natural Sciences, F Social and Behavioral Sciences, and G Humanities.

Stony Brook will grant up to 30 credits by examination in partial fulfillment of the bachelor's degree. Included in this total are credits based upon standardized external examinations (AP, CLEP, CPE) and Stony Brook's own Challenge Examination Program. Credit by examination does not count as part of the semester credit required for good academic standing, nor may it be used to meet the Stony Brook residency requirement. All AP, CLEP, and CPE credit carries the grade of "S" and has no effect on a student's grade point average. Consult the Transfer Office for further information on CLEP and CPE, and the Academic Advising Center for more information on Challenge exams.

AP Exam	Score	Stony Brook Equivalent	Credits	D.E.C.
Art				
General	3, 4, or 5	none	3	G
History	4 or 5	ARH 101, 102	6	G
Studio	3	none	3	G
Studio	3, 4, or 5	none	3	G
Biology	4 or 5	none*	6	E
	3	none	3	E
Calculus				
AB	4 or 5	MAT 131, placement 7	4	Skill 1, C
BC	4 or 5	MAT 131, 132, placement 9	8	Skill 1, C
AB or BC	3	none	3	Skill 1
Chemistry	4 or 5	CHE 131 and 132 (waiver of CHE 133, 134)	8	E
	3	none	3	E
Computer Science				
A	3, 4, or 5	CSE 110**	3	none
A/B	3	CSE 110**	3	none
A/B	4 or 5	CSE 114	3	none
Economics				
Macro	3, 4, or 5	none	3	F
Micro	3, 4, or 5	none	3	F
Macro & Micro	4 or 5	ECO 107	4+2	F
English Language	3, 4, or 5	none	3	Skill 2; 1st crs, A
English Literature	3, 4, or 5	none	3	Skill 2; 1st crs, A
Environmental Science	3, 4, or 5	none	3	E
French Language	3, 4, or 5	FRN 212	3	Skill 3
French Literature	3, 4, or 5	none	3	Skill 3, G
German Language	3, 4, or 5	GER 212	3	Skill 3
German Literature	3, 4, or 5	none	3	Skill 3, G
Government and Politics				
Comparative Government	4 or 5	POL 103	3	F
U.S. Government and Politics	3	none	3	F
U.S. Government and Politics	4 or 5	POL 102	3	F
U.S. Government and Politics	3	none	3	F
European History	4 or 5	HIS 101, 102	6	F
	3	none	3	F
U.S. History	4 or 5	HIS 103, 104	6	F
	3	none	3	F
Human Geography	3, 4, or 5	none	3	F
Latin				
Virgil	3, 4, or 5	LAT 251, 252	3	Skill 3
Catullus/Horace	3, 4, or 5	LAT 251, 252	3	Skill 3
Music Literature	3, 4, or 5	MUS 101	3	G
Music Theory	3, 4, or 5	MUS 119	3	G
Physics				
B	3, 4, or 5	none	3	E
C: Mechanical	3, 4, or 5	none	2	none
C: Electrical and Magnetic	3, 4, or 5	none	2	none
Both C Exams	3, 4, or 5	none	4	E
Psychology	4 or 5	PSY 103	3	F
	3	none	3	F
Spanish Language	3, 4 or 5	SPN 212	3	Skill 3
Spanish Literature	3, 4 or 5	none	3	Skill 3, G
Statistics	3, 4, or 5	AMS 102	3	Skill 1, C

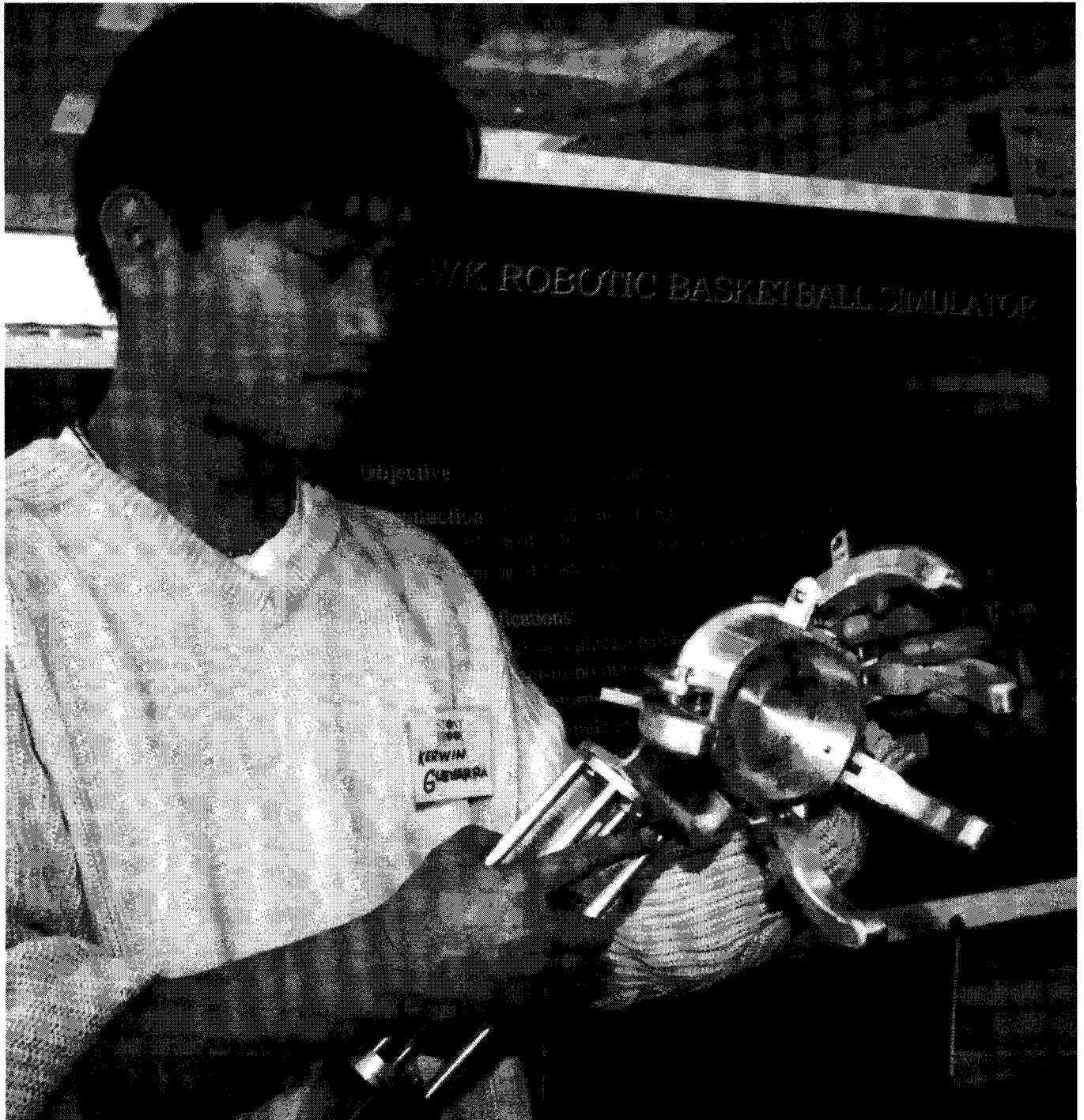
* Six credits toward the Biology major Core Requirements

** Students who take and pass the transfer evaluation examination in CSE 114 may substitute CSE 114 on their transcripts for a total of three credits. (Note: students who receive credit for CSE 114 through AP credits must either enroll in CSE 113 or pass that transfer evaluation examination.)





Special Academic Opportunities



This chapter details special academic programs and other opportunities available to Stony Brook undergraduates: Bachelor's/Master's Degree Programs, Graduate Courses, the Honors College, Independent Study, Internship Program for Students in the College of Arts and Sciences, Internships Program for Students in the College of Engineering and Applied Sciences, Living/Learning Centers, National Student Exchange, RAIRE (summer research fellowships), Scholars for Medicine, Study Abroad, Teaching Assistantships, URECA (Undergraduate Research and Creative Activities), University Learning Communities, and WISE (Women in Science and Engineering). Students are encouraged to take advantage of these special opportunities to enhance both their personal growth and their educational experience at Stony Brook.

Combined Bachelor's/Master's Degrees

Stony Brook offers a number of combined Bachelor's/Master's degree programs which allow students to use graduate credits taken as an undergraduate toward the graduate degree. Combined degree programs are available in Applied Mathematics and Statistics, Biochemistry/Chemistry, Chemistry, Computer Science, Engineering Chemistry/Chemistry, Engineering Chemistry/Materials Science and Engineering, Engineering Science/Materials Science and Engineering, and Political Science.

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 3.00 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.

Graduate Courses

Upper-division students with superior academic records may take graduate courses with the permission of the dean of the Graduate School, or continuing education courses with permission of the dean of the School of Professional Development, for undergraduate credit. (Teaching practica, readings, research, or other independent study are excluded.) Permission of the instructor and the chair of the department offering the course is also necessary. Permission forms are available from the Graduate School, the School of Professional Development, and various advising offices and must be presented, after the necessary signatures are obtained, at the Registrar's Office when registering for the approved course.

Students should discuss their plans to take graduate or continuing education courses with their advisors in order to assess whether the credit will be applicable to their degree requirements. Students with majors in the College of Engineering and Applied Sciences wishing to apply graduate credits to their majors must get the approval of their department's undergraduate program director; approval forms are available in the CEAS Undergraduate Student Office.

Graduate courses taken while a student is an undergraduate remain part of the undergraduate record. The student cannot subsequently receive graduate credit for such courses, except in the case of approved five-year programs leading to both a baccalaureate and a master's degree.

No more than 6 graduate credits (including continuing education) may count toward the bachelor's degree.

The Honors College

Chair: Ruth S. Cowan
 Director: Laurie Fiegel
 Office: N-3070 Library
 Phone: 632-4378
 E-mail address: honorscollege@notes.cc.sunysb.edu
 Website: www.honors.sunysb.edu

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

Honors College admissions decisions are based on both quantitative and qualitative criteria. Among these are a record of high academic and 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 demonstrate overall academic excellence in high school by such accomplishments as achieving high grade averages in major subject areas, a cumulative average of 93 or greater, combined SAT scores equal to or over 1250, 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

Honors College students must fulfill Skills 1, 2, and 3 (see Note below) as outlined in the D.E.C. requirements for the College in which they are enrolled.

- A. Honors College students who enter as freshmen must take HON 105, 106, 201, 301, 401, 495 and 496 or their equivalents, equivalency to be determined by the chair of the Honors College. Students who enter the Honors College after the first semester of the freshman year are required to take a course program modified according to the time spent in the College. (Those entering as sophomores, for example, must take HON

105 and 106 or substitute equivalent courses.)

- B. Students who receive a grade of C- or lower in an Honors College course (those with the HON designator) may repeat the course toward Honors College requirements. No HON course in which a grade of C- or lower was received may satisfy an Honors College requirement.
- C. Each student entering as a first-year student is required to take four topics courses (HON 110-120). Students entering as sophomores are required to take two topics courses; those entering as juniors are not required to take any.
- D. Honors College students must take four additional courses with at least one course in each of the disciplinary domains other than that of their major (or one of their majors) in order to round out their course of study. (The disciplinary domains are natural sciences and mathematics, fine arts, humanities, and social sciences.) One of these courses must be from D.E.C. category K. Students are urged to take at least one of these courses in a foreign language at the intermediate level or higher or in the literature of a language other than English. These complementary elective courses must be passed with a grade of C or higher. A course used to satisfy a skill requirement cannot also be used to satisfy a complementary elective requirement.
- E. All Honors College students must submit a letter of intent describing their senior honors projects no later than the end of the last semester of their junior year. A progress report must be submitted at the end of the first semester of project work. An appropriate thesis (single-authored by the student) must be submitted at the end of the second semester and an oral report must be made at the annual Honors College Symposium. The grade on the senior project must be C or higher. These rules apply to students doing their senior honors projects under the HON designator or under a departmental designator.

Note: Students who need to satisfy the Skill 3, Elementary Foreign Language Competence requirement, through coursework must earn a B or higher in the second semester of an elementary

foreign language course to satisfy the requirement.

Independent Study

In the course of completing a degree program, a student may wish to undertake independent study through directed readings and research courses under departmental auspices. Independent study projects may be distributed throughout the undergraduate years, although in most cases, students should complete the freshman year and several general education courses before proposing independent study.

Through procedures established by departments, a student may enroll for up to six credits of directed readings, research, or internship in a single department in a single semester. More than six credits are permissible if they are in more than one department but students may not apply more than 12 credits of internship toward the 120 credits minimum required for the Bachelor of Arts or Bachelor of Sciences degrees or toward the 128 credits minimum for Bachelor of Engineering. During the summer a student may earn six credits in a single department in each term.

See also "Limits on Course Credits and Grading Options" in the Academic Policies and Regulations chapter.

Internship Program for Students in the College of Arts and Sciences

Internship Manager: Alfreda S. James
Office: W-0550 Melville Library
Phone: 632-9783
E-mail address: ajames@sunysb.edu
Website: www.sunysb.edu/career

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. Up to six credits may be earned for semester internships during the academic year; up to six for each summer term. Grading is Satisfactory/Unsatisfactory.

Internships allow students to test career intentions, to improve intellectual skills in writing, quantitative analysis, research, and administration, to increase understanding of social, political, and economic

forces, and to acquire work experience useful for seeking employment or entrance into professional schools.

Credit-bearing internships require the approval of an academic department and the internship manager in the Career Center when appropriate. The general guidelines for participation in an internship are:

- Completion of 57 credits prior to beginning the internship;
- Completion of at least one previous semester of coursework at Stony Brook;
- Minimum grade point average of 2.50;
- Submission of Stony Brook internship agreement form to faculty sponsor and Career Center when appropriate;
- Registration in only one 488 course per semester

Students enrolled in a department's internship course numbered 488 must maintain a journal, have regular contact with the faculty sponsor, and complete a term report. Students enrolled in the Career Center's course EXT 488 may be required to compile a portfolio that includes a resume, informational interviews with alumni or other professionals, and a written summary of their work experience.

Internships Program for Students in the College of Engineering and Applied Sciences

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 paid experience in which they observe engineers, scientists, and managers 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. More than 130 regional companies support the Internships Program.

Students may participate in internships with or without academic credit. In order to earn credit, the nature of the work undertaken in the industry setting must be reviewed by the student's academic advisor. With the approval and agreement of the employer and the academic advisor, the student may register for the department's internship course and receive three credits (or up to nine credits in the full-time semester-long internship in mechanical engineering) toward baccalaureate degree requirements. A student may choose to participate in an internship for the experience and remuneration only, and in this case, no course registration or academic approval is required.

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 resumes to internship employers, and, when necessary, assists in scheduling interviews on or off campus according to employer needs.

Living/Learning Centers

Director: Mary Scranton
Office: N-3071 Melville Library
Phone: 632-9550, 632-4378
E-mail address: llc@notes.cc.sunysb.edu
Website: www.sunysb.edu/llc

Living/Learning Centers integrate the student's residence hall experience with academic concerns and enrich both aspects of the college education. Stony Brook offers seven Living/Learning Centers: Environmental Studies in Dreiser College, Health and Wellness in Mount College, Human Sexual and Gender Development in Eisenhower College, Interdisciplinary Arts in Greeley College, International Studies in Stimson College, Science and Engineering in Keller College, and Service Learning for Community-Based Action Research in Douglass College. Many classes are held within the residential buildings and building activities are centered around the living/learning center topic. All Living/Learning

Centers offer academic minors and add an academic component to each student's residential experience. Although intended primarily for residents of the college housing the Living/Learning Center, other students may participate in the centers with permission of that program's director. For minor requirements, see the specific listings in the Approved Majors, Minors, and Programs chapter.

Environmental Studies

Faculty Director: Darcy Lonsdale,
Marine Sciences Research Center

The Environmental Studies Living/Learning Center, housed in Dreiser College, offers an environmental studies minor 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 coursework specifically to the study of the environment.

The minor in environmental studies is designed to give residents of Dreiser College enhanced exposure to one sub-field of environmental studies—the natural science of the environment.

Health and Wellness

Faculty Director: Richard W. Johnson,
School of Health Technology and Management

The Health and Wellness Living/Learning Center, housed in Mount College, is designed to give students a foundation in the concepts of healthy living and to help students select future studies and careers in the health professions. The minor is intended primarily, but not exclusively, for residents of Mount College.

Human Sexual and Gender Development

Faculty Director: Robin DeLuca, Psychology

The Human Sexual and Gender Development Living/Learning Center, housed in Eisenhower College, offers a minor in human sexual and gender development and 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.

Interdisciplinary Arts

Faculty Director: Constance Koppelman,
Women's Studies

The Interdisciplinary Arts Living/Learning Center, housed in Greeley College, offers a minor in interdisciplinary arts and provides an interdisciplinary and collaborative perspective on the fine arts. It is designed to explore the factors that unify the arts in modern culture and society.

Science and Engineering

Faculty Director: Thomas G. Robertazzi,
Electrical and Computer Engineering

The Science and Engineering Living/Learning Center, housed in Keller College, is intended for motivated students who wish to broaden their exposure to science and engineering beyond that offered by their major department.

Students from all disciplines are invited to apply for admission to the program, but it is expected that most will pursue majors in biology, biochemistry, mathematics, or one of the physical sciences. Participation in the program is particularly valuable for those who plan careers in the sciences or engineering.

The minor 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.

International Studies

Faculty Director: Timothy Moran, Sociology

The International Studies Living/Learning Center, housed in Stimson College, provides an integrated view of institutions, ideas, historical traditions, and aspirations of peoples of other countries or regions. The minor is open to all undergraduates, with preference given to residents of Stimson College, who wish to add an academic dimension to their residential experience.

Service Learning for Community-Based Action Research

Faculty Director: Gregory Ruf, Social Sciences
Interdisciplinary

The Service Learning for Community-

Based Action Research Living/Learning Center, housed in Douglass College, is designed to use the special educational opportunities available at Stony Brook to create citizens with the depth of commitment to community service that the 21st century will demand. Acquisition of skills and knowledge is combined with a fostering of an appreciation by students of their role as citizens both in the University and in the surrounding communities. The minor is open to all undergraduates, with preference given to residents of Douglass College, who wish to add an academic dimension to their residential experience.

National Student Exchange

Program Coordinator: Barbara Fletcher
Office: 291 Administration Building
Phone: 632-6712
E-mail address: Barbara.Fletcher@sunysb.edu

The National Student Exchange (NSE) offers undergraduate students an opportunity to study for up to one year at one of more than 160 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 values that exist across the United States.

To qualify for the program students must be studying full time when they apply and have completed a full-time course of study in the semester 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 from the coordinator of the National Student Exchange Program.

RAIRE Program

Director: Linda Pfeiffer
Office: N-3071 Melville Library
Phone: 632-4378
Website: <http://ws.cc.sunysb.edu/raire/index.html>

Stony Brook was one of ten universities nationwide selected by the National Science Foundation for a Recognition Award for the Integration of Research and Education (RAIRE) and was awarded funds to promote activities that engage undergraduates in research and research-related activities. The University at Stony Brook uses RAIRE funds to support a wide range of activities: undergraduate summer research fellowships, travel grants to undergraduates giving presentations at professional meetings, USB 101 undergraduate teaching assistants, grants to faculty for educational innovations consistent with the goals of RAIRE, co-sponsorship of an annual "Celebration of Undergraduate Achievements," and sponsorship of workshops and symposia.

Scholars for Medicine

Scholars for Medicine earn a BA/MD degree with four years of undergraduate coursework and four years of medical school. All Scholars for Medicine are individually counselled on their careers throughout their participation in the program. Benefits include full or partial scholarship funds, help in finding laboratory placements for undergraduate research, regular advising from both the Honors College Master and the premedical advisor, opportunities to meet faculty in the School of Medicine, seminar participation with invited guest speakers in the Scholars for Medicine Lecture Series, and support and encouragement in the exploration of undergraduate and career opportunities.

Scholars for Medicine positions are available to select entering freshmen who have been accepted to the Honors College Program. Eligibility criteria are: nomination of high school seniors by the Honors College; 1350 or above on the SATs; maturity; evidence of social commitment; evidence of interest in science; high moral character; breadth of interests; and strong communication skills. See the Scholars for Medicine entry in the Health Sciences Center Programs chapter of this *Bulletin* for complete information.

Study Abroad

Director: Alfredo Varela
Office: E-5340 Melville Library
Phone Number: 632-7030
E-mail address: studyabroad@sunysb.edu
Website: www.sunysb.edu/studyabroad

The University's Study Abroad Office offers students the opportunity to pursue their academic interests in an overseas location while still earning credits toward the Stony Brook degree. Programs cover an array of disciplines, ranging beyond the humanities and social sciences, and are taught in a variety of languages, including English. Program length is either a summer, a semester, or an academic year.

Through its affiliation with diverse international institutions Stony Brook is able to provide high quality, low cost programs for its students. Financial aid can frequently be used to help cover the costs of the program, since the credits earned are applied to the student's Stony Brook degree.

Students who have taken advantage of these exciting opportunities report that overseas study is among the most beneficial experiences of their lives. In addition to developing a greater level of maturity and confidence, students often expand their academic contacts and intellectual interests, all of which would be viewed favorably by future employers and graduate schools. An often unexpected benefit is that students develop not only a heightened understanding of other cultures, but also of the United States and its role in the world.

Program Selection and Eligibility

Students from all disciplines are encouraged to investigate the feasibility of studying abroad. They may choose from programs directly sponsored by Stony Brook (see below) or from programs administered by other SUNY campuses (over 300 programs in all). Details are available from the Study Abroad Office.

Early investigation is essential to successful overseas study so that it can be properly fitted to the student's curriculum. Through careful consultation with their academic department, the Undergraduate Transfer Office, and the Study Abroad Office, students can determine the applicability of courses and credits earned abroad toward their major and degree requirements, including the fulfillment of general education

and upper-division credit requirements. Studying abroad need not delay a student's graduation.

Application deadlines may vary, but are generally in early March for fall, full year, and summer programs and early October for spring semester programs. Prerequisites listed below reflect the minimum required. Students should consult the Study Abroad office for the specific prerequisites for each program.

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, although this can vary. Students should ascertain prior to enrollment in overseas academic programs, through careful consultation with their academic department and the Study Abroad Office, the applicability of courses and credits to Stony Brook degree and major requirements. However, final determination of the credit level is made only after return to Stony Brook. Credits awarded through Study Abroad programs are usually recorded on the Stony Brook transcript as S or U and are subject to Stony Brook policies governing S/U grades. A transcript supplement will be attached to the official transcript listing actual courses and grades received overseas. In a few instances, this information will be recorded directly on the Stony Brook transcript.

Some D.E.C. requirements can be fulfilled through overseas study. For example, 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. Others are evaluated on a case-by-case basis.

Stony Brook Programs

Listed below is a sampling of overseas programs offered by Stony Brook. Programs are continually being added and updated, so check with the Study Abroad Office for a definitive list.

Stony Brook in England: Lancaster

Offering courses in the sciences (including a pre-med program) as well as social studies, humanities, and business, this program allows students to enroll directly at Lancaster University. This is one of

the few British programs which will allow students to enroll for only a semester; a full academic year option is also available.

Prerequisites: U3 or U4 standing; good academic standing

Stony Brook in England: Sussex

Students may pursue studies in any discipline offered at the University of Sussex, located in Brighton. This is a full academic year program, designed to integrate students into the British university system.

Prerequisite: U3 or U4 standing

Stony Brook in England: Pharmacology Program, Manchester

Fall semester program allowing a pharmacology major to do coursework in England which will equate to courses at Stony Brook.

Prerequisite: Pharmacology major

Stony Brook in France: Paris

Students are enrolled directly in the University of Paris IV (Sorbonne), Paris VII (Denis Diderot), or Paris X (Nanterre). Course instruction is, therefore, in French; lectures are supplemented by tutorial assistance (in French and in English) which is arranged by the Resident Director. The program begins with a four-week intensive language course provided for U.S. students prior to the start of the French academic year and includes a year-long series of cultural events, excursions, and discussions with French scholars. Each student's program of study is arranged and supervised individually. Students can participate for the full academic year, the spring semester, or the fall semester.

Prerequisites: Four semesters of college-level French or the equivalent; good academic standing

Stony Brook in Germany: Konstanz

Through an exchange agreement with the University of Konstanz, students with a background in German are eligible to enroll directly in regular University of Konstanz courses. Students may participate for the academic year or for a semester, although the fall semester in Germany will not end in time for students to return for spring courses at Stony Brook.

Prerequisites: Sufficient background in the German language; good academic standing

Stony Brook in Germany: Tübingen

Offering a good combination of language preparation and regular university integration, the program begins with an optional Intensive German Language Course which helps prepare students for courses at the Eberhard-Karls University of Tübingen. Students may then continue their language study through the university's "German as a Second Language Department" and/or enroll directly in any university course for which they meet the prerequisites. Students may participate for a full academic year or a semester.

Prerequisites: Four semesters of college-level German or the equivalent; good academic standing

Stony Brook in Italy: Summer in Rome

Courses are offered in English and in Italian. Intensive study of Italian language at various levels as well as courses on Italian culture, civilization, and art are provided during this four-week summer program. Completed coursework is recorded on the student's official Stony Brook transcript with assigned letter grades. The academic program is supplemented with weekend excursions around Italy.

Stony Brook in Italy: University of Rome

This program features direct enrollment at the University of Rome and begins with a six-week intensive Italian language and culture course in October-November. During the normal Italian academic year, which begins in November, students attend regular university courses. Students are assisted in selection of their courses by the Resident Director; tutorial assistance is also made available. Academic evaluation is carried out by way of the Italian oral examination system at the end of the academic year (June). Students may participate for the full academic year or for the Spring semester.

Prerequisites: Good academic standing; four semesters of college-level Italian or the equivalent. Spring Only participants need a slightly higher fluency in Italian.

Stony Brook in Japan: Chiba, Okayama or Kyoto

Stony Brook has a number of exchange agreements with universities in Japan, each with its own highlights to recommend it. Together these programs offer students a wide range of courses taught

in English, including Japanese language, arts, philosophy, computer science, business, and history. In addition, students with sufficient Japanese language proficiency may enroll directly in regular university courses, thus broadening the disciplines they may study in Japan.

It is recommended that students apply for the full academic year though they may participate in the programs for one semester. A limited number of scholarships are available for students who meet g.p.a. and application requirements.

Prerequisites: Good academic standing

Stony Brook in Korea: Seoul

Stony Brook has a number of exchange agreements with universities in Korea, each with its own highlights and features to recommend it. Some specialize in business and management, others in Asian philosophy and religions, and so on. These programs offer a good array of courses taught in English with intensive Korean language study available. Students with sufficient language proficiency may enroll directly in regular university courses, thus broadening further the disciplines they may pursue in Korea.

Prerequisite: Good academic standing

Stony Brook in Madagascar: Ranomafana National Park

This fall semester program allows students to add an experiential learning component to their studies. The program focuses on biodiversity, conservation, ecology, anthropology, wildlife studies, environmental sciences, and primatology. It begins with a two-week intensive orientation on the Stony Brook campus. Participants then travel to Madagascar where they live in the rain forest of the Ranomafana National Park and Research Station, continuing their studies and working with international researchers. Students' independent study projects contribute to the biodiversity survey and ecological monitoring of the park.

Prerequisites: High academic standing; major in a program-related field

Stony Brook in Spain: Leon

This is a total immersion program designed for independent-minded undergraduate and graduate students interested in full integration into Spanish language and culture. This program offers a chance to enhance the language abilities of students who already have a strong

background in Spanish. Participants may spend a semester or a full year in Leon. Courses are taken through the Programa para Estudiantes Extranjeros; students with advanced linguistic ability may also enroll directly in regular University of Leon courses.

Prerequisite: U2, U3, U4, or graduate standing, good academic standing. A minimum of four semesters of college-level Spanish or its equivalent is required, although additional Spanish background is recommended.

Stony Brook in Tanzania

In this summer program, students visit various locations in northern Tanzania to highlight their course instruction, which is provided by Stony Brook faculty. Generally, visits are made to traditional Maasai boma, Olduvai Gorge, the Serengeti Plain, the Ngorongoro Crater, villages and cities in northern Tanzania, providing a rare and exciting opportunity to integrate classroom instruction with first-hand experience in a part of the world renowned for its natural beauty, diversity of cultures, wildlife, and conservation efforts. Coursework emphasizes the history and cultures of the area. Basic instruction is also provided in Swahili. Students typically earn six upper division anthropology credits. Application deadline is usually in early February.

Prerequisites: second semester U2, U3, or U4 students in good academic standing

Undergraduate Teaching Assistantships

Recognizing that teaching is a valuable component of learning, faculty members offer undergraduate teaching practica to permit qualified undergraduates to participate under faculty supervision in teaching courses. These teaching practica are intended 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. Students receive academic credit for the learning and experience they acquire in undergraduate teaching practica.

Undergraduate teaching assistants must be juniors or seniors (U3 or U4 status). They must have demonstrated mastery of the subject matter by having completed and excelled in the course in which they will be assisting 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 of work that have 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 nor must they proctor an examination in the course in which they are assisting. Exceptions to this rule may be made only by special permission of the Office of the Dean and College Curriculum Committee.

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.

Faculty members with either graduate or undergraduate teaching assistants must inform the students in their classes of the status of each teaching assistant.

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, for degrees in the College of Arts and Sciences, or seven credits, for degrees in the College of Engineering and Applied Sciences, earned through teaching practica may apply toward the degree.

University Learning Communities

Chair: David Hanson, Chemistry
 Office: N-3071 Melville Library
 Phone: 632-4378
 E-mail address: dhanson@notes.cc.sunysb.edu
 Website: <http://ws.cc.sunysb.edu/lcp>

Stony Brook, a pioneer in the development of learning communities throughout the curriculum, offers several learning communities built on the concept that a community of learners and teachers working together enhances the educational and social experience of the University. Learning communities provide many of the advantages of smaller institutions with the resources of a large research university.

Freshman Learning Communities

Freshmen with similar interests take major and general education courses as a "community." All the courses, usually limited to 25 students, are integrated through faculty collaboration so what students learn in one course is reinforced by the learning in the others. The courses are anchored by a small linking seminar in which students work together and conduct collaborative research projects. Students develop critical perspectives on their learning while building the skills and abilities necessary to take full advantage of the opportunities of a research university.

The Communities in Science are designed for students interested in biology, chemistry, and the health professions and include all the courses taken by 50 percent of incoming freshmen at Stony Brook. The Communities of Ideas are specially designed for students who are undecided about a major or who are interested in the humanities and social sciences. The Communities of Ideas include some of the most popular courses among incoming freshmen, allowing students to sample a variety of disciplines while preparing for most majors in the humanities and social sciences. Other communities are available for those interested in computer science, computer and electrical engineering, business, and the health sciences.

Advanced-Level Learning Communities

Modeled after the Freshman Learning Communities, advanced-level learning communities are designed to provide sophomores and juniors with the same kind of small-college community experience afforded to freshmen. Advanced-level communities typically link two courses that satisfy both major and general education requirements with a small seminar that fosters the development of writing and communication skills at the upper level and the transposability of skills, methods, and knowledge among different disciplines that is essential to success both at the University and beyond. Stony Brook offers several communities specifically targeted to ease the transition of transfer students to the University. These communities are constructed around the disciplinary courses most popular among incoming students. All advanced-level learning communities provide work in the major with a general education experience that helps students to build the skills and abilities necessary to take full advantage of the opportunities of a research university.

Federated Learning Communities

The Federated Learning Communities (FLC) creates an academic community based on shared exploration of common intellectual and personal interests. It is directed by a Master Learner who integrates material from a number of courses focused around a theme. The Master Learner teaches the program seminar and directs community outreach programs and other activities carried on by FLC students.

Program Theme

Each year-long program focuses on an issue of major importance and interest for special attention and study. FLC programs have considered issues in health and society, world hunger, creativity, gender and sexual diversity, and issues in management and business. Information on current program themes is available in the Learning Communities Office.

Program Courses

A Federated Learning Community incorporates regular University courses into a program of study. These courses are selected because they provide varied and comprehensive perspectives on the

issues studied. For instance, the FLC program on Issues in Health and Society linked courses such as HIS 398 AIDS and the Social History of Medicine, SOC/HMC 200 Medicine and Society, and ANT 350 Medical Anthropology. FLC students enroll in one or more of these courses, and the program seminar, which links, focuses and integrates the material of the program courses in a small community setting. The program seminar offers opportunities for enhancement of essential skills and abilities, such as oral and written communication, critical thinking and analysis, group interaction, and personal initiative.

The FLC Minor and Program Requirements

Students may choose to enroll in FLC for one or two semesters; but it is recommended that students take the full two-semester program seminar. Successful completion of the program courses and seminars earns an FLC minor in the program theme. In addition, many departments accept FLC work, including program seminars, toward satisfaction of major requirements. Students should consult with FLC about their individual academic plans and needs.

URECA Program

Director: Linda Pfeiffer
 Office: N-3071 Melville Library
 Phone: 632-4378
 E-mail address: lpfeiffer@notes.cc.sunysb.edu
 Website: <http://notes/cc.sunysb.edu/Prov.underresop.nsf>

The Undergraduate Research and Creative Activities (URECA) Program is the focus for most undergraduate research and creative activity on the Stony Brook campus.

URECA awards summer fellowships and small grants to undergraduates, hosts annual events to showcase student work, maintains Websites that inform students about opportunities to become involved in research and creative activity, publishes an annual collection of undergraduate abstracts, and coordinates undergraduate participation in research conferences. URECA activities are funded in part by the Simons Foundation. All matriculated undergraduates, including incoming freshmen and transfer students, are eligible to participate in the URECA Program.

Women in Science and Engineering (WISE)

Director: Susan G. Larson
 WISE Coordinator: Lois Rowman
 Office: 120 Physics
 Phone: 632-6947
 E-mail address: projectwise@notes.sunysb.edu
 Website: <http://www.wise.sunysb.edu>

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. Identified as a national model program by the National Science Foundation, 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, frequent interaction with faculty, and numerous social activities that range from guest lectures to field trips. Through participation in 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 WISE, applicants must be women who are moving directly from high school to college and have a demonstrated aptitude and 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 the Scholarships and Awards chapter.

Academic Requirements

WISE participants must fulfill Stony Brook's general education requirements, known as the Diversified Education Curriculum (D.E.C.), in addition to the requirements of their major department. Where appropriate, the WISE academic requirements may be applied toward the DEC or the student's major. WISE students are eligible for and encouraged to take honors courses, where appropriate. WISE students may pursue the one-year program alone, or elect to partici-

pate in a full four-year curriculum. All WISE women are expected to maintain a minimum grade point average of 3.00 and remain in good academic standing.

All WISE students must satisfy the following first year requirements:

1. The 1-credit course "Becoming a Scientist," offered as a special section of USB 101 taught by a faculty member in the sciences or mathematics
2. WSE 187 Introduction to Research.
3. Two semesters of mathematics and science courses for prospective science and engineering majors, such as MAT 131,132 or 141, 142 or CHE 131,132 or 141, 142 or PHY 131, 132 or 141, 142
4. Attendance at all mentoring sessions, entailing approximately six hours per week. (See Extracurricular Programs below.)
5. Attendance at all special evening programs and meetings. (See Extracurricular Programs below.)

WISE students pursuing the four-year program must fulfill the following additional requirements during the remaining undergraduate years:

1. WSE 242 Social Dimensions of Science
2. One computer science course or 200-level mathematics course
3. MAT 160 Mathematical Problems and Game or PHY 311 Connections in Science
4. Mentoring Seminar offered under WST 488 Internship (1 credit)
5. Professional Development Seminar offered under WST 488 Internship (1 credit)
6. Senior honors thesis/design project. See Note.
7. Attendance at a minimum of three special evening programs or meetings per year. (See Extracurricular Programs below.)

Note: The honors thesis/design project is satisfied through successful completion of a six-credit, year-long independent research project culminating in the submission of a substantial research paper, written to the professional standards of the relevant academic discipline. Research should be modeled after those in peer-reviewed journals. The project must be reviewed by the student's research mentor, WISE faculty advisor and one other member of the WISE committee and be judged acceptable for successful completion of this requirement. In

addition, at the end of the first semester, students must submit to their WISE academic advisor, a progress report on their activities. The senior honors thesis/design project requirement may be satisfied within the student's major. In addition, students are encouraged to apply for their major's departmental honors program. The thesis may apply toward both departmental honors and WISE requirements.

Extracurricular Programs and Activities

WISE academic requirements are supplemented by other activities designed to provide additional academic and social support and foster connections among the science, mathematics, engineering, and social environments.

Peer Study Groups

Based on their mathematics and science courses, first-year WISE women are placed in 5-6 member peer study groups, led by a WISE junior mentor, using collaborative learning methods. In years two and three, peer study groups will be organized around science, engineering, and mathematics courses, depending on student needs. After the first year, participation in peer study groups is optional but recommended.

Special Evening Programs and Meetings

WISE sponsors regular evening programs and meetings attended by WISE undergraduates, faculty in the sciences, mathematics, and engineering, graduate students, and others. The programs include talks from faculty, students, and visiting scientists and engineers from Brookhaven National Laboratory, Cold Spring Harbor Laboratory, and private sector research firms; panel discussions in subjects such as educational and cultural factors that influence and shape women's choices; workshops on resume writing; and social events.

First-year women are required to attend all evening programs. Women completing the four-year WISE program must attend a minimum of three evening programs per year and are expected to play an increasing role in planning sessions and leading discussion groups.

WISE students are encouraged to live in the Whitman or Cardozo Residence Halls. Whitman is the site of the WISE Computer Room and many WISE activities.





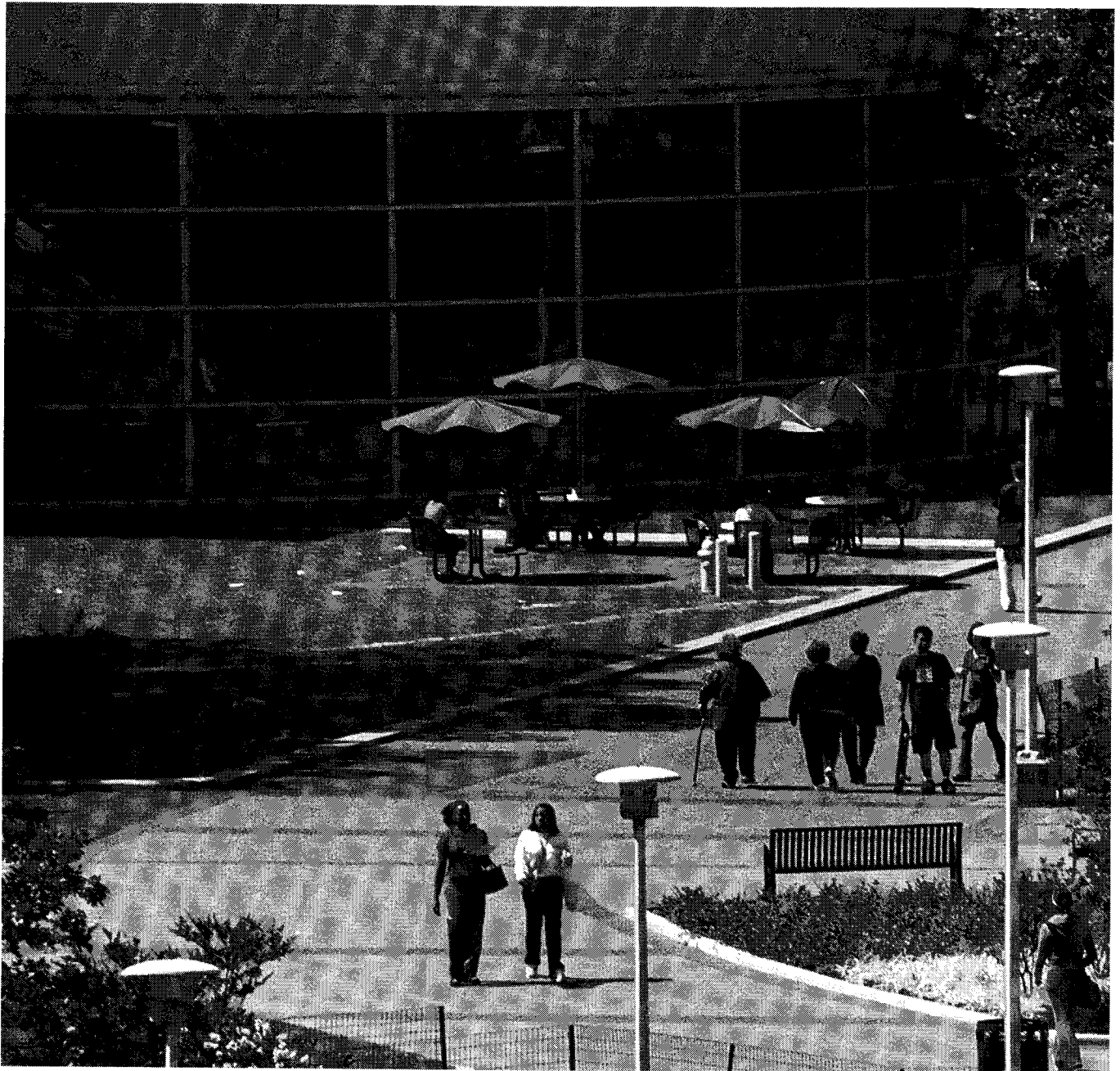
Approved Majors, Minors, and Programs

Robert C. Liebermann, Interim Dean, College of Arts and Sciences

Yacov Shamash, Dean, College of Engineering and Applied Sciences

Marvin A. Geller, Dean, Marine Sciences Research Center

Richard F. Laskowski, Dean, Physical Education and Athletics



AFS

Major and Minor in Africana Studies

Department of Africana Studies, College of Arts and Sciences

CHAIRPERSON: William McAdoo ADMINISTRATIVE ASSISTANT: Frances Larmon
OFFICE: S-245 Social and Behavioral Sciences PHONE: (631) 632-7470

Minors of particular interest to students majoring in Africana studies: anthropology (ANT), economics (ECO), English (EGL), history (HIS), political science (POL)

Faculty

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

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

Georges Fouron, *Associate Professor, Ed.D., Columbia University*: Joint appointment with Social Sciences Interdisciplinary Program; Social studies education; bilingual education; identity; Haiti; immigrants' experience in America; transnationalism.

Barbara Frank, *Associate Professor, Ph.D., Indiana University*: Joint appointments with Art and Anthropology; African art history, especially West Africa; arts of the African Diaspora and ancient Mesoamerica.

E. Anthony Hurley, *Associate Professor, Ph.D., Rutgers University*: Joint appointment with European Languages, Literatures, and Cultures; Francophone literature of the Caribbean and Africa; Caribbean poetics; Afro-Caribbean culture; Caribbean American literature.

Aisha Khan, *Assistant Professor, Ph.D., City University of New York*: Joint appointment with Anthropology; Race and ethnicity; theory and method in diaspora studies, social inequality, postcolonial societies, colonialism; Caribbean, Central America, U.S.

William McAdoo, *Associate Professor, Ph.D., University of Michigan*: Joint appointment with History; U.S. urban, social, and institutional history; immigration historiography; labor history; 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 Vaughan, *Associate Professor, Ph.D., University of Oxford*: Joint appointment with History; African politics and history; international relations. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1997, and the President's Award for Excellence in Teaching.

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 3

Interdisciplinary in nature, the Africana studies department considers the experiences of persons of African descent throughout the world. The major in Africana studies 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 are examined from both historical and contemporary perspectives. Particular attention is focused on political concepts, cultural development, legal relations, and social theories.

The major in Africana studies provides students with a thorough background in the history, politics, and social and economic conditions of people of African descent throughout the world. Because of this field's interdisciplinary approach, students are exposed to the critical contributions of scholars representing a variety of theoretical approaches and intellectual perspectives, enhancing the student's knowledge and understanding, while encouraging higher-level thinking and the ability to critically evaluate ideas and information.

Many Africana studies majors and minors have gone on to graduate and professional schools better prepared in various disciplines and professions including law, medicine, business, engineering, nursing, social work, and education. Africana studies courses also benefit students who go on to do graduate work in history, politics, anthropology, sociology, literature, and other fields.

Courses in Africana Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

AFH 206-B Great Books of the Black Experience

AFH 212-J French Caribbean Literature (in Translation)

AFH 213-G Caribbean and American Connections in Literature

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

AFH 329-J, 330-J Pan-African Literature I, II

AFH 339-G Arts of the African Diaspora

AFH 379-K Philosophy of Race

AFH 421, 422 Topics in Africana Studies

AFH 447 Readings in Africana Studies

AFH 475, 476 Undergraduate Teaching Practicum I, II

AFH 487 Research in Africana Studies

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

AFS 221-J Introduction to Modern African History

AFS 239-J Introduction to the Caribbean Experience

AFS 240-J Issues in Caribbean Society

AFS 277-K The Modern Color Line

AFS 283 Community Service

AFS 300-K Blacks in the City

AFS 310-K American Attitudes Toward Race

AFS 319-F The Politics of Race

AFS 325-K The Civil Rights Movement

AFS 337-J The Politics of Africa

AFS 345-J Culture and Gender: Women in Africa and the Caribbean

AFS 346-J Political and Social History of Africa

AFS 350-J Black Women and Social Change: A Cross-Cultural Perspective

AFS 360-K African-American Social Commentary

AFS 370-K The African-American Family

AFS 372-K African-American Political Thought

AFS 375-K Slavery

AFS 380-J Race and Ethnicity in Latin America and the Caribbean

AFS 388-J Slavery in Latin America and the Caribbean

AFS 395-J Religions of the Caribbean
 AFS 400 Ancient Egypt (KMT):
 Historical and Contemporary Views
 AFS 410 Computers and Third World
 Social Issues
 AFS 418 Legal Processes and Social
 Structure
 AFS 421, 422 Topics in Africana Studies
 AFS 447 Readings in Africana Studies
 AFS 463, 464 The Media and Black
 America I, II
 AFS 475, 476 Undergraduate Teaching
 Practicum I, II
 AFS 487 Research in Africana Studies
 AFS 488 Internship
 AFS 491 Interdisciplinary Seminar in
 Africana Studies

Sample Course Sequence in the Africana Studies Major

Freshman Fall	Credits
D.E.C. A	3
AFS 101	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
D.E.C. A	3
AFS 102	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Sophomore Fall	Credits
AFH 206 or 212 or AFH/EGL 249	3
AFS Intro Themes Course	3
D.E.C.	3
D.E.C.	3
D.E.C. or elective	3
Total	15

Spring	Credits
AFS Intro Themes Course	3
AFS Extended Study Course	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Requirements for the Major in Africana Studies (AFS)

The major in Africana studies leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 48 credits.

1. Foundation Courses

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

2. One literature course chosen from the following:

AFH 206 Great Books of the Black Experience

AFH 212 French Caribbean Literature

AFH 213 Caribbean and American Connections in Literature

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

3. Introduction to Themes in Africana Studies

Two courses, chosen in consultation with the undergraduate director, from the following:

AFS 221 Introduction to Modern African History

AFS 239 Introduction to the Caribbean Experience

AFS 240 Issues in Caribbean Society

AFS 277 The Modern Color Line

4. Extended Study

Two courses from the following:

AFH 329, AFS 300, AFS 310, AFS 319, AFS 325, AFS 337, AFS 345, AFS 350, AFS 360

Junior Fall	Credits
AFH or AFS 447 or 487	3
AFS Extended Study Course	3
Course in related discipline*	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
AFS Focused Study Course	3
Course in related discipline*	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
AFS 410	4
AFS Focused Study Course	3
Course in related discipline*	3
D.E.C.	3
Elective	3
Total	16

Spring	Credits
AFS 491	3
AFS Focused Study Course*	3
Course in related discipline*	3
Elective	3
Elective	3
Total	15

*Course may not be crosslisted with AFH or AFS.

5. Focused Study

Three courses from the following:

AFH 379, AFS 346, AFS 370, AFS 372, AFS 375, AFS 380, AFS 388, AFS 395, AFS 400, AFS 418, AFS 463, AFS 464

6. Three credits in AFH or AFS 447

Directed Readings or AFH or AFS 487 Directed Research to be taken in the junior or senior year

7. AFS 410 Computers and Third World Issues

8. AFS 491 Interdisciplinary Seminar in Africana Studies

9. Courses in Related Disciplines: Nine upper-division credits in related disciplines (excluding courses crosslisted with an AFH or AFS course) chosen in consultation with the undergraduate director.

Note: Students planning to apply for provisional teacher certification should consider taking SSI 327 and 350 toward this requirement.

10. Upper-Division Writing Requirement

Africana studies majors must submit two essay or term paper assignments with grades of B or higher completed for two upper-division AFS courses and must submit an evaluation form signed by the professor(s) approving the samples as meeting writing proficiency necessary for the major. Students must inform the instructor of the courses in advance of their plan to use the paper(s) in fulfillment of the writing requirement for the major. Submitted papers may be of any

length but a minimum of 15 pages of material must be submitted.

Note: No more than 12 of the 36 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 (AFS)

The minor in Africana studies is intended for students interested in exploring aspects of the Black Experience in ways that relate to their own major field of study. The sequence of lower- and upper-division courses gives the student a well-balanced analysis of the varied aspects of the black past. All courses offered for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 24 credits.

1. AFS 101, 102 Themes in the Black Experience I, II
2. One course from the following:
 - AFS 221 Introduction to Modern African History
 - AFS 239 Introduction to the Caribbean Experience
 - AFS 240 Issues in Caribbean Society
 - AFS 277 The Modern Color Line
 - AFS 310 American Attitudes Toward Race
 - AFS 350 Black Women and Social Change: A Cross-Cultural Perspective
3. One AFH or AFS course numbered 200 or higher (other than AFS 283), selected in consultation with the minor coordinator
4. Three courses selected from upper-division courses other than AFH or AFS 447, 475, 476, 487, or 488
5. Either AFH or AFS 447 Directed Readings or AFH or AFS 487 Directed Research to be taken in the junior or senior year

AMR

Interdisciplinary Major and Minor in American Studies

College of Arts and Sciences

UNDERGRADUATE DIRECTOR: Fred Gardaphe, European Languages, Literatures, and Cultures ADMINISTRATIVE ASSISTANT: Marie Sweatt
OFFICE: N-4073 Melville Library PHONE: (631) 632-1215 E-mail: Fred.Gardaphe@notes.cc.sunysb.edu

Minors or second majors of particular interest to students majoring in American studies: art (ARH/ARS), biology (BIO), English (EGL), history (HIS), linguistics (LIN), media arts (MDA), political science (POL), psychology (PSY), sociology (SOC), South Asian studies (SOA), Spanish (SPN)

Affiliated Faculty

Mary Jo Bona, *Women's Studies*

Helen Cooper, *English; Latin American and Caribbean Studies*

Roman de la Campa, *Hispanic Languages and Literature*

Fred Gardaphe, *European Languages, Literatures, and Cultures*

Anthony Hurley, *Africana Studies*

Aisha Kahn, *Africana Studies; Anthropology*

Ned Landsman, *History*

Brooke Larson, *History, Latin American and Caribbean Studies*

Gary Mar, *Philosophy*

Donna Rilling, *History*

Christopher Sellers, *History*

Jane Sugarman, *Music*

Antonio Vera Leon, *Latin American and Caribbean Studies*

Kathleen Vernon, *Hispanic Languages and Literature*

With the increase in migration and economic globalization and their impact on the culture of the United States and the Americas as a whole, scholars in many disciplines are examining, from interdisciplinary perspectives, the impact of the making of the Americas on world culture. The program in American Studies re-defines traditional disciplinary approaches, integrating and connecting new approaches to American studies that include a multicultural as well as a transnational understanding of the Americas. New methods of cultural analysis are introduced that challenge the power of comparative transnational histories to diversify political narratives of citizenship, homeland, and popular sovereignty. They also challenge how we understand others.

The interdisciplinary major in American studies introduces students to the rich variety of cultures, languages, and societies of the Americas. Students develop an in-depth knowledge of American culture beginning with core courses introducing interdisciplinary methods,

through elective courses in a particular concentration, and synthesized by a capstone seminar.

Graduates with a major in American studies can expect to work in education, business, journalism, government, and politics. Combined with a science major, the major provides a good background for the health professions. Majors will also be prepared to move on to graduate study in business, education, the humanities, law, and social sciences.

Courses in American Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

AMR 101-F Local and Global: National Boundaries and World-Systems

AMR 102-G Making American Identities

AMR 301-K Ethnicity and Race in American History

AMR 390-G Humanities Topics in American Studies

AMR 392-F Social and Behavioral Sciences Topics in American Studies

AMR 395-J Special Topics in American Studies

AMR 397-K Special Topics in American Studies

AMR 401 Senior Seminar in American Studies

AMR 447 Directed Readings in American Studies

AMR 475, 476 Undergraduate Teaching Practicum I, II

AMR 487 Independent Research in American Studies

AMR 488 Internship in American Studies

AMR 495 Senior Honors Project in American Studies

Requirements for the Major in American Studies (AMR)

The major in American Studies leads to the Bachelor of Arts degree. Except where noted, all courses offered for the major must be passed with a letter grade

of C or higher. Eighteen credits for the major must be earned in courses numbered 300 or higher.

Completion of the major requires 33 credits.

A. Core Courses

1. AMR 101 Local and Global: National Boundaries and World-Systems
2. AMR 102 Making American Identities
3. AMR 301 Ethnicity and Race in American History
4. AMR 401 Senior Seminar in American Studies

B. Study of Another Language

Six credits (or the equivalent of two semesters) of an intermediate-level language other than English appropriate to the student's intended concentration, to be chosen in consultation with the undergraduate director. All coursework taken to satisfy this requirement must be passed with a letter grade of C- or higher.

C. Concentration Requirement

Students must take five courses from any of the following groups, and two additional courses from any other of the groups. At least 12 credits must be at the 300 or 400 level.

Arts in Societies

AFH 206 Great Books of the Black Experience

AFH/HUF 212 French Caribbean Literature

AFH/HUF 213 Caribbean and American Connection in Literature

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

AFH 329, 300 Pan-African Literature I, II

AFH 339/ARH 329 Arts of the African Diaspora

AFS 463, 464 The Media and Black America I, II
 CLT 235 American Pluralism in Film and Literature
 CLT 320 Multicultural Experience in American Literature
 EGL 217, 218 American Literature I, II
 EGL 226 Contemporary American Literature: 1945 to the Present
 EGL 320 Literature of the 20th Century
 EGL 367 Contemporary African-American Literature
 EGL 369 Topics in Ethnic Studies in Literature
 EGL 378 Contemporary Native American Fiction
 EGL 379 Native American Texts and Contexts
 HIS 361 American History/American Film
 HUI 333 The Italian-American Experience in Literature
 HUI 338 Images of Italian Americans in Film
 HUS 371 United States Latino Literature
 HUS 390 Latin American Cinema
 MUS 109 Rock Music
 MUS 304 Contemporary Traditions in American Music: 1900 to the Present
 MUS 308 History of Jazz
 MUS 310 Music and Culture of the 1960s

American Peoples

AFS 239 Introduction to the Caribbean Experience
 AFS 240 Issues in Caribbean Society
 AFS/HIS 388 Slavery in Latin America and the Caribbean
 AFS/ANT 395 Religions of the Caribbean
 ANT 201 Peoples of South America
 ANT 219 Peoples of the Caribbean
 ANT 353 Archaeological Analysis and Interpretation
 ANT 362 Long Island Archaeology
 ANT 385 Prehistoric Peoples of the Americas
 ANT 392 Topics in American Cultural Alternatives
 HIS 385 Aztec Civilization
 HIS 389 Modern Mexico

Sample Course Sequence for the American Studies Major

Freshman Fall	Credits
D.E.C. A	3
AMR 101	3
Elementary foreign language	3-4
D.E.C.	3
D.E.C.	3
Total	15-16

Spring	Credits
D.E.C. A	3
AMR 102	3
Elementary foreign language	3-4
D.E.C.	3
Elective	3
Total	15-16

Sophomore Fall	Credits
Intermediate foreign language	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
Intermediate foreign language	3
Concentration requirement	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Junior Fall	Credits
AMR 301	3
Upper-Division Concentration	3
Upper-Division D.E.C.	3
Elective	3
Elective	3
Total	15

Spring	Credits
Upper-Division concentration	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

Senior Fall	Credits
AMR 401	3
Upper-Division concentration	3
Upper-Division D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Spring	Credits
Upper div. elective or AMR 401*	3
Upper-Division concentration	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

* If not taken in Fall senior year.

HIS 421, 422 Colloquia in Latin American History
 HUS 254 Latin America Today
 HUS 361 Latin-American Literature
 LAC 200 Introduction to Latin American and Caribbean Studies
 LIN 200 Language in the United States
 LIN 307 Sociolinguistics
 POL 214 Modern Latin America
 POL 382 Politics and Political Change in Latin America
 SOC 364 Sociology of Latin America
 SPN 392 The Culture and Civilization of Spanish America
 SPN 395, 396 Introduction to Spanish-American Literature I, II

SPN 405 Issues in Hispanic Cultural Studies
 SPN 415 Hispanic Cultures in Contact
 SPN 420 Topics in Spanish and Latin American Cinema
 SPN 435 Topics in Latin American Literature from the Colonial Period to the Present
History and Politics
 AFS/HIS 325 The Civil Rights Movement
 AFS 372 African-American Political Thought
 AFS 375 Slavery
 AFS/POL 418 Legal Processes and Social Structure
 HIS 103 American History to 1877
 HIS 104 United States Since 1877

HIS 213 Colonial Latin America
 HIS/POL 214 Modern Latin America
 HIS/POL 216 History of U.S.-Latin American Relations
 HIS 250 The Second World War, 1939-1945
 HIS 262 American Colonial Society
 HIS 326 History of Popular Culture
 HIS 362 Making Peace with the Sixties
 HIS 365 Environmental History of North America
 HIS 369 American Social History to 1860
 HIS 370 U.S. Social History, 1860-1930
 HIS 396 Topics in U.S. History
 HIS 411-414 Colloquia in American History
 POL 102 Introduction to American Government
 POL 320 Constitutional Law and Politics: United States
 POL 324 American Politics Parties and Pressure Groups
 POL 325 Civil Liberties and Civil Rights
 POL 326 Politics of New York State
 POL 327 Urban Politics
 POL 328 Criminal Law
 POL 344 American Political Ideology and Public Opinion
 POL 367 Mass Media in American Politics
Ethnicity, Race, Gender and Philosophy
 AFH/PHI 379 Philosophy of Race
 AFS/WST 350 Black Women and Social Change: A Cross-Cultural Perspective
 AFS 101, 102 Themes in the Black Experience I, II
 AFS/HIS 277 The Modern Color Line
 AFS 300 Blacks in the City
 AFS 310 American Attitudes toward Race
 AFS 319 The Politics of Race
 AFS 360 African-American Social Commentary
 AFS 370 The African-American Family
 ANT 356 Urban Anthropology
 AFS/ANT 380 Race and Ethnicity in Latin America and the Caribbean
 HIS/WST 333 Women in U.S. History

HIS/WST 374 Historical Perspectives on Gender Orientation
 HIS/WST 387 Women, Development and Revolution in Latin America
 HIS 397 Topics in History of U.S. Immigration and Ethnicity
 HUI/WST 237 Images of Italian-American Women
 HUI 236 The Italian-American Scene
 HUI 336 Italian Americans and Ethnic Relations
 JDS/HIS 226 The Shaping of Modern Judaism
 PHI 310 American Philosophy
 PHI 378 Philosophical Topics in Asian-American History
 PHI/WST 383 Philosophical Issues of Race and Gender
 POL/WST 330 Gender Issues in the Law
 POL/WST 347 Women and Politics
 SOC/WST 247 Sociology of Gender
 SOC 302 American Society
 SOC 310 Ethnic and Race Relations

D. Upper-Division Writing Requirement

All students are required to write a term paper for AMR 301, which is evaluated by the instructor for its evidence of upper-division writing ability. Students whose writing is judged satisfactory will have fulfilled the upper-division writing requirement. Students who do not fulfill the requirement in AMR 301 must submit to the major advisor, no later than the first semester of the senior year, a portfolio of papers written for subsequent upper-division courses taken for the major and must achieve an evaluation of satisfactory on the portfolio.

Notes:

1. Only three credits of AMR 447 Directed Readings, AMR 487 Independent Research, or AMR 488 Internship may be used to satisfy major requirements.
2. Students should consider the prerequisites to upper-division courses for the major when choosing elective and D.E.C. courses.
3. Other relevant courses, including special topics courses offered by other departments, may be substituted for major requirements with permission of the undergraduate director.

The Minor in American Studies

Interdisciplinary in nature, the minor in American studies is designed especially for students who wish to add a variety of American perspectives and an overview of American culture to the development of their majors in the arts and sciences. Students are encouraged to approach American studies from the perspective of their major. Beyond the four required courses, the minor is organized around the student's interest in a particular area of American studies. At least 12 of the 21 credits required for the minor must be taken at Stony Brook. The specific distribution of credits should be determined in consultation with the undergraduate director.

Requirements for the Minor in American Studies (AMR)

All courses offered for the minor must be passed with a letter grade of C or higher. Students should consider the prerequisites to upper-division courses for the minor when choosing elective and D.E.C. courses.

Completion of the minor in American studies requires 21 credits.

1. AMR 101 Local and Global: National Boundaries and World-Systems
2. AMR 102 Making American Identities
3. AMR 301 Ethnicity and Race in American History
4. AMR 401 Senior Seminar in American Studies
5. Three additional courses selected from the approved list of courses (available from the undergraduate director) at the 300 or 400 level, chosen in consultation with the program advisor.

Declaration of the Minor

Students must declare the American studies minor no later than the middle of their junior year, at which time they must consult with the program advisor and plan their course of study for fulfillment of the requirements.

ANT

Major and Minor in Anthropology

Department of Anthropology, College of Arts and Sciences

CHAIRPERSON: David Hicks ADMINISTRATIVE ASSISTANT: Janet Masullo

OFFICE: S-509 Social and Behavioral Sciences PHONE: (631) 632-7620 E-MAIL: JMasullo@notes.cc.sunysb.edu

WEB ADDRESS: www.sunysb.edu/anthro

Minors of particular interest to students majoring in anthropology: biology (BIO), Chinese studies (CNS), history (HIS), Japanese studies (JNS), Judaic studies (JDS), Korean studies (KRS), Middle Eastern studies (MES), psychology (PSY)

Faculty

William Arens, *Professor, Ph.D., University of Virginia*: Africa; social anthropology.

David Bernstein, *Associate Professor and Director of the Institute for Long Island Archaeology, Ph.D., State University of New York at Binghamton*: North American archaeology.

Carola Borries, *Adjunct Assistant Professor, Ph.D., University of Goettingen*: Primate behavioral ecology; Asia.

Patricia Crawford, *Adjunct Professor, Ph.D., Boston University*: Archaeology; Egypt; Near East; paleoethnobotany.

Diane Doran, *Associate Professor, Ph.D., University at Stony Brook*: Behavior and ecology of African apes; primatology.

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

Frederick Grine, *Professor, Ph.D., University of Witwatersrand*: Physical anthropology; human evolution.

Margaret Gwynne, *Adjunct 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.

Aisha Khan, *Assistant Professor, Ph.D., City University of New York*: Joint appointment with Africana Studies; Caribbean; post-colonial societies; Diaspora studies.

Andreas Koenig, *Assistant Professor, Ph.D., University of Goettingen*: Primate behavioral ecology; Asia.

Karen Kramer, *Assistant Professor, Ph.D., University of New Mexico*: Human behavioral ecology; Americas; anthropological demography.

Curtis Marean, *Associate Professor, Ph.D., University of California, Berkeley*: African prehistory; archaeozoology.

Lawrence Martin, *Professor, Ph.D., University of London*: Ape and human evolution; dental anthropology.

Dolores Newton, *Associate Professor, Ph.D., Harvard University*: South America; cultural anthropology; material culture.

Gregory Ruf, *Assistant Professor, Ph.D., Columbia University*: Joint appointment with Social Sciences Interdisciplinary; Social organization and gender; theory and methodology; rural industrialization; East Asia, China, Overseas Chinese, Japan.

John J. Shea, *Associate Professor, Ph.D., Harvard University*: Lithic technology; Old World paleolithic.

Elizabeth C. Stone, *Professor, Ph.D., University of Chicago*: Near East; Old World archaeology.

Patricia Wright, *Professor and Director of the Institute for the Conservation of Tropical Environments, Ph.D., City University of New York*: Primate ecology; primate behavior; primate conservation; Madagascar.

Adjunct Faculty

Estimated number: 4

Teaching Assistants

Estimated number: 12

Anthropology is a social science that seeks to understand and explain human cultural, behavioral, and biological variation through time and space. This gives anthropology a wide reach and has resulted in the formation of three subdisciplines: social anthropology, archaeology, and physical anthropology. Social anthropology concentrates on modern human culture and behavior. Archaeology examines cultural and behavioral variation over time. Physical anthropology studies the biological evidence for human evolution, encompassing everything from the study of modern non-human primates to the earliest stages of mammalian fossil evolution. The objective of the anthropology major is to train the student in all three subdisciplines while allowing the student to concentrate in a specific subdiscipline.

Students with a degree in anthropology take several post-graduate paths. Some continue their anthropology training in graduate schools, many at the finest graduate schools in the country. Others

pursue, for example, medical school or conservation studies.

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 medical anthropology. Students often have the opportunity to pursue coursework in any of the three fields in different cultural settings. Interested students should contact the director of undergraduate studies for details.

Courses in Physical Anthropology

See the Course Descriptions listing in this *Bulletin* for complete information.

ANP 120-E Introduction to Physical Anthropology

ANP 210-E The Living Primates

ANP 300-E Human Anatomy

ANP 320 Primate Functional Morphology and Biomechanics

ANP 321 Primate Evolution

ANP 325-E Primate Behavior

ANP 330-E Human Evolution

ANP 340 Field Methods in Physical Anthropology

ANP 360-H Primate Conservation

ANP 391 Topics in Physical Anthropology

ANP 403 Problems in Physical Anthropology

ANP 404 Human Osteology

Independent readings, research, teaching practica, and senior honors courses

Courses in Cultural Anthropology

ANT 102-F Introduction to Cultural Anthropology

ANT 104-F Introduction to Archaeology

ANT 160-F The Individual in Society

- ANT 201-J Peoples of South America
- ANT 203-J Native Peoples of North America
- ANT 219-J Peoples of the Caribbean
- ANT 230-J Peoples of the World
- ANT 290-H Science and Technology in Ancient Society
- ANT 310-J Ethnography
- ANT 311-J Immersion in Another Culture
- ANT 321 Archaeological Field Methods
- ANT 333-F Witchcraft and Magic
- ANT 350-F Medical Anthropology
- ANT 351-F Comparative Religion
- ANT 352-F Personality and Culture
- ANT 353 Archaeological Analysis and Interpretation
- ANT 354-F Family, Kinship, and Marriage
- ANT 356-F Urban Anthropology
- ANT 357-F The Agricultural Revolution
- ANT 358-J Ways to Civilization
- ANT 360-J Ancient Mesopotamia
- ANT 361-F Peasants
- ANT 362-J Long Island Archaeology
- ANT 363-F Archaeological Method and Theory
- ANT 364-J African Stone Age
- ANT 366-J Prehistoric and Historic Hunter-Gatherers
- ANT 367-F Male and Female
- ANT 368-F Ice Age Europe
- ANT 370-F Great Archaeological Discoveries
- ANT 379-J Ethnicity and Nation in China
- ANT 380-J Race and Ethnicity in Latin America and the Caribbean
- ANT 381-F Applied Anthropology
- ANT 385-J Prehistoric Peoples of the Americas
- ANT 390-F, 391-F Topics in Social and Cultural Anthropology
- ANT 392-F Topics in American Cultural Alternatives
- ANT 393-F, 394-F Topics in Archaeology
- ANT 395-J Religions of the Caribbean
- ANT 401 Problems in Social and Cultural Anthropology
- ANT 402 Problems in Archaeology
- ANT 417 Prehistoric Technology
- ANT 418 Lithic Analysis

Sample Course Sequence for the Anthropology Major

Freshman Fall	Credits
D.E.C. A	3
ANT 102 or 104 or ANP 120	3-4
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15-16

Spring	Credits
D.E.C. A	3
ANT 102 or 104 or ANP 120	3-4
D.E.C.	3
D.E.C.	3
Elective	3
Total	15-16

Sophomore Fall	Credits
Elective	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
ANT 362	3
ANP 325	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Junior Fall	Credits
ANT 418	3
ANP 300	4
ANT 370	3
Upper-Division elective	3
Elective	3
Total	16

Spring	Credits
ANT 357	3
ANP 330	3
ANT 381	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

ANT 419 Zooarchaeology
 ANT 420 Environmental Analysis Using Remote Sensing and Geographic Information Systems
 Independent readings, research, internship, teaching practica, and senior honors courses

Requirements for the Major in Anthropology (ANT)
 The major in anthropology leads to the Bachelor of Arts degree. Students must take an introductory course in two of the three sub-fields offered and include at least 18 credits of upper-division courses in the major. All courses offered for the major must be passed with a letter grade of C or higher. No transfer credits with a grade lower than C may be applied toward major requirements.

Completion of the major requires 37 credits.

A. Study within the Area of the Major

1. Two introductory courses chosen from:
 - ANT 102 Introduction to Cultural Anthropology
 - ANT 104 Introduction to Archaeology
 - ANP 120 Introduction to Physical Anthropology
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

- Six additional anthropology courses (one course from another department may be substituted with the approval of the director of undergraduate studies)
- One 400-level seminar chosen from ANT 401, 402, 417, 418, 419, 420, ANP 403 or 404

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 and will be assessed 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, 219, 230, 310, 311, 333, 350, 351, 352, 354, 356, 361, 367, 379, 380, 381, 390, 391, 392, 395, 401.

Archaeology

ANT 104, 290, 321, 353, 357, 358, 360, 362, 363, 364, 366, 368, 370, 385, 393, 394, 402, 417, 418, 419, 420.

Physical Anthropology

ANP 120, 210, 300, 320, 321, 325, 330, 340, 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 (3.00 g.p.a. overall) and a g.p.a. of 3.50 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 second semester of their senior 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 final 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:

- Completion of all requirements for the major in anthropology with a g.p.a. of 3.50 or higher in anthropology courses
- ANT 495 and 496, or ANP 495 and 496
- The honors thesis

Requirements for the Minor in Anthropology (ANT)

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 offered for the minor must be passed with a letter grade of 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.

Completion of the minor requires 21 or 22 credits.

General Anthropology

- Two introductory courses chosen from:
 - ANT 102 Introduction to Cultural Anthropology
 - ANT 104 Introduction to Archaeology
 - ANP 120 Introduction to Physical Anthropology
- Two additional courses chosen from different subfields
- Three anthropology elective courses

Social and Cultural Anthropology

- ANT 102 Introduction to Cultural Anthropology
- Three ethnographic area courses in social and cultural anthropology chosen from:
 - 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 310 Ethnography
 - ANT 311 Immersion in Another Culture
 - ANT 366 Prehistoric and Historic Hunter-Gatherers
 - ANT 379 Ethnicity and Nation in China
 - ANT 380 Race and Ethnicity in Latin America and the Caribbean
- One topical course in social and cultural anthropology to be selected from ANT 160, 333, 350, 351, 352, 354, 356, 361, 367, 379, 380, 381, and also 391 and 401 when the topic is applicable
- Two elective courses in social and cultural anthropology

Archaeology and Cultural History

- ANT 104 Introduction to Archaeology
- 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

- ANP 120 Introduction to Physical Anthropology
- ANP 210 The Living Primates or ANP 330 Human Evolution
- ANP 321 Primate Evolution
- Three additional ANP courses (except 475 or 476)
- One course chosen from BIO 344, 351, 354, 359, 385; GEO 302, 403; AMS 110

AMS

Major and Minor in

Applied Mathematics and Statistics

Department of Applied Mathematics and Statistics, College of Engineering and Applied Sciences

CHAIRPERSON: James Glimm UNDERGRADUATE PROGRAM DIRECTOR: Alan C. Tucker UNDERGRADUATE SECRETARY: Scott Connelly
OFFICE: P-131 Math Tower PHONE: (631) 632-8370 E-MAIL: atucker@notes.cc.sunysb.edu WEB ADDRESS: www.ams.sunysb.edu

Students majoring in applied mathematics and statistics often double major in one of the following: computer science (CSE), economics (ECO), information systems (ISE)

Faculty

Hongshik Ahn, *Associate Professor, Ph.D., University of Wisconsin*: Biostatistics; survival analysis.

Esther Arkin, *Associate Professor, Ph.D., Stanford University*: Computational geometry; combinatorial optimization.

Edward J. Beltrami, *Professor Emeritus, Ph.D., Adelphi University*: Optimization; stochastic models.

Yung Ming Chen, *Professor Emeritus, Ph.D., New York University*: Partial differential equations; inverse problems.

Yuefan Deng, *Professor, Ph.D., Columbia University*: Computational fluid dynamics; parallel computing.

Vaclav Dolezal, *Professor Emeritus, Sc.D., Czechoslovak Academy of Science*: Distribution theory; systems theory.

Eugene Feinberg, *Professor, Ph.D., Vilnius University*: Operations research.

Stephen Finch, *Associate Professor, Ph.D., Princeton University*: Applied statistics.

Robert Frey, *Adjunct Assistant Professor, Ph.D., University at Stony Brook*: Operations research.

James Glimm, *Distinguished Professor, Ph.D., Columbia University*: Mathematical physics; nonlinear physics.

John Grove, *Adjunct Professor, Ph.D., Ohio State University*: Conservation laws; computational fluid dynamics.

Woo Jong Kim, *Professor, Ph.D., Carnegie Mellon University*: Ordinary differential equations.

Xiao Lin Li, *Associate Professor, Ph.D., Columbia University*: Computational applied mathematics.

Brent Lindquist, *Professor, Ph.D., Cornell University*: Computational fluid dynamics; reservoir modeling.

Nancy Mendell, *Professor, Ph.D., University of North Carolina at Chapel Hill*: Biostatistics; statistical genetics.

Joseph Mitchell, *Professor, Ph.D., Stanford University*: Computational geometry. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1996.

Bradley Plohr, *Professor, Ph.D., Princeton University*: Conservation laws; computational fluid dynamics.

John Reinitz, *Associate Professor, Ph.D., Yale University*: Mathematical biology.

David Sharp, *Adjunct Professor, Ph.D., California Institute of Technology*: Mathematical physics.

Ram P. Srivastav, *Professor, D.Sc., University of Glasgow; Ph.D., University of Lucknow*: Integral equations; numerical solutions.

Michael Taksar, *Professor, Ph.D., Cornell University*: Stochastic processes.

Reginald P. Tewarson, *Professor Emeritus, 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.

Kenny Ye, *Assistant Professor, Ph.D., University of Michigan*: Design of experiments; industrial statistics.

Qiang Zhang, *Associate Professor, Ph.D., New York University*: Scientific computing; computational fluid dynamics.

Wei Zhu, *Assistant Professor, University of California, Los Angeles*: Biostatistics.

Affiliated Faculty

Hussein Badr, *Computer Science*

Pradeep Dubey, *Economics*

David Ferguson, *Technology and Society*

Roger Grimson, *Preventive Medicine*

Abraham Neyman, *Economics*

Steven Skiena, *Computer Science*

Jadranka Skorin-Kapov, *Harriman School*

Judith Tanur, *Sociology*

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 20

The undergraduate program in applied mathematics and statistics aims to give mathematically oriented students a liberal education in quantitative problem solving. The courses in this program survey a wide variety of mathematical theories and techniques that are currently 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. Students interested in environmental issues should consider the department's track in applied environmental science. This track, run jointly by AMS and the Marine Sciences Research Center, provides a multidisciplinary perspective combined with strong technical training.

About half of the applied mathematics majors enter graduate or professional programs, primarily 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.

Courses Offered in Applied Mathematics and Statistics

See the Course Descriptions listing in this *Bulletin* for complete information.

AMS 101-C Applied Precalculus

AMS 102-C Elements of Statistics

AMS 110 Probability and Statistics in the Life Sciences

AMS 151-C, 161 Applied Calculus I, II

AMS 194-C Patterns of Problem Solving

AMS 201 Matrix Methods and Models

AMS 210 Applied Linear Algebra

- AMS 236 Statistics in Engineering Quality Control
- AMS 261 Applied Calculus III
- AMS 300 Writing in Applied Mathematics
- AMS 301 Finite Mathematical Structures
- AMS 303 Graph Theory
- AMS 310 Survey of Probability and Statistics
- AMS 311 Probability Theory
- AMS 312 Mathematical Statistics
- AMS 315 Data Analysis
- AMS 318 Theory of Interest
- AMS 321 Computer Projects in Applied Mathematics
- AMS 322 Groundwater Modeling
- AMS 326 Numerical Analysis
- AMS 331 Mathematical Modeling
- AMS 335 Game Theory
- AMS 341 Operations Research I: Deterministic Models
- AMS 342 Operations Research II: Stochastic Models
- AMS 345 Computational Geometry
- AMS 351 Applied Algebra
- AMS 361 Applied Calculus IV: Differential Equations
- AMS 373 Analysis of Algorithms
- AMS 394 Statistical Laboratory
- AMS 410 Actuarial Mathematics
- AMS 421 Statistical Quality Control and Design of Experiments
- AMS 475 Undergraduate Teaching Practicum
- AMS 487 Research in Applied Mathematics
- AMS 492 Topics in Applied Mathematics

Acceptance into the Applied Mathematics and Statistics Major

Qualified freshman and transfer students who have indicated their interest in the major on their applications are accepted directly into the major upon admission to the University. Students 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 only after completion of AMS 161 or MAT 132 or

Sample Course Sequence in the Applied Mathematics and Statistics Major

Freshman Fall	Credits	Spring	Credits
D.E.C. A	3	AMS 161*	3
AMS 151*	3	D.E.C.	3
D.E.C.	3	D.E.C.	3
D.E.C.	3	CSE 110*	3
D.E.C.	3	D.E.C.	3
Total	15	Total	15

Sophomore Fall	Credits	Spring	Credits
AMS 210	3	AMS 301	3
AMS 261	4	AMS 310	3
D.E.C.	3	Elective	3
D.E.C.	3	AMS Upper-Division elective	3
D.E.C.	3	AMS Upper-Division elective	3
Total	16	Total	15

Junior Fall	Credits	Spring	Credits
AMS Upper-Division elective	3	Upper-Division elective	3
Upper-Division elective	3	Upper-Division elective	3
AMS Upper-Division elective	3	Related Area course**	3
AMS Upper-Division elective or ECO 321	4	Elective	3
AMS Upper-Division elective	3	Elective	3
Total	16	Total	15

Senior Fall	Credits	Spring	Credits
AMS 300	1	Related Area course**	3
Upper-Division elective	3	Related Area course**	3
Upper-Division elective	3	Elective	3
Related Area course**	3	Elective	3
Related Area course**	3	Total	12
Elective	3		
Total	16		

* See A. 1. for alternate course selections.

**Consult the department for appropriate courses.

142 or 127; AMS 210 or MAT 211; and CSE 110 or 114 or MEC 111.

Requirements for the Major in Applied Mathematics and Statistics (AMS)

The major in applied mathematics and statistics leads to the Bachelor of Science degree. (Note: the applied environmental science track has different requirements, given below.)

Completion of the major requires approximately 60 credits.

A. Study Within the Area of the Major

1. AMS 151, 161 Applied Calculus I, II
AMS 210 or MAT 211 Applied Linear Algebra
AMS 261 or MAT 203 or MAT 205 Applied Calculus III

Note: The following alternate calculus course sequences may be substituted for AMS 151, 161 in major requirements or prerequisites:

- MAT 125, 126, 127
- or MAT 131, 132
- or MAT 141, 142

2. CSE 110 Introduction to Computer Science

or CSE 114 Computer Science I

or ESG 111 C Programming for Engineering

or MEC 111 Computer Science for Engineers

or MEC 112 Practical C/C++ for Scientists and Engineers

3. 24 credits of AMS courses numbered 301 and above including AMS 301 Finite Mathematical Structures and either AMS 310 Survey of Probability and Statistics or AMS 311 Probability Theory. (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. Typical 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. AMS students must register for the writing course AMS 300, or submit a technical paper(s) written for other courses. 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 A. 1, 2, and 3 above must be taken for a letter grade.

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.

Requirements for the Track in Applied Environmental Science

The departmental major also offers a specialized track in applied environmental sciences leading to the Bachelor of Science degree. Completion of the track requires approximately 74 credits.

1. AMS 151, 161 Applied Calculus I, II

Note: The following alternate calculus course sequences may be substituted for AMS 151, 161 in major requirements or prerequisites:

MAT 125, 126, 127

or MAT 131, 132

or MAT 141, 142

2. CHE 131, 132 General Chemistry

3. PHY 131 Classical Physics I

4. CSE 110 Introduction to Computer Science

or CSE 114 Computer Science I

or MEC 111 Computer Science for Engineers

5. AMS 210 or MAT 211 Applied Linear Algebra

AMS 310 Survey of Probability and Statistics

AMS 315 Data Analysis

AMS 322 Groundwater Modeling

AMS 361 Applied Calculus IV

6. MAR 308 Principles of Instrumental Analysis

MAR/GEO 318 Engineering Geology and Coastal Processes

MAR 333 Coastal Oceanography

7. ATM 305 Global Atmospheric Change

ATM 397 Air Pollution and Its Control

8. One upper-division biology course chosen in consultation with the major advisor

9. 12 credits of course work from the following:

AMS 261 Applied Calculus III

AMS 326 Numerical Analysis

AMS 331 Mathematical Modeling

EST 290 Technology, Society, and Values: Balancing Risks and Rewards

EST 291 Energy, Environment, and People

GEO 101 Environmental Geology

GEO 111 Environmental Geology Lab

GEO 315 Groundwater Hydrology

MAR 212 Environmental Microbiology

MAR 304 Waves, Tides, and Beaches

MAR 334 Remote Sensing of the Environment

MAR 488 Internship

10. Upper-Division Writing Requirement

See note A. 4 under Requirements for the Major in Applied Mathematics and Statistics.

Actuarial Science

The AMS major covers the mathematical sciences topics tested in the first actuarial examination and part of the second actuarial examination. 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. Also see the Website www.soa.org for details.

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 113, 114 or ESG 111 or MEC 111 or 112; 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 speak with faculty members specializing in these areas as early as possible for more information.

Statistics: AMS 301, 310, 311, 312, 315, another CSE course beyond 110 or 114 or MEC 111; students considering graduate statistics programs should take MAT 310 and 320.

Operations Research or Management Science: AMS 301, 310, 311, 341, and 342; students considering graduate operations research programs should take MAT 310 and 320.

Programmer-Analyst: AMS 301, 310, 311, 321, 326, 341, and CSE 214, 220, and 301.

Applied Environmental Science: See requirements for applied environmental science track.

Secondary Teaching: Students preparing for a career as a teacher of mathematics in the secondary schools enroll in the Mathematics Teacher Preparation Program. See the Education and Teacher Preparation entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Course Sequence in the Applied Mathematics and Statistics Major

Many students enter the University intending another major and change to the applied mathematics and statistics major, or add it as a second major, toward the end of the sophomore year or in the junior year. Required courses for the major in the first two years are the calculus sequence and linear algebra—virtually the same mathematical requirements as found in the intended majors of students who subsequently switch to applied mathematics and statistics.

The particular set of 300-level AMS courses taken in the junior and senior years by applied mathematics and statistics majors, and the order in which they are taken, is very flexible. Normally, majors take AMS 301 and 310 (the two required 300-level AMS courses) first. For assistance in 300-level AMS course sequences, majors are encouraged to speak with the department's undergraduate program director.

B.S./M.S. Program in Applied Mathematics and Statistics

An applied mathematics and statistics major may apply at the end of the junior year for admission to a special program that 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 120 credits for the B.S. degree, the student takes 30 graduate credits to fulfill the M.S. requirements in either 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 (AMS)

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: AMS 151, 161 (See note)
- 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

Note: The following alternate calculus course sequences may be substituted for AMS 151, 161 in requirements for the minor or prerequisites:

MAT 125, 126, 127

or MAT 131, 132

or MAT 141, 142

ARH, ARS

Majors and Minors in

Art History and Criticism; Studio Art

Department of Art, College of Arts and Sciences

CHAIRPERSON: James H. Rubin DIRECTOR OF UNDERGRADUATE STUDIES: Nicholas Mirzoeff
OFFICE: 2225 Staller Center for the Arts PHONE: (631) 632-7250

Minors of particular interest to students majoring in art history: French (FRN), German (GER), cinema and cultural studies (CCS), studio art (ARS)
Minors of particular interest to students majoring in studio art: art history (ARH), interdisciplinary arts (LIA), media arts (MDA), theatre arts (THR)

Faculty

James Beatman, *Adjunct Lecturer, M.F.A., University of Massachusetts-Amherst:* Sculpture.

Michele H. Bogart, *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.

Stephanie Dinkins, *Assistant Professor, M.F.A., Maryland Institute College of Art:* Electronic media; photography; video art.

Christa Erickson, *Assistant Professor, M.F.A., University of California at San Diego:* Electronic installation; digital media; video art.

Barbara Frank, *Associate Professor, Ph.D., Indiana University:* African art history.

Jacques Guilmain, *Professor Emeritus, 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.

Jonathan Katz, *Visiting Associate Professor, Ph.D., Northwestern University:* Queer studies; post-war American art; critical theory.

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, *Associate Professor, M.F.A., California College of Arts and Crafts:* Printmaking.

Nicholas Mirzoeff, *Associate Professor, Ph.D., Warwick University:* Modern art and visual culture; history of photography.

Daniel Monk, *Assistant Professor, Ph.D., Princeton University:* Architectural history and criticism.

Anita F. Moskowitz, *Professor, Ph.D., New York University:* Art and architectural history; medieval and Renaissance art.

Melvin H. Pekarsky, *Professor, M.A., Northwestern University:* Drawing; painting; public art.

Howardena Pindell, *Professor, M.F.A., Yale University:* Drawing; painting.

Carl H. Pope, *Assistant Professor, M.F.A., Indiana University:* Photography.

James H. Rubin, *Professor, Ph.D., Harvard University:* Art and architectural history; 18th- and 19th-century European art and criticism.

Adjunct Faculty

Estimated number: 10

Teaching Assistants

Estimated number: 20

The Art Department offers two majors, one in art history and criticism, and one in studio art.

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, will also usually fulfill requirements for admission to graduate study or preparation for professional work in the field.

Art history and criticism majors acquire a thorough foundation in the history of Western art and architecture, from ancient to modern, with tracks also in non-Western art, and such practical aspects of the discipline as gallery management.

Studio art majors concentrate on the creative, technical, and practical aspects of the discipline, acquiring a broad-based background in drawing, design, painting, and sculpture, plus specialized tracks in ceramics, printmaking, photography, and computer imaging. In addition majors are expected to acquire a sound foundation in art history and criticism with the emphasis on modernism.

Art Department graduates who go on to work in the discipline usually acquire some post-graduate training, which may include anything from a few additional courses to such advanced graduate degrees as the M.A., M.F.A., or Ph.D. University at Stony Brook studio art graduates hold teaching

positions up to and including the college level; others work as commercial artists, printers, photographers and designers. Art history/criticism graduates hold teaching positions in colleges and universities; others work as gallery or museum administrators, or as art critics.

Courses in Art History and Criticism

See the Course Descriptions listing in this *Bulletin* for complete information.

ARH 101-D Art in Culture from Prehistoric Times to the Age of the Cathedrals, ca. 1400 A.D.

ARH 102-D Art in Culture from the Early Renaissance, ca. 1400 to Postmodernism

ARH 201-D Arts of Africa, Oceania, and the Americas

ARH 203-J History of Asian Art

ARH 205-G Introduction to Architecture

ARH 299 Gallery Management Workshop

ARH 300-I Greek Art and Architecture

ARH 301-I Roman Art and Architecture

ARH 302-J Ancient Egyptian Art

ARH 303-I The Art and Architecture of the Early Middle Ages, ca. 400-1050

ARH 304-I The Art and Architecture of the High and Late Middle Ages, ca. 1050-1400

ARH 306-I The Early Renaissance in Italy

ARH 307-I The Age of Michelangelo in Central Italy

ARH 310-I Splendors of Renaissance Art in Venice

ARH 314-I Baroque Painting in the Netherlands

ARH 315-I Spanish Painting, 1560-1700

ARH 316-I Baroque Art in Italy and France

ARH 318-J History of Chinese Painting

ARH 320-I Art of the 18th Century

ARH 322-G American Art Since 1947

ARH 324-G Architecture and Design of the 19th and 20th Centuries
 ARH 325-J Ancient Mesopotamian Art
 ARH 326-J Arts of Ancient Mesoamerica
 ARH 328-J Arts of West Africa
 ARH 329-G Arts of the African Diaspora
 ARH 331-K American Art to 1890
 ARH 332-K Art of the United States, 1890-1930
 ARH 333-K Arts for the Public
 ARH 335-G History of Photography
 ARH 337-I Northern Renaissance Art
 ARH 341-I Art of the 19th Century
 ARH 342-G Art of the 20th Century
 ARH 365-G Women in the Visual Arts
 ARH 370-I Masterpieces of Western Art
 ARH 400-403 Topics in Art History and Criticism
 ARH 404 Topics in Film Studies and Criticism
 ARH 485 Projects in Art History and Criticism in New York City
 Independent reading, research, internship, teaching practica, and senior honors courses

Requirements for the Major in Art History and Criticism (ARH)

The major in art history and criticism leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher. Completion of the major requires 39 credits.

- Two introductory art history courses:
 - 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
- Twenty-seven additional credits in art history and criticism, of which at least 18 must be upper-division
- The courses in requirement 2 must be distributed to include at least one course in five of the following areas:
 - Ancient art and architecture: ARH 300, 301, 302, 325
 - Medieval art and architecture: ARH 303, 304
 - Renaissance art and architecture: ARH 306, 307, 310, 337

- Baroque or 18th-century art and architecture: ARH 314, 315, 316, 320
 - Modern art and architecture (19th or 20th century): ARH 205, 322, 324, 331, 332, 333, 341, 342
 - Asian art and architecture, or African, Oceanic, Native American, and Mesoamerican art and architecture: ARH 201, 203, 318, 326, 328, 329
 - Architecture: ARH 205, 324
 - Advanced study: ARH 400, 401, 402, 403, 487, 488
 - Photography and Visual Culture: CCS 101; ARH 335, 365, 404
- ARS 154 and one additional ARS course, or—especially for students planning graduate work in art history—a year of French or German at the intermediate level or higher.
 - 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.

Courses in Studio Art

See the Course Descriptions listing in this *Bulletin* for complete information.

ARS 154-D Foundations of Drawing
 ARS 208 Technology in the Arts
 ARS 225 Introductory Electronic Media
 ARS 230 Foundations of Two-Dimensional Design
 ARS 255 Introductory Painting
 ARS 256 Fundamentals of Sculpture
 ARS 264 Ceramics
 ARS 274 Beginning Printmaking

ARS 281 Photography I
 ARS 299 Studio Management Workshop
 ARS 317 Interactive Performance, Media, and MIDI
 ARS 325 Theory and Practice of Electronic Media: Print
 ARS 330 Foundations of Three-Dimensional Design
 ARS 350 Life Drawing and Painting
 ARS 351 Painting II: Theory and Practice
 ARS 352 Painting III: Theory and Practice
 ARS 359 Theory and Practice of Conceptual Drawing
 ARS 364 Advanced Theory and Practice of Ceramics
 ARS 365 Theory and Practice of Sculpture: Wood, Metal, and Mixed Media
 ARS 366 Theory and Practice of Sculpture: Modeling, Casting, and Carving
 ARS 374 Theory and Practice of Printmaking: Intaglio Processes
 ARS 375 Theory and Practice of Printmaking: Lithography
 ARS 381 Photography II
 ARS 425 Computer Imaging Workshop
 ARS 452 Advanced Theory and Practice of Painting
 ARS 465 Advanced Theory and Practice of Sculpture: Welding, Construction, and Related Techniques
 ARS 466 Advanced Theory and Practice of Sculpture: Modeling, Carving, and Casting
 ARS 471 Advanced Theory and Practice of Printmaking: Intaglio Processes
 ARS 472 Advanced Theory and Practice of Printmaking: Lithography
 ARS 481 Photography III
 ARS 482 Photography IV
 ARS 487 Advanced Directed Projects in Studio Theory and Practice
 ARS 491, 492 Special Topics in Studio/Theory and Practice
 Internship, teaching practica, and senior honors courses

Requirements for the Major in Studio Art (ARS)

The major in studio art leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher.

Sample Course Sequence for the Major in Art History/Criticism

Freshman Fall	Credits
D.E.C. A	3
ARH 101	3
GER or FRN 111, or ARS 154	3-4
D.E.C.	3
D.E.C.	3
Total	15-16

Spring	Credits
D.E.C. A	3
ARH 102	3
GER or FRN 112	4
D.E.C.	3
D.E.C.	3
Total	16

Sophomore Fall	Credits
One course from list 2.a.	3
One course from list 2.b.	3
GER or FRN 211, or ARS elective	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
One course list 2.c.	3
One course from list 2.d.	3
GER or FRN 212, or ARS elective	3
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
One course from list 2.e.	3
One course from list 2.f.	3
D.E.C.	3
Elective (PHI or HIS)	3
Upper-Division elective in ARH, ARS, PHI, HIS or language	3
Total	15

Spring	Credits
One course from list 2.g.	3
Upper-Division electives in ARH, ARS, HIS, PHI, or languages	6
D.E.C.	3
Elective	3
Elective	3
Total	15

Senior Fall	Credits
Upper-Division ARH courses	12
or Upper-Division independent studies or special topics or internship	3
Total	15

Spring	Credits
Upper-Division ARH and other fine arts and humanities courses or social studies courses in areas of special interest or advanced independent studies or special topics or internship	15
Total	15

Sample Course Sequence for the Major in Studio Art

Freshman Fall	Credits
D.E.C. A	3
ARS 154	3
ARH 101	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
ARS 200-level elective	3
ARH 102	3
D.E.C.	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
ARS 208 or 225	3
ARS 200-level elective	3
ARH 342	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
ARS 300-level elective	3
ARS 300-level elective	3
Upper-Division ARH (modern)	3
D.E.C.	3
Elective	3
Total	15

Junior Fall	Credits
ARS 300-level elective	3
ARS 300-level elective	3
Upper Division ARH	3
D.E.C.	3
Upper-Division D.E.C.	3
Total	15

Spring	Credits
ARS 300-level elective	3
ARS 300-level elective	3
ARS elective	3
D.E.C.	3
Upper-Division elective	3
Total	15

Senior Fall	Credits
Upper-Division ARS	6
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Total	15

Spring	Credits
Upper-Division ARS and ARH courses in area of special interest or advanced directed studio project or special topics in studio theory and practice	6
Electives in other department or internship	6
D.E.C.	3
Total	15

Completion of the major requires 57 credits.

- Two introductory art history courses:
 - 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
- ARS 154 Foundations of Drawing
- ARS 208 Technology in the Arts or ARS 225 Introductory Electronic Media
- ARH 342 Art of the 20th Century
- 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, 333, 335, or 341)

- Thirty-nine additional credits in studio art. Twelve of the required studio credits must be in upper-division courses and twelve must be in one of the following areas of concentration:
 - Painting and drawing: ARS 230, 255, 350, 351, 352, 359, 452, 491, 492
 - Multiple Media, Photography and Printmaking: ARS 208, 225, 274, 281, 317, 325, 374, 375, 381, 425, 471, 472, 481, 482
 - Sculpture and Ceramic Sculpture: ARS 256, 264, 330, 364, 365, 366, 465, 466a
- 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.

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 3.00 overall and 3.50 in the major. The student should apply for the honors program before the beginning of the 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. Selected students for the program must enroll in ARH or ARS 495 for the semester in which they pursue their project.

In the art history/criticism field, the student's research project is supervised by the honors advisor. In the studio art field, 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 3.50 grade point average in all art courses taken in the senior year, honors are conferred.

Minor in Art History

With the minor in art history, 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, Asian/African/Oceanic/Native American/Mesoamerican, Renaissance, Baroque, or Modern.

Requirements for the Minor in Art History (ARH)

All courses offered for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 21 credits in art history, of which at least nine credits must be in upper-division courses.

1. Two introductory Art History courses:
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

2. An ancient, medieval, Asian, African, Oceanic, Native American, or Mesoamerican art course
3. A renaissance, baroque, or modern art course
4. Nine additional credits in the area of concentration

Minor in Studio Art

Requirements for the Minor in Studio Art (ARS)

All courses offered for the minor must be passed with a letter grade of C or higher.

Completion of the minor in studio art requires 21 credits.

1. ARS 154 Foundations of Drawing
2. Eighteen additional studio credits, of which at least nine must be upper-division

Minor in Design

Requirements for the Minor in Design (DES)

All courses offered for the minor must be passed with a letter grade of C or higher.

Completion of the minor in design requires 21 credits.

1. ARS 230 Foundations of Two-Dimensional Design
2. ARS 330 Foundations of Three-Dimensional Design
3. An additional ARS or ARH lower-division course chosen in consultation with minor advisor
4. ARH 205 Introduction to Architecture
5. ARH 324 Architecture and Design of the 19th and 20th Centuries
6. Six-credits from ARH 485, 487, 488 and ARS 487

AST

Major in

Astronomy/Planetary Sciences

Department of Physics and Astronomy, College of Arts and Sciences

ACTING CHAIRPERSON: Janos Kirz DIRECTOR OF UNDERGRADUATE STUDIES: Philip B. Allen ASTRONOMY COORDINATOR: Frederick Walter
UNDERGRADUATE SECRETARY: Elaine Larsen

OFFICE: P-110 Graduate Physics PHONE: (631) 632-8100 E-MAIL: fwalter@astro.sunysb.edu
WEB ADDRESS: <http://insti.physics.sunysb.edu/astro/>

Minors of particular interest to students majoring in astronomy: electrical engineering (ESE), electronic, optical, and magnetic materials (EOM), mathematics (MAT), optics (OPT), science and engineering (LSE)

Faculty

Aaron Evans, *Assistant Professor, Ph.D., University of Hawaii*: Observational extragalactic astronomy.

Miriam Forman, *Adjunct Professor, Ph.D., University at Stony Brook*: Cosmic rays.

Kenneth M. Lanzetta, *Associate Professor, Ph.D., University of Pittsburgh*: Observational cosmology.

James M. Lattimer, *Professor, Ph.D., University of Texas at Austin*: Nuclear astrophysics.

Jack J. Lissauer, *Adjunct Professor, Ph.D., University of California, Berkeley*: Planetary science.

Deane M. Peterson, *Associate Professor, Ph.D., Harvard University*: Observational stellar astronomy.

Michal Simon, *Professor, Ph.D., Cornell University*: Observational astronomy.

Philip M. Solomon, *Professor, Ph.D., University of Wisconsin*: Galactic and extragalactic astronomy.

F. Douglas Swesty, *Research Assistant Professor, Ph.D., University at Stony Brook*: Computational nuclear astrophysics.

Frederick M. Walter, *Associate Professor, Ph.D., University of California, Berkeley*: Observational stellar astronomy.

Ralph Wijers, *Assistant Professor, Ph.D., University of Amsterdam*: Theoretical high energy astrophysics.

Amos Yahil, *Professor, Ph.D., California Institute of Technology*: Astronomy.

Teaching Assistants

Estimated number: 5

Astronomy is the scientific discipline dedicated to the study of everything in the universe outside the Earth's atmosphere. The undergraduate major leading to the Bachelor of Science degree in astronomy/planetary sciences prepares a student for graduate and professional work. Graduates with a degree in astronomy teach in secondary schools, work in academic, government, and industrial laboratories, and teach and conduct research at colleges and universities.

Course requirements for the B.S. program are listed below and are summarized in the accompanying chart. When the student declares the astronomy major, the director of undergraduate studies assigns a faculty advisor to the student. This advisor assists the student in the selection of courses. 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.

Courses in Astronomy

See the Course Descriptions listing in this *Bulletin* for complete information.

AST 101-E Introduction to Astronomy

AST 105-E Introduction to the Solar System

AST 112 Astronomy Laboratory

AST 203-E Astronomy

AST 248-H The Search for Life in the Universe

AST 287 Introductory Research in Astronomy

AST 301-H Collisions in the Solar System

AST 341 Stars and Radiation

AST 342 The Interstellar Medium

AST 343 Galaxies

AST 344 Cosmology

AST 345 Undergraduate Research in Astronomy

AST 443 Observational Techniques in Optical Astronomy

AST 447 Senior Tutorial in Astronomy

AST 475 Teaching Practicum in Astronomy

AST 487 Senior Research in Astronomy

Requirements for the Major in Astronomy/Planetary Sciences (AST)

The major in astronomy leads to the Bachelor of Science degree. Up to three astronomy or physics courses passed with a C- may be applied to the major; all other courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 60-63 credits.

A. Required Departmental Courses:

1. AST 203 Astronomy
2. Three courses chosen from the following:
 - AST 341 Stars and Radiation
 - AST 342 The Interstellar Medium
 - AST 343 Galaxies
 - AST 344 Cosmology
3. At least six credits from additional AST courses numbered 200 or higher (except AST 248). Up to three credits of AST 287, 447, and 487 may be used toward this requirement.

B. Required Physics Courses:

1. PHY 131, 132 Classical Physics I, II (See note 1 below)
2. PHY 251/252 Modern Physics with Laboratory
3. PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics
4. At least 12 credits from approved PHY courses numbered 300 or higher, except PHY 306 (PHY 301, 302, 303, 308, and 352 recommended)

C. Mathematics Requirements:

1. MAT 131, 132 Calculus I, II (See note 2 below)
2. One of the following:
 - MAT 203 Calculus III with Applications
 - MAT 205 Calculus III
 - AMS 261 Applied Calculus III

3. One of the following:

MAT 303 Calculus IV with Applications

MAT 305 Calculus IV

AMS 361 Applied Calculus IV: Differential Equations

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 astronomy coordinator 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.

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: 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 the alphabetical listing for Mathematics, especially "Beginning Mathematics Courses," and the course descriptions.

Sample Course Sequence in the Astronomy/Planetary Sciences Major

Freshman Fall	Credits
D.E.C. A	3
PHY 131 or 141	4
MAT 131	4
D.E.C.	3
Total	14

Spring	Credits
D.E.C. A	3
PHY 132 or 142	4
MAT 132	4
D.E.C.	3
Total	14

Sophomore Fall	Credits
PHY 251/252	4
MAT 205 or AMS 261	4
AST 203	3
D.E.C.	3
D.E.C.	3
Total	17

Spring	Credits
PHY 306	3
MAT 305 or AMS 361	4
D.E.C.	1
D.E.C.	3
D.E.C.	3
Total	14

Junior Fall	Credits
AST 341*	3
MAT elective	3
PHY 301	3
PHY 303	3
D.E.C.	3
Total	15

Spring	Credits
AST 342*	3
PHY 308	3
PHY 302	3
D.E.C.	3
Upper-Division elective	3
Total	15

Senior Fall	Credits
AST 343*	3
D.E.C.	3
D.E.C.	3
Elective	3
Upper-Division elective	3
Total	15

Spring	Credits
AST 344*	3
AST 443*	4
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	16

*AST 341, 342 and AST 343, 344 are offered in alternate years. AST 443 is offered in alternate spring semesters.

Honors Program in Astronomy/Planetary Sciences

Students in the astronomy/planetary sciences major who have maintained a cumulative grade point average of 3.30 through the junior year in courses required for the major may apply to the department to become candidates for departmental honors in astronomy/planetary sciences. 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 3.30 grade point average in all coursework in natural sciences and mathematics, honors are conferred.

ATM

Major in

Atmospheric and Oceanic Sciences

Marine Sciences Research Center

DEAN AND DIRECTOR: Marvin A. Geller DIRECTOR OF UNDERGRADUATE STUDIES: Malcolm J. Bowman
ASSISTANT TO THE DIRECTOR: Nancy Glover

EDUCATION OFFICE: 105 Endeavour Hall PHONE: (631) 632-8681 E-MAIL: mrcugrad@notes.cc.sunysb.edu

WEB ADDRESS: www.msrc.sunysb.edu

Faculty

Josephine Y. Aller, *Research Associate Professor, Ph.D., University of Southern California*: Marine benthic ecology; invertebrate zoology; marine microbiology; biogeochemistry.

Robert C. Aller, *Distinguished Professor, Ph.D., Yale University*: Marine geochemistry; marine animal-sediment relations.

Robert A. Armstrong, *Associate Professor, Ph.D., University of Minnesota*: Marine ecology and biogeochemistry.

Henry J. Bokuniewicz, *Professor, Ph.D., Yale University*: Near-shore transport processes; coastal sedimentation; marine geophysics.

Malcolm J. Bowman, *Professor, Ph.D., University of Saskatchewan*: Estuarine and coastal ocean dynamics.

Bruce J. Brownawell, *Associate Professor, Ph.D., Massachusetts Institute of Technology*: Biogeochemistry of organic pollutants in seawater and groundwater.

Edward J. Carpenter, *Professor Emeritus, 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, Ph.D., Yale University*: Marine geochemistry; use of radionuclides as geochemical tracers; diagenesis of marine sediments.

Brian A. Colle, *Assistant Professor, Ph.D., University of Washington*: Synoptic meteorology; mesoscale numerical modeling and forecasting; coastal meteorology.

David O. Conover, *Professor, Ph.D., University of Massachusetts-Amherst*: Ecology of fishes; fishery biology.

Nicholas S. Fisher, *Professor and MSRC Associate Dean, Ph.D., University at Stony Brook*: Marine phytoplankton physiology and ecology; biogeochemistry of metals; marine pollution.

Roger D. Flood, *Professor, Ph.D., Massachusetts Institute of Technology*: Marine geology; sediment dynamics; continental margin sedimentation.

Jane L. Fox, *Professor, Ph.D., Harvard University*: Planetary upper atmospheres.

Marvin A. Geller, *Professor and MSRC Dean and Director, Ph.D., Massachusetts Institute of Technology*: Atmospheric dynamics; stratosphere dynamics; ozone behavior.

Steven A. Goodbred, *Assistant Professor, Ph.D., College of William and Mary*: Marine sedimentology; coastal margin processes.

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., University at Stony Brook*: Benthic ecology; animal-sediment interactions.

Kamazima Lwiza, *Associate Professor, Ph.D., University College of North Wales*: Coastal ocean circulation; tides and tidal fronts; mixing.

John E. Mak, *Associate Professor, Ph.D., University of California, San Diego*: Atmospheric chemistry and biosphere-atmosphere interactions; isotope geochemistry.

Anne E. McElroy, *Associate Professor, Ph.D., Massachusetts Institute of Technology*: Aquatic toxicology.

Frank J. Roethel, *Lecturer, Ph.D., University at Stony Brook*: Environmental chemistry; behavior of coal waste in the environment; solution chemistry.

Sergio A. Sanudo-Wilhelmy, *Associate 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.

Robert L. Swanson, *Adjunct Professor and Director, Waste Reduction and Management Institute; Ph.D., Oregon State University*: Marine monitoring; environmental tradeoffs in waste disposal methodologies and sites especially in the marine environment.

Gordon Taylor, *Associate 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, *Associate Professor, Ph.D., University of California, San Diego*: Air-sea interaction; 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, *Professor Emeritus, Ph.D., Stanford University*: Effects of chlorinated hydrocarbons on phytoplankton communities.

Jeannette Yen, *Professor Emerita, Ph.D., University of Washington*: Marine zooplankton ecology.

Minghua Zhang, *Associate Professor and Director of the Institute of Terrestrial and Planetary Atmospheres, Ph.D., Academia Sinica*: Atmospheric dynamics; climate modeling.

Affiliated Faculty

Robert L. deZafra, *Physics*

Theodore Goldfarb, *Chemistry*

William H. Greene, *Medicine*

Stewart Harris, *Engineering*

Lee E. Koppelman, *Political Science*

Manuel Lerda, *Ecology and Evolution*

Jeffrey Levinton, *Ecology and Evolution*

Sheldon Reaven, *Technology and Society*

Teaching Assistants

Estimated number: 13

The Marine Sciences Research Center (MSRC) is the center for marine research, education, and public service in the marine sciences for the State University of New York system. In addition, MSRC is the University at Stony Brook's center for research, education, and public service in the atmospheric sciences. MSRC is a leading coastal oceanographic and atmospheric institution. The expertise of MSRC's faculty places them in the forefront in addressing and answering questions about regional environmental problems, as well as problems relating to the global ocean and atmosphere. The primary focus of the MSRC faculty is on fundamental research designed to increase understanding of the processes that characterize the coastal ocean and the atmosphere. The Marine Sciences Research Center is also committed to applying the results of research to solve problems arising from society's uses and misuses of the environment. The Center includes institutes in several major areas: the Institute for Terrestrial and Planetary Atmospheres, the Living Marine Resources Institute, the Long Island Groundwater Resource Institute, and the Waste Reduction and Management Institute. These institutes add a wealth of varied resources to education and research.

MSRC offers undergraduate majors in atmospheric and oceanic sciences and environmental studies, minors in environmental studies and marine sciences, and several cooperative programs with departments in the College of Arts and Sciences and the College of Engineering and Applied Sciences. See the entries for environmental studies and marine sciences in the alphabetical listings in Approved Majors, Minors, and Programs for more information on these programs. Research opportunities in marine sciences, atmospheric sciences, environmental studies, and waste management are available to undergraduates. Information on research opportunities may be found on the MSRC Website at www.msrc.sunysb.edu.

Courses Offered in Atmospheric and Oceanic Sciences

See the Course Descriptions listing in this *Bulletin* for complete information.

ATM 102-E Weather and Climate

ATM 205-E Introduction to Atmospheric Sciences

ATM 237-H Current Topics in World Climate and Atmosphere

ATM 247 Atmospheric Structure and Analysis

ATM 305-E Global Atmospheric Change

ATM 345 Atmospheric Thermodynamics and Dynamics

ATM 346 Advanced Atmospheric Dynamics

ATM 347 Advanced Synoptic Meteorology and Weather Forecasting

ATM 348 Atmospheric Physics

ATM 397 Air Pollution and Its Control

ATM 447 Senior Tutorial in Atmospheric Sciences

ATM 487 Senior Research in Atmospheric Sciences

ATM 488 Internship

MAR 101-E Long Island Sound: Science and Use

MAR 104-E Oceanography

MAR 301 Environmental Microbiology

MAR 302 Marine Microbiology and Microbial Ecology

MAR 303 Long Island Marine Habitats

MAR 304-E Waves, Tides, and Beaches

MAR 305 Experimental Marine Biology

MAR 307 Communication in Environmental Science

MAR 308 Principles of Instrumental Analysis

MAR 313 Marine Biochemistry

MAR 315-H Conservation Biology and Marine Biodiversity

MAR 318 Engineering Geology and Coastal Processes

MAR 320 Limnology

MAR 333-H Coastal Oceanography

MAR 334-E Remote Sensing of the Environment

MAR 335 Primary Productivity in the Sea

MAR 336 Marine Pollution

MAR 340-H Environmental Problems and Solutions

MAR 346 Marine Sedimentology

MAR 350 Introduction to Ocean Physics

MAR 351 Introduction to Ocean Chemistry

MAR 360 Behavioral Ecology Laboratory

MAR 366 Plankton Ecology

MAR 385 Principles of Fishery Biology and Management

MAR 391-H Environmental Policy

MAR 392-H Waste Management Issues

MAR 394-H Environmental Toxicology and Public Health

MAR 395 Topics in Marine Environmental Sciences

MAR 410 Modeling Techniques for Marine Geochemistry

MAR 475 Teaching Practicum in Marine Sciences

MAR 487 Research in Marine Sciences

MAR 488 Internship

Requirements for the Major in Atmospheric and Oceanic Sciences (ATM)

The major in atmospheric and oceanic sciences leads to the Bachelor of Science degree. Two tracks of study are available in the major. One is intended for students wishing to learn about the physical behavior of the atmosphere and its application to weather forecasting and the other track is for students who wish to learn about physical phenomena in the atmosphere and the oceans and their interactions.

Of the 65 credits required for the major, at least 61 credits must be passed with a letter grade of C or higher.

Completion of the major requires approximately 65 credits.

The core courses for both tracks are as follows:

A. Required Courses in Mathematics, Chemistry, Physics, and Computer Science

1. MAT 131 and 132 Calculus I and II (see note below)
2. MAT 203 Calculus III with Applications
or MAT 205 Calculus III
or AMS 261 Applied Calculus III
3. MAT 303 Calculus IV with Applications
or AMS 361 Applied Calculus
4. CHE 131 and 132 General Chemistry I and II
or CHE 141 and 142 Honors Chemistry I and II
5. PHY 125, 126, 127 Classical Physics A, B, and C
or PHY 131, 132 Classical Physics I and II
or PHY 141, 142 Classical Physics I and II: Honors

**Sample Course Sequence for the
Atmospheric and Oceanic Sciences Major (Meteorology Track)**

Freshman Fall	Credits
D.E.C. A	3
MAT 131	4
CHE 131 or CHE 141	4
PHY 131 or PHY 141	4
Total	15

Spring	Credits
D.E.C. A	3
MAT 132	4
CHE 132 or CHE 142	4
PHY 132 or PHY 142	4
Total	15

Sophomore Fall	Credits
ATM 205	3
MAT 203 or 205 or PHY 251	4
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	16

Spring	Credits
ATM 247	3
PHY 251 or MAT 203 or 205	4
MEC 111	3
D.E.C.	3
D.E.C.	3
Total	16

Junior Fall	Credits
ATM 345	3
MAT 303	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
ATM 346	3
ATM 348 or ATM 397	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
ATM 347	3
MAR 334	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
ATM 348 or ATM 397	3
MAR 350	2
Upper-Division elective	3
Elective	3
Elective	3
Total	14

6. PHY 251 Modern Physics
7. MEC 111 Computer Science for Engineers

B. Required Departmental Courses:

1. ATM 205 Introduction to Atmospheric Sciences
2. ATM 345 Atmospheric Thermodynamics and Dynamics
3. ATM 346 Advanced Atmospheric Dynamics
4. ATM 397 Air Pollution and Its Control
5. MAR 334 Remote Sensing
6. MAR 350 Ocean Physics

C. Upper-Division Writing Requirement:

All students majoring in atmospheric sciences/meteorology must submit two papers from required departmen-

tal 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.

Additional Requirements for the Meteorology Track:

ATM 247 Atmospheric Structure and Analysis
 ATM 347 Advanced Synoptic Meteorology and Weather Forecasting
 ATM 348 Atmospheric Physics
 In this track, students learn both the mathematics and physics governing atmospheric behavior and apply this knowledge to forecasting the weather

using real-time data received at our weather laboratory. Opportunities are available for students to gain additional practical experience by working under cooperative agreements at two nearby NOAA weather forecasting installations as well as local TV stations. Students graduating in this track will have satisfied all of the coursework recommended by the American Meteorological Society for undergraduate training in meteorology and also the course work required by NOAA for certification as an entry level government meteorologist. Students are also prepared for graduate study in atmospheric sciences or positions in other technically related fields.

Additional Requirements for the Atmosphere/Ocean Track:

MAR 308 Principles of Instrumental Analysis
 MAR 333 Coastal Oceanography
 MAR 340 Environmental Problems and Solutions

Students graduating in this track will have taken the coursework necessary for graduate study leading to degrees that prepare them for research and teaching positions in the atmospheric sciences, in physical oceanography, or in atmosphere-ocean interactions.

Note: The following alternate beginning calculus sequences may be substituted for major requirements or prerequisites: MAT 125, 126, 127 or 141, 142 or AMS 151, 161 for MAT 131, 132. Equivalency for MAT courses achieved by earning the appropriate score on a placement test is accepted as fulfillment of the requirement without the necessity of substituting other credits. For more detailed information about the various calculus sequences, see "Beginning Mathematics Courses" under the Mathematics Department in this *Bulletin*.

BIO

Majors and Minors in

Biochemistry, Biology

Departments of Biochemistry and Cell Biology, Ecology and Evolution, Neurobiology and Behavior; College of Arts and Sciences

Minors of particular interest to students majoring in biology or biochemistry: bioengineering (BNG), biomedical engineering (BMG), environmental studies (ENS), health and wellness (LHW), philosophy (PHI), science and engineering (LSE)

Department of

Biochemistry and Cell Biology

CHAIRPERSON: William J. Lennarz

DIRECTOR OF UNDERGRADUATE STUDIES:
Bernard S. Dudock

Faculty

Paul M. Bingham, *Associate Professor, Ph.D., Harvard University*: Regulation of transcription in and transposon biology of developing multicellular organisms.

Deborah Brown, *Associate Professor, Ph.D., Stanford University*: Trafficking of membrane proteins in polarized epithelial cells.

David Bynum, *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 Emeritus, Ph.D., Indiana University*: Mutation and gene structure; history of genetics; human genetics.

Vitaly Citovsky, *Associate Professor, Ph.D., Hebrew University*: Nuclear targeting and intercellular communication in plants.

Neta Dean, *Associate 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, *Professor, Ph.D., Brandeis University*: Molecular biology; genetics of embryonic development in *Drosophila*.

Robert Haltiwanger, *Associate Professor, Ph.D., Duke University*: Glycosylation of nuclear and cytoplasmic proteins.

Bernadette Holdener, *Assistant Professor, Ph.D., University of Illinois-Chicago*: Development and genetic regulation of mouse gastrulation; genome organization.

Nancy Hollingsworth, *Associate Professor, Ph.D., University of Washington, Seattle*: Analysis of meiotic chromosome recombination, synapsis, and segregation in yeast.

Jen-Chih Hsieh, *Assistant Professor, Ph.D., Duke University*: Wnt signaling by the frizzled proteins.

A. Wali Karzai, *Assistant Professor, Ph.D., Johns Hopkins University*: A system for protein tagging, directed degradation and ribosome rescue.

Abraham D. Krikorian, *Professor Emeritus, Ph.D., Cornell University*: Plant growth and development.

William J. Lennarz, *Professor, Ph.D., University of Illinois*: The role of glycoproteins in cellular and developmental biology.

Erwin London, *Professor, Ph.D., Cornell University*: Membrane biochemistry and physics.

Harvard Lyman, *Associate Professor, 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., University at Stony Brook*: Organization, mechanisms of expression, and evolution of eukaryotic multi-gene systems.

Aaron Neiman, *Assistant Professor, Ph.D., University of California, San Francisco*: Vesicle trafficking and intracellular signaling in yeast.

Raghupathy Sarma, *Professor Emeritus, 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.

C. Hermann Schindelin, *Assistant Professor, Ph.D., Freie Universität Berlin*: Structure and function of metalloenzymes and enzymes involved in metallofactor biosynthesis; protein crystallography.

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.

John Shanklin, *Adjunct Professor, Ph.D., University of Wisconsin-Madison*: Structure and function of fatty acid saturase.

Sanford R. Simon, *Professor, Ph.D., Rockefeller University*: Structure-function relationships in hemoglobin; membrane biochemistry.

Steven O. Smith, *Professor, Ph.D., University of California, Berkeley*: Membrane protein structure and function.

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.

Gerald H. Thomsen, *Associate Professor, Ph.D., Rockefeller University*: Vertebrate molecular embryology: cell-cell signaling and group factor function.

James S. Trimmer, *Associate 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

DIRECTOR OF UNDERGRADUATE STUDIES:
Michael A. Bell

Faculty

Michael A. Bell, *Professor, Ph.D., University of California, Los Angeles*: Evolutionary biology; ichthyology; paleobiology and geographic variation.

Geeta Bharathan, *Assistant Professor, Ph.D., University of Arizona*: Evolution of angiosperms; homeobox genes, genome size.

Daniel E. Dykhuizen, *Professor, Ph.D., University of Chicago*: Population genetics and molecular evolution, especially of bacteria.

Walter F. Eanes, *Professor, Ph.D., University at Stony Brook*: Population and biochemical genetics of *Drosophila*; molecular evolution.

Douglas J. Futuyma, *Professor, Ph.D., University of Michigan*: Ecological genetics; coevolution of species, especially of plants and insects; evolutionary biology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974.

Lev R. Ginzburg, *Professor, Ph.D., Agrophysical Institute, St. Petersburg, Russia*: Theoretical and applied ecology.

Jessica Gurevitch, *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, *Professor, Ph.D., University of Washington*: Social ecology of vertebrates; plant dispersal strategies.

Timothy H. Keitt, *Assistant Professor, Ph.D., University of New Mexico*: Complex systems; landscape ecology; metapopulation theory; applied ecology.

Manuel T. Lerda, *Associate 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; State University Chancellor's Award for Excellence in Teaching and President's Award for Excellence in Teaching, 1997.

Dianna Padilla, *Associate Professor, Ph.D., University of Alberta, Canada*: Phenotype plasticity; plant-herbivore functional ecology; ecology of evading species.

F. James Rohlf, *Professor, Ph.D., University of Kansas*: Multivariate data analysis techniques applied to problems in taxonomy and ecology; computer modeling; applied ecology.

Department of Neurobiology and Behavior

CHAIRPERSON: Lorne M. Mendell

DIRECTOR OF UNDERGRADUATE STUDIES:
Benjamin Walcott

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 Emeritus, 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, *Associate Professor, Ph.D., University of Pennsylvania*: Physiology; neurophysiology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1997 and President's Award for Excellence in Teaching, 1997.

L. Craig Evinger, *Professor, Ph.D., University of Washington*: Sensorimotor integration.

Joseph Fetcho, *Professor, Ph.D., University of Michigan*: Motor systems.

James W. Gnadt, *Associate Professor, Ph.D., University of Alabama*: Systems neurophysiology; sensorimotor integration.

Simon Halegoua, *Professor, Ph.D., University at Stony Brook*: Molecular neurobiology.

Maurice Kernan, *Assistant Professor, Ph.D., University of Wisconsin-Madison*: Molecular neurobiology.

Mary Kritzer, *Associate Professor, Ph.D., Yale University*: Neurobiology of cognition.

Joel M. Levine, *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, *Associate Professor, Ph.D., Australian National University*: Molecular biology of ion channels.

Susan McLaughlin, *Assistant Professor, Ph.D., University of Florida*: Molecular neurobiology.

Lorne M. Mendell, *Distinguished 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, *Professor, Ph.D., University of Oregon*: Physiology.

Lonnie Wollmuth, *Assistant Professor, Ph.D., University of Washington, Seattle*: Physiology and biophysics.

Stephen Yazulla, *Professor, Ph.D., University of Delaware*: Physiology.

Affiliated Faculty

Marian Evinger, *Pediatrics*

Edmund LaGamma, *Pediatrics*

Stuart S. McLaughlin, *Physiology and Biophysics*

Teaching Assistants (all areas)

Estimated number: 58

Courses in Biology

See the Course Descriptions listing in this *Bulletin* for complete information.

BIO 101-E, 102-E Biology: A Humanistic Approach I, II

BIO 111-E The Aquatic World

BIO 113-E General Ecology

BIO 115-E Evolution and Society

BIO 150-E The Living World

BIO 201-E Fundamentals of Biology: Organisms to Ecosystems

BIO 202-E Fundamentals of Biology: Molecular and Cellular Biology

BIO 203-E Fundamentals of Biology: Cellular and Organ Physiology

BIO 208-H Cell, Brain, Mind

BIO 210-E Human Physiology

BIO 300-H Biology of Human Reproduction

BIO 302 Human Genetics

BIO 307 Computer Modeling of Biological Systems

BIO 310 Cell Biology

BIO 311 Techniques in Molecular and Cellular Biology

BIO 314 Biological Clocks

BIO 315 Microbiology

BIO 317 Principles of Cellular Signaling

BIO 320 General Genetics

BIO 325 Animal Development

BIO 327 Developmental Genetics Laboratory

BIO 328 Mammalian Physiology

BIO 334 Principles of Neurobiology

BIO 335 Animal Physiology Laboratory

BIO 340 Zoology

BIO 341 Plant Diversity

BIO 343 Invertebrate Zoology

BIO 344 Chordate Zoology

BIO 346 Aquatic Arthropods and Vertebrates

BIO 349 Biodiversity and Evolution in the Fossil Record

BIO 350-H Darwinian Medicine

BIO 351-H Ecology

BIO 352 Ecology Laboratory

BIO 353 Marine Ecology

BIO 354 Evolution

BIO 356 Applied Ecology and Conservation Biology Laboratory

BIO 358-H Biology of Human Social and Sexual Behavior

BIO 359 Behavioral Ecology

BIO 361, 362 Biochemistry I, II

BIO 365 Biochemistry Laboratory

BIO 374 Molecular Neurobiology

BIO 379 Developmental Neurobiology

BIO 380 Entomology

BIO 385-H Plant Ecology

BIO 386-H Ecosystem Ecology in a Changing World

BIO 401-405 Seminars in Biology

BIO 407 Colloquium in Ecology and Evolution for Biology Majors

BIO 409 Selected Topics in Biochemistry, Cell Biology, and Developmental Biology

Independent reading, research, teaching practica and internship courses

The Biochemistry Program

UNDERGRADUATE DIRECTOR: Bernard S. Dudock

OFFICE: 450 Life Sciences Building

PHONE: (631) 632-8550

WEB ADDRESS: www.bio.sunysb.edu

The Biochemistry Undergraduate Major Program provides a challenging and exciting introduction to the chemical basis of biological phenomena. The major is designed to prepare students who intend to pursue graduate study, attend health-related professional schools and fill entry-level positions in private, state, and federal laboratories or in pharmaceutical and biotechnology industries. The undergraduate curriculum provides fundamental background in biology, chemistry, genetics, and biochemistry with pertinent courses in mathematics and physics necessary for advanced understanding of this broad field. Students may not declare a double major among biochemistry, biology, and pharmacology.

Requirements for the Major in Biochemistry (BCH)

All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires approximately 68 to 72 credits.

A. Courses in Related Fields

- CHE 131, 132 General Chemistry or CHE 141, 142 Honors Chemistry
- CHE 133, 134 General Chemistry Laboratory or CHE 143, 144 Honors Chemistry Laboratory
- CHE 321, 322 Organic Chemistry or CHE 331, 332 Honors Organic Chemistry
- CHE 327 Organic Chemistry Laboratory A or CHE 383 Introductory Synthetic and Spectroscopic Laboratory Techniques
- CHE 301 or 312 Physical Chemistry
- MAT 125, 126, 127 Calculus A, B, C or MAT 131, 132 Calculus I, II or level 9 on mathematics placement examination.

Sample Course Sequence in the Biochemistry Major

Freshman Fall	Credits
D.E.C. A	3
CHE 131	4
CHE 133	1
MAT 125 or 131	3-4
BIO 150	3
Total	14-15

Spring	Credits
D.E.C. A	3
CHE 132	4
CHE 134	1
MAT 126 or 132	3-4
BIO 202	4
Total	15-16

Sophomore Fall	Credits
BIO 201	4
CHE 321	3
MAT 127 (if MAT 125, 126 sequence taken)	3
D.E.C.	3
D.E.C.	3
Total	16

Spring	Credits
BIO 203	4
CHE 322	3
CHE 327	2
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
BIO 320	3
BIO 361	3
PHY 121/123	4
D.E.C.	3
D.E.C.	3
Total	16

Spring	Credits
BIO 310	3
BIO 362	3
PHY 122/124	4
D.E.C.	3
Elective	3
Total	16

Senior Fall	Credits
BIO elective	3
BIO 365 or 311	2
CHE 301 or 312*	3
D.E.C.	3
D.E.C.	3
Total	14

Spring	Credits
Upper Division electives selected from the list under Category C (above)	5-6
D.E.C.	3
Electives	6
Total	14-15

*CHE 301 is offered only in the Fall semester;
CHE 312 is offered only in the Spring semester.

- PHY 121/123, 122/124 Physics for the Life Sciences and laboratories 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
 - BIO 310 Cell Biology
 - BIO 361, 362 Biochemistry I, II
 - One of the following laboratories:
BIO 365 Biochemistry Laboratory (Fall only)
BIO 311 Techniques in Molecular and Cellular Biology
- Note: BIO 150 The Living World is waived for students who have taken high school AP biology and who score level 4 or higher on the mathematics placement examination.
- #### B. Courses in Biological Sciences
- BIO 150 The Living World (See Note)
 - BIO 201 Fundamentals of Biology: Organisms to Ecosystems
 - BIO 202 Fundamentals of Biology: Molecular and Cellular Biology
 - BIO 203 Fundamentals of Biology: Cellular and Organ Physiology
 - BIO 320 General Genetics

C. Advanced Electives

Two additional courses, totaling at least five credits, chosen after consultation with an advisor, from the following list. It is highly recommended that students take more than the suggested minimum number of electives.

- BCP 401 Principles of Pharmacology
- BCP 402 Advanced Pharmacology
- BCP 403 Principles of Pharmacology Laboratory
- BCP 404 Advanced Pharmacology Laboratory
- BIO 315 Microbiology
- BIO 317 Principles of Cellular Signaling
- BIO 325 Animal Development
- BIO 328 Mammalian Physiology
- BIO 334 Principles of Neurobiology
- BIO 358-H Biology of Human Social and Sexual Behavior
- BIO 374 Molecular Neurobiology
- BIO 379 Developmental Neurobiology
- BIO 409 Selected Topics in Biochemistry, Cell Biology, and Developmental Biology
- 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. Most of these courses are offered only once a year. A list of those available each semester is posted at the Biochemistry and Cell Biology Department office, together with any additional courses that may be approved.

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 February 1 for students graduating in the following May or August, and October 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.

Honors Program in Biochemistry

Graduation with honors in biochemistry requires: 1) a cumulative grade point average of 3.50 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 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.

Bachelor of Science Degree/Master of Science Degree in Chemistry Program

A student interested in this research-intensive graduate program, intended to prepare students for professional employment in the chemical or pharmaceutical industries, may apply for admission at the end of the junior year. The program leads to a Bachelor of Science degree in Biochemistry at the end of the fourth year and a Master of Science in Chemistry at the end of the fifth year. During the senior year, the student is expected to take two 500-level CHE courses and begin research. In the fifth

year, the student works full-time on research, earning 24 credits in CHE 599.

The Biology Program

UNDERGRADUATE DIRECTOR: William Collins
 STAFF ASSISTANT: Nancy Cammarota
 OFFICE: G05 Biology Learning Laboratories
 PHONE: (631) 632-8530
 WEB ADDRESS: www.bio.sunysb.edu

Biology is the study of organisms, including the molecular and cellular basis of life, development of the individual and its genetic basis, maintenance of the individual, and interaction of organisms with their biotic and physical environment.

The biology major introduces students to the concepts and methodologies associated with the multiple levels of biological complexity. Following BIO 150-The Living World, an introduction to the tools, models, and concepts of modern biology, students explore the Fundamentals of Biology, a thorough introduction to organisms, ecosystems, cellular and molecular biology, and physiology. These courses also provide a solid background for students interested in the health professions. Students go on to advanced laboratory work and have the opportunity to specialize in any of several areas, including: bioengineering, developmental genetics, ecology and evolution, environmental biology, marine biology, and neuroscience. Students may also elect the general biology track. Students may design their own curriculum, in consultation with an advisor, within the context of these tracks, based on individual interest. The biology major requires a strong foundation in chemistry, physics, and mathematics.

Majors are encouraged to explore research opportunities in biology, typically beginning in their second or third year.

Most positions for biologists require graduate training. Most students majoring in biology prepare for professional study in the biological or health sciences. Some prepare for secondary school teaching, and others for technical positions in industry, including biotechnology, government agencies, and research institutes.

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. Students may not declare a double major among biology, biochemistry, and pharmacology.

Requirements for the Major in Biology (BIO)

Students must complete a minimum of 32 credits in requirements A and C on pages 116-118. (See note 1). At least 32 credits in requirements A and C must be passed with a grade of C or higher. At least one semester each of calculus, general chemistry lecture, organic chemistry lecture, and physics lecture must be passed with a grade of C or higher. Courses taken under the P/NC option may not be used to satisfy major requirements.

Completion of the major requires approximately 65 to 67 credits.

A. Biology Core

1. BIO 150 The Living World (see note 2)
2. BIO 201, 202, 203 Fundamentals of Biology (see note 3)

B. Courses Required in Related Fields

1. MAT 125, 126 Calculus A, B
or MAT 131, 132 Calculus I, II
or MAT 141, 142 Calculus I, II Honors
or level 8 or 9 on the Mathematics Placement Examination.
2. CHE 131, 132 General Chemistry and CHE 133, 134 General Chemistry Laboratory
or CHE 141, 142 Honors Chemistry and CHE 143, 144 Honors General Chemistry Laboratory
3. CHE 321, 322 Organic Chemistry
or CHE 331, 332 Honors Organic Chemistry
4. CHE 327 Organic Chemistry Laboratory
or CHE 383 Introductory Synthetic and Spectroscopic Laboratory Techniques
5. PHY 121/123, PHY 122/124 Physics for Life Sciences and laboratory
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

Sample Course Sequence in the Biology Major

Freshman Fall	Credits
D.E.C. A	3
CHE 131	4
CHE 133	1
MAT 125	3
D.E.C.	3
Total	14

Spring	Credits
D.E.C. A	3
CHE 132	4
CHE 134	1
MAT 126	3
BIO 150	3
D.E.C.	3
Total	17

Sophomore Fall	Credits
CHE 321	3
AMS 110	3
BIO 202	4
D.E.C.	3
D.E.C.	3
Total	16

Spring Credits	Credits
CHE 322	3
CHE 327	2
BIO 203	4
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
PHY 121/123	4
BIO 201	4
BIO Area	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Total	17

Spring	Credits
PHY 122/124	4
BIO Area	3
BIO Lab	1-3
D.E.C.	3
Upper-Division elective	3
Total	14-16

Senior Fall	Credits
BIO Area	3
BIO Lab	1-3
BIO Upper-Division elective	3
D.E.C.	3
Electives	6
Total	16-18

Spring	Credits
BIO Area	3
BIO Upper-Division elective	3
D.E.C.	3
Electives	6
Total	15

Note: Well-prepared, highly motivated students can do BIO 150 and either BIO 202 or 203 in their first year.

6. AMS 110 Probability and Statistics in Life Sciences
or AMS 310 Survey of Probability and Statistics
(not required for students completing the Bioengineering Track or the Marine Biology Track)

C. Advanced Courses

Students must complete one of the following five tracks using the advanced biology lecture and laboratory courses listed below and courses offered by related departments where specified:

Advanced Lecture Courses:

- Area I: Cell Biology and Biochemistry
BIO 310, 314, 315, 317, 361, 362

Area II: Genetics and Development
BIO 302, 320, 325, 379

Area III: Neurobiology and Physiology
BIO 328, 334, 374

Area IV: Organisms
BIO 340, 341, 343, 344, 346, 380

Area V: Ecology and Evolution
BIO 349, 350, 351, 353, 354, 358, 359, 385, 386

Advanced Laboratory Courses:

- Area I BIO 311, 365
Area II BIO 327
Area III BIO 335
Area IV BIO 340, 341, 343, 344, 346, 380

Area V BIO 352, 356,

MAR 303, 305, 320

Area VI BIO 307, HBM 321

1. General Biology Track

- a. Advanced Lecture Courses: At least one lecture course in four of the five areas above. Students in the Biology Teacher Preparation Program must take a course in each of the five areas.
- b. Advanced Laboratory Courses: Two advanced laboratory courses chosen from any of the five areas above.
- c. Study in Depth: A second lecture course in one of the five areas of inquiry *or* any 400-level BIO course for majors *or* SCI 454 (for students enrolled in the Biology Teacher Preparation Program).
- d. Biology Electives: Additional advanced biology lecture, laboratory, and independent research courses, as needed, for a minimum of 32 credits in requirements A and C. See note 1.

2. Ecology and Evolution Track

- a. BIO 351 Ecology
- b. BIO 354 Evolution
- c. Area Lecture/Laboratory Requirement: Students must choose one course from
 - i. Lecture/Laboratory Courses *or* one course each from ii., Lecture Courses and iii., Laboratory Courses below.
 - i. Lecture/Laboratory Courses
 - BIO 340 Zoology
 - BIO 341 Plant Diversity
 - BIO 343 Invertebrate Zoology
 - BIO 344 Chordate Zoology
 - BIO 346 Aquatic Arthropods and Vertebrates
 - BIO 380 Entomology
 - ii. Lecture Courses
 - BIO 353 Marine Ecology
 - BIO 359 Behavioral Ecology
 - BIO 385 Plant Ecology
 - BIO 386 Ecosystem Ecology in a Changing World

MAR 366 Plankton Ecology

iii. Laboratory Courses

BIO 352 Ecology Laboratory
 BIO 356 Applied Ecology and Conservation Biology Laboratory
 MAR 303 Long Island Marine Habitats
 MAR 305 Experimental Marine Biology
 MAR 320 Limnology

d. Breadth Requirement

- i. Two advanced biology lecture or lecture/laboratory courses chosen from any area excluding Area V, Ecology and Evolution above.
- ii. One advanced biology laboratory (or lecture with laboratory) course chosen from any area excluding Area V, Ecology and Evolution above.

e. Biology Electives

Additional advanced biology lecture, laboratory, and independent research courses, as needed, for a minimum of 32 credits in requirements A and C. See note 1.

3. Environmental Biology Track

- a. BIO 351 Ecology
- b. Area Lecture/Laboratory Requirement: Two courses chosen from the lists below. In choosing courses, students must include at least one course with laboratory. Students may take no more than one course from i., Organisms, and no more than one course from iii., The Environment.
 - i. Organisms
 - BIO 340 Zoology (with lab)
 - BIO 341 Plant Diversity (with lab)
 - BIO 343 Invertebrate Zoology (with lab)
 - BIO 344 Chordate Zoology (with lab)
 - BIO 380 Entomology (with lab)
 - MAR 366 Plankton Ecology
 - ii. Ecology
 - BIO 352 Ecology Lab (with lab)

BIO 353 Marine Ecology

BIO 359 Behavioral Ecology

BIO 385 Plant Ecology

BIO 386 Ecosystem Ecology in a Changing World

MAR 303 Long Island Marine Habitats (with lab)

iii. The Environment

ATM 305 Global Atmospheric Change

ATM 397 Air Pollution and its Control

MAR 318 Engineering Geology and Coastal Processes

MAR 333 Coastal Oceanography

c. Breadth Requirement

Three advanced biology lecture courses from outside the Environmental Biology track, chosen in consultation with the undergraduate biology advisor. At least one of the courses must include a laboratory component.

d. Biology Electives

Additional advanced biology lecture, laboratory, and independent research courses, as needed, for a minimum of 32 credits in requirements A and C. See note 1.

4. Marine Biology Track

- a. MAR 104 Oceanography
- b. BIO 353 Marine Ecology
- c. Area Lecture/Laboratory Requirement: Three courses. In choosing courses from the lists below, students must include at least one course with a laboratory component.
 - i. One of the following field courses:
 - MAR 303 Long Island Marine Habitats
 - MAR 305 Experimental Marine Biology (with lab)
 - ii. One of the following courses in organismal diversity:
 - BIO 343 Invertebrate Zoology (with lab)
 - BIO 344 Chordate Zoology (with lab)

BIO 346 Aquatic Arthropods and Vertebrates (with lab)

- iii. One of the following advanced marine biology courses:

MAR 302 Marine Microbiology and Microbial Ecology

MAR 335 Primary Productivity in the Sea

MAR 366 Plankton Ecology

d. Breadth Requirement

- i. Two advanced biology lecture courses from outside the Marine Biology track, chosen in consultation with the undergraduate biology advisor.
- ii. One advanced biology laboratory course from outside the Marine Biology track, chosen in consultation with the undergraduate biology advisor.

e. Biology Electives

Additional advanced biology lecture, laboratory, and independent research courses, as needed, for a minimum of 32 credits in requirements A and C. See note 1.

5. Neuroscience Track

a. Area Lecture/Laboratory Requirement:

- i. BIO 334 Principles of Neurobiology
- ii. BIO 328 Mammalian Physiology
- iii. BIO 335 Animal Physiology Laboratory
- iv. One of the following:
 BIO 317 Principles of Cellular Signaling
 BIO 374 Molecular Neurobiology
 BIO 379 Developmental Neurobiology
 BCP 401 Principles of Pharmacology

b. Breadth Requirement

- i. Two advanced biology lecture courses chosen from any area excluding Area III, Neurobiology and Physiology above.
- ii. One advanced biology laboratory (or lecture with laboratory) course chosen from any area excluding Area III, Neurobiology and Physiology above.

c. Biology Electives

Additional advanced biology lecture, laboratory, and independent research courses, as needed, for a minimum of 32 credits in requirements A and C. See note 1.

6. Developmental Genetics Track

a. Area Lecture/Laboratory Requirement:

- i. BIO 320 General Genetics
- ii. BIO 325 Animal Development
- iii. BIO 327 Developmental Genetics Laboratory
- iv. One of the following:
 BIO 310 Cell Biology
 BIO 317 Principles of Cellular Signaling
 BIO 379 Developmental Neurobiology

b. Breadth Requirement

- i. Two advanced biology lecture courses from outside the Developmental Genetics track, chosen in consultation with the undergraduate biology advisor.
- ii. One advanced biology laboratory (or lecture with laboratory) from outside the Developmental Genetics track, chosen in consultation with the undergraduate biology advisor.

c. Biology Electives

Additional advanced biology lecture, laboratory, and independent research courses, as needed, for a minimum of 32 credits in requirements A and C. See note 1.

7. Bioengineering Track

a. Area Lecture/Laboratory Requirement:

- i. BNG 201 Bioengineering and Society (does not count toward 32 biology credits required for the major)
- ii. BNG 301 Bioelectricity
- iii. BNG 303 Biomechanics
- iv. BNG 309 Bioengineering Laboratory Techniques
- v. BNG 401 Design in Bioengineering

b. Breadth Requirement

- i. Two advanced biology lecture courses chosen from any area above.

- ii. One advanced biology laboratory (or lecture with laboratory) course chosen from any area above.

c. Biology Electives

Additional advanced biology lecture, laboratory, and independent research courses, as needed, for a minimum of 32 credits in requirements A and C. See note 1.

D. 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 sciences at Stony Brook (including readings and research), *or*
- b. two laboratory reports from a single upper-division course in biological sciences at Stony Brook.

A list of currently participating courses is available in the Undergraduate Biology 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.

Notes:

- Up to 6 credits of electives may be chosen from a list of courses offered outside the department; see the Undergraduate Biology Office for the current list.
- BIO 150 The Living World is waived for students who have taken high school AP biology and who score

level 4 or higher on the mathematics placement examination.

- Students with documented AP biology scores of 4 or 5 receive a waiver of two of the core courses and 6 transfer credits.
- Requests for waivers of major requirements must be approved by the Undergraduate Biology Studies Committee. Biology majors must meet the major requirements of the bulletin of their latest matriculation date.

Application of Transfer Credits to Biology Requirements

Biology courses taken elsewhere apply to major requirements only if authorized by the biology transfer evaluator or if listed as equivalent to a Stony Brook course in Stony Brook *Transfer Guides*. Transfer students must take at least 15 of the 32 credits in requirements A and C at Stony Brook in courses for majors at the 200 level or higher. At least 12 of the 15 credits must be in BIO-designator courses. At least two of the advanced laboratory experiences, 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 Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Honors Programs in Biology and in Biology and Society

Graduation with departmental honors in Biology or in Biology and Society requires:

- a cumulative grade point average of 3.5 or higher in all courses for the major and
- presentation of an honors thesis based on a research project (see list of approved research and internship courses for each track below) written in the form of a paper for a scientific journal.

A student interested in becoming a candidate for honors should submit an outline of the proposed thesis research project to the director of undergraduate biology as early as possible but no later than the sec-

ond week of classes in the last semester. The director of undergraduate biology and the research sponsor appoint a thesis committee consisting of the research sponsor and two additional faculty members, one of them from a different department than that of the research sponsor. The student must present a copy of the finished thesis to each member of the thesis committee and the director of undergraduate biology at least 28 days before the date of graduation.

Approved Research and Internship Courses

- General Biology Track
BIO 484, 486, 489 Independent Research
BIO 488 Internship
- Bioengineering Track
BIO 488 Internship
BNG 499 Research in Bioengineering
- Developmental Genetics Track
BIO 487 Independent Research
BIO 488 Internship
- Ecology and Evolution Track
BIO 489 Research in Ecology and Evolution
BIO 488 Internship
- Environmental Biology Track
One of the following:
ATM 487, BIO 489, MAR 487 Independent Research
BIO 488, MAR 488 Internship
- Marine Biology Track
BIO 489, MAR 487 Independent Research
BIO 488, MAR 488 Internship
- Neuroscience Track
BIO 486 Research in Neurobiology and Physiology
BIO 488 Internship

Requirements for the Minor in Biology (BIO)

Only students with majors other than biology, biochemistry, or pharmacology may elect the biology minor. All courses for the minor must be taken for a letter grade. (See Note 1 below.)

Completion of the minor requires at least 20 credits in those biology courses designed for the biology major, including:

A. Two of the following courses:

BIO 201 Fundamentals of Biology: Organisms to Ecosystems
BIO 202 Fundamentals of Biology: Cell and Molecular Biology
BIO 203 Fundamentals of Biology: Cellular and Organ Physiology

B. Nine credits at the 300 level

C. A lecture course in at least two of the five areas of inquiry (I-V) listed under the biology major.

Notes:

- All 20 credits of biology courses intended for the biology minor must be passed with a grade of C or higher, including 9 credits at the 300 level. A grade of satisfactory in readings, internship, and research courses applies to the quality requirements within credit limitations noted below:
Up to two credits of biology independent research (BIO 484, 486, 487, 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 credits for the minor, except for those in requirement A, must be in BIO major courses at Stony Brook. Requests for waivers of minor requirements must be approved by the Undergraduate Biology Studies Committee.

BNG

Interdisciplinary Minor in Bioengineering

College of Engineering and Applied Sciences

DIRECTOR OF THE MINOR: Kenneth McLeod, School of Medicine ADMINISTRATIVE ASSISTANT: Anne-Marie Dusatko
OFFICE: 130 Life Sciences PHONE: (631) 632-2302 E-MAIL: anne.dusatko@sunysb.edu FAX: (631) 632-1539

Faculty

Michael Hadjiargyrou, *Assistant Professor, Ph.D., City University of New York*: Gene expression during biophysical stimulation of tissues.

Partap Khalsa, *Assistant Professor, Ph.D., Worcester Polytechnic Institute*: Robotics; haptic interfaces in robotics; neural encoding.

Kenneth McLeod, *Associate Professor, Ph.D., Massachusetts Institute of Technology*: Joint appointment with Materials Science and Engineering; Electromagnetic interactions with living tissue, self-organization of tissues.

Mark Otter, *Assistant Professor, Ph.D., University of Illinois*: Electrokinetic processes in physiologic systems; diagnostic instrumentation.

Yi-Xian Qin, *Assistant Professor, Ph.D., University at Stony Brook*: Fluid flow of porous structures; ultrasonic-based diagnostics.

Clint Rubin, *Professor, Ph.D., University of Bristol*: Joint appointment with Mechanical Engineering; Adaptation of the skeletal system; therapeutic medical devices.

Affiliated Faculty

Danny Bluestein, *Mechanical Engineering*

Christopher Berndt, *Materials Science and Engineering*

The bioengineering minor is designed for College of Arts and Sciences students who wish to obtain a more thorough understanding of how physical forces in the natural world influence the development and history of plants, animals, and single cell organisms on earth. Coursework introduces these concepts and shows how an engineering approach can be useful in dealing with the natural world. The program serves as an excellent background for students who wish to prepare for graduate study in bioengineering or a related field or to prepare for a career in which an understanding of engineering concepts would provide an advantage.

Courses Offered in Bioengineering

See the Course Descriptions listing in this *Bulletin* for complete information.

BNG 201-H Bioengineering and Society

BNG 301 Problem Solving in Bioelectricity

BNG 302 Biofluids

BNG 303 Engineering Methods in Biomechanics

BNG 304 Genetic Engineering

BNG 309 Laboratory Methods in Bioengineering

BNG 401 Design in Bioengineering

BNG 499 Research in Bioengineering

Requirements for the Minor in Bioengineering (BNG)

All courses for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 21-23 credits.

A. Required Courses

1. BIO 201 Fundamentals of Biology: Organisms to Ecosystems

or BIO 202 Fundamentals of Biology: Molecular and Cellular Biology

or BIO 203 Fundamentals of Biology: Cellular and Organ Physiology

(depending on courses chosen to satisfy requirement B. Electives)

2. BNG 201 Bioengineering and Society

3. Two 300-level BNG courses

4. BNG 401 Design in Bioengineering

B. Electives

Two courses chosen from:

ANT 350 Medical Anthropology

ATM 397 Air Pollution and Its Control

BIO 307 Computer Modeling of Biological Systems

BIO 311 Techniques in Molecular and Cellular Biology

BIO 328 Mammalian Physiology

BIO 335 Animal Physiology Laboratory

BIO 350 Darwinian Medicine

BIO/GEO 353 Marine Ecology

BIO 356 Applied Ecology Laboratory

CHE 310 Chemistry in Technology and the Environment

ENS 443 Environmental Problem Solving

ESM 353 Biomaterials: Manufacture, Properties, and Applications

EST 330 Natural Disasters: Societal Impacts and Technological Solutions

GEO/MAR 318 Engineering Geology and Coastal Processes

HMC 331 Legal and Ethical Issues in Health Care

MAR 334 Remote Sensing of the Environment

MEC 381 Transport and Fate of Pollutants

PSY 384 Research Lab: Human Factors

Notes:

1. Students are strongly encouraged to complete two from BIO 201, 202, and 203.
2. Other electives may be substituted for Requirement B. Electives, with permission of the director.

BES

Interdisciplinary Minor in Biomedical Engineering

Department of Materials Science and Engineering, College of Engineering and Applied Sciences

CHAIRPERSON: Michael Dudley, Materials Science and Engineering UNDERGRADUATE PROGRAM DIRECTOR: Christopher C. Berndt
ADMINISTRATIVE ASSISTANT: Gertha Benoit-Hollis

OFFICE: 314 Engineering PHONE: (631) 632-8484 E-MAIL: ghollis@notes.cc.sunysb.edu WEB ADDRESS: <http://DOL1.eng.sunysb.edu/>

The minor in biomedical engineering is designed for students enrolled in programs leading to the Bachelor of Engineering (B.E.) degree who wish to obtain an understanding of how materials interact with the human body and how engineering materials can be designed to serve physiological functions. The minor includes a comprehensive selection of courses in materials science, biomechanics, and biology as well as study of fluids and electricity as they relate to human physiology. The program serves as an excellent background for engineering students who wish to prepare for graduate education in medicine, bioengineering, and the biosciences or a related field, or to prepare for a career in which an understanding of biological concepts is essential.

Requirements for the Minor in Biomedical Engineering (BES)

Electrical Engineering (ESE), Engineering Science (ESG), and Mechanical Engineering (MEC) majors may choose to complete the sequence of courses for the minor as they relate to their major program. An example of the minor course list for each is listed below, but students should contact the Department of Materials Science and Engineering, Engineering Building, Room 314, as early as possible for detailed requirements.

Completion of the minor requires 21-23 credits in addition to courses counting towards the requirements for the majors.

Students majoring in Electrical or Computer Engineering:

1. ESE 304 Electronic Instrumentation and Operational Amplifiers
2. ESE 318 Digital Systems Design
3. ESE 380 Embedded Microprocessor Systems Design I
4. ESM 353 Biomaterials: Manufacture, Properties, and Applications

5. Three courses chosen from:

- BNG 301 Bioelectricity
- BNG 302 Biofluids
- BNG 303 Biomechanics
- BNG 401 Design in Bioengineering

6. Two courses chosen from:

- BIO 202 Fundamentals of Biology: Molecular and Cellular Biology
- BIO 203 Fundamentals of Biology: Cellular and Organ Physiology
- BIO 328 Mammalian Physiology
- BIO 361 Biochemistry I
- CHE 321 Organic Chemistry
- ESG 332 Materials Science I: Structure and Properties of Materials

7. BNG/ESG 201 Engineering and Society

Students majoring in Engineering Science:

1. ESM 334 Materials Engineering
2. ESM 335 Mechanical Properties of Materials
3. ESM 353 Biomaterials: Manufacture, Properties, and Applications
4. ESG 332 Materials Science I: Structure and Properties of Materials
5. Three courses chosen from:
 - BNG 301 Bioelectricity
 - BNG 302 Biofluids
 - BNG 303 Biomechanics
 - BNG 401 Design in Bioengineering
6. One course chosen from:
 - BIO 202 Fundamentals of Biology: Molecular and Cellular Biology
 - BIO 203 Fundamentals of Biology: Cellular and Organ Physiology
 - BIO 328 Mammalian Physiology
 - BIO 361 Biochemistry I
 - CHE 321 Organic Chemistry
7. BNG/ESG 201 Engineering and Society

Students majoring in Mechanical Engineering:

1. MEC 310 Introduction to Machine Design
2. MEC 410 Design and Analysis of Machine Elements
3. ESG 332 Materials Science I: Structure and Properties of Materials
4. ESM 353 Biomaterials: Manufacture, Properties, and Applications
5. Three courses chosen from:
 - BNG 301 Bioelectricity
 - BNG 302 Biofluids
 - BNG 303 Biomechanics
 - BNG 401 Design in Bioengineering
6. Two courses chosen from:
 - BIO 202 Fundamentals of Biology: Molecular and Cellular Biology
 - BIO 203 Fundamentals of Biology: Cellular and Organ Physiology
 - BIO 328 Mammalian Physiology
 - BIO 361 Biochemistry I
 - CHE 321 Organic Chemistry
7. BNG/ESG 201 Engineering and Society

BUS

Major and Minor in

Business Management

W. Averell Harriman School for Management and Policy, College of Engineering and Applied Sciences

DIRECTOR: Thomas R. Sexton UNDERGRADUATE PROGRAM DIRECTOR: Carl J. Allocca

OFFICE OF STUDENT SERVICES: Maria Moore, Patrice Virgilio

OFFICE: 102 Harriman Hall PHONE: (631) 632-7171 E-MAIL: oss@notes.cc.sunysb.edu FAX: (631) 632-8181

WEB ADDRESS: www.sunysb.edu/harriman/home.htm

Minors or other majors of particular interest to students majoring in business management: applied math & statistics (AMS), computer science (CSE), economics (ECO), psychology (PSY)

Faculty

Carl J. Allocca, CPA, Lecturer, Long Island University, C.W. Post: Public and private accounting, auditing, taxation and internal systems development, conversion and review.

T. Owen Carroll, Associate Professor, Ph.D., Cornell University: Management information systems; finance. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974.

Jeff T. Casey, Associate Professor, Ph.D., University of Wisconsin, Madison: Behavioral decision making; business strategy; human resource management.

Herbert F. Lewis, Lecturer, Ph.D., University at Stony Brook: Operations research/management science; operations management; management information systems; productivity analysis.

Manuel London, Professor and Director of Labor Management Studies Program, Ph.D., Ohio University: Personnel; promotion policies; management training; assessment centers.

Sanal K. Mazvanchery, Assistant Professor, Ph.D., University of Michigan: Marketing; consequences of customer satisfaction; industrial organization models in marketing and their empirical testing.

Anne Preston, Associate Professor, Ph.D., Harvard University: Labor economics; nonprofit organizations.

Thomas R. Sexton, Associate Professor, Ph.D., University at Stony Brook: Operations research; statistics; health care management; productivity analysis.

Jadranka Skorin-Kapov, Professor, Ph.D., University of British Columbia: Management science; mathematical programming with applications; artificial intelligence.

Gerrit Wolf, Professor, Ph.D., Cornell University: Decision and organizational behavior.

Affiliated Faculty

Eugene A. Feinberg, Applied Mathematics and Statistics

Donald P. Harrington, Radiology

Lee E. Koppelman, Political Science

Alan Leiken, Health Technology and Management

Robert Nathans, Physics

Mark Schneider, Political Science

John T. Scholz, Political Science

Michael Taksar, Applied Mathematics and Statistics

Paul E. Teske, Political Science

Adjunct Faculty

Estimated Number: 20

The W. Averell Harriman School for Management and Policy offers undergraduate students a major and a minor in business management. The major program stresses the role of business managers in today's society while providing a solid foundation of essential concepts and applications relevant to all areas of management and organizational decision making.

The primary purpose of the business management major is to develop and enhance general managerial skills while creating an overall awareness of the interrelationship and interdependency of various financial, economic, and administrative considerations within a business environment. Additional concepts presented include data management, systems evaluation, resource allocation and utilization, strategic planning, assessment, and monitoring.

The business management program provides students with the necessary career skills to obtain diverse and innovative managerial and professional positions in all areas of business. Career opportunities include management positions in manufacturing companies, business and management consulting, financial planning and banking, sales management, marketing, and human resource administration.

Courses Offered in Business Management

See the Course Descriptions listing in this *Bulletin* for complete information.

- BUS 110 Business in the 21st Century
 - BUS 210 Financial Accounting
 - BUS 214 Managerial Accounting
 - BUS 249 Management Science
 - BUS 310 Intermediate Accounting
 - BUS 311 Federal Income Taxation
 - BUS 312 Financial Statement Analysis
 - BUS 339 The Nonprofit Sector: Institutions, Policy, and Practice
 - BUS 340 Management Information Systems
 - BUS 341, 342 Special Topics in Management
 - BUS 343 Expert Systems in Business
 - BUS 344 Decision Support Systems
 - BUS 346 Operations Management
 - BUS 347 Business Ethics
 - BUS 348 Principles of Marketing
 - BUS 350 Internet Marketing
 - BUS 351 Human Resource Management
 - BUS 352 Electronic Commerce
 - BUS 353 Entrepreneurship
 - BUS 355 Investment Analysis
 - BUS 356 Financial Engineering
 - BUS 440 International Management
 - BUS 441 Business Strategy
- Independent research, teaching practica, and internship courses

Acceptance to the Major

Qualified freshman and transfer students who have indicated their interest in the major on their applications are accepted directly into the major upon admission to the University. Students who did not apply for the major and those who were not accepted into the major when they entered the University may apply to the major at any time during their academic career provided that their cumulative grade point average (including, for transfer students, coursework completed at other institutions) is

3.00 or higher. Students seeking admission to the major should contact the Harriman Student Services Office, Harriman Hall, Room 102.

Requirements for the Major in Business Management (BUS)

The major in business management leads to the Bachelor of Science degree.

Completion of the major requires 66-68 credits.

A. Business Courses

BUS 110 Business in the 21st Century
 BUS 210 Financial Accounting
 BUS 249 Management Science
 BUS 340 Management Information Systems
 BUS 346 Operations Management
 BUS 347 Business Ethics
 BUS 348 Principles of Marketing
 BUS 355 Investment Analysis
 or ECO 389 Corporate Finance
 BUS 440 International Management
 BUS 441 Business Strategy
 POL 319 Business Law

B. Mathematics Courses

AMS 102 Elements of Statistics
 AMS 201 Matrix Methods and Models
 AMS 315 Data Analysis
 or ECO 320 Mathematical Statistics
 MAT 122 Overview of Calculus with Applications
 or MAT 123 Introduction to Calculus

C. Economics Courses

ECO 107 Introduction to Economic Reasoning
 ECO 109 Introduction to Analytical Economics
 ECO 303 Intermediate Microeconomic Theory

D. Social Science Requirement

PSY 103 Introduction to Psychology
 or SOC 105 Introduction to Sociology

E. Electives

Two courses chosen from the following:

BUS 214 Managerial Accounting
 BUS 310 Intermediate Accounting
 BUS 311 Federal Income Taxation
 BUS 312 Financial Statement Reporting and Analysis
 BUS 339 The Non Profit Sector: Institutions, Policy, and Practice

BUS 343 Expert Systems in Business
 BUS 344 Decision Support Systems
 BUS 350 Internet Marketing
 BUS 351 Human Resource Management
 BUS 352 Electronic Commerce
 BUS 353 Entrepreneurship
 BUS 355 Investment Analysis
 BUS 356 Financial Engineering
 AMS 341 Operations Research I: Deterministic Models
 AMS 342 Operations Research II: Stochastic Models
 CSE/ISE 305 Principles of Database Systems
 ECO 305 Intermediate Macroeconomic Theory
 ECO 318 Labor Economics
 ECO 321 Econometrics
 ECO 326 Industrial Organization
 ECO 337 Advanced Labor Theory
 ECO 360 Money and Banking
 ECO 383 Public Finance
 ECO 387 Advanced Labor Theory
 ECO 389 Corporate Finance
 EST 305 Applications Software for Information Management
 EST 325 Technology in the Workplace
 EST 392 Engineering and Managerial Economics
 POL 364 Organizational Decision Making
 SOC 317 Decisions, Uncertainty and Individual Futures
 SOC/WST 371 Gender and Work
 SOC 381 Sociology of Organizations
 Only one of the following courses may be substituted for elective courses with the approval of the undergraduate program director: BUS 475, 476 Undergraduate Teaching Practicum I, II, BUS 487 Independent Research, and BUS 488 Internship. If the student takes additional courses from this group, it will count toward the total University credit requirement but not for the business major.

F. Upper-Division Writing Requirement

All undergraduate business majors must successfully demonstrate the ability to communicate and express

their ideas related to business and management in writing. A written portfolio of work is to be completed comprising three documents: 1) a resume; 2) a letter of application for a real job advertised in a newspaper or other medium; and 3) a two-page memorandum describing the results of an analysis or similar topic appropriate to a business organization. Business majors work with their faculty advisor beginning the first semester of their junior year and complete this requirement prior to the conclusion of the junior year. The student should allow time for revisions that may be necessary to satisfy the requirement. A sample package of exhibits and additional information on the upper-division writing requirement is available for a nominal charge from Solutions in the campus bookstore. The faculty advisor gives a satisfactory (S) evaluation upon successful completion of the portfolio.

Grading

All courses taken to satisfy requirements A and E above must be taken for a letter grade. A grade of C or higher is required in the following courses: AMS 102; BUS 110, 210, 214, 249, 340, 346, 348, 440, and 441; ECO 109; MAT 122 or 123; PSY 103; SOC 105.

The Minor in Business Management (BUS)

The business management minor is intended for students pursuing other majors who seek a foundation in business studies. The minor complements their chosen major by introducing them to principles and techniques used in business and management.

The minor can be completed with 21-24 credits provided that the appropriate prerequisite courses have been taken. Including the prerequisites, a total of 39 credits are necessary for completion of the minor. All courses must be taken for a letter grade.

1. BUS 110 Business in the 21st Century
2. Two courses from the following:
 - AMS 102 Elements of Statistics
 - BUS 249 Management Science
 - ECO 107 Introduction to Economic Reasoning
 - ECO 109 Introduction to Analytical Economics

3. Three courses from the following:
 BUS 210 Financial Accounting
 BUS 340 Management Information Systems
 BUS 346 Operations Management
 BUS 348 Principles of Marketing
 BUS 351 Human Resource Management
 BUS 354 Principles of Finance

Sample Course Sequence for the Major in Business Management

Freshman Fall	Credits
D.E.C. A	3
BUS 110	3
MAT 122 or 123	3
PSY 103 or SOC 105	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
BUS 210	3
ECO 107	4
D.E.C.	3
AMS 102	3
Total	16

4. BUS 441 Business Strategy

Notes to Sample Course Sequence:

- Students seeking additional guidance should consult their faculty advisor. The list of faculty advisors is available in the Harriman School's Office of Student Services, Harriman Hall, Room 102.
- Business management students are required to meet the same Diversified Education Curriculum (D.E.C.) requirements as those required by the College of Arts and Sciences and are encouraged to complete all D.E.C. requirements by the end of the sophomore year.
- It is recommended that students take the business electives beginning in the second semester of the junior year. Many business elective courses have prerequisites that must be completed in addition to the courses listed in the sample course sequence.
- Students are encouraged to take upper-division electives in the senior year.

Sophomore Fall	Credits
AMS 201	3
ECO 109	4
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	16

Spring	Credits
BUS 249	3
BUS 340	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
Begin upper division writing requirement	
AMS 315 or ECO 320	3-4
BUS 355 or ECO 389	3
D.E.C. (Upper Division)	3
Elective	3
Elective	3
Total	15-16

Spring	Credits
Complete upper division writing requirement	
BUS 346	3
BUS 348	3
ECO 303	4
BUS elective	3
Elective	3
Total	16

Senior Fall	Credits
BUS 347	3
POL 319	3
BUS elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
BUS 440	3
BUS 441	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

CHE

Majors in
Chemistry

Department of Chemistry, College of Arts and Sciences

CHAIRPERSON: Iwao Ojima DIRECTOR OF UNDERGRADUATE STUDIES: Robert Kerber STUDENT AFFAIRS COORDINATOR: Diane Godden
OFFICE: 109 Chemistry PHONE: (631) 632-7886 E-MAIL: rkerber@notes.cc.sunysb.edu WEB ADDRESS: <http://www.chem.sunysb.edu>

Minors of particular interest to students majoring in chemistry: biology (BIO), environmental studies (ENS), marine sciences (MAR), science and engineering (LSE)

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*: Reactions between complex nuclei.
- Benjamin Chu, *Distinguished Professor, Ph.D., Cornell University*: Light-scattering spectroscopy; X-ray scattering; polymer physics; colloid science, DNA electrophoresis.
- Dale G. Drueckhammer, *Associate Professor, Ph.D., Texas A and M University*: Enzyme catalysis in the synthesis of organic and biological compounds; elucidation of enzyme reaction mechanisms; design, synthesis, and evaluation of enzyme inhibitors.
- Frank W. Fowler, *Professor, Ph.D., University of Colorado*: Synthetic chemistry. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1995, and the President's Award for Excellence in Teaching, 1995.
- Joanna S. Fowler, *Adjunct Professor, Ph.D., University of Colorado*: organic synthesis with short-lived positron-emitting isotopes; neuroscience; drug mechanisms.
- 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.
- Nancy Goroff, *Assistant Professor, Ph.D., University of California, Los Angeles*: Non-natural organic compounds and their properties; organic materials.
- Clare Grey, *Associate Professor, D.Phil., University of Oxford*: Materials chemistry; solid-state NMR spectroscopy; catalysis.
- Albert Haim, *Professor Emeritus, 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. Recipient of the Stony Brook Alumni Association's Outstanding Professor Award, 1994.
- David M. Hanson, *Professor, Ph.D., California Institute of Technology*: Soft X-ray spectroscopy; photochemistry; radiation chemistry.
- Jason D. Hofstein, *Lecturer and Director of Intermediate Chemistry Laboratories, Ph.D., University of New York at Stony Brook*: Physical chemistry.
- Benjamin S. Hsiao, *Associate Professor, Ph.D., University of Connecticut*: Fundamentals of structure, morphology, property and processing relationships in polymers; polymer physics.
- 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 Director of Advanced Chemistry Laboratories, M.S., Indiana University*: Organic chemistry; laboratory curriculum development. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1996, and the President's Award for Excellence in Teaching, 1996.
- 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, Ph.D., University of Bombay*: Chemistry education.
- Roy Lacey, *Associate Professor, Ph.D., University at Stony Brook*: Nuclear chemistry. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1998, and the President's Award for Excellence in Teaching, 1998.
- 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 Emeritus, Ph.D., University of Chicago*: Chemistry of highly compressed solutions; stereochemistry.
- Andreas Mayr, *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, *Distinguished Professor, Ph.D., University of Tokyo*: Synthetic, organometallic, and medicinal chemistry.
- Daniel P. Raleigh, *Associate Professor, Ph.D., Massachusetts Institute of Technology*: Biological chemistry; protein structure and protein-ligand interactions using NMR.
- Nicole S. Sampson, *Associate 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.
- Scott McN. Sieburth, *Associate Professor, Ph.D., Harvard University*: Synthetic and bioorganic chemistry.
- Carlos Simmerling, *Assistant Professor, Ph.D., University of Illinois at Chicago*: Development of new algorithms and programs for simulation of large biomolecular systems; development of tools for the visualization and analysis of the data generated by such calculations.
- Richard Solo, *Adjunct Associate Professor, Ph.D., University of California, Berkeley*: Gas phase kinetics.
- Charles S. Springer, *Professor Emeritus and Adjunct Professor, Ph.D., Ohio State University*: Nuclear magnetic resonance, with emphasis on living systems.
- George Stell, *Leading Professor, Ph.D., New York University*: Molecular theory of fluids; transport and thermodynamic properties of fluids.
- Arthur Suits, *Associate Professor, Ph.D., University of California, Berkeley*: Physical chemistry; chemical reaction dynamics.
- Peter Tonge, *Associate Professor, Ph.D., University of Birmingham, England*: Biological chemistry and enzyme mechanisms; quantitating substrate strain in enzyme-substrate complexes using vibrational spectroscopy; rational drug design.
- Arnold Wishnia, *Associate Professor, Ph.D., New York University*: Physical chemistry of proteins.
- Stanislaus S. Wong, *Assistant Professor, Ph.D., Harvard University*: Biophysical chemistry; materials science; nanotechnology.

Affiliated FacultyFrancis Johnson, *Pharmacological Sciences*Franco P. Jona, *Materials Science and Engineering*Erwin London, *Biochemistry*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, environmental chemistry, and marine and atmospheric chemistry, in addition to the traditional chemical science option. The B.S. 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 pre-medical 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.

Courses in Chemistry

See the Course Descriptions listing in this *Bulletin* for complete information.

CHE 108-E The Extraordinary Chemistry of Ordinary Things

CHE 112-E Highlights of Organic and Biological Chemistry

CHE 121-E Concepts and Methodologies of General Chemistry

CHE 131-E, 132-E General Chemistry I, II

CHE 133, 134 General Chemistry Laboratory I, II

CHE 141-E, 142-E Honors Chemistry I, II

CHE 143, 144 Honors Chemistry Laboratory I, II

CHE 198-E Chemistry for Engineers

CHE 199 General Chemistry Laboratory for Engineers

CHE 221 Introduction to Chemistry of Solids

CHE 301, 302 Physical Chemistry I, II

CHE 303 Solution Chemistry Laboratory

CHE 304 Chemical Instrumentation Laboratory

CHE 310-H Chemistry in Technology and the Environment

CHE 312 Physical Chemistry (Short Course)

CHE 321, 322 Organic Chemistry I, II

CHE 327 Organic Chemistry Laboratory

CHE 331, 332 Honors Organic Chemistry I, II

CHE 344 Spectroscopy of Organic Compounds

CHE 345 Structure and Reactivity in Organic Chemistry

CHE 346 Biomolecular Structure and Reactivity

CHE 351 Quantum Chemistry

CHE 353 Chemical Thermodynamics

CHE 357 Molecular Structure and Spectroscopy Laboratory

CHE 361 Nuclear Chemistry

CHE 362 Nuclear Chemistry Laboratory

CHE 375, 376 Inorganic Chemistry I, II

CHE 383 Introductory Synthetic and Spectroscopic Laboratory Techniques

CHE 384 Intermediate Synthetic and Spectroscopic Laboratory Techniques

CHE 385 Tools of Chemistry

CHE 461 Selected Topics in Chemistry

CHE 475, 476 Undergraduate Teaching Practicum I, II

CHE 482 Senior Laboratory Projects in Chemistry

CHE 487 Research in Chemistry

CHE 488 Internship

CHE 490 Current Trends in Biological Chemistry

CHE 495-496 Senior Research

Requirements for the Major in Chemistry (CHE) (Bachelor of Science Degree)

Up to three chemistry courses passed with a C- may be applied to the major; all other courses offered for the major must be passed with a letter grade of C or higher. No transferred course with a

grade lower than C may be used to fulfill any major requirement.

Completion of the major requires approximately 66-69 credits.

A. Core Requirements

1. CHE 131, 132 General Chemistry I, II
or CHE 141, 142 Honors Chemistry
2. CHE 133, 134 General Chemistry Lab I, II
or CHE 143, 144 Honors Chemistry Laboratory I, II
3. CHE 301, 302 Physical Chemistry I, II
4. CHE 303 Solution Chemistry Laboratory
5. CHE 321, 322 Organic Chemistry I, II
or CHE 331, 332 Honors Organic Chemistry I, II
6. CHE 375 Inorganic Chemistry I
7. CHE 383 Introductory Synthetic and Spectroscopic Laboratory Techniques
8. CHE 385 Tools of Chemistry
9. MAT 131, 132 Calculus I, II (See note 1 for possible substitutions)
10. AMS 210 Applied Linear Algebra
or MAT 211 Linear Algebra (see note 1 for possible substitutions)
11. 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 357 Molecular Structure and Spectroscopy Laboratory
CHE 384 Intermediate Synthetic and Spectroscopic Laboratory Techniques
CHE 482 Senior Laboratory Projects in Chemistry
or CHE 496 Senior Research
Two electives chosen from CHE 221, 344, 345, 346, 376, PHY 251, or ESG 281
2. Biological Chemistry Option
CHE 384 Intermediate Synthetic and Spectroscopic Laboratory Techniques

One organic or inorganic chemistry elective chosen from CHE 344, 345, 346, 376, 482, or 496

BIO 202 Fundamentals of Biology: Cell and Molecular Biology

BIO 361 Biochemistry I

BIO 310 Cell Biology
or BIO 362 Biochemistry II

3. Chemical Physics Option

CHE 304 Chemical Instrumentation Laboratory

CHE 351 Quantum Chemistry
or CHE 353 Chemical Thermodynamics

CHE 357 Molecular Structure and Spectroscopy Laboratory

MAT 205 Calculus III (See note 1 for possible substitutions)

PHY 251/252 Modern Physics and Laboratory

One elective chosen from PHY 262, 301, 303, or 306

4. Environmental Chemistry Option

CHE 304 Chemical Instrumentation Laboratory

CHE 310 Chemistry in Technology and the Environment

CHE 357 Molecular Structure and Spectroscopy Laboratory

CHE 384 Intermediate Synthetic and Spectroscopic Laboratory Techniques

BIO 201 Fundamentals of Biology: Organisms to Ecosystems
or BIO 113 Applied Ecology

ATM 397 Air Pollution and Its Control

5. Marine and Atmospheric Chemistry Option

ATM 205 Introduction to Atmospheric Sciences

MAR 308 Principles of Instrumental Analysis

MAR 333 Coastal Oceanography

MAR 351 Introduction to Ocean Chemistry

One of the following sets of courses:

MAR 313 Marine Biochemistry
and MAR 410 Marine Geochemistry

or ATM 305 Global Atmospheric Change

and ATM 397 Air Pollution and Its Control

Sample Course Sequence for the Major in Chemistry (Chemical Science Option, B.S. Degree)

Freshman Fall	Credits
D.E.C. A	3
MAT 131	4
CHE 141 or 131	4
CHE 143 or 133	1
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
CHE 142 or 132	4
CHE 144 or 134	1
MAT 132	4
D.E.C.	3
Total	15

Sophomore Fall	Credits
CHE 331 or 321	3
CHE 383	2
AMS 210 or MAT 211	3
PHY 131	4
D.E.C.	3
Total	15

Spring	Credits
CHE 332 or 322	3
CHE 384	3
CHE 385	1
PHY 132	4
D.E.C.	3
Total	14

Junior Fall	Credits
CHE 301	4
CHE 303	2
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
CHE 302	4
CHE 304	2
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Senior Fall	Credits
CHE 357	2
CHE 375	3
CHE 495	3
D.E.C.	3
Electives	6
Total	17

Spring	Credits
CHE 482 or 496	2-3
Upper-Division CHE elective	3
Upper-Division CHE elective	3
Upper-Division elective	3
Elective	3
Total	14-15

C. Upper-Division Writing Requirement

Each student majoring in chemistry must take CHE 385, Tools of Chemistry, until a satisfactory grade is achieved. The course requires several papers which are evaluated for cogency, clarity, and mechanics.

Notes:

1. Alternate Mathematics Sequences

The following alternate sequences may be substituted for major requirements or prerequisites: MAT 125, 126, 127 or 141, 142 or AMS 151, 161 for MAT 131, 132; MAT 203 or 205 for AMS 210 or MAT 211. Equivalency for MAT courses as indicated by earning the appropriate score on a 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 121/123 and PHY 122/124 or PHY 141, 142 or PHY 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

**Sample Course Sequence for the
Major in Chemistry (B.A. Degree)**

Freshman Fall	Credits
MAT 131	4
CHE 131 or 141	4
CHE 133 or 143	1
D.E.C. A	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
CHE 132	4
CHE 134 or 144	1
MAT 132	4
D.E.C.	3
Total	15

Sophomore Fall	Credits
CHE 321 or 331	3
CHE 383	2
AMS 210 or MAT 211	3
PHY 131	4
D.E.C.	3
Total	15

Spring	Credits
CHE 322 or 332	3
CHE 384*	3
CHE 385	1
PHY 132	4
D.E.C.	3
Elective	3
Total	17

Junior Fall	Credits
CHE 301	4
CHE 303	2
D.E.C.	3
D.E.C.	4
Elective	3
Total	16

Spring	Credits
CHE 302	4
CHE 304*	2
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Senior Fall	Credits
CHE 375	3
D.E.C.	3
Upper-Division electives	6
Elective	3
Total	15

Spring	Credits
Upper-Division electives	6
Electives	9
Total	15

*Only one of these two laboratory courses is required.

secure ACS certification along with their Bachelor of Science degree.

In order to obtain ACS certification, students electing the chemical science option must complete CHE 346. Students electing the biological chemistry option must complete one additional elective in chemistry or a related field and the laboratories CHE 304, 357, and either CHE 482 or 496. Students electing the chemical physics or the marine and atmospheric chemistry option must complete CHE 346 and the laboratories CHE 384 and either CHE 482 or 496. Students electing the environmental chemistry option must complete CHE 346 and the laboratories CHE 304 and either CHE 482 or 496.

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 graduate studies in chemistry, it is recommended that they attain a reading knowledge of German and of French or Russian.

Requirements for the Major in Chemistry (CHE) (Bachelor of Arts Degree)

Up to three chemistry courses passed with a C- may be applied to the major; all other courses offered for the major must be passed with a letter grade of C or higher. No transferred course with a grade lower than C may be used to fulfill any major requirement.

Completion of the major requires approximately 53-54 credits.

A. Study Within the Area of Chemistry

- CHE 131, 132 General Chemistry I, II
or CHE 141, 142 Honors Chemistry I, II
- CHE 133, 134 General Chemistry Lab I, II
or CHE 143, 144 Honors Chemistry Laboratory I, II
- CHE 301, 302 Physical Chemistry I, II
- CHE 303 Solution Chemistry Laboratory and one additional laboratory course (304 or 384)
- CHE 321, 322 Organic Chemistry I, II
or CHE 331, 332 Honors Organic Chemistry I, II
- CHE 327 Organic Chemistry Laboratory
or CHE 383 Introductory Synthetic and Spectroscopic Laboratory Techniques
- CHE 375 Inorganic Chemistry I
- CHE 385 Tools of Chemistry

B. Courses in Related Fields

- MAT 131, 132 Calculus I, II
and AMS 210 Applied Linear Algebra
or MAT 211 Linear Algebra (See note 1)
- PHY 131, 132 Classical Physics I, II (See note 2)

C. Upper-Division Writing Requirement

Each student majoring in chemistry must take CHE 385, Tools of Chemistry, until a satisfactory grade is achieved. The course requires several papers which are evaluated for cogency, clarity, and mechanics.

Notes:

- Alternate Mathematics Sequences

The following alternate sequences may be substituted for major requirements or prerequisites: MAT 125, 126, 127 or 141, 142 or AMS 151, 161 for MAT 131, 132; MAT 203 or 205 for AMS 210 or MAT 211. Equivalency for MAT courses as indicated by earning the appropriate score on a 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 121/123 and 122/124 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 3.00 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 3.40 cumulative grade point average in chemistry courses taken in the senior year, honors will be conferred.

Chemistry Secondary Teacher Preparation Program

See the Education and Teacher Preparation entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Bachelor of Science Degree/Master of Science Degree Program

A student interested in this research-intensive graduate program, intended to prepare students for professional employment in the chemical or pharmaceutical industries, may apply for admission at the end of the junior year. The program leads to a Bachelor of Science degree in Chemistry at the end of the fourth year and a Master of Science in Chemistry at the end of the fifth year. During the senior year, the student is expected to take two 500-level CHE courses and begin research. In the fifth year, the student works full-time on research, earning 24 credits in CHE 599.



CFS

Minor in

Child and Family Studies

Interdisciplinary Program in Social Sciences, College of Arts and Sciences

DIRECTOR OF THE MINOR: Joan F. Kuchner, Social Sciences Interdisciplinary ADMINISTRATIVE ASSISTANT: Lorraine Geiger

OFFICE: N-533 Social and Behavioral Sciences PHONE: (631) 632-7695

The Child and Family Studies minor focuses on children's development and their 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 child care centers and other approved facilities.

Requirements for the Minor in Child and Family Studies (CFS)

No more than one course may be taken under the Pass/No Credit option.

Completion of the minor requires 24 credits.

A. Required Courses

SSI 210 Human Development: The Family Context (PSY 220 may be substituted)

SSI 322 The Infant and Young Child

SSI 381 Seminar in Child Development

SSI 283 Practicum in Child Development

B. Four additional SSI courses

At least three courses must be upper-division and at least one of these must be an SSI course at the 400 level from the following selection:

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 Middle Childhood and 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:

AFS 370 The African-American Family

PSY 325 Children's Cognitive Development

PSY 329 Special Topics in Developmental Psychology

PSY 338 Behavior Deviation in Children

SOC/WST 304 Sociology of the Family

SOC/WST 340 Sociology of Human Reproduction

SOC 384 Sociology of the Life Course

SOC 387 Sociology of Education

WST 377/PSY 347 Psychology of Women

Notes:

1. No more than six credits of independent work may be used toward fulfillment of the minor requirements.
2. SSI 287, 447, 487, and 488 may be used only if the topics concern child and family studies.
3. Students planning to work in the child 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.

CNS

Minor in Chinese Studies

Interdisciplinary Program in Social Sciences, College of Arts and Sciences

DIRECTOR OF THE MINOR: To be announced ADMINISTRATIVE ASSISTANT: Lorraine Geiger
OFFICE: N-517 Social and Behavioral Sciences PHONE: (631) 632-7691

Affiliated Faculty

Iona Man-Cheong, *History*

Rhonda Cooper, *Art History*

Shiming Hu, *Emerita, Social Sciences
Interdisciplinary*

Sachiko Murato, *Comparative Studies*

Gregory A. Ruf, *Social Sciences
Interdisciplinary and Anthropology*

Eli Seifman, *Emeritus, Social Sciences
Interdisciplinary*

Mark Setton, *Comparative Studies*

The Chinese Studies minor is intended for students interested in interdisciplinary study of China combining coursework in social and behavioral sciences, humanities, and fine arts. Students design an individualized program of study, subject to the approval of the director of the Chinese Studies minor. Students are strongly encouraged to explore special study abroad opportunities through consultation with the director of the minor.

Courses in Chinese Language

See the Course Descriptions listing in this *Bulletin* for complete information.

CHI 111, 112 Elementary Chinese I, II

CHI 211, 212 Intermediate Chinese I, II

CHI 311, 312 Advanced Chinese I, II

CHI 475 Undergraduate Teaching
Practicum

CHI 487 Independent Research

Courses in Chinese Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

CNS 249-J Chinese Culture and Society:
Traditional China

CNS 250-J Chinese Culture and Society:
Modern China

CNS/ANT 379-J Ethnicity and Nation in
China

CNH, CNS 447 Readings in Chinese
Studies

CNH, CNS 461 Senior Seminar in
Chinese Studies

CNH, CNS 487 Research in Chinese
Studies

Requirements for the Minor in Chinese Studies (CNS)

No more than one course may be taken under the Pass/No Credit option.

Completion of the minor requires 18 credits.

A. CHI 212 Intermediate Chinese II

B. Two social and behavioral science courses of at least three credits each, chosen from among the following:

CNS 249 Chinese Culture and Society: Traditional China

CNS 250 Chinese Culture and Society: Modern China

CNS/ANT 379 Ethnicity and Nation in China

CNS 447 Readings in Chinese Studies

CNS 487 Research in Chinese Studies

ECO 339 China's Economy Since 1949

HIS 219 Introduction to Chinese History and Civilization

HIS 341 20th-Century China

HIS 431, 432 Colloquia in Asian History (appropriate topics only)

C. Two humanities and fine arts courses of at least three credits each, chosen from among the following:

ARH 203 History of Asian Art

ARH 318 History of Chinese Painting

CHI 311 Advanced Chinese I

CHI 312 Advanced Chinese II

CHI 487 Independent Research

CNH 447 Readings in Chinese Studies

CNH 487 Research in Chinese Studies

CLT 220 Non-Western Literature (appropriate topics only)

CLT 361 Literature and Society (appropriate topics only)

CLT 362 Literature and Ideas (appropriate topics only)

PHI 111 Introduction to Eastern Philosophy

PHI 342 History of Chinese Philosophy

RLS 240 Confucianism and Taoism

RLS 260 Buddhism

D. CNH 461 or CNS 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 six credits of independent work (CNH 447, 487, CNS 447, 487, CHI 487) may be used toward fulfillment of the minor.
3. The humanities and fine arts courses, if they are numbered 300 or higher, may be used to satisfy the social sciences interdisciplinary major's "related courses" option with permission of the director of the Chinese Studies minor.
4. Students who have proficiency in Chinese through the level of CHI 212 must substitute three credits from other courses acceptable for the minor.

CCS

Interdisciplinary Major in Cinema and Cultural Studies

Department of Comparative Studies, College of Arts and Sciences

CHAIR: Krin Gabbard, Comparative Studies DIRECTOR: Robert Harvey, Comparative Studies ADMINISTRATIVE ASSISTANT: Mary Moran-Luba
OFFICE: E-4309 Library PHONE: (631) 632-7460 E-MAIL: robert.harvey@sunysb.edu WEB ADDRESS: www.sunysb.edu/complit/

Minors of particular interest to students majoring in cinema and cultural studies: art history (ARH), interdisciplinary arts (LIA), media arts (MDA), philosophy (PHI), studio art (ARS)

Affiliated Faculty

Michele Bogart, *Art History*
Krin Gabbard, *Comparative Studies*
Robert Harvey, *Comparative Studies*
Izabella Kalinowska-Blackwood, *European Languages, Literatures, and Cultures*
E. Ann Kaplan, *English and Humanities Institute*
Shirley Jennifer Lim, *History*
Ira Livingston, *English*
John Lutterbie, *Theatre Arts*
Nicholas Mirzoeff, *Art History*
Adrienne Munich, *English and Women's Studies*
Jacqueline Reich, *European Languages, Literatures, and Cultures*
Nicholas Rzhovsky, *European Languages, Literatures, and Cultures*
Jane Sugarman, *Music*
Kathleen Vernon, *Hispanic Language and Literature*

Administered by the department of comparative studies, the major in Cinema and Cultural Studies considers film as a form of representation in and of itself and in relation to other disciplines such as literature, art, and theatre. By emphasizing the emerging discipline of cultural studies, the major is designed to show how cultural forms such as cinema and the other arts develop and interact with each other and with social, historical, and economic forces. The major's core courses place strong emphasis on writing skills and critical thinking about film and other cultural forms. Students are also taught "media literacy"—the ability to read the many images we encounter every day in an age when images are being used for manipulation as never before. Students are encouraged to apply knowledge in the classroom to practical situations through internships in film and advertising industries or through independent research.

Students majoring in cinema and cultural studies are prepared to undertake graduate study in many humanistic disciplines and to enter into careers in the motion picture, communications, and advertising industries.

Courses Offered in Cinema and Cultural Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

CCS 101-B Images and Texts:
Understanding Culture

CCS 201 Writing about Culture

CCS 301-G Theorizing Cinema and
Culture

CCS 311-G Gender and Genre in Film

CCS 401 Senior Seminar in Cinema and
Culture Studies

Independent research, internship, and
senior honors courses

Requirements for the Major in Cinema and Cultural Studies (CCS)

The major in cinema and cultural studies leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher. Twenty-one credits for the major must be earned in courses numbered 300 or higher.

Completion of the major requires
39 credits.

A. Core Courses

CCS 101 Images and Texts:
Understanding Culture

CCS 201 Writing about Culture

CCS 301 Theorizing Cinema and
Culture

CCS 401 Senior Seminar in Cinema
and Cultural Studies

B. Courses in Cinema

1. One course from the following:

HUM 201 Film and Television
Studies: Genres

HUM 202 Film and Television
Studies: History and Theory

THR 117 Media Analysis and
Culture

2. Two lower-division courses from the
following:

CLT 235 American Pluralism in Film
and Literature

HUF 211 French Cinema

HUG 221 German Cinema Since
1945

HUI 231 Sex and Politics in Italian
Cinema

HUM 201 Film and Television
Studies: Genres (if not used to satisfy
Requirement 1)

HUM 202 Film and Television
Studies: History and Theory (if not
used to satisfy Requirement 1)

HUR 145 Russian Film and Culture

THR 117 Media Analysis and
Culture (if not used to satisfy
Requirement 1)

3. Three upper-division courses from
the following:

CCS 311 Gender and Genre in Film
CCS 487 Independent Research (see
note)

CCS 488 Internship (see note)

CLT 335 Interdisciplinary Study of
Film

HIS 326 History of Popular Culture

HUI 338 Images of Italian
Americans in Film

HUS 390 Latin American Cinema

SOC 351 Sociology of the Arts

SPN 420 Topics in Spanish and Latin
American Cinema

THR 403 Media Theory and
Criticism

C. Courses in Cultural Studies

1. Texts and Contexts. One course from
the following:

AFH 329/HUF 318 Pan-African
Literature I

AFH 330 Pan-African Literature II

AFS 360 African-American Social
Commentary

CLT 361 Literature and Society

CLT 362 Literature and Ideas

CLT 363 Literature and the Arts

EGL 369 Topics in Ethnic Studies in
Literature

EGL 371 Topics in Gender Studies in
Literature

EGL 373 Literature in English from Non-Western Cultures

EGL 375 Literature in English in Relation to Other Disciplines

2. Visual Culture. One course from the following:

ARH 322 American Art Since 1947

ARH 329/AFH 339 Arts of the African Diaspora

ARH 331 American Art to 1890

ARH 333 Arts for the Public

ARH 342 Art of the 20th Century

3. Performing Culture. One course from the following:

MUS 313 Cross-Cultural Musics from Stravinsky to World Beat

MUS 314 Women Making Music

THR 312 American Theatre and Drama

THR 313 Asian Theatre and Drama

THR 315 European History and Drama: The Classical Era

THR 316 European History and Drama: The Modern Era

D. Upper-Division Writing Requirement

All students are required to write a term paper for CCS 301, which is evaluated by the instructor for its evidence of upper-division writing ability. Students whose writing is judged satisfactory will have fulfilled the upper-division writing requirement. Students who do not fulfill the requirement in CCS 301 must submit to the major advisor, no later than the first semester of the senior year, a portfolio of papers written for subsequent upper-division courses taken for the major and must achieve an evaluation of satisfactory on the portfolio.

Notes:

1. Only three credits of CCS 487, Independent Study, or CCS 488, Internship, may be used to satisfy major requirements.
2. Students should consider the prerequisites to upper-division courses for the major when choosing elective and D.E.C. courses.
3. Other relevant courses may be substituted for major requirements with permission of the director of undergraduate studies.

Sample Course Sequence for the Cinema and Cultural Studies Major

Freshman Fall	Credits
D.E.C. A	3
CCS 101	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
Requirement B-1 course	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Sophomore Fall	Credits
Requirement B-2 course	3
D.E.C.	3
D.E.C.	3
Elective	3
Elective	3
Total	15

Spring	Credits
CCS 201	3
Requirement B-2 course	3
D.E.C.	3
Elective	3
Elective	3
Total	15

Junior Fall	Credits
CCS 301	3
Requirement B-3 course	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Spring	Credits
Requirement B-3 course	3
Requirement C-1 course	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
Requirement B-3 course	3
Requirement C-2 course	3
D.E.C.	3
CCS 488 (recommended)	3
Elective	3
Total	15

Spring	Credits
CCS 401	3
Requirement C-3 course	3
D.E.C.	3
Upper-Division elective	3
CCS 488 (recommended)	3
Total	15

The Minor in Cinema and Cultural Studies

The minor in cinema and cultural studies is designed to provide a broad overview of film and culture and to complement most majors in the arts and sciences.

Requirements for the Minor in Cinema and Cultural Studies (CCS)

All courses for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 21 credits.

- CCS 101 Images and Texts: Understanding Culture
or CCS 201 Writing about Culture
- HUM 201 Film and Television Studies: Genres
or HUM 202 Film and Television Studies: History and Theory
or THR 117 Media Analysis and Culture
- CCS 301 Theorizing Cinema and Culture

- D. Two courses from the following:

AFH 339/ARH 329 318, AFH 330, AFH 329/ARH 339, AFS 350, ARH 322, ARH 331, ARH 332, ARH 333, ARH 342, CLT 361, CLT 362, CLT 363, EGL 360, EGL 371, EGL 373, EGL 375, MUS 313, MUS/WST 314, THR 312, THR 313, THR 315, THR 316

- E. Six credits from the following:

CCS 311, CCS 401, CCS 487, CCS 488, CLT 335, HUI 338, HUI 431, HUS 390, SPN 420

Notes:

1. Only one course from CCS 487 or CCS 488 may be used to satisfy requirement E.
2. Students should consider the prerequisites to upper-division courses for the minor when choosing elective and D.E.C. courses.
3. Other relevant courses may be substituted for minor requirements in consultation with the minor director.

Honors Program in Cinema and Cultural Studies

Students who have maintained a grade point average of 3.50 in the major and 3.00 overall may attempt the degree in cinema and cultural studies with honors. Students should apply for the honors program at the end of their junior year. The student must find a faculty member affiliated with the program to act as sponsor and, with written approval of the sponsor, submit a written proposal for an honors thesis or honors project to the department. The thesis or project is reviewed by at least two faculty members affiliated with the program and one unaffiliated faculty member. If the honors thesis or project is judged to be completed with distinction and the student has achieved a 3.50 g.p.a. in all courses for the cinema and cultural studies major taken during the senior year, honors are conferred. Course credit for the honors thesis or project is given under CCS 495.



CLS

Minor in

Classical Civilization

Department of European Languages, Literatures, and Cultures, College of Arts and Sciences

DIRECTOR OF THE MINOR: Aaron Godfrey, European Languages, Literatures, and Cultures

OFFICE: 124 Humanities PHONE: (631) 632-6546 E-MAIL: agodfrey@notes.ccl.sunysb.edu WEB ADDRESS: www.sunysb.edu/eurolangs

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.

Courses Offered in Classical Civilization

See the Course Descriptions listing in this *Bulletin* for complete information.

CLS 113-B Greek and Latin Literature in Translation

CLS 215-I Classical Mythology

CLS 320 Topics in Classical Civilization

CLS 447 Directed Readings in Classics

GRK 111, 112 Elementary Ancient Greek I, II

GRK 447 Directed Readings in Ancient Greek

LAT 111, 112 Elementary Latin I, II

LAT 251, 252 Readings in Latin Literature I, 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

LAT 447 Directed Readings in Latin

Group IA: GRK 111, 112 Elementary Ancient Greek I, II
GRK 447 Directed Readings in Ancient Greek

Group IB: LAT 111, 112 Elementary Latin I, II

LAT 251, 252 Readings in Latin Literature I, 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

LAT 447 Directed Readings in Latin

Group II: CLS 113 Greek and Latin Literature in Translation

Group III: CLS 215 Classical Mythology
EGL 260 Mythology in Literature

Group IV: CLS 320 Topics in Classical Civilization

ARH 300 Greek Art and Architecture

ARH 301 Roman Art and Architecture

Group V: PHI 200 Introduction to Ancient Philosophy
PHI 300 Ancient Philosophy

Requirements for the Minor in Classical Civilization (CLS)

The student must select at least two courses from group IA or IB, and one course each from groups II through V, 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 under the Pass/No Credit option.

CLT

Major and Minor in

Comparative Literature

Department of Comparative Studies, College of Arts and Sciences

CHAIRPERSON: Krin Gabbard DIRECTOR OF UNDERGRADUATE STUDIES: Robert Harvey ADMINISTRATIVE ASSISTANT: Mary Moran-Luba
OFFICE: E-4309 Library PHONE: (631) 632-7460 E-MAIL: robert.harvey@sunysb.edu WEB ADDRESS: www.sunysb.edu/complit/

Minors of particular interest to students majoring in comparative studies: *Africana studies (AFS)*, *art history (ARH)*, *cinema and cultural studies (CCS)*, *classics (CLS)*, *English (EGL)*, *French (FRN)*, *German (GER)*, *history (HIS)*, *Italian (ITL)*, *interdisciplinary arts (LIA)*, *Judaic studies (JDS)*, *music (MUS)*, *Russian (RUS)*, *Spanish (SPN)*, *theatre arts (THR)*, *women's studies (WST)*

Faculty

Thomas J.J. Altizer, *Professor Emeritus, Ph.D., University of Chicago*: Religion and literature; theology.

Ruth S. Bottigheimer, *Adjunct Professor, D.A., University at Stony Brook*: German literature; fairy tales.

William Chittick, *Professor, Ph.D., Teheran University*: Islamic studies; comparative mysticism.

Sungtaek Cho, *Assistant Professor, Ph.D., University of California, Berkeley*: Buddhist literature and history in east and south Asia.

Krin Gabbard, *Professor, Ph.D., Indiana University*: The arts and their interrelations; film; jazz.

Robert Harvey, *Associate Professor, Ph.D., University of California, Berkeley*: Contemporary French and Maghrebian Francophone literatures; critical theory; film.

Sachiko Murata, *Associate 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, *Associate 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.

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.

Affiliated Faculty

Lou Charnon Deutsch, *Hispanic Languages and Literature*

Román de la Campa, *Hispanic Languages and Literature*

E. Ann Kaplan, *English*

Ira Livingston, *English*

Joaquin Martinez-Pizarro, *English*

Nicholas Mirzoeff, *Art History*

Mary C. Rawlinson, *Philosophy*

Jacqueline Reich, *European Languages, Literatures, and Cultures*

Nicholas Rzhevsky, *European Languages, Literatures and Cultures*

Hugh J. Silverman, *Philosophy*

Adjunct Faculty

Estimated number: 3

Teaching Assistants

Estimated number: 18

The Department of Comparative Studies integrates the efforts of a number of humanities programs centering on comparative literature, language, and culture. In addition to the major in comparative literature, described below, the department offers major programs in humanities and religious studies and minor programs in classical civilization, Japanese studies, Korean studies, and religious studies. Requirements for these programs appear under each program title elsewhere in the alphabetical listings of Approved Majors, Minors, and Programs. Further information is available in the Comparative Studies Office.

The Major in Comparative Literature

The comparative literature major brings the historical and intercultural resources of the department together in a broadly based program for the student interested in comparative 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.

Courses in Comparative Literature

See the Course Descriptions listing in this *Bulletin* for complete information.

CLT 211-I Literary Survey: Medieval through Late Renaissance

CLT 212-I Literary Survey:

Enlightenment through Modern

CLT 220-J Non-Western Literature

CLT 235-K American Pluralism in Film and Literature

CLT 266-G The 20th-Century Novel

CLT 301-G Theory of Literature

CLT 331-G Literary Genres: Poetry

CLT 332-G Literary Genres: Drama

CLT 333-G Literary Genres: Novel

CLT 334-G Other Literary Genres

CLT 335-G The Interdisciplinary Study of Film

CLT 361-G Literature and Society

CLT 362-G Literature and Ideas

CLT 363-G Literature and the Arts

Independent reading, research, teaching practica, and senior honors courses

Requirements for the Major in Comparative Literature (CLT)

The interdisciplinary major in comparative literature leads to the Bachelor of Arts degree. All courses offered for the major must be taken for a letter grade. All upper-division courses offered for the major must be passed with a grade of C or higher.

Completion of the major requires 36 credits.

A. Introduction

Two courses that survey a literary theme historically and cross-culturally, selected from the following:

HUM 109 Philosophy and Literature in Social Context

HUM 121 Death and Afterlife in Literature

HUM 122 Images of Women in Literature

HUM 123 Sin and Sexuality in Literature

RLS 101 Western Religions

RLS 102 Eastern Religions

B. Background

Three courses beyond the introductory level, 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, CLT 211, 212, 220, 266, or one course per designer from the following: EGL 200-level, FRN 395, 396, ITL 395, 396, GER 344, HUR 341, 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, 206, 208, 264, RLS 240, 246, 250, 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

CLT 301 Theory of Literature (CCS 301 or EGL 365 may be substituted.)

E. Advanced Study

Four upper-division courses, at least one from each of groups 1 and 2:

Group 1:

- CLT 331 Literary Genres: Poetry
- CLT 332 Literary Genres: Drama
- CLT 333 Literary Genres: Novel
- CLT 334 Other Literary Genres

Group 2:

- CLT 335 Interdisciplinary Study of Films
- CLT 361 Literature and Society
- CLT 362 Literature and Ideas
- CLT 363 Literature and the Arts

F. Senior Project

A directed study project (CLT 487 or, for students in the honors program, CLT 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 CLT 301 is evaluated by the instructor for its quality of writing. Students whose writing is satisfactory fulfill this requirement with that

Sample Course Sequence for the Comparative Studies Major

Freshman Fall	Credits
D.E.C. A	3
One course from among: HUM 100-level, RLS 101 or 102	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
D.E.C. A	3
One other course from among: HUM 100-level, RLS 101 or 102	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Sophomore Fall	Credits
Group 1 course	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
Group 1 course	3
Group 1 or Group 2 course	3
Foreign Language Literature course	3
D.E.C.	3
Elective	3
Total	15

Junior Fall	Credits
CLT 301	3
Upper-Div. Adv. Study Group 1 course	3
Upper-Div. Adv. Study Group 2 course	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
Upper-Division Advanced Study Group 1 or Group 2 course	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
Upper-Division Advanced Study Group 1 or Group 2 course	3
CLT 487	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Spring	Credits
Upper-Division elective	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

paper. Students who do not fulfill the requirement in CLT 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 Literature

Students who have maintained a grade point average of 3.50 in the major and 3.00 overall may attempt the degree in comparative 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 the original language used for requirement C.
- B. Study of a language other than that used for requirement C through the intermediate 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 CLT 495 to fulfill major requirement F.

Requirements for the Minor in Comparative Literature (CLT)

The minor in comparative 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.

Completion of the minor requires 21 credits.

A. Introduction

One course that surveys a literary theme historically and cross-culturally, selected from the following:

- HUM 109 Philosophy and Literature in Social Context
- HUM 121 Death and Afterlife in Literature
- HUM 122 Images of Women in Literature
- HUM 123 Sin and Sexuality in Literature
- RLS 101 Western Religions
- RLS 102 Eastern Religions

B. Background

Two courses beyond the introductory level, 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, CLT 211, 212, 220, 266, or one course per designator from EGL 200-level, FRN 395, 396, ITL 395, 396, GER 344, HUR 341, 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, 206, 208, 264, RLS 240, 246, 250, 260, 270, 280

C. Literature in the Original Language

At least one course in literature in its original language (other than English)

D. Theory

- CLT 301 Theory of Literature

E. Advanced Study

Two upper-division courses, one from group 1, and one from group 2:

Group 1:

- CLT 331 Literary Genres: Poetry
- CLT 332 Literary Genres: Drama
- CLT 333 Literary Genres: Novel
- CLT 334 Other Literary Genres

Group 2:

- CLT 335 Interdisciplinary Study of Film
- CLT 361 Literature and Society
- CLT 362 Literature and Ideas
- CLT 363 Literature and the Arts

ECE

Major in

Computer Engineering

Department of Electrical and Computer Engineering, College of Engineering and Applied Sciences

CHAIRPERSON: Serge Luryi UNDERGRADUATE PROGRAM DIRECTOR: Ridha Kamoua STAFF ASSISTANT: Carolyn Huggins

OFFICE: 267 Light Engineering PHONE: (631) 632-8415 E-MAIL: postmaster@ece.sunysb.edu WEB ADDRESS: www.ece.sunysb.edu

Minors of particular interest to students majoring in electrical or computer engineering: applied mathematics and statistics (AMS), computer science (CSE), science and engineering (LSE)

The Department of Electrical and Computer Engineering offers two majors leading to the Bachelor of Engineering (B.E.) degree. The department's teaching and research areas include computer engineering, computer networks, microprocessors, computer architecture, communications, signal and image processing, pattern recognition, electronic circuits, solid-state electronics, lasers and fiber-optics, electromagnetics, microwave electronics, systems and control, biomedical engineering, VLSI, computer-aided design, parallel and distributed processing, computer vision, and computer graphics.

The objective of the electrical and computer engineering programs is to give students an excellent preparation for professional careers or graduate studies in the electrical and computer engineering fields. The programs are developed to provide students with depth and breadth of knowledge in engineering science and engineering design as well as in mathematics and the natural sciences. Development of non-technical skills such as communication and teamwork is also emphasized. The two programs share a common core curriculum in the freshman and sophomore years with specialization taking place during the junior and senior years. See the entry in the alphabetical listings of Approved Majors, Minors, and Programs for the requirements for the major in electrical engineering.

Following graduation many students choose immediate employment in industry from Long Island to the west coast. Electrical engineers are recruited in diverse fields for a variety of challenging positions: a communications engineer may work on improving the flow of traffic in communications networks; a command and control engineer may work on systems in tactical and traffic control, satellite and surveillance systems, or in commercial applications; a circuit design engineer designs, develops, and manufactures electronic circuits for many

applications including microcomputers; and computer engineers design microprocessor-based systems that include a range of consumer products, industrial machinery, and specialized systems such as those used in flight control, automobiles, and in financial institutions. Graduates also pursue advanced degrees in engineering, business, finance, medicine, law, and other professions in which their problem-solving skills and technical knowledge are valuable qualities.

Acceptance into the Computer Engineering Major *OK for me*

Freshman and transfer applicants who have specified their interest in the major in computer engineering may be accepted into these majors upon admission to the University. Applicants admitted to the University but not immediately accepted into the computer engineering major may apply for acceptance to the major at any time during the academic year. The department's enrollment committee will consider an application only if the following conditions have been met:

1. the student has completed at least 12 credits of mathematics, physics, electrical and computer engineering, or computer science courses required for the major;
2. the student has earned a grade point average of 3.00 or higher in these courses with no grade in any of them lower than C;
3. no courses required for the major have been repeated;
4. all transfer courses have been evaluated.

Requirements for the Major in Computer Engineering (ECE)

The solutions to current system design problems are based on both hardware and software. It is important for students who wish to specialize in computer hardware to be fluent in modern software techniques and familiar with digital elec-

tronics and the application of large-scale integrated devices.

Completion of the (major) requires approximately 110 credits.

1. Mathematics *MAT 131, 132*
AMS 151, 161 Applied Calculus I, II ✓
AMS 210 or MAT 211 Applied Linear Algebra *MAT 203*
AMS 361 or MAT 303 Applied Calculus IV
AMS 301 Finite Mathematical Structures

Note: The following alternate calculus course sequences may be substituted for AMS 151, 161 in major requirements or prerequisites:

- MAT 125, 126, 127
or MAT 131, 132
or MAT 141, 142

2. Natural Sciences
PHY 131, 132 Classical Physics I, II ✓
CHE 198 and 199 Chemistry for Engineers *phy 251*

Note: The physics course sequence PHY 125, 126, 127 or 141, 142 is accepted in lieu of PHY 131, 132. (Students are advised to take PHY 127 before PHY 126.)

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 Introduction to Electronic Design
ESE 124 Computer Techniques for Electronic Design
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) systems, components, or processes.

Sample Course Sequence in the Computer Engineering Major

a. Engineering Sciences

ESE 211 Electronics Laboratory A

ESE 271 Electrical Circuit Analysis

ESE 305 Deterministic Signals and Systems

ESE 318 Digital Systems Design

ESE 345 Computer Architecture

ESE 372 Electronics

One of the following: Δ

MEC 259 Particle and Rigid Body Mechanics

ESG 302 Thermodynamics of Materials

ESG 332 Materials Science I: Structure and Properties of Materials

ESG 333 Materials Science II: Electronic Properties

b. Engineering Design

ESE 314 Electronics Laboratory B

ESE 324 Electronics Laboratory C

ESE 380 Embedded Microprocessor Systems Design I

ESE 440 Engineering Design I

ESE 441 Engineering Design II

Note: ESE 440, 441 are courses on engineering design projects that must be carried out at Stony Brook under the supervision of an Electrical and Computer Engineering faculty member.

5. Probability and Statistics

ESE 306 Random Signals and Systems

6. Computer Science

CSE 113 Foundations of Computer Science I

CSE 114 Computer Science I

CSE 214 Computer Science II

CSE 306 Operating Systems or ESE 333 Real-time Operating Systems

CSE 308 Software Engineering

Engineering Technical Electives

Three ESE electives chosen from:

ESE 311 Electronic Circuits Design

ESE 316 Digital Devices and Circuits

ESE 344 Software Tools for Engineers

ESE 346 Computer Communications

ESE 347 Digital Signal Processing

ESE 349 Introduction to Fault Diagnosis of Digital Systems

ESE 357 Digital Image Processing

Freshman Fall	Credits
D.E.C. A	3
AMS 151# <u>MAT 131</u>	3
PHY 131#	4
ESE 123	4
Total	14

Spring	Credits
AMS 161# <u>MAT 132</u>	3
PHY 132#	4
ESE 124	3
CHE 198	4
CHE 199	1
Total	15

Sophomore Fall	Credits
AMS 361 or MAT 303	4
ESE 271#	4
ESE 318#	4
CSE 113	3
D.E.C.	3
Total	18

Spring	Credits
AMS 210 or MAT 211	3
ESE 211#	2
ESE 372#	4
CSE 114	3
D.E.C.	3
Total	15

Junior Fall	Credits
ESE 305	3
ESE 314	3
ESE 380#	4
AMS 301	3
D.E.C.	3
Total	16

Spring	Credits
ESE 300	1
ESE 324	2
ESE 306	3
ESE technical elective#	3
ESE technical elective#	3
CSE 214	4
Total	16

Senior Fall	Credits
ESE 440	3
ESE technical elective#	4
ESE 345#	3
CSE 308	3
D.E.C.	3
Total	16

Spring	Credits
ESE 441	3
ESG 302 or 332 or 333 or MEC 259	4
CSE 306 or ESE 333	3
D.E.C.	3
D.E.C.	3
Total	16

Note: Courses with a # must be completed with a C or higher.

These sequences ensure that prerequisites and corequisites are taken in the proper order.

ESE 358 Computer Vision

ESE 381 Embedded Microprocessor Systems Design II

ESE 382 Digital Design with Programmable Logic

8. Upper-Division Writing Requirement

All degree candidates must demonstrate skill in written English at a level acceptable for computer engineering majors. The ECE 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 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; AMS 151, 161 (or equivalent courses), PHY 131, 132 (or equivalent courses); and three ESE technical electives.

ESE 319

MEC 259

TI

to continue

3

4

$140 - \frac{40}{8} = 5$ without DEC
 DEC: $\frac{8}{8} = 1$.

CSE

Major and Minor in Computer Science

Department of Computer Science, College of Engineering and Applied Sciences

CHAIRPERSON: Arie Kaufman UNDERGRADUATE PROGRAM DIRECTOR: Leo Bachmair UNDERGRADUATE SECRETARY: Grace Garufi

OFFICE 1440 Computer Science PHONE: (631) 632-8470 E-MAIL: leo@cs.sunysb.edu or ggarufi@notes.cc.sunysb.edu

WEB ADDRESS: www.cs.sunysb.edu

Faculty

Leo Bachmair, *Professor, Ph.D., University of Illinois at Urbana-Champaign*: Computational logic; automated deduction; symbolic computation.

Hussein G. Badr, *Associate Professor, Ph.D., Penn State University*: Computer communication networks and protocols; performance evaluation, modeling and analysis.

Michael A. Bender, *Assistant Professor, Ph.D., Harvard University*: Algorithms; scheduling; asynchronous parallel computing.

Arthur J. Bernstein, *Professor, Ph.D., Columbia University*: Transaction processing; concurrent programming; distributed databases.

Tzi-cker Chiueh, *Associate Professor, Ph.D., University of California, Berkeley*: Processor architecture; parallel I/O; high-speed networks; compression.

W. Rance Cleaveland II, *Professor, Ph.D., Cornell University*: Specification and verification formalisms; automated verification algorithms and tools; models of concurrent computation.

Thomas J. Cortina, *Lecturer, M.S., Polytechnic University*: programming methodology; computer science education; computer music.

Herbert L. Gelernter, *Professor Emeritus, Ph.D., University of Rochester*: Artificial intelligence; knowledge-based, heuristic problem-solving systems; scientific applications.

Radu Grosu, *Assistant Professor, Ph.D., Technical University of Muenchen*: Software and systems engineering; design automation for embedded systems; applied formal methods.

Jack Heller, *Professor Emeritus, Ph.D., Polytechnic Institute of Brooklyn*: Database systems; office automation; visualization.

Arie Kaufman, *Leading Professor, Ph.D., Ben Gurion University, Israel*: Computer graphics; visualization; virtual reality; user interfaces; multimedia; computer architecture.

Robert F. Kelly, *Lecturer, Ph.D., New York University*: Information systems; software engineering; electronic commerce; parallel programming.

Michael Kifer, *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.

Vidya Kulkarni, *Lecturer, M.S., McMaster University*.

Philip M. Lewis, *Professor, Ph.D., Massachusetts Institute of Technology*: Concurrency and concurrent systems; transaction processing systems; software engineering.

Y. Annie Liu, *Associate Professor, Ph.D., Cornell University*: Programming languages and compilers; program optimization; program analysis and transformation; programming environments; reactive systems; algorithm design.

Antonios Michailidis, *Lecturer, Ph.D., University of Liverpool*: Computer-supported cooperative work; workflow management systems; human-computer interaction; enterprise-wide computing.

Klaus Mueller, *Assistant Professor, Ph.D., Ohio State University*: Visualization; computer graphics; medical imaging; image-based rendering; virtual reality; distributed virtual environments.

Manuel Oliveira Neto, *Assistant Professor, Ph.D., University of North Carolina at Chapel Hill*: Image-based rendering; interactive 3-D graphics; virtual environments; scientific visualization.

Theo Pavlidis, *Professor Emeritus, Ph.D., University of California, Berkeley*: Image processing; machine vision; computer graphics; window systems.

Shaunak Pawagi, *Lecturer, Ph.D., University of Maryland at College Park*: Analysis of algorithms; parallel computing.

Hong Qin, *Assistant Professor, Ph.D., University of Toronto*: Computer graphics; geometric modeling and design; physics-based animation and simulation; scientific computing and visualization; virtual environment; computer vision; medical imaging; applied mathematics.

C.R. Ramakrishnan, *Assistant Professor, Ph.D., University at Stony Brook*: Logic programming; programming languages; verification.

I.V. Ramakrishnan, *Professor, Ph.D., University of Texas at Austin*: Computer architecture; algorithms; rewrite systems.

Dimitri Samaras, *Visiting Assistant Professor, Ph.D., University of Pennsylvania*: Computer vision; computer graphics; medical imaging; animation and simulation; image-based rendering; physics-based modeling.

Christelle Scharff, *Lecturer, Ph.D., Université Henri Poincaré*: Automated deduction; theorem proving.

R. Sekar, *Assistant Professor, Ph.D., University at Stony Brook*: Computer and network security; software/distributed systems; programming languages; software engineering.

Steven Skiena, *Associate Professor, Ph.D., University of Illinois at Urbana-Champaign*: Algorithms; computational biology; computational geometry.

David R. Smith, *Professor Emeritus, Ph.D., University of Wisconsin, Madison*: Hardware description languages and synthesis; VLSI design tools; experimental chip architectures.

Donald Alan Smith, *Lecturer, Ph.D., Brandeis University*: Programming languages; logic programming.

Scott A. Smolka, *Professor, Ph.D., Brown University*: Model checking; semantics of concurrency; CASE tools for safety-critical systems; 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.

Scott Stoller, *Assistant Professor, Ph.D., Cornell University*: Distributed systems; fault-tolerance and security; software testing and verification; program analysis and optimization.

John D. Valois, *Research Assistant Professor, Ph.D., Rensselaer Polytechnic Institute*: Concurrent data structures; algorithm engineering; experimental algorithmics.

Amitabh Varshney, *Assistant Professor, Ph.D., University of North Carolina at Chapel Hill*: Interactive 3D computer graphics; scientific visualization; parallel graphics algorithms; geometric modeling; computational geometry.

David S. Warren, *Professor, Ph.D., University of Michigan*: Logic programming; database systems; knowledge representation; natural language processing.

Anita Wasilewska, *Associate Professor, Ph.D., Warsaw University, Poland*: Data base mining; knowledge discovery in data bases; machine learning; uncertainty in expert systems; automated theorem proving.

Andrew Wildenberg, *Lecturer, Ph.D., University of Oxford*: Computer vision; algorithms; computational biology; multimedia.

Larry D. Wittie, *Professor, Ph.D., University of Wisconsin, Madison*: Superconducting computers and networks; massively parallel computation; computer architecture; distributed operating systems.

Erez Zadok, *Assistant Professor, Ph.D., Columbia University*: Operating systems; storage and file systems; software portability; networking; security.

Affiliated Faculty

Esther Arkin, *Applied Mathematics and Statistics*

Susan Brennan, *Psychology*

Jerome Liang, *Radiology*

Joseph Mitchell, *Applied Mathematics and Statistics*

Yuanyuan Yang, *Electrical and Computer Engineering*

Teaching Assistants

Estimated number: 58

Computer science is the study of computer systems, including the architecture of computers, development of computer software, information processing, computer applications, algorithmic problem-solving, and the mathematical foundations of the discipline.

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 prepare for their professional careers through internships at local companies. Computer science graduates are recruited heavily, and career opportunities include developing software systems for a diverse range of applications such as: user-interfaces; networks; databases; forecasting; World Wide Web support; and medical, communications, satellite, and embedded systems. Many are employed in the telecommunication and financial industries, and some are self-employed as heads of software consulting companies.

The Department of Computer Science offers two undergraduate majors: Computer Science and Information Systems. Requirements and courses for the latter appear under the program title in the alphabetical listings of Approved Majors, Minors, and 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.

Computing Facilities

Computing facilities for undergraduates are maintained by both the University Computing Center and the Department of Computer Science. For a description of the computing services provided by the University Computing Center, see page 19.

The Department of Computer Science provides additional laboratories to support undergraduate instruction and research. The laboratory facilities are regularly upgraded to keep pace with advances in technology. Current computing facilities include the Computer Science Undergraduate Computing Laboratory with approximately 40 Pentium class systems; the Programming Techniques Teaching Laboratory with approximately 40 Pentium III class systems and facilities for classroom instruction; the Computer Associates Transactions Laboratory, used primarily for upper-level courses on databases, transaction processes, and Web applications; the Computer Science Advanced Programming Laboratory, also donated by Computer Associates, Inc., which provides computing support for upper-level courses on such topics as operating systems and user interfaces; and the Computer Science Multimedia Laboratory, used for courses on multimedia design. Most of the laboratories are connected to the Internet via a fiber optic link to the campus network and are easily accessible by students from campus residences or from off-campus via modem.

The departmental research laboratories are available to undergraduate students working on supervised projects with computer science faculty.

Transfer Credits

Students wishing to transfer credits for courses equivalent to CSE 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 the major must demonstrate proficiency in the course material by passing a proficiency examination. (Proficiency examinations covering the syllabi of CSE 113, 114, 213, 214, and 220

are given during the first week of each semester.)

Courses Offered in Computer Science

See the Course Descriptions listing in this *Bulletin* for complete information.

- CSE 101 Introduction to Computers and Information Technologies
- CSE 103 Introduction to the Internet
- CSE 110 Introduction to Computer Science
- CSE 113-C, 213 Foundations of Computer Science I, II
- CSE 114, 214 Computer Science I, II
- CSE 127 Introduction to C Programming
- CSE 219 Computer Science III
- CSE 220 Computer Organization and Systems Programming
- CSE 230 Introduction to C and UNIX
- CSE 300 Writing in Computer Science
- CSE 303 Introduction to the Theory of Computation
- CSE 304 Compiler Design
- CSE 305 Principles of Database Systems
- CSE 306 Operating Systems
- CSE 307 Principles of Programming Languages
- CSE 308 Software Engineering
- CSE 310 Data Communication and Networks
- CSE 315 Database Transaction Processing Systems
- CSE 320 Computer Architecture
- CSE 326 Digital Image Processing
- CSE 327 Computer Vision
- CSE 328 Fundamentals of Computer Graphics
- CSE 332 Introduction to Scientific Visualization
- CSE 333 User Interface Development
- CSE 334 Introduction to Multimedia Systems
- CSE 336 Internet Commerce Programming
- CSE 346 Computer Communication
- CSE 352 Artificial Intelligence
- CSE 355 Computational Geometry
- CSE 364 Advanced Multimedia Techniques
- CSE 366 Introduction to Virtual Reality
- CSE 371 Logic
- CSE 373 Analysis of Algorithms

CSE 390 Special Topics in Computer Science

Independent research, internship, teaching practica, and senior honors courses

Enrolling in CSE Courses

To enroll in CSE courses, students must:

1. Have completed all prerequisites with a grade of C or higher. (Pass/No Credit grades are not acceptable to meet prerequisites.) For transfer students, official transfer credit evaluations must have been completed and approved and the relevant proficiency examination for lower division courses, given during the first week of each semester, must have been taken and passed.
2. Attend the first class.

Failure to satisfy the prerequisites or to attend the first class may result in deregistration. Priority for registration is given to students who have not taken the same course previously. Upper-division CSE courses are restricted to CSE majors. The Pass/No Credit option is not available to CSE majors for CSE and ISE courses.

Acceptance into the Computer Science Major

Qualified freshman and transfer applicants may be accepted directly into the Computer Science or Information Systems major upon admission to the University. Currently enrolled students may apply for acceptance to one of these majors after completing the following courses with a grade point average of 2.80 or higher and no grade in any of them lower than a C.

1. CSE 113 Foundations of Computer Science I
2. CSE 114 Computer Science I
3. AMS 151 or MAT 125 or MAT 131

Only one of these courses may be repeated, and repeated only one time.

Requirements for the Major in Computer Science (CSE)

The major in computer science leads to the Bachelor of Science degree. At least five upper-division courses from items 2 and 3 below must be completed at Stony Brook.

Completion of the major requires approximately 80 credits.

1. Required Introductory Courses

Sample Course Sequence in the Computer Science Major

Freshman Fall	Credits
D.E.C. A	3
EAS/USB 101	1
CSE 113	3
AMS 151	3
Natural science course	4
Total	14

Spring	Credits
CSE 114	4
AMS 161	3
Natural science course	4
D.E.C.	3
Total	14

Sophomore Fall	Credits
CSE 213	3
CSE 214	3
AMS 210	3
Natural science course	3
D.E.C.	3
Total	16

Spring	Credits
CSE 219	3
CSE 220	4
AMS 301	3
Natural science course	3
D.E.C.	3
Total	16

Junior Fall	Credits
CSE Software course	3
CSE Hardware course	3
AMS 310	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
CSE Software course	3
CSE 303 or 373	3
CSE Elective	3
D.E.C.	3
Elective	3
Total	15

Senior Fall	Credits
CSE 300	1
CSE 308	3
CSE Elective	3
D.E.C.	3
Elective	3
Elective	3
Total	16

Spring	Credits
CSE Software course	3
CSE Elective	3
D.E.C.	3
Elective	3
Elective	3
Total	15

- CSE 113 Foundation of Computer Science
- CSE 114 Computer Science I
- CSE 213 Foundations of Computer Science II
- CSE 214 Computer Science II
- CSE 219 Computer Science III
- CSE 220 Computer Organization and Systems
2. Required Advanced Courses
 - a. CSE 303 Introduction to the Theory of Computation or CSE 373 Analysis of Algorithms
 - b. CSE 308 Software Engineering
 - c. Three software-related courses chosen from: CSE 305; 306; 304 or 307; 328 or 333

- d. One hardware-related course chosen from: CSE 310, 320, 346, ESE 318, 345
3. Computer Science Electives

Three upper-division CSE or ISE courses, excluding CSE/ISE 475, 488, 495, 496, and ISE 440.
4. AMS 151, 161 Applied Calculus I, II

Note: The following alternate calculus course sequences may be substituted for AMS 151, 161 in major requirements or prerequisites: MAT 125, 126, 127, or MAT 131, 132, or MAT 141, 142. Equivalency for MAT courses achieved through the Mathematics Placement Examination is accepted to meet MAT course requirements.

5. One of the following:

MAT 211 Introduction to Linear Algebra

AMS 210 Applied Linear Algebra

AMS 326 Numerical Analysis

6. AMS 301 and AMS 310 or 311 or 312

7. One of the following natural science sequences:

Two courses from: BIO 201, 202, 203
Fundamentals of Biology

CHE 131, 132, 133 or CHE 141, 142,
143 General Chemistry

GEO 102/112 The Earth/Physical
Geology Lab and GEO 309
Structural Geology

PHY 131, 132 or PHY 141, 142 or
PHY 125, 126, 127 Classical Physics

8. Six additional credits from the above natural science courses (biology, chemistry, geology, or physics), though not necessarily a sequence. More advanced natural science courses may be substituted with the prior approval of the Department of Computer Science.

9. Upper-Division Writing Requirement

All degree candidates must demonstrate writing skills in English at a level acceptable for computer science majors. To satisfy the requirement, the CSE student must 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. Students whose writing does not meet the required standards are directed to seek remedial help and resubmit their work.

Notes: All students are encouraged to discuss their program with an undergraduate advisor. In requirement 2 above, CSE/ESE double majors may substitute ESE 440, 441 Electrical Engineering Design I, II for CSE 308 Software Engineering provided that the design project contains a significant software component. Approval of the Computer Science Department is required.

Grading

All courses taken to satisfy requirements 1 through 8 must be passed with a letter grade of C or higher. A grade of C or higher is also required in prerequisite courses listed for all 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; CSE/ISE 315

Hardware: CSE 306; CSE 320; ESE 345; CSE 346; ESE 318

Operating Systems: CSE 306, 307, 320; ESE 345

Programming Languages and Software Engineering: CSE 304, 307, 308

Theory: CSE 303, 371, 373

Graphics: CSE 328, 332, 333

Multimedia: CSE 333, 334, 364

Computer Networks and Communications: CSE/ESE 310; CSE/ISE 346

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 "Graduate Courses" in the Special Academic Opportunities chapter). Students should consult early with faculty members of the Department of Computer Science to plan their programs.

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 260 Survey of Cognition and Perception
3. The concentration requires completion of at least two electives from the following list:

CSE 328 Fundamentals of Computer Graphics

CSE/ISE 332 Introduction to Scientific Visualization

CSE 334 Introduction to Multimedia Systems

PSY 384 Research Lab: Human Factors

ISE 440 Information Systems Design

The Honors Program in Computer Science

The honors program is open to junior and senior computer science majors who have completed at least three upper-division CSE courses at Stony Brook and who have maintained a 3.50 cumulative g.p.a. and a 3.80 g.p.a. in CSE courses.

A prospective honors program student must declare his or her intention to participate in the program to the undergraduate program director before registration for the senior year. In addition to the regular academic program, an honors student must complete a senior honors research project (CSE 495-496) under the close supervision of a computer science faculty member. Conferral of honors is contingent upon completion of all required courses, including the senior honors project, with a 3.50 cumulative g.p.a. and a 3.80 g.p.a. in CSE courses.

The department will facilitate internship placement for honors program students in the summer between the junior and senior years. In addition, participants in the honors program will be automatically approved for admission to the five-year joint B.S./M.S. program in computer science. Students who successfully complete the honors program and decide to enroll in the joint B.S./M.S. program will be considered for a tuition waiver in the fifth year as well as for a graduate student assistantship. (It is recommended that these students register for an undergraduate teaching practicum in the junior or senior year.)

The Minor in Computer Science (CSE)

The minor in computer science is open to all students not majoring in either computer science or information systems. All of these courses must be passed with a letter grade of C or higher. In order to declare the minor in computer science, students must complete CSE 113 and 114 with grades of C or higher. The minor

requires seven CSE or ISE courses totaling 22 to 24 credits as outlined below.

1. CSE 113 Foundations of Computer Science I
2. CSE 114 Computer Science I
3. CSE 214 Computer Science II
4. CSE 219 Computer Science III or CSE 220 Computer Organization and Systems Programming
5. Three upper-division CSE or ISE courses totaling at least nine credits (excluding CSE/ISE 300, 475, 487, 488 and ISE 440). ESE 318 may be substituted for one of these three CSE or ISE courses.

Joint B.S./M.S. Program in Computer Science

Computer science majors may apply 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. Students usually apply to the program in their junior year.

Students must satisfy the respective requirements of both the B.S. degree and the M.S. degree, but the main advantage of the program is that six credits may be simultaneously applied to both the undergraduate and graduate requirements. The M.S. degree can therefore be earned in less time than that required by the traditional course of study.

For more details about the B.S./M.S. program, see the undergraduate or graduate program director in the Department of Computer Science.

DAN

**Minor in
Dance**

Department of Theatre Arts, College of Arts and Sciences

DIRECTOR OF THE MINOR: John Lutterbie, Theatre Arts ADMINISTRATIVE ASSISTANT: Ed Quinn

OFFICE: 3046 Staller Center for the Arts PHONE: (631) 632-7300 WEB ADDRESS: <http://ws.cc.sunysb.edu/theatrearts>

The minor in dance provides an approach to the educational experience of dance that integrates movement, thought, sensation, and feeling. The minor offers a foundation for further study in choreography, performance, education, and criticism.

**Requirements for the
Minor in Dance (DAN)**

All courses offered for the minor must be passed with a letter grade of C or higher. At least 12 of the 24 credits must be taken at Stony Brook.

Completion of the minor requires 24 credits.

1. THR 102 Dance Appreciation
2. THR 168 World Dance
3. Three of the following:
 - THR 165 Modern Dance Technique I
 - THR 166 Ballet Technique I
 - THR 167 Jazz Dance Technique I
 - THR 353 Special Topics in Dance Performance
 - THR 365 Modern Dance Technique II
 - THR 366 Ballet Technique II
 - THR 367 Jazz Dance Technique II
4. THR 368 Dance Improvisation
5. THR 468 Choreography
6. THR 400 Performance Dance Ensemble

ESS

Interdisciplinary Major in Earth and Space Sciences

Department of Geosciences, College of Arts and Sciences

CHAIRPERSON: Scott M. McLennan DIRECTOR OF UNDERGRADUATE STUDIES: Daniel M. Davis MAJOR ADVISOR: Donald H. Lindsley
OFFICE: 255 Earth and Space Sciences PHONE: (631) 632-8200 WEB ADDRESS: www.pbisotopes.ess.sunysb.edu/geo

Minors of particular interest to students majoring in geology and earth and space sciences: environmental studies (ENS), marine sciences (MAR), engineering minors

Earth and space sciences is a broadly-based multidisciplinary field combining geology, astronomy, atmospheric science, and marine science. The major in earth and space sciences is a diversified program in the natural sciences and mathematics aimed at fostering a basic understanding of the earth and space sciences; it also includes concentrated study in any one of the natural sciences or mathematics or interdisciplinary studies in environmental geoscience. Intended for those seeking a science-related career, the program is 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, secondary education, or research in private industry and government.

Requirements for the Major in Earth and Space Sciences (ESS)

The major in earth and space sciences leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires approximately 61 to 72 credits.

A. Introductory earth and space sciences courses

GEO 103 The Earth Through Time
and GEO 113 Historical Geology
Laboratory
GEO 122 Physical Geology
or GEO 102 The Earth and GEO 112
Physical Geology Laboratory
AST 101 Introduction to Astronomy
AST 112 Astronomy Laboratory
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 must include a laboratory

C. Introductory related science courses

1. MAT 131, 132 Calculus I, II (See notes 1 and 2 below)
2. PHY 121/123 Physics for Life Sciences
or PHY 125 Classical Physics A
or PHY 131 Classical Physics I
or PHY 141 Classical Physics I:
Honors
3. Any two of the following groups (see notes 3, 4, and 5 below):
 - a. PHY 122/124 Physics for Life Sciences
or PHY 132 Classical Physics II
or PHY 142 Classical Physics II:
Honors
or PHY 126, 127 Classical
Physics B and C
 - b. CHE 112 Highlights of Organic
and Biological Chemistry
and CHE 121 Concepts of General
Chemistry
or CHE 131, 132 General
Chemistry I, II
or CHE 141, 142 Honors
Chemistry I, II
 - c. BIO 150 The Living World
and BIO 201 Fundamentals of
Biology: Organisms to Ecosystems

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. Students must obtain departmental approval of courses chosen to satisfy the specific science concentration.

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 125, 126, 127 or 141, 142, or AMS 151, 161. Equivalency for MAT courses achieved by earning the appropriate score on a University mathematics placement examination will be accepted as fulfillment of the requirement without the necessity of substituting other credits.
2. For biology, chemistry, geology, and marine sciences concentrations, MAT 132 or 127 may be waived under compelling circumstances and with the written permission of the ESS advisor.
3. For concentration in chemistry, CHE 112, 121 are not acceptable under requirement C3.
4. For astronomy, atmospheric sciences, mathematics, and physics concentrations, PHY 121/123, and PHY 122/124 are not acceptable under requirements C2 and C3.
5. 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 C3 may be waived.

Earth Science Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Sample Course Sequence in the Earth and Space Sciences Major

Freshman Fall	Credits
D.E.C. A	3
CHE 131	4
GEO 102	3
GEO 112	1
D.E.C. (or MAT 123 if needed)	3
Total	14

Spring	Credits
D.E.C. A	3
CHE 132	4
MAT 125 or 131	3-4
GEO 103	3
GEO 113	1
Total	14-15

Sophomore Fall	Credits
MAT 126 or 132	3-4
PHY 121/123 or 131	4
D.E.C.	3
D.E.C.	3
Total	13-14

Spring	Credits
PHY 122/124 or 132	4
GEO/AST/ATM Elective	3
D.E.C. or MAT 127	3
D.E.C.	3
Upper-Division D.E.C.	3
Total	16

Junior Fall	Credits
ATM 205	3
Upper-Division Concentration elective	3
AST 101	3
AST 112	1
BIO 150	3
Upper-Division D.E.C.	3
Total	16

Spring	Credits
Upper-Division Concentration elective	3
GEO/AST/ATM Elective	4
BIO 201	3
D.E.C.	3
Upper-Division elective	3
Total	16

Senior Fall	Credits
Upper-Division Concentration elective	3
Upper-Division GEO/AST/ATM elective	3
D.E.C.	3
Upper-Division D.E.C.	3
Upper-Division elective or D.E.C.	3
Total	15

Spring	Credits
Upper-Division Concentration elective	3
GEO/AST/ATM Elective	3
Upper-Division D.E.C.	3
Upper-Division D.E.C.	3
Upper-Division elective	3
Total	15

ECO

Major in Economics

Department of Economics, College of Arts and Sciences

CHAIRPERSON: William Dawes DIRECTOR OF UNDERGRADUATE STUDIES: Michael Zweig
OFFICE: S-601 Social and Behavioral Sciences PHONE: (631) 632-7540 WEB ADDRESS: www.sunysb.edu/economics

Minors of particular interest to students majoring in economics: applied mathematics and statistics (AMS), business management (BUS), computer science (CSE), international studies (LIS)

Faculty

Olivier Armantier, *Assistant Professor, Ph.D., University of Pittsburgh*: Econometrics; experimental economics.

Hugo Benitez-Silva, *Assistant Professor, Ph.D., Yale University*: Labor economics; applied microeconomics.

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.

Debra Dwyer, *Assistant Professor, Ph.D., Cornell University*: Microeconomics, health economics.

John Hause, *Professor, Ph.D., University of Chicago*: Theory of measurement and econometric estimation in human capital; industrial organization; applied microeconomics.

Bryce Hool, *Professor, Ph.D., University of California, Berkeley*: Macroeconomics; general equilibrium theory; monetary theory.

Takashi Kamihigashi, *Associate Professor, Ph.D., University of Wisconsin*: Macroeconomics; international economics; economic theory.

Mark Montgomery, *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 Emeritus, Ph.D., Harvard University*: Comparative systems; Soviet and East European economics.

Sangin Park, *Assistant Professor, Ph.D., Yale University*: Industrial organization; econometrics; microeconomics.

Warren Sanderson, *Professor, Ph.D., Stanford University*: Joint appointment with History; Economic history; economic demography.

Christopher Swann, *Assistant Professor, Ph.D., University of Virginia*: Labor economics; applied microeconomics; public economics.

Yair Tauman, *Professor, Ph.D., Hebrew University*: Industrial organization; game theory.

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 and Visiting Faculty

Estimated number: 6

Teaching Assistants

Estimated number: 30

Economics is the study of production, distribution, and exchange of goods and services. It investigates such questions as price formation, degree of employment of labor and other resources, efficient use of scarce resources, and the basis and effects of government policies in the economy. Economics also analyzes, compares, and contrasts different economic systems in the world, and studies the international economic relations among countries.

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.

The undergraduate economics program is designed to give students a beginning sense of what economists do as well as how they think. After taking the introductory combination of ECO 107 and 109, students acquire a more thorough background in economic theory by taking ECO 303 and ECO 305. The remaining economics courses used to satisfy the major requirements focus on particular

aspects of economics (e.g., labor markets, industrial organization, money and banking, economic development, finance) showing how economists analyze the theoretical and empirical issues. Some upper-division courses apply statistical methods, which are taught (but not required) in the program.

Students with a degree in economics can pursue graduate studies leading to an M.A. or Ph.D. in economics, or to a Master of Business Administration degree. The major is also especially useful for students interested in graduate studies in such areas as law, human resources, public policy, and health economics. The majority of graduating economics majors who continue their education either go to law school or pursue an M.B.A. A small number of graduates go to graduate school in economics. More than half the graduating seniors go directly into the job market. The great majority find entry-level positions in finance, marketing, sales, and various forms of business analysis and research. Many M.B.A. programs require applicants to have had work experience before applying to their program, so many students enter the job market temporarily and eventually return to school for an advanced degree.

Students are urged to consider enrolling in ECO 488, Internship. Internships provide opportunities for students to integrate work experience into the Economics major by doing related readings, keeping a daily journal, and writing an analytical paper under the supervision of a faculty member. In order to register for ECO 488, students must have the permission of the internship coordinator in the economics department and the internship manager in the Career Center. For further information, students should contact the Internship Coordinator in the department.

Courses Offered in Economics

See the Course Descriptions listing in this *Bulletin* for complete information.

ECO 107-F Introduction to Economic Reasoning

ECO 109-F Introduction to Analytical Economics

ECO 303 Intermediate Microeconomic Theory

ECO 305 Intermediate Macroeconomic Theory

ECO 310 Basic Computational Methods in Economics

ECO 317 Marxist Political Economy

ECO 318 Labor Economics

ECO 320 Mathematical Statistics

ECO 321 Econometrics

ECO 326 Industrial Organization

ECO 334-J Demographic Economics of Developing Countries

ECO 335 Economic Development

ECO 337 Advanced Labor Theory

ECO 339-J China's Economy Since 1949

ECO 340-J Japanese Economy

ECO 341-I European Economic Integration

ECO 343 Transformation in Economic Systems

ECO 345 Law and Economic Issues

ECO 348 Analysis for Managerial Decision Making

ECO 351-354, 356, 357 Special Topics in Economics

ECO 355 Game Theory

ECO 358-J Topics in Developing Economies

ECO 360 Money and Banking

ECO 373-H Economics of Environmental and Natural Resources

ECO 383 Public Finance

ECO 389 Corporate Finance

Independent research, teaching practica, and internship courses

Requirements for the Major in Economics (ECO)

The major in economics leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 39 to 46 credits.

Sample Course Sequence for the Economics Major

Freshman Fall	Credits
D.E.C. A	3
ECO 107 or ECO 109	4
MAT 122 or 123 or AMS 151	3
D.E.C.	3
D.E.C.	3
Total	16

Spring	Credits
D.E.C. A	3
ECO 109 or 107	4
MAT	3-4
D.E.C.	3
Elective	3
Total	16-17

Sophomore Fall	Credits
ECO 303	4
D.E.C.	3
D.E.C.	3
Elective	3
Elective	3
Total	16

Spring	Credits
ECO 305	4
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	16

Junior Fall	Credits
Upper-Division ECO	3
Upper-Division ECO	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Total	15

Spring	Credits
Upper-Division ECO	3
ECO elective or other approved course	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
Upper-Division ECO	3
Upper-Division ECO	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Spring	Credits
Upper Division ECO	3
ECO elective or other approved course	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

A. A minimum of 12 courses, at least 10 of them in economics, distributed as follows:

1. Introductory economics courses:

ECO 107 Introduction to Economic Reasoning

ECO 109 Introduction to Analytical Economics

(Note that one semester of calculus with a grade of C or higher is a prerequisite for ECO 109. See note 1.)

2. Intermediate economics courses:

ECO 303 Intermediate Microeconomic Theory

ECO 305 Intermediate Macroeconomic Theory

3. Six additional courses in economics at the 300 level and above. Each of these must be taken for a minimum of three credits.

4. Two additional courses, either in economics or from a list of preapproved electives in other departments, each with a minimum of three credits.

5. No more than two 400-level courses will count toward fulfillment of major requirements.

B. MAT 122 Overview of Calculus with Applications

or MAT 123 Introduction to Calculus

or AMS 151 Applied Calculus I

or level 4 on the mathematics placement examination

or any higher level calculus course (See Note 2.)

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 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.

Notes:

1. Students who need to take MAP 103 will be unable to take ECO 107 or 109 in the first semester of the freshman year and will have to adjust their schedule accordingly.
2. Economics is a quantitative social science. Students planning to use their background in economics for graduate studies or in their careers should take additional courses in mathematics and applied mathematics.
3. A maximum of four courses in economics taken at other institutions may be applied toward the major.

Independent Research

Students are encouraged to explore advanced subjects in economics through independent research supervised by a faculty member. Typically, an independent research project will emerge after a student has taken an upper division ECO course that provides a foundation of knowledge and a relationship with a faculty member. The student should formulate the research project in consultation with the supervising faculty member before the start of the semester in which the research is undertaken for credit through ECO 487. The project should

culminate in a substantial written paper. Credit is variable, and will be awarded on the basis of the University's guideline that one credit should involve about four hours per week of work. Outstanding work will be featured in the annual university undergraduate achievement celebration.

Internships

Students are encouraged to explore opportunities for study in the context of an internship in a business, government, social service agency, or union setting. *Note that an internship for credit through ECO 488 is an academic undertaking; it is not the same as involvement in what the employing agency may call an internship.*

An ECO 488 internship for credit provides an opportunity for the student to integrate work experience into the economics major by doing related readings, keeping a daily journal reflecting on the lessons learned at work, and writing an analytical paper under the supervision of an ECO department faculty member. Essentially, an internship for credit is an independent research project undertaken in the context of a work environment that provides the student with access to data, people, and experience that will make the study of some economic issue possible. Students are encouraged to base the internship study on an upper division ECO course that has provided basic knowledge and analytic tools appropriate to the work setting. Credit is variable, depending upon the time involved.

To enroll for internship credit in ECO 488, a student must have the approval of a supervising faculty member in the economics department and permission of the internship manager in the University's Career Center. This will involve acknowledgment and cooperation from the employing agency. Permission must be arranged before the start of the semester in which the student enrolls in ECO 488. The academic component of the internship must be done at the same time as the work component in the business or agency in which the student works.

Honors in Economics

Qualified students can graduate with honors in Economics. As specified below, the requirements include an honors thesis approved by the department's director of undergraduate studies. Qualified students interested in graduation with

honors are urged to enroll in upper division economics courses that provide them with the opportunity to write research papers which may be submitted for consideration as an honors thesis. For further information, students should contact the director of undergraduate studies for the Department of Economics.

Honors in Economics will be awarded to graduating seniors who have achieved the following:

1. A grade point average of at least 3.25 in the four required courses (A. 1., 2.), with no less than a B in any one of these courses.
2. A grade point average of at least 3.50 in any four electives in economics at the 300 level
3. Six credits in economics at the 400 level
4. An honors thesis, submitted to the director of undergraduate studies for honors evaluation.

EGL, ESL, FLA, MAE, SCI, SSI

Programs in

Education and Teacher Certification

Professional Education Program

DIRECTOR: Thomas T. Liao ASSOCIATE DIRECTOR, TEACHER CERTIFICATION OFFICER: Marvin Glockner ADMINISTRATOR: Mary Ann Short
FIELD EXPERIENCE COORDINATOR: Motier Haskins PHONE: (631) 632-4PEP WEB ADDRESS: www.pep.sunysb.edu

Secondary Education Certification in Biology, Chemistry, Earth Sciences, English, French, General Science with a discipline, German, Italian, Mathematics, Physics, Russian, Spanish, Social Studies

Kindergarten through Grade 12 Certification in Teaching English to Speakers of Other Languages

Affiliated Faculty:

Catherine Bennett, *Science*
Jacqueline Grennon Brooks, *Science*
Elsa Emenheiser, *English*
Georges Fournon, *Social Studies*
Fred Horstmann, *Social Studies*
Sarah Jourdain, *Foreign Languages*
Dorit Kaufman, *TESOL, Linguistics*
Mike Ledgerwood, *Foreign Languages*
Mario Macaluso, *Foreign Languages*
Elyse Magram, *Mathematics*
Andrea Mandel, *English*
Lester Paldy, *Science Outreach*
Anthony Phillips, *Mathematics*
Jody Resko, *Social Studies*

Adjunct Faculty:

Estimated number: 12

Teaching Assistants:

Estimated number: 4

The Professional Education Program prepares students to become teachers of academic subjects in secondary schools (grades 7 through 12) and to become teachers of English to speakers of other languages (TESOL) in grades Pre-K through 12. Stony Brook's teacher certification programs are registered and approved by the New York State Education Department.

Students complete the requirements for either a departmental major or an interdisciplinary major in addition to the requirements for teacher certification. Students should consult their intended major department as early as the second semester of the freshman year to determine if the major includes the teacher education option and to obtain guidance in completing teacher education program requirements along with requirements for their major program.

Teacher preparation programs are offered in the following subject areas:

1. Certification Grades 7 Through 12:
Sciences and General Science: Biology
Chemistry, Earth Science, Physics

English

Foreign Languages: French, German,
Italian, Russian, and Spanish

Mathematics

Social Studies

2. Certification Grades Pre-K
Through 12:

Teaching English to Speakers of
Other Languages (TESOL)

Major Components of the Teacher Preparation Programs

Students applying for certification must satisfy the following requirements:

1. Students must formally apply for admission to one of the six programs by completion of a "declaration of major" form. Methods course registration requires admission to the program and approval of the program director. We encourage application submission by the end of the sophomore year.
2. Completion of the requirements of the academic major.
3. Completion of 18-22 credits in professional study in education (depending on the specific certification program).
Fulfillment of a state-mandated literacy requirement.
100 clinical experience hours prior to student teaching (pending NYSED recertification).
4. Completion of one semester of supervised student teaching.
5. Students must achieve a minimum grade of C in all professional education courses or repeat the courses until such grades are achieved.
6. Additional requirements as set by the academic department overseeing the certification area.

University-Wide Coordination of the Programs

The various programs, each of which is registered and approved by the New York State Education Department, are coordinated by the Profession Education Prog-

ram (PEP). PEP performs a major role in the Long Island region by coordinating, supporting, strengthening, and developing: 1) undergraduate (pre-service) and graduate (in-service) teacher certification and teacher education; 2) educational research and development; and 3) school-university partnership programs. PEP has had a significant positive impact upon 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.

Special Assets of Teacher Preparation at Stony Brook

The university-wide approach to teacher education adopted by Stony Brook provides graduates of our teacher preparation programs with the intellectual rigor of an academic major as well as a valuable professional credential that qualifies them to teach in New York State and many other states in the country. Stony Brook students have consistently scored higher than the state average on each of the sub-tests of the New York State Teacher Certification Examinations (NYSTCE).

Stony Brook students preparing for teacher certification take their courses with the same faculty who teach undergraduate and graduate students in the academic departments and interdisciplinary programs, and have the same opportunity for experience with renowned professors in each teaching field.

Clinical placements for Stony Brook students are available in an interesting cross-section of cooperating school districts that draw upon school populations with a wide range of socio-economic backgrounds, including culturally diverse students, students with disabilities, and gifted and talented students. Many schools are engaged in innovative and experimental programs in education.

The teacher preparation programs are closely monitored by an active and dedi-

cated PEP Director's Committee and a PEP Advisory Council consisting of university faculty and representatives from public school districts on Long Island.

The Office of Teacher Certification advises prospective teacher certification candidates in Stony Brook programs on procedures for obtaining New York State teacher certification. Clearance and applications for the certificate are processed by the Office of Teacher Certification, which keeps all documentation pertaining to these services on file and makes it available to students for in-state and out-of-state certification purposes and to prospective employers.

Certification is not automatic. Upon successful completion of the University's program, the student must apply for state certification by completing the necessary application forms available from the Office of Teacher Certification, completing the certificate requirements for Training in Child and Substance Abuse Recognition and Reporting, and passing the New York State Teacher Certification Examinations (NYSTCE).

The Career Center helps students in three ways. Through its credentials service, recommendations supporting students in their application for jobs are kept on file. Copies of these recommendations are sent to prospective employers upon request. The Center also posts announcements for teaching jobs available locally and in schools around the country. Students seeking employment in school districts off Long Island are invited to participate in the Long Island Teachers Recruitment Consortium. For more information, contact the Career Center at (631) 682-6810 (Voice/TDD).

The following sections describe specific requirements for each of the University's Teacher Preparation Programs.

English Secondary Teacher Preparation Program

PROGRAM COORDINATOR: Elsa Emenheiser,
Department of English

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

Note: The University is in the process of revising its teacher education curriculum to bring it into compliance with the new standards approved by the New York State Board of Regents. Students should consult an English Secondary Teacher Preparation advisor for further details.

- A. All requirements for the major in English.
- B. A 3.00 grade point average.
- C. A writing sample.
- D. Professional educational requirements:
 1. SSI 327 Middle Childhood and Adolescent Growth and Development
 2. SSI 350 Foundations of Education
 3. EGL 393 Performance and Technology in Teaching Literature and Composition
 4. EGL 398 Methods of Instruction in Literature and Composition
 5. EGL 451 Supervised Teaching—Grades 7-9
 6. EGL 452 Supervised Teaching—Grades 10-12
 7. EGL 454 Student Teaching Seminar

Note: Courses taken for Pass/No Credit may not be used to satisfy the professional education component of the Teacher Preparation Program.

Foreign Languages Secondary Teacher Preparation Program

PROGRAM DIRECTOR: Sarah Jourdain,
European Languages, Literatures, and Cultures

Requirements for Provisional Certification

Note: The University is revising its teacher education curriculum to bring it into compliance with the new standards approved by the New York State Board of Regents. Students should consult a Foreign Language Secondary Teacher Preparation advisor for further details.

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 Middle Childhood and 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 451 Supervised Teaching—Foreign Language, Grades 7-9
- F. FLA 452 Supervised Teaching—Foreign Language, Grades 10-12
- G. FLA 454 Student Teaching Seminar

Notes:

1. Courses taken for Pass/No Credit may not be used to satisfy the professional education component of the teacher preparation program.
2. Students should consider FLA 439, Introduction to Technology for Language Teaching, and FLA 440, Foreign Language Acquisition Research, in choosing electives for their major.
3. Prospective student teachers are urged to take as many advanced language courses as possible through the semester prior to student teaching. It is also highly recommended that students participate in a study abroad program prior to student teaching. Students must complete 36 credit hours of courses in the language to be eligible for certification. Courses taught in English will not satisfy the language requirement for certification purposes. 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.

French, German, Italian, or Russian Secondary Teacher Preparation Program

Students who wish to prepare for certification as secondary school teachers of French, German, Italian, or Russian or any combination of two languages, including Spanish, 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 courses in education required by the State Education Department. To be eligible for FLA 339,

students must have declared a language major, and have taken at least one 300-level language course and one 300-level literature course. Students must have maintained a 3.00 g.p.a. in the major and a 2.75 g.p.a. overall. Those seeking certification in German are urged to take GER 411, 412, and 438 in addition to the courses required for the major and certification. Students seeking certification in Russian are urged to take RUS 439 when possible. Please see the course descriptions for the Foreign Languages Secondary Teacher Preparation Program (FLA).

Spanish Secondary Teacher Preparation Program

Students who wish to prepare for certification as secondary school teachers of Spanish should choose SPN 462, 463, or 465 in satisfying major requirement A5. They should consult appropriate departmental advisors concerning additional requirements and procedures in the teacher preparation program. To be eligible to enter student teaching, students must have maintained a 3.00 grade point average in the major and a 2.75 grade point average overall. See the course descriptions for the Foreign Languages Secondary Teacher Preparation Program (FLA).

Mathematics Secondary Teacher Preparation Program

ACTING PROGRAM DIRECTOR: Anthony Phillips

PROGRAM COORDINATOR: Elyse Magram,
Department of Mathematics

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 Coordinator of the Mathematics Teacher Preparation Program as soon as they have completed the basic requirements of one year of calculus (i.e. MAT 131 and 132, or MAT 141 and 142, or MAT 125, 126, and 127), MAT 200, and MAT 211 or AMS 210. In order to enroll in the program, students must have a B average in these courses.

Note: MAT 200 is a writing-intensive course concerned with logic and proofs.

This new requirement will be binding on all students entering the program in fall 2001 or later.

Requirements for Provisional Certification

The Mathematics Education Program has revised its Teacher Education Program and is compliant with the new standards approved by the New York State Board of Regents. Students should consult with the Coordinator for details.

1. Completion of either the mathematics (MAT) or the applied mathematics and statistics (AMS) major.
2. Credit for, or exemption from, the following courses:
 - MAT 200; MAT 313, 318, or 320; MAT 360 or 364
 - AMS 310
 - MAE 301, 302, 311, 312, 447, 451, 452, 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 begin the study of methods of teaching and visit schools for a total of 36 hours to observe math classes (MAE 311). In the spring they continue their study of methods and engage in 48 limited classroom hours of participation and 18 hours of inclusion work (MAE 312). In one semester of the senior year, students carry out supervised student teaching (MAE 451 and 452) and participate in an associated student teaching seminar (MAE 454). In MAE 447, students write an intensive research paper. In SSI courses, students learn adolescent and child psychology.

Students in the program are strongly encouraged to include AMS 301 as an elective and to take a one-year sequence that uses mathematics in physics, chemistry, biology, engineering science, or economics. Students are also encouraged to take MAE 330 (Technology in Mathematics 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.

Sample Program (Required Courses Only for Mathematics Secondary Teacher Certification)

Freshman: MAT 131, 132 (or 141, 142 or AMS 151, 152); MAT 200

Sophomore: MAT 211 or AMS 210; MAT 203, 205, or AMS 261; AMS 261; AMS 310; MAT 303, 305, or AMS 361; MAT 312, 313, or 318

Junior: Fall MAE 301 and 311, MAT 320, SSI 327 and 350, MAT 360 or 364. Spring MAE 302 and 312, MAT 331, MAE 330, or CSE 113, MAT 310.

Senior: MAE 451, 452, and 454; Any other courses needed for (University) D.E.C., language, and any other department requirements.

Science Education Program

PROGRAM DIRECTOR: Jacqueline Grennon-Brooks, Science Education Program

PROGRAM ADMINISTRATOR: Bonnie Ginsberg
PHONE: (631) 632-7075

WEB ADDRESS: www.sunysb.edu/sep

Faculty

Lynda Adams, *Lecturer, M.A., University at Stony Brook.*

Dennis Allendorph, *Lecturer, M.A., University at Stony Brook.*

Catherine Bennett, *Lecturer, M.A.L.S., University at Stony Brook.*

Jacqueline Grennon Brooks, *Associate Professor, Ed.D., Columbia University: Science education.*

Anthony Messina, *Lecturer, M.A., New York University.*

Lester G. Paldy, *Distinguished Service Professor, M.S., Hofstra University: Arms control verification and negotiation; science education policy.*

Affiliated Faculty

William F. Collins III, *Biology*

Robert C. Kerber, *Chemistry*

Donald Lindsley, *Geosciences*

Robert McCarthy, *Physics and Astronomy*

The Science Education Program 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. The program is designed to be taken sequentially in the last three semesters of your degree program. The first two semesters require one morning a week of clinical

practice in supervised campus programs and one afternoon or evening per week of methods classes. The third semester is a full student teaching experience in a regional school with an accompanying once-per-week afternoon seminar at the University.

All undergraduate science education candidates must major in the scientific discipline that they propose to teach.

All applicants must:

- Contact the appropriate science teacher preparation program advisor for a transcript review; the student and advisor jointly plan a course of study appropriate to the student's background.
- Achieve a 2.75 cumulative g.p.a. and a 2.75 g.p.a. in all science courses.
- Officially declare a science education major.

Requirements for Provisional Certification in Any of the Sciences

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 30 credits, in order to satisfy current requirements for New York State provisional certification:

- SCI 410 Pedagogy and Methods for Science Education I
- SCI 420 Pedagogy and Methods for Science Education II
- SCI 441 Clinical Experience and Action Research I
- SCI 442 Clinical Experience and Action Research II
- SCI 451 Supervised Teaching—Middle Level Science (grades 7-9)
- SCI 452 Supervised Teaching—High School Science (grades 10-12)
- SCI 454 Science Student Teaching Seminar
- SSI 327 Middle Childhood and Adolescent Growth and Development
- SSI 350 Foundations of Education

Note: Courses taken for Pass/No Credit may not be used to satisfy the professional education component of the Teacher Preparation Program.

Biology Secondary 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 Science Education Program. Guidelines used by the teacher selection committee include a minimal overall g.p.a. of 2.75. Consult the director of undergraduate biology for further details about appropriate biology courses. Consult the Science Education Program for further details about professional development courses.

Chemistry Secondary Teacher Preparation Program

This program is designed for students preparing to teach chemistry in secondary schools. Professional courses are provided through the Science Education Program. Consult the director of undergraduate studies in chemistry for more details about appropriate chemistry courses. Consult the Science Education Program for more details about professional development courses.

Earth Sciences Secondary Teacher Preparation Program

This program is designed for the student who is preparing to teach earth sciences in secondary schools. Professional courses are provided through the Science Education Program. Consult the director of undergraduate studies in the Department of Geosciences for further details about appropriate disciplinary courses. Consult the Science Education Program for further details concerning professional development courses.

Physics Secondary Teacher Preparation Program

This program is designed for the student who is preparing to teach physics in secondary schools. Professional courses are provided through the Science Education Program. Consult the director of undergraduate studies in physics for further details about appropriate physics courses. Consult the Science Education Program for further details concerning professional development courses.

Social Studies Secondary Teacher Preparation Program

DIRECTOR: Georges Fouron, *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. A minimum cumulative g.p.a. of 2.75 is required for student teaching placement. In addition, a minimum grade of C is required in all courses used to satisfy program requirements.

Students who wish to enter this program are expected to consult the program director and establish an advising folder prior to the beginning of their 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 and D.E.C. requirements.

Requirements for Provisional Certification

Note: The University is revising its teacher education curriculum to bring it into compliance with the new standards approved by the New York State Board of Regents. Students should consult a Social Studies Secondary Teacher Preparation advisor for further details.

A. Preparation in Social Science

In addition to the major components of teacher preparation programs outlined on page 152, a minimum of 48 credits in social science departments or interdisciplinary programs, excluding psychology and linguistics, must be met by all candidates.

1. Included in the social science credits must be at least 18 credits distributed as follows:
 - 3 credits in economics
 - 3 credits in Asian history
 - 3 credits in African history
 - 3 credits in Latin American history
 - 3 credits in U.S. history
 - 3 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 Middle Childhood and Adolescent Growth and Development
 SSI 350 Foundations of Education
 SSI 397 Teaching Social Studies
 SSI 398 Social Studies Teaching Strategies
 SSI 451 Supervised Teaching—Social Studies, Grades 7-9
 SSI 452 Supervised Teaching—Social Studies, Grades 10-12
 SSI 454 Student Teaching Seminar

Notes:

1. Courses taken for Pass/No Credit may not be used to satisfy the 48-credit Requirement A, Preparation in Social Science.
2. Courses taken for Pass/No Credit may not be used to satisfy the 27-credit Requirement B, Preparation in Professional Education.

3. BUS 210, 214, and 310 may not be used to satisfy the requirements of this program.

Teaching English to Speakers of Other Languages (TESOL) Preparation Program

DIRECTOR: Dorit Kaufman, *Department of Linguistics*

The program outlined below is restricted to students majoring in Linguistics; it leads to provisional certification in teaching English to Speakers of Other Languages (TESOL) from pre-kindergarten to grade 12. Students must consult with the program director as soon as they decide to seek certification.

Requirements for Provisional Certification

Note: The University is revising its teacher education curriculum to bring it into compliance with the new standards approved by the New York State Board

of Regents. Students should consult a TESOL advisor for further details.

- A. All requirements for the major in Linguistics.
- B. A 3.00 major grade point average and 2.75 grade point average overall.
- C. Courses in linguistics, and social and anthropological aspects of language: LIN 101, 201, and 307.
- D. Courses in professional preparation: SSI 350 Foundations of Education, SSI 327 Middle Childhood and Adolescent Growth and Development, LIN 375, 378, 451, 452, 454.
- E. Language Study: 12 college-level credits of a modern foreign language (e.g., Chinese, French, German, Hindi, Italian, Japanese, Russian, Spanish) or American Sign Language.

Note: Courses taken for Pass/No Credit may not be used to satisfy the preparation in professional education component of the Teacher Preparation Program.

Pathways to Certification
Initial Licensure

	English*	European Languages*	Mathematics*	Sciences*	Social Sciences*	TESOL**
Adolescent Growth/Development	SSI 327	SSI 327	SSI 327	SSI 327	SSI 327	SSI 327
Foundations of Education	SSI 350	SSI 350	SSI 350	SSI 350	SSI 350	SSI 350
Methods Courses	EGL 398 EGL 393	FLA 339 FLA 340	MAE 301/311 MAE 302/312	SCI 410 SCI 420	SSI 397 SSI 398	LIN 375 LIN 378
Clinical Experience/Action Research	TBD	FLA 440	MAE 447	SCI 441 SCI 442	TBD	TBD
Literacy Course	TBD	TBD	TBD	TBD	TBD	TBD
Student Teaching	EGL 451 EGL 452	FLA 451 FLA 452	MAE 451 MAE 452	SCI 451 SCI 452	SSI 451 SSI 452	LIN 451 LIN 452
Student Teaching Seminar	EGL 454	FLA 454	MAE 454	SCI 454	SSI 454	LIN 454
36 credits in Content	EGL courses	FRN, GER, ITL, RUS, SPN courses	Mathematics courses	BIO, CHE, ESS, PHY courses	ANP, ECO, HIS, POL, SOC courses	

Professional Licensure

- Four years of teaching at Level (first-year to mentored)
- Functionally relevant Master's Degree
- NYSTCE; ATS-P

License Maintenance

- 175 hours of in-service coursework within 5 years

• Please note that the segments dealing with: integration of technology in the curriculum, inclusion of the special child, multi-culturalism and diversity in the classroom, and literacy (the teaching of reading and writing English in each content field) must be included in the two foundations courses and in the methods courses *as well as* in a specially designed course which will be taught across the curricula.
 • All teachers in the State of New York *must* be U.S. citizens or have filed a *Declaration of Intent* to become a citizen in order to be licensed.
 • Students who plan to achieve certification after Fall 2003 must satisfy all new NYSED requirements.

*For all teachers in the State of New York (except TESOL teachers): 1) One year of a language other than English is required; 2) Evidence of completion of the LAST, ATS-W, and CST must be submitted; 3) As of July 1, 2000, evidence of completion of child and substance abuse seminars must be submitted
 **For all TESOL teachers in the State of New York: 1) Two years of a language other than English is required; 2) Evidence of completion of the LAST, ATS-W and English proficiency test must be submitted; 3) As of July 1, 2000, evidence of completion of child and substance abuse seminars must be submitted.

ESE

Major and Minor in

Electrical Engineering

Department of Electrical and Computer Engineering, College of Engineering and Applied Sciences

CHAIRPERSON: Serge Luryi UNDERGRADUATE PROGRAM DIRECTOR: Ridha Kamoua STAFF ASSISTANT: Carolyn Huggins

OFFICE: 267 Light Engineering PHONE: (631) 632-8415 E-MAIL: postmaster@ece.sunysb.edu WEB ADDRESS: www.ece.sunysb.edu

Minors of particular interest to students majoring in electrical or computer engineering: applied mathematics and statistics (AMS), computer science (CSE), science and engineering (LSE)

Faculty

Gregory L. Belenky, *Professor, Ph.D., Institute of Semiconductors, Kiev, Ukraine; D.Sc., Institute of Physics and Mathematics, Baku, Russia:* Semiconductor devices; physics and technology; lasers for telecommunication.

Sheldon S.L. Chang, *Professor Emeritus, Ph.D., Purdue University:* Optimal control; energy conservation; information theory; economic theory.

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:* Fiber-optic sensors; optical signal processing; photon correlation spectroscopy; inverse problems.

Petar M. Djuric, *Associate Professor, Ph.D., University of Rhode Island:* Signal processing; systems theory.

Alexa Doboli, *Assistant Professor, Ph.D., University of Cincinnati:* VLSI; CAD with emphasis on hardware/software co-design; mixed-signal synthesis and high-level systems.

Mikhail N. Dorojevets, *Associate Professor, Ph.D., Russian Academy of Sciences, Novosibirsk:* Parallel computer architecture; high-performance systems design.

Vera Gorfinkel, *Associate Professor, Ph.D., A.F. Ioffe Physical-Technical Institute, St. Petersburg, Russia:* Semiconductor devices, including microwave and optoelectronics.

Sangjin Hong, *Assistant Professor, Ph.D., University of Michigan:* Low-power VLSI design of multimedia wireless communications and digital signal processing systems, including SOC design methodology and optimization.

Ridha Kamoua, *Associate Professor, Ph.D., University of Michigan:* Solid-state devices and circuits; microwave devices and integrated circuits.

Adrian Leuciuc, *Assistant Professor, Ph.D., Technical University of Iasi, Romania:* Analog integrated circuits design; nonlinear circuits and systems; nonlinear adaptive signal processing.

Serge Luryi, *Professor, Ph.D., University of Toronto:* High speed solid-state electronic and photonic devices; semiconductor physics and technology.

Velio A. Marsocci, *Distinguished Service Professor Emeritus, Eng.Sc.D., New York University:* Solid-state electronics; integrated electronics; biomedical engineering.

John Murray, *Associate Professor, Ph.D., University of Notre Dame:* Signal processing; systems theory.

Andrea Pacelli, *Assistant Professor, Ph.D., Politecnico di Milano, Italy:* Semiconductor device modeling; compact semiconductor device modeling; physics and simulation of heterojunction bipolar transistors.

Jayantkumar P. Parekh, *Professor, Ph.D., Polytechnic Institute of Brooklyn:* Microwave acoustics; microwave magnetics; microwave electronics; microcomputer applications.

Stephen S. Rappaport, *Professor Emeritus, Ph.D., New York University:* Communication theory; systems theory.

Thomas G. Robertazzi, *Associate Professor, Ph.D., Princeton University:* Computer communications; performance evaluation; parallel processing.

Yacov Shamash, *Professor, Ph.D., Imperial College:* Control systems and robotics.

Kenneth L. Short, *Professor, Ph.D., University at Stony Brook:* Digital system design; embedded microprocessor systems; 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, *Professor, Ph.D., University of Maryland at College Park:* Computer vision; image processing.

Stephen E. Sussman-Fort, *Associate Professor, Ph.D., University of California, Los Angeles:* Electronic circuits; CAD; solid-state electronics; electromagnetics; semiconductor devices.

Wendy K. Tang, *Associate Professor, Ph.D., University of Rochester:* Parallel and distributed processing; massively parallel systems; computer architecture; neural networks.

Hang-Sheng Tuan, *Professor, Ph.D., Harvard University:* Electromagnetic theory; integrated optics; microwave acoustics.

Yuanyuan Yang, *Associate Professor, Ph.D., Johns Hopkins University:* Parallel and distributed computing and systems; high speed networks; optical networks; high performance computer architecture; fault-tolerant computing.

Armen H. Zemanian, *Distinguished Professor, Eng.Sc.D., New York University:* Network theory; VLSI modeling.

Affiliated Faculty

Gene R. Gindi, *Radiology*

John H. Marburger, *Physics*

Adjunct Faculty

Estimated number: 3

Teaching Assistants

Estimated number: 30

The Department of Electrical and Computer Engineering offers two majors leading to the Bachelor of Engineering (B.E.) degree. The department's teaching and research areas include computer engineering, computer networks, microprocessors, computer architecture, communications, signal and image processing, pattern recognition, electronic circuits, solid-state electronics, lasers and fiber-optics, electromagnetics, microwave electronics, systems and control, biomedical engineering, VLSI, computer-aided design, parallel and distributed processing, computer vision, and computer graphics.

The objective of the electrical and computer engineering programs is to give students an excellent preparation for professional careers or graduate studies in the electrical engineering fields. The programs provide students with depth and breadth of knowledge in engineering science and engineering design as well as in mathematics and the natural sciences. Development of non-technical skills such as communication and teamwork is also emphasized. The two programs share a common core curriculum in the freshman and sophomore years with specialization taking place during the junior and senior years. See the entry in the alphabetical listings of Approved Majors, Minors, and Programs for the requirements for the major in computer engineering.

Following graduation many students choose immediate employment in industry from Long Island to the west coast. Electrical engineers are recruited in diverse fields for a variety of challenging positions: a communications engineer

may work on improving the flow of traffic in communications networks; a command and control engineer may work on systems in tactical and traffic control, satellite and surveillance systems, or in commercial applications; a circuit design engineer designs, develops, and manufactures electronic circuits for many applications including microcomputers; and computer engineers design microprocessor-based systems that include a range of consumer products, industrial machinery, and specialized systems. Graduates also pursue advanced degrees in engineering, business, finance, medicine, law, and other professions in which their problem-solving skills and technical knowledge are valuable qualities.

Courses Offered in Electrical and Computer Engineering

See the Course Descriptions listing in this *Bulletin* for complete information.

ESE 123 Introduction to Electronic Design
 ESE 124 Computer Techniques for Electronic Design
 ESE 211 Electronics Laboratory A
 ESE 271 Electrical Circuit Analysis I
 ESE 275 Fundamentals of Electrical Engineering
 ESE 290 Transitional Study
 ESE 300 Writing in Electrical/Computer Engineering
 ESE 304 Electronic Instrumentation and Operational Amplifiers
 ESE 305 Deterministic Signals and Systems
 ESE 306 Random Signals and Systems
 ESE 307 Analog Filter Design
 ESE 310 Electrical Circuit Analysis II
 ESE 311 Electronic Circuits Design
 ESE 312 Microwave Electronics
 ESE 314 Electronics Laboratory B
 ESE 315 Control System Design
 ESE 316 Digital Devices and Circuits
 ESE 318 Digital Systems Design
 ESE 319 Introduction to Electromagnetic Fields and Waves
 ESE 320 Microwave Electronics Laboratory
 ESE 321 Electromagnetic Waves and Fiber Optics
 ESE 324 Electronics Laboratory C
 ESE 330 Integrated Electronics

ESE 331 Introduction to Semiconductor Devices
 ESE 332 Semiconductor Device Characterization
 ESE 333 Real-Time Operating Systems
 ESE 337 Digital Signal Processing: Theory
 ESE 340 Basic Communication Theory
 ESE 341 Information Theory and Coding
 ESE 342 Digital Communications Systems
 ESE 343 Modern Electronic Communications Laboratory
 ESE 344 Software Tools for Engineers
 ESE 345 Computer Architecture
 ESE 346 Computer Communications
 ESE 347 Digital Signal Processing: Implementation
 ESE 349 Introduction to Fault Diagnosis of Digital Systems
 ESE 350 Electrical Power Systems
 ESE 351 Energy Conversion
 ESE 352 Electromechanical Energy Converters
 ESE 357 Digital Image Processing
 ESE 358 Computer Vision
 ESE 362 Optoelectronic Devices and Optical Imaging Techniques
 ESE 371 Computer Graphics
 ESE 372 Electronics
 ESE 380 Embedded Microprocessor Systems Design I
 ESE 381 Embedded Microprocessor Systems Design II
 ESE 382 Digital Design Using VHDL and PLDs
 ESE 390 Special Topics in Digital Systems
 ESE 440 Engineering Design I
 ESE 441 Engineering Design II
 Research, teaching practica, and internship courses

Acceptance into the Electrical Engineering Major

Freshman and transfer applicants who have specified their interest in the major in electrical engineering may be accepted into the major upon admission to the University. Applicants admitted to the University but not immediately accepted into the electrical engineering major may apply for acceptance to the major at any time during the academic year. The

department's enrollment committee will consider an application only if the following conditions have been met:

1. the student has completed at least 12 credits of mathematics, physics, or electrical and computer engineering courses required for the major
2. the student has earned a grade point average of 3.00 or higher in these courses with no grade in any of them lower than C
3. no courses required for the major have been repeated
4. all transfer courses have been evaluated.

Requirements for the Major in Electrical Engineering (ESE)

The curriculum begins with a focus on basic mathematics and natural sciences followed by courses that emphasize engineering science and bridging courses that combine engineering science and design. The series of courses culminates with a one-year design experience that integrates various engineering skills and knowledge acquired. A minimum of six technical electives taken in the Electrical and Computer 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.

Completion of the (major) requires approximately 100 credits.

1. Mathematics

AMS 151, 161 Applied Calculus I, II
 AMS 261 or MAT 203 Applied Calculus III
 AMS 361 or MAT 303 Applied Calculus IV

Note: The following alternate calculus course sequences may be substituted for AMS 151, 161 in major requirements or prerequisites:

MAT 125, 126, 127

or MAT 131, 132

or MAT 141, 142

2. Natural Sciences

PHY 131, 132 Classical Physics I, II
 CHE 198 and 199 Chemistry for Engineers

PHY 251 Modern Physics or ESG 281 Introduction to the Solid State

Note: The physics course sequence PHY 125, 126, 127 or 141, 142 is accept-

major (~~credits~~) + DEC.

can be shared.

ed in lieu of PHY 131, 132. (Students are advised to take PHY 127 before PHY 126.) The chemistry course sequence CHE 131, 132, and 133 or 141, 142, and 143 is accepted in lieu of CHE 198 and 199

Sample Course Sequence in the Electrical Engineering Major

3. Freshman Introduction to Electrical Engineering

ESE 123 Introduction to Electronic Design

ESE 124 Computer Techniques for Electronic Design

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 (revising) systems, components, or processes.

a. Engineering Sciences

ESE 211 Electronics Laboratory A

ESE 271 Electrical Circuit Analysis I

ESE 305 Deterministic Signals and Systems

ESE 318 Digital Systems Design

ESE 319 Introduction to Electromagnetic Fields and Waves

ESE 372 Electronics

MEC 259 Particle and Rigid Body Mechanics

One of the following:

ESG 302 Thermodynamics of Materials

ESG 332 Materials Science I: Structure and Properties of Materials

ESG 333 Materials Science II: Electronic Properties

b. Engineering Design

ESE 314 Electronics Laboratory B

ESE 324 Electronics Laboratory C

ESE 440 Engineering Design I

ESE 441 Engineering Design II

Note: ESE 440, 441 are engineering design project courses that must be carried out at Stony Brook under the supervision of an Electrical and Computer Engineering faculty member.

5. Probability and Statistics

ESE 306 Random Signals and Systems

Freshman Fall	Credits
D.E.C. A	3
AMS 151#	3
PHY 131#	4
ESE 123	4
Total	14

Spring	Credits
AMS 161#	3
PHY 132#	4
ESE 124	3
CHE 198	4
CHE 199	1
Total	15

Sophomore Fall	Credits
AMS 361 or MAT 303	4
ESE 271#	4
ESE 305	3
ESE 318#	4
D.E.C.	3
Total	18

Spring	Credits
AMS 261 or MAT 203	4
ESE 211#	2
ESE 306	3
ESE 372#	4
D.E.C.	3
Total	16

Junior Fall	Credits
ESE 314	3
ESE 319	3
ESE technical elective#	3
MEC 259	4
D.E.C.	3
Total	16

Spring	Credits
PHY 251 or ESG 281	3-4
ESE 300	1
ESE 324	2
ESE technical elective#	3
ESE technical elective#	3
ESE technical elective#	3
Total	15-16

Senior Fall	Credits
ESE 440	3
ESE technical elective#	3
Technical elective	3
ESG 302 or 332 or 333	4
D.E.C.	3
Total	16

Spring	Credits
ESE 441	3
ESE technical elective#	3
Technical elective	3
D.E.C.	3
D.E.C.	3
Total	15

Note: Courses with a # must be completed with a C or higher.

These sequences ensure that prerequisites and corequisites are taken in the proper order.

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.

- ESE 304 307 311 315 316
- 321 330 331 332 337 340
- 342 346 347 350 362 363
- 380 381 (350 352)

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; AMS 151, 161 (or equivalent courses); PHY 181, 182 (or equivalent courses); and six ESE technical electives.

Specialized Areas in Electrical Engineering

专业

The following is a list of major specialization areas:

Bioengineering

Communications and Signal Processing

Control and Systems

Power and Energy Systems

Electronic Circuits and Devices

Solid-State Electronics

Electromagnetic Fields and Optical Systems

This list is not exhaustive. For more detailed information concerning additional areas and specific course recommendations, students should consult the Undergraduate Guide to Electrical Engineering, available in the department's office.

Requirements for the Minor in Electrical Engineering (ESE)

The Electrical Engineering minor is intended for students with majors other than Electrical or Computer Engineering who seek to complement their chosen major through an introduction to the principles and techniques of electrical engineering. Students interested in the minor should apply through the office of the Department of Electrical and Computer Engineering, as early as possible. A cumulative grade point average of 2.75 is required for admission to the minor.

Students seeking to complete the ESE minor must meet the relevant prerequisites and corequisites of each ESE course.

At least nine credits must be in upper-division courses. All courses for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 21 credits.

1. ESE 123 (4 credits)
2. ESE 271 (4 credits)

3. Four or five ESE courses for a total of at least 13 credits.

Note: Students may not take ESE 124, 275, 300, 324, 440, 441, 475, 488, or 499 for credit toward the minor.

EOM

Minor in

Electronic, Optical, and Magnetic Materials

Department of Materials Science and Engineering, College of Engineering and Applied Sciences

CHAIRPERSON: Michael Dudley, Materials Science and Engineering UNDERGRADUATE PROGRAM DIRECTOR: Christopher C. Berndt

ADMINISTRATIVE ASSISTANT: Gertha Benoit-Hollis

OFFICE: 314 Engineering PHONE: (631) 632-8484 E-MAIL: ghollis@notes.cc.sunysb.edu WEB ADDRESS: <http://DOL1.eng.sunysb.edu/>

The Department of Materials Science and Engineering offers the minor in Electronic, Optical, and Magnetic Materials, suitable for engineering science students or for non-engineering science students who seek to obtain a more thorough understanding of the engineering sciences. Engineering science, computer engineering, electrical engineering, mechanical engineering, and applied mathematics and statistics students can assemble a sequence of courses with 18-24 credits to satisfy an engineering science minor. Courses used to satisfy the requirements of the minor may not be used to satisfy requirements of another minor in engineering science. The student's program must be approved by the undergraduate program director, Department of Materials Science and Engineering, Engineering Building, Room 314.

Requirements for the Minor in Electronic, Optical, and Magnetic Materials (EOM)

Completion of the minor requires 18-24 credits.

Requirements for students majoring in Engineering Science (ESG):

1. ESE 318 Digital Systems Design *and* ESE 380 Embedded Microprocessor Systems Design II
or ESE 312 Microwave Electronics *and* ESE 315 Control System Design
2. Five courses chosen from:
BNG/ESG 201 Engineering Responses to Society
ESE 319 Introduction to Electronmagnetic Fields
ESE 321 Electromagnetic Waves and Fiber Optics
ESM 325 Diffraction Techniques and Structure of Solids
ESM 336 Electronic Materials
ESM 369 Polymers
ESM 488 Cooperative Industrial Practice
ESM 499 Research in Materials

Requirements for all other students:

1. ESE 318 Digital Systems Design *and* ESE 380 Embedded Microprocessor Systems Design II
or ESE 312 Microwave Electronics *and* ESE 315 Control System Design
2. ESE 123 Introduction to Electronic Design
or ESG 100 Introduction to Engineering Science
or MEC 100 Introduction to Mechanical Engineering
3. BNG/ESG 201 Engineering Responses to Society
4. Three courses chosen from:
ESE 319 Introduction to Electronmagnetic Fields
ESE 321 Electromagnetic Waves and Fiber Optics
ESM 325 Diffraction Techniques and Structure of Solids
ESM 336 Electronic Materials
ESM 369 Polymers
ESM 488 Cooperative Industrial Practice *or* ESM 499 Research in Materials

ECM

Interdisciplinary Program in Engineering Chemistry

Department of Chemistry, College of Arts and Sciences; Department of Materials Science and Engineering, College of Engineering and Applied Sciences

DIRECTOR: Robert Kerber, Chemistry DIRECTOR EMERITUS: Patrick Herley, Materials Science and Engineering

STUDENT AFFAIRS COORDINATOR: Diane Godden OFFICE: 109 Chemistry PHONE: (631) 632-7886 E-MAIL: rkerber@notes.cc.sunysb.edu

Minors of particular interest to students majoring in engineering chemistry: science and engineering (LSE)

The Interdisciplinary Program in Engineering Chemistry, 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.

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 in Engineering Chemistry (ECM)

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; P/NC grades are not acceptable. All chemistry and engineering courses must be passed with a grade of C or higher with the exception of three courses for which the grade may be C-. No transferred course with a grade lower than C may be used to fulfill any major requirement.

Completion of the major requires approximately 65 to 67 credits.

A. Mathematics and Basic Science Requirements

1. MAT 131, 132 Calculus I, II (see note, below)
2. One of the following pairs of courses: AMS 261 and 361 Engineering Mathematics I, II;
or MAT 205 and 305 Calculus III, IV;
or MAT 203 and 303 Calculus III, IV with Applications
3. MEC 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

7. PHY 251/252 Modern Physics and Laboratory

or ESG 281 An Engineering Introduction to the Solid State

Note: The following alternate calculus sequences may be substituted for MAT 131, 132: MAT 141, 142 or 125, 126, 127.

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 Organic Chemistry
or CHE 331 Honors 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 chemistry or materials science coursework, at least two of which should be full laboratory reports from chemistry or materials science 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

Students make a selection of technical and open electives to total 120 credits. Students are advised to divide their electives among courses within the College of Engineering and Applied Sciences and the Department of Chemistry 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 Chemistry Society certification requirements must take, in addition to the above, CHE 322 (organic), 346 (biological), 375 (inorganic), and the laboratories CHE 383, 384.

Bachelor of Science Degree/Master of Science Degree in Chemistry Program

A student interested in this research-intensive graduate program, intended to prepare students for professional employment in the chemical or pharmaceutical industries, may apply for admission at the end of the junior year. The program leads to a Bachelor of Science degree in Engineering Chemistry at the end of the fourth year and a Master of Science in Chemistry at the end of the fifth year. During the senior year, the student is expected to take two 500-level CHE courses and begin research. In the fifth year, the student works full-time on research, earning 24 credits in CHE 599.

Bachelor of Science Degree in Chemistry/Master of Science Degree in Materials Science

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, contact the director of the program in engineering chemistry.

Sample Course Sequence for the Major in Engineering Chemistry

Freshman Fall		Credits		Spring		Credits	
D.E.C. A	3	D.E.C. A	3	CHE 142 or 132	4	CHE 144 or 134	1
MAT 131	4	CHE 142 or 132	4	MAT 132	4	MEC 111	3
CHE 141 or 131	4	CHE 144 or 134	1	MAT 132	4	Total	15
CHE 143 or 133	1	MAT 132	4	MEC 111	3		
D.E.C.	3	Total	15	Total	15		
Total	15						

Sophomore Fall		Credits		Spring		Credits	
CHE 221 or ESM 221	3	CHE 302	4	AMS 361	3	PHY 132	4
CHE 301	4	AMS 361	3	PHY 132	4	D.E.C.	4
CHE 303	2	PHY 132	4	D.E.C.	4	Total	15
AMS 261	3	D.E.C.	4	Total	15		
PHY 131	4	Total	16				
Total	16						

Junior Fall		Credits		Spring		Credits	
CHE 331 or 321	3	CHE 304	2	ESG 333	4	D.E.C.	3
ESG 281 or PHY 251/252	4	ESG 333	4	D.E.C.	3	D.E.C.	3
ESG 332	4	D.E.C.	3	Elective	3	Total	15
D.E.C.	3	D.E.C.	3	Total	15		
Total	14						

Senior Fall		Credits		Spring		Credits	
ESM 302	3	D.E.C.	3	D.E.C.	3	Electives	9
D.E.C.	3	D.E.C.	3	Electives	9	Total	15
D.E.C.	3	Electives	9	Total	15		
Upper-Division elective	3	Total	15				
Elective	3						
Total	15						

ESG

Major in

Engineering Science

Department of Materials Science and Engineering, College of Engineering and Applied Sciences

CHAIRPERSON: Michael Dudley UNDERGRADUATE PROGRAM DIRECTOR: Christopher C. Berndt

ADMINISTRATIVE ASSISTANT: Gertha Benoit-Hollis

OFFICE: 314 Engineering PHONE: (631) 632-8484 E-MAIL: ghollis@notes.cc.sunysb.edu WEB ADDRESS: <http://DOL1.eng.sunysb.edu/>

Minors of particular interest to students majoring in Engineering Science: biomedical engineering (BES), electronic, optical, and magnetic materials (EOM), manufacturing engineering (MFE), materials science (ESM), physical metallurgy (PME)

Faculty

Marita Allen, *Adjunct Associate Professor, Ph.D., Monash University*: Corrosion; cements.

Robert Bari, *Adjunct Professor, Ph.D., Brandeis University*: Condensed matter physics; nuclear waste management; probabilistic risk assessment.

Christopher C. Berndt, *Professor, Ph.D., Monash University*: Condensed matter physics; nuclear waste management; probabilistic risk assessment.

Clive R. Clayton, *Professor, Ph.D., University of Surrey*: Structure and properties of materials; thin film processing.

Benjamin Dorfman, *Adjunct Professor, Sc.D., Institute of Semiconductors, Novosibirsk*: Physics and technology of solid-state devices.

Michael Dudley, *Professor, Ph.D., University of Warwick*: Synchrotron X-ray topography; defects in single crystals.

A.J. Francis, *Adjunct Professor, Ph.D., Cornell University*: Environmental remediation; radiological materials analysis.

Richard J. Gambino, *Professor and Principal Research Scientist, M.S., Polytechnic Institute of New York*: Magnetic thin films; magneto-optical properties.

Dilip Gersappe, *Assistant Professor, Ph.D., Northwestern University*: Polymer science; computational methods in materials science.

Allen N. Goland, *Adjunct Professor, Ph.D., Northwestern University*: Solid-state physics.

Pelagia Irene Gouma, *Assistant Professor, Ph.D., University of Birmingham*: Microstructural characterization of advanced materials; electron microscopy; microanalysis.

Gary P. Halada, *Assistant Professor, Ph.D., University at Stony Brook*: Surface analysis; engineering design; environmental remediation; infrared spectroscopy.

Herbert Herman, *Professor, Ph.D., Northwestern University*: Materials engineering; surface engineering; physical metallurgy.

James K. Hirvonen, *Adjunct Professor, Ph.D., Rutgers University*: Surface engineering; ion beam methods; coatings.

Hugh Isaacs, *Adjunct Professor, Ph.D., Imperial College*: Surface defects; surface analysis.

Peter D. Johnson, *Adjunct Professor, Ph.D., University of Warwick*: Spin-polarized photo-emission.

Franco P. Jona, *Professor, Ph.D., Eidgenossische Technische Hochschule*: Solid-state physics; modern materials.

Mahn Won Kim, *Adjunct Professor, Ph.D., University of California, Santa Barbara*: Light-scattering; Langmuir-Blodgett films.

David J. Larson, Jr., *Research Professor and Principal Research Scientist, Ph.D., Northwestern University*: Crystal growth; microgravity materials science.

Chou Li, *Adjunct Professor, Ph.D., Purdue University*: Physical metallurgy.

Paul Marcus, *Adjunct Professor, Ph.D., Massachusetts Institute of Technology*: Atomic scale surface structure; electron diffraction; magnetic properties of metals.

Kenneth McLeod, *Adjunct Professor, Ph.D., Massachusetts Institute of Technology*: Biomaterials.

John Papazian, *Adjunct Professor, Ph.D., Columbia University*: Physical metallurgy; forming of aluminum matrix composites.

James Powell, *Adjunct Professor, Sc.D., Massachusetts Institute of Technology*: Chemical engineering.

Miriam Rafailovich, *Professor, Ph.D., University at Stony Brook*: Polymer surfaces and interfaces.

Sanjay Sampath, *Associate Professor, Ph.D., University at Stony Brook*: Thermal spray technology; tribology; functionally graded materials.

Steven Schwarz, *Adjunct Professor, Ph.D., Stanford University*: Materials and device characterization by SIMS.

Leslie L. Seigle, *Emeritus Professor, D.Sc., Massachusetts Institute of Technology*: Thermodynamics.

Jonathan C. Sokolov, *Professor, Ph.D., University at Stony Brook*: Polymer surfaces and interfaces.

Arun Srivatsa, *Adjunct Assistant Professor, Ph.D., North Carolina State University*: Materials science and engineering.

John J. Strozier, *Adjunct Professor, Ph.D., Cornell University*: Solid-state physics.

Masaki Suenaga, *Adjunct Professor, Ph.D., University of California, Berkeley*: Superconducting materials.

Hazem Tawfik, *Adjunct Professor, Ph.D., University of Waterloo*: Mechanical engineering.

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.

Henry White, *Assistant Professor, Ph.D., University at Stony Brook*: Polymer nanocomposites; materials joining.

Affiliated Faculty

Benjamin Chu, *Chemistry*

Vishwanath Prasad, *Mechanical Engineering*

Adjunct Faculty

Estimated number: 20

Teaching Assistants

Estimated number: 20

The Department of Materials Science and Engineering offers the Bachelor of Engineering degree program in engineering science and 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. Reflecting the breadth and variety of topics falling within the domain of engineering science, the department also offers five minors that afford undergraduate students the opportunity to enhance their engineering or science studies with knowledge in a specialized area. In addition to the minor in materials science, described in this section, the department offers minors in biomedical engineering;

electronic, optical, and magnetic materials; manufacturing engineering; and physical metallurgy, each detailed under a separate heading in the alphabetical listings of Approved Majors, Minors, and Programs.

The major in engineering science furnishes the student with a broad background in the basic engineering disciplines. The 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 excellent preparation for graduate studies in architecture, business, law, or medicine.

The program in engineering science also prepares students for a variety of employment opportunities as it is particularly suited to the nature of modern manufacturing processes in industry as well as to scientific institutions and laboratories across the nation. Graduates of the program, trained to understand the materials and forces of nature and to apply that knowledge to practical problem solving, are well equipped to take optimum advantage of rapidly developing technology for the benefit of society. They occupy engineering, scientific, and management positions in engineering, development, manufacturing, and marketing in major corporations in the area of communications, computing, and aerospace. Small and medium-sized companies also rely on the expertise of materi-

als scientists in design and manufacturing. In addition, some graduates apply their knowledge to patent law and consulting. About ten percent of the program's graduates pursue advanced degrees in engineering research as well as in law, business, and medicine.

Courses Offered in Engineering Science

See the Course Descriptions listing in this *Bulletin* for complete information.

- ESG 100 Introduction to Engineering Science
- ESG 111 C Programming for Engineers
- ESG 201-H Engineering Responses to Society
- ESG 217 Engineering Science Design I
- ESG 281 An Engineering Introduction to the Solid State
- ESG 300 Writing in Engineering Science
- ESG 302 Thermodynamics of Materials
- ESG 310 Research Methods for Engineers and Scientists
- ESG 312 Engineering Laboratory
- ESG 316 Engineering Science Design II: Methods
- ESG 332 Materials Science I: Structure and Properties of Materials
- ESG 333 Materials Science II: Electronic Properties
- ESG 339 Thin Film Processing of Advanced Materials
- ESG 440 Engineering Science Design III
- ESG 441 Engineering Science Design IV
- ESG 487 Cooperative Research in Technological Solutions

Acceptance into the Major in Engineering Science

Freshman and transfer applicants who have specified their interest in the engineering science major may be accepted directly into the major upon admission to the University. Students in good academic standing who were admitted to the University but not immediately accepted into the major may apply for acceptance in any semester, but priority for admission to the engineering science 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 3.00 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 for the major.

Requirements for the Major in Engineering Science (ESG)

The major in engineering science leads to the Bachelor of Engineering degree.

Completion of the major requires approximately 110 credits.

A. Core Courses

1. Mathematics

AMS 151, 161; AMS 261 or MAT 203; AMS 361 or MAT 303

Note: The following alternate calculus course sequences may be substituted for AMS 151, 161 in major requirements or prerequisites:

MAT 125, 126, 127 or
MAT 131, 132 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

ESG 111

Note: MEC 111 or MEC 112 or CSE 113-114 may be substituted with permission of the department.

4. Engineering Science Core Program

ESG 100; 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

MEC 260, 262, 363

5. Engineering Synthesis and Design

ESG 217, 316, 440, 441; ESM 355

B. 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 con-

Sample Course Sequence in the Engineering Science Major

Freshman Fall	Credits
D.E.C. A	3
AMS 151#	4
PHY 131#	4
ESG 100	3
ESG 111	3
Total	17

Spring	Credits
AMS 161#	4
PHY 132#	4
CHE 198	4
CHE 199	1
D.E.C.	3
Total	16

Sophomore Fall	Credits
AMS 261 or MAT 203	4
PHY 251 or ESG 281	3-4
MEC 260	3
ESG 332	4
D.E.C.	3
Total	17

Spring	Credits
AMS 361 or MAT 303	4
MEC 262	3
MEC 363	4
ESE 271	4
Total	15

Junior Fall	Credits
ESG 312#	3
ESE 372	4
ESG 217#	3
Technical elective (design)#	3
D.E.C.	3
Total	15

Spring	Credits
ESG 316	4
ESG 300	0
ESG 302	4
ESG 333	4
ESG 339#	4
Total	16

Senior Fall	Credits
ESG 440	3
ESM 450	3
Technical elective (design)#	3
Two technical electives#	6
D.E.C.	3
Total	18

Spring	Credits
ESM 350	3
ESM 355	3
ESG 441	3
Technical elective#	3
D.E.C.	3
D.E.C.	3
Total	18

Courses with a # must be completed with a grade of C or higher.

sultation with a faculty advisor to ensure a cohesive course sequence with depth at the upper level.

The five areas of specialization are biomedical engineering, electrical engineering, mechanical and manufacturing engineering, materials science and engineering, and engineering research. The engineering research specialization requires: 1) a g.p.a. of at least 3.00, 2) a letter of intent from the student that indicates a particular area of research and 3) permission of the undergraduate program director.

C. Upper-Division Writing Requirement

All degree candidates must demonstrate skill in written English. 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

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 (or their equivalents):

- AMS 151, 161; PHY 131, 132; ESG 217, 312, 339; and
- Each of the five technical electives required for the specialization.

Areas of Specialization

Each area of specialization requires two design and three elective courses above those used towards requirement A—Core Courses. Other technical electives may be substituted only with the approval of the undergraduate program director.

Biomedical Engineering

- One of the following two-course design sequences must be completed.
 - ESM 334 Materials Engineering
ESM 335 Mechanical Properties of Materials
 - MEC 310 Kinematics and Dynamics of Machinery
MEC 410 Design of Machine Elements
 - MEC 305 Heat and Mass Transfer
MEC 364 Introduction to Fluid Mechanics
- Three courses from the following:
 - ESM 353 Biomaterials: Manufacture, Properties, and Applications
 - BIO 150 The Living World
 - BIO 203 Fundamentals of Biology: Cellular and Organ Physiology
 - ESG 440/441 Engineering Science Design III/IV (See Note)

Electrical Engineering

This specialization builds upon the courses already taken toward meeting the requirements.

- One of the following two-course design sequences:
 - ESE 318 Digital Systems Design and ESE 380 Microprocessors and Programmed Logic I
 - ESE 307 Modern Filter Design and ESE 312 Microwave Electronics
- Three courses from the following:
 - ESE 304 Electronic Instrumentation
 - ESE 305 Deterministic Signals and Systems
 - ESE 306 Random Signals and Systems
 - ESE 307 Modern Filter Design
 - ESE 310 Electric Circuit Analysis II
 - ESE 311 Electronic Circuit Design

ESE 315 Control Systems Design
 ESE 316 Digital Devices and Circuits
 ESE 319 Introduction to Electromagnetic Fields and Waves
 ESE 332 Semiconductor Device Characterization
 ESE 350 Electrical Power Systems
 ESE 352 Energy Conversion
 ESE 358 Computer Vision
 ESE 362 Optoelectronic Devices and Optical Imaging Techniques
 ESE 381 Embedded Microprocessor System Design II
 ESG 440/441 Engineering Science Design III/IV (See Note)

Materials Science and Engineering

1. One of the following two-course design sequences:

ESM 334 Materials Engineering *and* ESM 335 Mechanical Properties of Materials

MEC 310 Kinematics and Dynamics of Machinery *and* MEC 410 Design of Machine Elements

MEC 305 Heat and Mass Transfer *and* MEC 364 Introduction to Fluid Mechanics

ESE 318 Digital Systems Design *and* ESE 380 Microprocessors and Programmed Logic I

ESE 307 Modern Filter Design *and* ESE 312 Microwave Electronics

2. Three courses from the following:

ESM 302 Introduction to the Crystalline State

ESM 309 Thermodynamics of Solids
 ESM 325 Diffraction Techniques and Structure of Solids

ESM 336 Electronic Materials

ESM 369 Polymers

ESM 475 Undergraduate Teaching Practicum

ESG 440/441 Engineering Science Design III/IV (See Note)

Mechanical and Manufacturing Engineering

This specialization builds on the courses already taken toward Requirements.

1. One of the following two-course design sequences:

MEC 310 Kinematics and Dynamics of Machinery *and* MEC 410 Design of Machine Elements

MEC 305 Heat and Mass Transfer *and* MEC 364 Introduction to Fluid Elements

2. Three courses from the following:

AMS 310 Survey of Probability and Statistics

MEC 325 Manufacturing Processes

MEC 364 Introduction to Fluid Mechanics

MEC 393 Engineering and Fluid Mechanics

MEC 398 Thermodynamics II

MEC 402 Mechanical Vibrations

MEC 422 Thermal System Design

MEC 455 Applied Stress Analysis

ESG 440/441 Engineering Science Design III/IV (See Note)

Engineering Research

To qualify for this specialization, students must have a g.p.a. of at least 3.00 and need the permission of the undergraduate program director and the instructor of ESG 440/441.

1. One of the following two-course design sequences

ESM 334 Materials Engineering *and* ESM 335 Mechanical Properties of Materials

MEC 310 Kinematics and Dynamics of Machinery *and* MEC 410 Design of Machine Elements

MEC 305 Heat and Mass Transfer *and* MEC 364 Introduction to Fluid Elements

ESE 318 Digital Systems Design *and* ESE 380 Microprocessors and Programmed Logic I

ESE 307 Modern Filter Design *and* ESE 312 Microwave Electronics

2. The following five courses must be completed:

ESG 440/441 Engineering Science Design III/IV

a total of six credits of ESM 499, ESM 488, ESG 487 or ESM 475, and ESG 310 Research Methods

Note:

The sequence ESG 440/441 Engineering Science Design III/IV counts for one technical elective and requires permis-

sion of the instructor and the undergraduate program director.

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. For further details, contact the Interdisciplinary Program in Engineering Chemistry.

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 master's degree program. See the physics major entry for additional information.

Bachelor of Science Degree/Master of Science Degree 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*.

EGL

Major and Minor in

English

Department of English, College of Arts and Sciences

CHAIRPERSON: Peter Manning UNDERGRADUATE DIRECTOR: Ira Livingston ADMINISTRATIVE ASSISTANT: Clare Logan

OFFICE: 254 Humanities PHONE: (631) 632-7400 WEB ADDRESS: www.sunysb.edu/english/index.html

Minors of particular interest to students majoring in English: cinema and cultural studies (CCS), comparative studies (CLT), foreign languages, journalism (JRN), media arts (MDA)

Faculty

Ursula Appelt, *Assistant Professor, Ph.D., University of Virginia*: Renaissance.

Bruce W. Bashford, *Associate 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.

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.

Elsa Emmerheiser, *Lecturer, Ph.D., University at Stony Brook*: Modern British and American literature; secondary education.

Diane Fortuna, *Emerita Professor, Ph.D., Johns Hopkins University*: 20th-century British and American literature; 19th-century American literature.

Eric Haralson, *Assistant Professor, Ph.D., Columbia University*: American studies.

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.

Heidi Hutner, *Assistant Professor, Ph.D., University of Washington*: 18th century literature; women writers; women's studies; colonial and post-colonial discourse.

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.

Johnathan Levy, *Distinguished Teaching Professor, Ph.D., Columbia University*: Playwriting; dramatic literature.

Ira Livingston, *Associate Professor, Ph.D., Stanford University*: Romanticism; literary theory.

Kay M. Losey, *Associate Professor and Director of Writing Program, Ph.D., University of California, Berkeley*: Composition; rhetoric; literacy.

Peter Manning, *Professor, Ph.D., Yale University*: British romantic period.

Thomas E. Maresca, *Professor Emeritus, Ph.D., Johns Hopkins University*: Restoration and 18th-century literature; the epic; satire.

Joaquin Martinez-Pizarro, *Professor, Ph.D., Harvard University*: Old English; Middle English.

Carolyn McGrath, *Lecturer, M.A., University at Stony Brook*: Creative writing; composition.

Adrienne Munich, *Professor, Ph.D., City University of New York*: Victorian literature; women's studies.

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.

Carol Rosen, *Professor, Ph.D., Columbia University*: Theory; criticism; modern drama.

Walter Scheps, *Professor Emeritus, Ph.D., University of Oregon*: Old English; Middle English; the history of the English language.

Susan Scheckel, *Associate Professor, Ph.D., University of California, Berkeley*: Early American Literature.

David Sheehan, *Associate Professor, Ph.D., University of Wisconsin*: Restoration and 18th-century literature; Native American literature.

Clifford H. Siskin, *Professor, Ph.D., University of Virginia*: British romanticism; critical theory.

Stephen J. Spector, *Professor, Ph.D., Yale University*: Old English; Middle English; the history of the English language.

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.

Students who graduate with a major in English pursue careers as writers, lawyers, journalists, librarians, academic and governmental administrators, and publishers, to name a few. Large businesses, for example, publish "in-house" newsletters and magazines, as well as material for the general public. Newspapers seek copy editors able to write clear, accurate prose. The legal profession requires people skilled in the language arts. Many English majors go on to graduate or professional schools to educate themselves for professional careers.

The department regularly offers courses in creative writing (EGL 285, 286, 385, 386); journalism (JRN 287, 288, 387, 388, 389, 390, 394, 395), see the Journalism entry in the alphabetical listings of Approved Majors, Minors, and Programs; and secondary education leading to provisional New York State certification (EGL 398, 451, 452, 454).

Courses Offered in English

See the Course Descriptions listing in this *Bulletin* for complete information.

EGL 191-B Introduction to Poetry

EGL 192-B Introduction to Fiction

EGL 193-B Introduction to Drama

EGL 204 Literary Analysis and Argumentation

EGL 205-I, 206-I Survey of British Literature I, II

EGL 207-G The English Language

EGL 217-K, 218-K American Literature I, II

EGL 224-G 20th-Century Literature in English

EGL 226-K 20th-Century American Literature

EGL 231-I Saints and Fools

EGL 232-I Rebels and Tyrants
 EGL 243-I Shakespeare: The Major Works
 EGL 249-G African-American Literature and Music in the 19th and 20th Centuries
 EGL 260-G Mythology in Literature
 EGL 261-B The Bible as Literature
 EGL 266-G The 20th-Century Novel
 EGL 274-K Black American Literature
 EGL 276-B Feminism: Literature and Cultural Contexts
 EGL 285 Writing Workshop: Fiction
 EGL 286 Writing Workshop: Poetry
 EGL 300-G Old English Literature
 EGL 302-G Medieval Literature in English
 EGL 304-G Renaissance Literature in English
 EGL 306-G English Literature of the 17th Century
 EGL 308-G The Age of Dryden
 EGL 310-G Neoclassical Literature in English
 EGL 312-G Romantic Literature in English
 EGL 314-G Victorian Literature
 EGL 316-G Early American Literature
 EGL 318-G 19th-Century American Literature
 EGL 320-G Literature of the 20th Century
 EGL 340-G Chaucer
 EGL 342-G Milton
 EGL 344-G Major Writers of the Renaissance Period in England
 EGL 345-G, 346-G Shakespeare I, II
 EGL 347-G Major Writers of the Neoclassical Period in England
 EGL 348-G Major Writers of the Romantic Period in England
 EGL 349-G Major Writers of the Victorian Period in England
 EGL 350-G Major Writers of American Literature, Colonial Period to 1900
 EGL 352-G Major Writers of 20th-Century Literature in English
 EGL 354-G Major Writers of Contemporary British and American Literature
 EGL 361-G Poetry in English
 EGL 362-G Drama in English
 EGL 363-G Fiction in English

EGL 364-G Prose in English
 EGL 365-G Literary Criticism and Theory
 EGL 366-G Topics in Literary Criticism and Theory
 EGL 367-G Contemporary African-American Literature
 EGL 369-K Topics in Ethnic American Studies in Literature
 EGL 371-G Topics in Gender Studies in Literature
 EGL 372-G Topics in Women and Literature
 EGL 373-J Literature in English from Non-Western Cultures
 EGL 374-G Literature in English in Relation to Other Literatures
 EGL 375-G Literature in English in Relation to Other Disciplines
 EGL 376-G The Literature of Imperialism
 EGL 377-G Literature in English in Relation to Other Disciplines
 EGL 378-J Contemporary Native American Fiction
 EGL 379-J Native American Texts and Contexts
 EGL 385 Advanced Fiction Workshop
 EGL 386 Advanced Poetry Workshop
 EGL 393 Performance and Technology in Teaching Literature and Composition
 EGL 398 Methods of Instruction in Literature and Composition I
 EGL 451 Supervised Teaching—English; Middle School Grade Levels 7-9
 EGL 452 Supervised Teaching—English; High School Grade Levels 10-12
 EGL 454 Student Teaching Seminar
 Independent project, internship, teaching practica, and senior honors courses

Requirements for the Major in English (EGL)

The major in English leads to the Bachelor of Arts degree. All courses offered for A—Study within the Area of the Major—must be passed with a letter grade of C or higher.

Completion of the major requires 54 credits.

A. Study within the Area of the Major

1. EGL 204 Literary Analysis and Argumentation
2. EGL 207 The English Language
3. Three survey courses from among the following:
 EGL 205 Survey of British Literature I
 EGL 206 Survey of British Literature II
 EGL 217 American Literature I
 EGL 218 American Literature II
 EGL 224 20th-Century Literature in English
 EGL 226 20th-Century American Literature
 EGL 243 Shakespeare: The Major Works
 EGL 274 Black American Literature
4. Six 300-level courses from among courses numbered EGL 300-381
5. One elective course from among courses numbered EGL 200-400 (excluding EGL 398); EGL 490 and 496 may also be used.

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 285, 286, 385, 398, 451, 452, 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.
3. Students must complete 9 credits in one of the following four concentrations:
 British Literature
 EGL 205
 EGL 206
 EGL 243
 EGL 300-314
 EGL 340-349
 EGL 352
 EGL 361-364
 American Literature
 EGL 217
 EGL 218
 EGL 226
 EGL 274
 EGL 316-318
 EGL 350-352
 EGL 361-364

Modern and Contemporary Literature

- EGL 224
- EGL 226
- EGL 274
- EGL 318-320
- EGL 350-352
- EGL 361-364

Issues and Topics in the Study of Literature

- EGL 224
- EGL 226
- EGL 274
- EGL 276
- EGL 365-369
- EGL 371-376

B. Study in Related Areas

1. Six credits (or the equivalent of one year) of college study of a foreign language at the intermediate level or beyond. All coursework taken to satisfy this requirement must be taken for a letter grade and passed with a grade of C- or higher.
2. Six credits of study of British, American, Medieval, or Renaissance history
3. Six credits of study in the humanities and fine arts (excluding English courses) and in addition to the foreign language requirement above

Notes on Section B:

1. Six of the twelve credits used to satisfy requirements 2 and 3 may be taken under the P/NC option unless they also are being used to satisfy general education requirements.
2. Only six of the twelve credits used to satisfy requirements 2 and 3 may be passed with grades below C-.

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 specify those courses in which students may satisfy

Sample Course Sequence for the English Major

Freshman Fall	Credits
D.E.C. A	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
D.E.C. A	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
EGL 204	3
EGL 200-level survey*	3
Foreign language (elementary)	3-4
D.E.C.	3
Upper-Division elective	3
Total	15-16

Spring	Credits
EGL 200-level survey*	3
EGL 200-level survey*	3
Foreign language (elementary)	3-4
EGL 200-400 level elective**	3
Upper-Division elective	3
Total	15-16

Junior Fall	Credits
EGL 207	3
Foreign language (intermediate)	3
History (U.S. British, medieval, or Renaissance)	3
D.E.C.	3
Upper-Division elective	3
Total	15

Spring	Credits
EGL 300-level elective***	3
EGL 300-level elective***	3
Foreign language (intermediate)	3
D.E.C.	3
Upper-Division elective	3
Total	15

Senior Fall	Credits
EGL 300-level elective***	3
EGL 300-level elective***	3
History (U.S. British, medieval, or Renaissance)	3
D.E.C.	3
Upper-Division elective	3
Total	15

Spring	Credits
EGL 300-level elective***	3
EGL 300-level elective***	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

* See requirement A3 **See requirement A5 ***See requirement A4

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 of the director of undergraduate studies no later than the beginning of the semester before the one in which the student expects to graduate.

English Secondary Teacher Preparation Program

See the entry Education and Teacher Preparation in the alphabetical listings of Approved Majors, Minors, and Programs.

The Honors Program in English

To be awarded honors, a department major must: 1) attain an overall g.p.a. of at least 3.00 and a g.p.a. of at least 3.50 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 (EGL)

The minor in English 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 offered for the minor must be taken for a letter grade.

Completion of the minor requires 18 credits.

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, 451, 452, 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

ENS

Interdisciplinary Major and Living/Learning Center Minor in Environmental Studies

Marine Sciences Research Center

DEAN AND DIRECTOR: Marvin A. Geller DIRECTOR OF UNDERGRADUATE STUDIES: Malcolm Bowman ASSISTANT TO DIRECTOR: Nancy Glover
EDUCATION OFFICE: 105 Endeavour Hall PHONE: (631) 632-8681 E-MAIL: msrcugrad@notes.cc.sunysb.edu

WEB ADDRESS: www.msrc.sunysb.edu

DIRECTOR OF THE MINOR: Darcy Lonsdale, Marine Sciences Research Center

OFFICE: 207 Endeavour Hall PHONE: (631) 632-8712 E-MAIL: dlonsdale@notes.cc.sunysb.edu

The Environmental Studies major, leading to a Bachelor of Arts degree, is designed to provide students with the analytical and communication skills and the broad background necessary to understand and address complex environmental issues. The major also offers the opportunity for students to carry out focused study within a specific area of interest. Environmental issues are not resolved in the scientific, technological, social, or political area alone. The curriculum is, therefore, interdisciplinary and integrates principles and methodologies from the social sciences, engineering, the natural sciences, and humanities, addressing the complex scientific, legal, political, socio-economic, and ethical issues that define and surround the principles of sustainable development and biodiversity protection at a regional, national, and international level.

The major in environmental studies prepares students for further education and entry-level employment in a wide range of fields including public interest science and advocacy, environmental conservation, law, journalism, management, television documentary production, ecotourism, population studies, and public service, including public health issues.

To demonstrate depth of learning, an area of concentration is required of all students in the major. Additionally, a research course, an internship, or field study is an essential part of the curriculum to provide real-world experience in an appropriate subject area. Seniors are expected to share these experiences with the rest of the academic community through participating in an annual environmental studies colloquium.

The environmental studies major is administered by the Marine Sciences Research Center. A minor, with a residential component, is also available, housed in Dreiser College. Students majoring in environmental studies are

given priority housing in Dreiser College. A lounge and study area are also available within Dreiser for commuter students enrolled in the major. The Living/Learning Center offers special programs such as a seminar series showcasing faculty research and selected courses in the major and minor. Freshmen interested in majoring in environmental studies are encouraged to take one of the USB 101 sections taught by faculty associated with the program.

Courses Offered in Environmental Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

ENS 101-E Prospects for Planet Earth

ENS 102 Opportunities in Environmental Studies

ENS 119 Physics for Environmental Studies

ENS 190 Forum in Environmental Issues

ENS 301-H Seminar in Environmental Studies

ENS 311-H The Global Environment

ENS 312-H Population, Technology, and the Environment

ENS 443 Environmental Problem Solving

ENS 487 Independent Research in Environmental Studies

ENS 488 Internship in Environmental Studies

Requirements for the Major in Environmental Studies (ENS)

The major in environmental studies leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires approximately 66 credits.

A. Foundation Courses (34 credits)

1. Natural Sciences Courses

BIO 201 Principles of Biology From Organisms to Ecosystems

CHE 131, 133 General Chemistry and Lab (see Note 1)

MAT 125 or MAT 131 or MAT 141 Calculus

PHY/ENS 119 Physics for Environmental Studies (See Note 2)

GEO 101, 111 Environmental Geology and Lab

2. Social Sciences Courses

ANP 120 Introduction to Physical Anthropology

ECO 107 Introduction to Economic Reasoning

POL 102 Introduction to American Government

3. Humanities Courses

PHI 104 Moral Reasoning
or PHI 105 Politics and Society

4. Communications

Proficiency in writing, oral communication, and computer literacy will be encouraged in all students. These skills will be developed within the context of formal coursework and no additional credits are required.

5. Upper-Division Writing Requirement

All students in the major must submit two papers from any upper division course in the major to the Director of Undergraduate Programs for evaluation by the end of the junior year.

B. Core Courses (20 credits)

1. BIO 113 General Ecology

2. One of the following statistics courses:

AMS 102, AMS 110, AMS 310, ECO 320, POL 201, PSY 201, or SOC 202.

3. MAR 340 Environmental Problems and Solutions

or BIO 306 Ecological Risks and Environmental Decisions

4. MAR 391 Environmental Policy
5. ENS 386 The Global Environment
6. ENS 301 Seminar in Environmental Studies
or ENS 312 Population, Technology, and the Environment
7. One of the following research, internship, or field experiences (2 credits):
ENS 443 Environmental Problem Solving
Independent Research (See Note 3)
Internship (See Note 4)

C. Concentration (12 credits)

All students in the major must complete an area of concentration consisting of four courses to develop depth of knowledge in a specific field of interest.

1. Archaeology
ANT 104 Introduction to Archaeology
ANT 357 The Agricultural Revolution
ANT 362 Long Island Archaeology
One additional upper-division archaeology course
2. Atmospheric Studies
ATM 205 Introduction to Atmospheric Science
ATM 237 Global Atmospheric Change
ATM 397 Air Pollution and its Control
MAR 334 Remote Sensing in the Environment
Other upper-division ATM courses (ATM 345, ATM 346, or ATM 348) may be substituted with permission of the undergraduate program director
3. Conservation/Physical Anthropology
ANP 210 The Living Primates
ANP 350 Primate Behavior and Ecology
ANP 360 Primate Conservation
MAR 315 Conservation Biology and Marine Biodiversity
4. Ecology
BIO 351, 352 Ecology and Lab
BIO 353 Marine Ecology
BIO 354 Evolution or BIO 385 Plant Ecology

Sample Course Sequence for the Environmental Studies Major

Freshman Fall	Credits
D.E.C. A	3
ANT 104	3
MAT 125	3
D.E.C.	3
Elective	3
ENS 102	1
Total	16

Spring	Credits
D.E.C. A	3
CHE 131	4
CHE 133	1
PHI 104 or 105	3
Elective	3
Total	14

Sophomore Fall	Credits
BIO 113	3
GEO 101	3
GEO 111	1
D.E.C.	3
D.E.C.	3
Elective	3
Total	16

Spring	Credits
ECO 107	4
POL 102	3
AMS 110 or other statistics	3
Upper-Division D.E.C.	3
Elective	3
Total	16

Junior Fall	Credits
BIO 201	4
ANP 120	4
PHY 119	4
Upper-Division elective	3
Total	15

Spring	Credits
BIO 306 or MAR 340	3
ENS 301 or 312	3
Upper-Division concentration	3
Upper-Division D.E.C.	3
Elective	3
Total	16

Senior Fall	Credits
ENS 386	3
Upper-Division concentration	3
Upper-Division concentration	3
D.E.C.	2-3
Upper-Division elective	3
Total	15-16

Spring	Credits
MAR 391	3
Upper-Division concentration	3
ENS 443 or research	3
Upper-Division D.E.C.	3
Elective	3
Total	15

- Other upper-division ecology courses (e.g. MAR 320 Limnology) may be substituted for BIO 353 and BIO 354/BIO 385 with permission of the undergraduate program director.
5. Environmental Economics
ECO 109 Introduction to Analytical Economics
ECO 303 Intermediate Microeconomic Theory
ECO 373 Economics of the Environment and Natural Resources
One additional upper-division economics course
 6. Environmental Law
POL 320 Constitutional Law and Politics
POL 329 Administrative Law

- POL/MAR 313 Environmental Law
POL 366 Government Regulation of Business
- Other upper-division courses (i.e., POL 359, POL 364, POL 351, PHI 375) may be substituted for POL 366 with permission of the undergraduate program director.
7. Marine Environmental Studies
MAR 333 Coastal Oceanography
MAR 336 Marine Pollution
MAR 315 Conservation Biology and Marine Biodiversity
MAR 385 Principles of Fisheries Biology and Management
Other upper-division courses (BIO 343, 353; MAR 302, 304, 307, 308, 334, 350, 351, 366, 371, 390) may be

substituted for MAR 315 and/or MAR 385

8. Public Policy

POL 359 Public Policy Analysis

POL 364 Organizational Decision Making

POL 366 Government Regulation of Business

PHI 364 Philosophy of Technology or PHI 366 Philosophy and the Environment

9. Waste Reduction and Management

MAR 392 Waste Management Issues

MAR 393 Treatment Technologies

MAR/POL 313 Environmental Law

BCP/MAR 394 Toxicology and Public Health

Notes:

1. CHE 141, 143 Honors Chemistry and Lab may be substituted for CHE 131, 133
2. PHY 117, 118 or 121, 122 or 125, 126, 127 or 131, 132 or 141, 142 may be substituted for PHY/ENS 119.
3. Two credits of any course numbered 487 or equivalent with one of the following designators: ANP, ANT, ATM, BCP, BIO, CHE, ECO, ENS, EST, GEO, MAR, PHY, POL. In addition to other prerequisites, credit toward the major requires approval of the research topic by the Director of Undergraduate Studies of the Marine Sciences Research Center. A presentation at the annual senior colloquium is also required.
4. Two credits of any course numbered 488 or equivalent with one of the following designators: ANP, ANT, ATM, BCP, BIO, CHE, ECO, ENS, EST, GEO, MAR, PHY, POL. In addition to other prerequisites, credit toward the major requires approval of the internship by the Director of Undergraduate Studies. A presentation at the annual senior colloquium is also required.

Living/Learning Center Interdisciplinary Minor in Environmental Studies

The Environmental Studies Living/Learning Center, housed in Dreiser College, offers a minor in environmental science as well as activities that emphasize both scientific and social issues encompassed by the broad field of environmental studies. Through this pro-

gram, motivated natural science and social science students are able to apply their other coursework 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 primarily, but not exclusively, for residents of Dreiser College and provides enhanced exposure to one subfield of environmental studies—the natural science of the environment.

Requirements for the Minor in Environmental Studies (ENS)

No more than one three-credit course in the minor may be taken under the Pass/No Credit option. All upper-division courses offered for the minor must be passed with a letter grade of C or higher. Completion of the minor requires 18 credits.

1. One introductory course chosen from the following:
 - ATM/EST 102 Weather and Climate
 - BIO 113 General Ecology
 - BIO 201 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 301 Seminar in Environmental Studies
4. Two advanced courses chosen from the following:
 - ANP 360 Primate Conservation
 - ANT 420 Environmental Analysis Using Remote Sensing and Geographic Information Systems
 - ATM 397 Air Pollution and Its Control
 - BIO 351 Ecology
 - BIO 352 Ecology Laboratory
 - BIO/GEO 353 Marine Ecology
 - BIO 356 Applied Ecology and Conservation Biology Laboratory
 - CHE 310 Chemistry in Technology and the Environment
 - GEO 304 Energy, Mineral Resources, and the Environment
 - GEO 315 Groundwater Hydrology
 - MAR 320 Limnology
 - MAR 333 Coastal Oceanography

MAR 340 Environmental Problems and Solutions

5. At least three credits of independent study or research in any department, approved by the minor coordinator

Note: Incoming students interested in the minor are encouraged to take ENS 102, Opportunities in Environmental Studies.

Declaration of the Minor

Students should declare the environmental science minor no later than the middle of their junior year, at which time they should consult with the minor coordinator and plan their course of study for fulfillment of the requirements.

FRN / GER / ITL / RUS

Department of

European Languages, Literatures, and Cultures

College of Arts and Sciences

CHAIRPERSON: Charles Franco DIRECTOR OF UNDERGRADUATE STUDIES: Thomas Kerth UNDERGRADUATE SECRETARY: Marie Sweatt

OFFICE: N-4004 Melville Library PHONE: (631) 632-7440 E-MAIL: tkerth@notes.cc.sunysb.edu or msweatt@notes.cc.sunysb.edu

WEB ADDRESS: www.sunysb.edu/eurolangs/

Faculty

Harriet Allentuch, *Professor Emerita, 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.

Robert K. Bloomer, *Associate Professor, Ph.D., University of Michigan*: Germanic linguistics; morphology; etymology.

Mary Jo Bona, *Assistant Professor, Ph.D., University of Wisconsin, Madison*: Italian-American literature and culture; colonial and nineteenth-century American literature; American women's literature.

Carol Blum, *Research Professor of Humanities, Ph.D., Columbia University*: 18th-century French literature; literature of the French Revolution.

Frederick Brown, *Professor Emeritus, Ph.D., Yale University*: 19th- and 20th-century French literature.

Russell E. Brown, *Professor Emeritus, Ph.D., Harvard University*: Modern German literature; Expressionist poetry; Trakl; Brecht; Jahn.

Stana Dolezal, *Adjunct Lecturer, D.A., University at Stony Brook*: Eastern European literature and culture; Czech language.

Barbara Elling, *SUNY Distinguished Teaching Professor Emerita, Ph.D., New York University*: Romanticism; German cultural studies. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1973.

Andrea Fedi, *Associate Professor, Dottore in Lettere e Filosofia, University of Florence; Ph.D., University of Toronto*: Italian Renaissance literature; historiography.

Luigi Fontanella, *Professor, Ph.D., Harvard University*: Modern Italian literature.

Charles Franco, *Associate Professor and Coordinator of Medieval Studies Minor, Ph.D., Rutgers University*: Medieval Italian literature.

Fred Gardaphe, *Professor and Director of Italian American Studies Minor, Ph.D., University of Illinois, Chicago*: Italian American Studies.

Aaron W. Godfrey, *Lecturer and Director of Classical Studies Minor, M.A., Hunter College*: Latin; medieval studies.

Eva Gold, *Lecturer, Ph.D., New York University*: Modern Italian literature, cultural studies.

Sarah Jourdain, *Assistant Professor, Ph.D.,*

Indiana University, Bloomington: Foreign language pedagogy; second language acquisition; applied French linguistics.

Izabella Kalinowska-Blackwood, *Assistant Professor, Ph.D., Yale University*: Russian and Polish literature, culture, and film.

Thomas A. Kerth, *Associate Professor and German Program Director, Ph.D., Yale University*: Medieval literature; Middle High German; 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.

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 and Italian Program Director, Ph.D., Rutgers University*: Contemporary Italian literature.

Jacqueline Reich, *Assistant Professor, Ph.D., University of California, Berkeley*: Italian cinema; film theory; gender studies.

Anthony Rizzuto, *Professor, Ph.D., Columbia University*: 19th- and 20th-century French literature.

Nicholas Rzhovsky, *Associate Professor and Russian Program Director, Ph.D., Princeton University*: Russian and Soviet literature; Russian theatre; Russian intellectual history.

Joseph Tursi, *Professor Emeritus, Ph.D., City University of New York*: Foreign language teaching methodology.

Birgit Grosse-Middledorf Viola, *Adjunct Lecturer, D.A., University at Stony Brook*: Business German.

Monique Watts, *Lecturer, University at Stony Brook*: French language.

Ruth Plaut Weinreb, *Associate Professor, Ph.D., Columbia University*: Pedagogy and 18th-century French literature.

Timothy Westphalen, *Associate Professor, Ph.D., Harvard University*: Russian poetry; Russian Symbolism; Russian literature of the 19th century; Bakhtin.

Eléonore M. Zimmermann, *Professor Emerita, Ph.D., Yale University*: 17th-, 19th-, and 20th-century French literature; comparative literature.

Affiliated Faculty

John F. Bailyn, *Linguistics*

Christina Y. Bethin, *Linguistics*

Robert Harvey, *Comparative Studies*

E. Anthony Hurley, *Africana Studies*

Sandy Petrey, *Comparative Studies*

Lori Repetti, *Linguistics*

Adjunct Faculty

Estimated number: 5

Teaching Assistants

Estimated number: 3

The Department of European Languages, Literatures, and Cultures fosters teaching and research in modern and classical European languages, literatures, and cultures at the undergraduate and graduate levels. Many courses in English translation also offer access to this field to students with a general interest in the Western tradition. The department prepares students for post-graduate professional training, graduate study, and for a global market in which knowledge of other languages and cultures is increasingly essential. In addition, the department promotes the training of secondary school language teachers in European languages through a program that conforms to the requirements in the New York State Regents guidelines.

See individual listings for requirements for the majors and minors in: French, German, Italian, and Russian.

Study Abroad

The department encourages both majors and minors to complete some of their coursework abroad in the junior or senior year. The University maintains exchange programs during the academic year and in the summer in Paris, France; Konstanz, Germany; Rome, Italy; and there are several other programs in Germany, Poland, and Russia sponsored by other SUNY colleges and universities. See the Special Academic Opportunities chapter in this *Bulletin* and the Study Abroad Office for further details.

FRN

Major and Minor in

French Language and Literature

Department of European Languages, Literatures, and Cultures, College of Arts and Sciences

CHAIRPERSON: Charles Franco DIRECTOR OF UNDERGRADUATE STUDIES: Thomas Kerth UNDERGRADUATE SECRETARY: Marie Sweatt

OFFICE: N-4004 Melville Library PHONE: (631) 632-7440 E-MAIL: tkerth@notes.cc.sunysb.edu or msweatt@notes.cc.sunysb.edu

WEB ADDRESS: www.sunysb.edu/eurolangs/

Minors of particular interest to students majoring in French: business management (BUS), comparative literature (CLT), economics (ECO), English (EGL), history (HIS), international studies (LIS), linguistics (LIN), medieval studies (MVL), philosophy (PHI), political science (POL), other languages

Pursuing French as an academic field means mastering the language and studying the literature and the social and political culture of France and French-speaking countries. French is spoken all around the globe—in Europe, Africa, Asia, Canada, and the Caribbean, where it has produced rich national literatures and diverse cultures over the span of many centuries. Command of the language is the first prerequisite to entrance into the discipline which depends upon linguistic, literary, and analytical skills. On a more practical level, French is the language of government, law, management, and business in many regions of the international community, and the study of French as used in these areas is an applied field within the discipline.

Students who graduate with a major in French pursue diverse careers and employment. Many become teachers or take positions in international commerce, marketing, banking, or travel (e.g., airlines, travel agencies, Club Med). Others work in fields of government, publishing, journalism, or international relations. As a liberal arts major, French is also the choice of some who go on to professional schools in law, management and business, library science, computer technology, or medicine.

Courses Offered in French

See the Course Descriptions listing in this *Bulletin* for complete information.

FRN 101 Intensive Elementary French
FRN 111, 112 Elementary French I, II
FRN 201 Intensive Intermediate French
FRN 211, 212 Intermediate French I, II
FRN 311 Conversation and Composition
FRN 312 Introduction to Stylistics
FRN 313 Vocabulary Through Music
FRN 331-G The French Novel
FRN 332-G The French Comedy from Molière to Ionesco

FRN 395-G, 396-G Readings in French Literature: Analysis and Interpretation

FRN 410 Business French

FRN 411 Phonetics and Diction

FRN 412 Stylistics

FRN 413 Advanced French Composition

FRN 432 Studies in Renaissance Literature

FRN 433 Studies in 17th-Century Literature

FRN 434 Studies in 18th-Century Literature

FRN 435 Studies in 19th-Century Literature

FRN 436 Studies in 20th-Century Literature

FRN 438-J Caribbean and African Literature in French

FRN 441-I French Civilization

FRN 442 Free Seminar

Independent reading, teaching practica, and senior honors courses

Courses Offered in French Literature and Culture Taught in English

See the Course Descriptions listing in this *Bulletin* for complete information.

HUF 211-D French Cinema

HUF 212-J French Caribbean Literature

HUF 213-G Caribbean and American Connections in Literature

HUF 216-G French Civilization Through the Ages

HUF 219-I Modern France

HUF 235-G The "Stranger" in World Literature

HUF 311-G French Literature

HUF 318-J Pan-African Literature I

Placement in Language Courses for Incoming Students

The prerequisites for courses 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 believe the recommended course is inappropriate.

Requirements for the Major in French Language and Literature (FRN)

The major in French language and literature leads to the Bachelor of Arts degree. Students must complete Concentration A or Concentration B. These concentrations are designed to allow maximum flexibility in the students' programs and to fulfill their varying needs and interests. Both require as a basis a solid preparation in French. Concentration A provides preparation for teaching at the secondary school level or for graduate study in literature; Concentrations A and B both provide appropriate background for students preparing for work in law, government, international relations, business, banking, hotel management, or translation and interpretation.

All students should consult with a French advisor. 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.

All courses offered for the major, excluding those graded S/U, must be passed with a letter grade of C or higher. Transfer students must take at least 12 credits of French in residence at Stony Brook.

Completion of the major requires 36 credits (Concentration A) or 42 credits (Concentration B).

Freshman Fall	Credits
D.E.C. A	3
FRN 211 or 311 (depending on placement)	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
FRN 212 or FRN 312	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Sophomore Fall	Credits
FRN 311 or FRN 395	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Spring	Credits
FRN 312 or FRN 396	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Junior Fall	Credits
FRN 395 (if not taken fall of sophomore year)	3
FRN 411	3
One 300-level literature course	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
FRN 396 (if not taken spring of sophomore year)	3
FRN 412	3
FRN 441 or one 300-level literature course	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	18

Senior Fall	Credits
FRN 413 (or 410)	3
One or two 300-level literature courses	3-6
Upper-Division elective	3
Elective	3
Elective	3
Total	15-18

Spring	Credits
FRN 441 (if not taken spring junior year)	3
One 300-level literature course	3
Elective	3
Elective	3
Elective	3
Total	15

A. Concentration in Language and Literature

1. Required courses:

a. Language courses:

- FRN 311 Conversation and Composition
- FRN 312 Introduction to Stylistics
- FRN 411 Phonetics and Diction
- FRN 412 Stylistics

b. Literature courses:

- FRN 395 Readings in French Literature: Analysis and Interpretation I
- FRN 396 Readings in French Literature: Analysis and Interpretation II

2. Elective courses:

18 additional credits in FRN courses beyond FRN 395, 396, of which 12 credits must be in literature (Two courses from among HUF 211, 216, 219, and HUL 424 are also acceptable)

3. Upper-division writing requirement: See C below

B. Concentration in French and a Second Discipline

1. Required courses:

- FRN 311 Conversation and Composition
- FRN 312 Introduction to Stylistics
- FRN 395, 396 Readings in French Literature: Analysis and Interpretation I, II
- FRN 411 Phonetics and Diction
- FRN 412 Stylistics

2. Elective courses:

One course in French literature numbered 300 or higher

FRN 441 French Civilization or HUF 216 or 219

Two additional FRN or HUF courses

2. Elective courses:

12 additional credits (nine of which must be 300-level or higher) 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.

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 will be asked to rewrite and resubmit the work in the senior year.

Notes:

1. Students whose language proficiency is such that they can be exempted from FRN 311, 312 may, and are strongly urged to, apply to have courses in art, music, history, or another language count for major credit.
2. Students who wish to offer their native language as the main area of concentration are asked to replace FRN 311, 312, 410, and 411 by English courses appropriate to their level of proficiency in that language.
3. All students majoring in French are automatically considered to have chosen Concentration A unless they obtain approval from the advisor for French.

Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Requirements for the Minor in French (FRN)

All courses offered for the minor must be taken for a letter grade, excluding those graded S/U. All upper-division courses offered for the minor must be passed with a grade of C or higher. Students must complete either A—Emphasis on Language or B—Emphasis on Literature. Transfer students must take at least six credits of upper-division French courses in residence at Stony Brook.

Completion of the minor requires 24 credits.

A. Emphasis on Language

Required courses:

FRN 212 Intermediate French II

FRN 311 Conversation and Composition

FRN 312 Introduction to Stylistics

FRN 395 *or* 396 Readings in French Literature

FRN 410 Business French (see note)

FRN 411 Phonetics and Diction

FRN 412 Stylistics

FRN 441 French Civilization
or HUF 216 Modern France

Note: A French literature course or HUL 424 may be substituted for FRN 410

B. Emphasis on Literature

Required courses:

FRN 212 Intermediate French II

FRN 311 Conversation and Composition

FRN 312 Introduction to Stylistics

FRN 395 Readings in French Literature I

FRN 396 Readings in French Literature II

Electives:

Three literature courses at the 300 level

Honors Program in French

To be eligible to participate in the honors program, majors must have a cumulative grade point average of 3.00 and an average of 3.50 in French 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. Students selected for the program must enroll in FRN 495 for the semester in which the thesis is written. The thesis is evaluated by the thesis advisor, another member of the department, and a third reader from outside the department. For further information consult the director of undergraduate studies.

GEO

Major and Minor in Geology

Department of Geosciences, College of Arts and Sciences

CHAIRPERSON: Scott M. McLennan DIRECTOR OF UNDERGRADUATE STUDIES: Daniel M. Davis

OFFICE: 255 Earth and Space Sciences PHONE: (631) 632-8200 WEB ADDRESS: www.pbisotopes.ess.sunysb.edu/geo

Minors of particular interest to students majoring in geology and earth and space sciences: environmental studies (ENS), marine sciences (MAR), engineering minors

Faculty

Daniel M. Davis, *Professor, Ph.D., Massachusetts Institute of Technology:* Geophysics.

Robert T. Dodd, Jr., *Professor Emeritus, Ph.D., Princeton University:* Geochemistry.

Steven C. Engebright, *M.S., Curator, University at Stony Brook:* Geology.

Gilbert N. Hanson, *Professor, Ph.D., University of Minnesota:* Geochemistry.

William E. Holt, *Associate Professor, Ph.D., University of Arizona:* Geophysics.

Robert C. Liebermann, *Professor and Distinguished Service Professor, Ph.D., Columbia University:* Geophysics.

Donald H. Lindsley, *Professor, Ph.D., Johns Hopkins University:* Geochemistry; petrology.

Scott M. McLennan, *Professor, Ph.D., Australian National University:* Geochemistry.

William J. Meyers, *Professor Emeritus, Ph.D., Rice University:* Sedimentology.

Hanna Nekvasil, *Associate Professor, Ph.D., Pennsylvania State University:* Geochemistry; petrology.

John B. Parise, *Professor, Ph.D., James Cook University:* Crystallography; mineral physics.

Richard J. Reeder, *Professor, Ph.D., University of California, Berkeley:* Geochemistry; sedimentology.

Martin A. Schoonen, *Professor, Ph.D., Pennsylvania State University:* Geochemistry.

Donald J. Weidner, *Distinguished Professor, Ph.D., Massachusetts Institute of Technology:* Geophysics.

Teng-fong Wong, *Professor, Ph.D., Massachusetts Institute of Technology:* Geophysics.

Affiliated Faculty

Robert C. Aller, *MSRC*

Henry J. Bokuniewicz, *MSRC*

J. Kirk Cochran, *MSRC*

Marvin Geller, *MSRC*

David W. Krause, *Anatomical Sciences*

Charles Nittrouer, *MSRC*

Teaching Assistants

Estimated number: 12

The Department of Geosciences offers two undergraduate programs: the Geology major, leading to a Bachelor of Science degree, and the Earth and Space Sciences major, leading to a Bachelor of Arts degree. Minimum course requirements for the B.S. program in geology are detailed below. For requirements for the B.A. program in earth and space sciences, see the entry in the alphabetical listings of Approved Majors, Minors, and Programs. Upon declaring the major, the student is assigned a faculty advisor who will assist in the selection of a course sequence leading to the 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.

Geology

The science of geology is concerned with the physical and chemical nature of the earth (and other planets) and the evolution of the earth over the vast expanse of geological time. The B.S. program in geology includes four tracks: geological science, environmental geoscience, engineering geology, and geological oceanography. The major aims at providing the student with maximum preparation to carry out graduate and professional work in each of these fields. Students graduating with a B.S. in geology typically go on to graduate school or obtain professional employment with environmental consulting firms or various government organizations.

Courses in Geology

See the Course Descriptions listing in this *Bulletin* for complete information.

GEO 101-E Environmental Geology

GEO 102-E The Earth

GEO 103-E The Earth Through Time

GEO 106-E Planetary Geology

GEO 107-E Natural Hazards

GEO 111 Environmental Geology Laboratory

GEO 112 Physical Geology Laboratory

GEO 113 Historical Geology Laboratory

GEO 122-E Physical Geology

GEO 133 Methods and Ethics of Science Research

GEO 201-H Environmental Geology of Long Island and Metropolitan New York

GEO 287 Introductory Research in Geology

GEO 302-E Paleontology

GEO 304-H Energy, Mineral Resources, and the Environment

GEO 305 Field Geology

GEO 306 Mineralogy and Petrology I

GEO 309 Structural Geology

GEO 310 Introduction to Geophysics

GEO 311-H Geoscience and Global Concerns

GEO 315 Groundwater Hydrology

GEO 316 Geochemistry of Surficial Processes

GEO 318 Engineering Geology and Coastal Processes

GEO 327 Computerized Modeling of Geological Phenomena

GEO 353 Marine Ecology

GEO 401 Optical Mineralogy

GEO 403 Stratigraphy

GEO 407 Mineralogy and Petrology II

GEO 420 Environmental Analysis Using Remote Sensing and Geographic Information Systems

GEO 447 Senior Tutorial in Geology

GEO 452 Seismology

Independent research, teaching practica, and internship courses

Requirements for the Major in Geology (GEO)

The major in geology leads to the Bachelor of Science degree. All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 66 to 68 credits.

Geology and Environmental Geoscience 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 305 Field Geology
 or (with written permission of the undergraduate director) either GEO 487 or 488
 GEO 306 Mineralogy and Petrology I
 GEO 309 Structural Geology
 GEO 310 Introduction to Geophysics
 GEO 401 Optical Mineralogy
 GEO 403 Stratigraphy
 GEO 407 Mineralogy and Petrology II

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 306 Mineralogy and Petrology I
 GEO 315 Groundwater Hydrology
 GEO 316 Geochemistry of Surficial Processes
 GEO 401 Optical Mineralogy
 GEO 403 Stratigraphy
 Any two of the following:
 GEO 305, 309, 310, 407, ATM 397,
 AMS 210, 321

B. Required courses in the related sciences:

MAT 131, 132 Calculus I, II
 (See note 1 below)
 CHE 131, 132 General Chemistry
 or CHE 141, 142 Honors Chemistry
 PHY 131, 132 Classical Physics I, II
 (See note 2 below)

C. Related science electives:

A coherent set of upper-division science courses, totaling 12 credits, that has been approved by 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 306 Mineralogy and Petrology I
 GEO 309 Structural Geology
 GEO 315 Groundwater Hydrology
 GEO/MAR 318 Engineering Geology and Coastal Processes
 GEO 401 Optical Mineralogy
 GEO 403 Stratigraphy
 MEC 260 Engineering Statics
 MEC 363 Mechanics of Solids

B. Required courses in the related sciences:

MAT 131, 132 Calculus I, II
 (See note 1 below)
 MAT 203 Calculus III with Applications
 or AMS 261 Applied Calculus III
 CHE 131, 132 General Chemistry
 or CHE 141, 142 Honors Chemistry
 PHY 131, 132 Classical Physics I, II
 (See note 2 below)

C. Related science and engineering electives:

A coherent set of science and engineering courses, totaling at least six credits, approved by the department.

D. Upper-Division Writing Requirement

See D under "Geology and Environmental Geoscience Tracks," above.

Geological Oceanography Track

A. Required courses

GEO 122 Physical Geology
 or GEO 102 The Earth and GEO 112 Physical Geology Laboratory
 GEO 306 Mineralogy and Petrology I
 GEO/BIO 353 Marine Ecology
 GEO 401 Optical Mineralogy
 GEO 403 Stratigraphy
 MAR 104 Oceanography
 MAR 304 Waves, Tides, and Beaches
 MAR 333 Coastal Oceanography
 MAR 346 Marine Sedimentology
 MAR 350 Introduction to Ocean Physics

B. Required Courses in related sciences:

MAT 131, 132 Calculus I, II (see Note 1 below)
 AMS 361 Applied Calculus IV: Differential Equations
 BIO 150 The Living World
 BIO 201 Fundamentals of Biology: Organisms to Ecosystems
 CHE 131, 132 General Chemistry
 or CHE 141, 142 Honors Chemistry
 PHY 131, 132 Classical Physics I, II
 or PHY 125, 126, 127 Physics A,B,C
 or PHY 141, 142 Classical Physics I, II: Honors

C. Upper-Division Writing Requirement

See D under "Geology and Environmental Geoscience Tracks" at left.

Notes:

- The following alternate beginning calculus sequences may be substituted for MAT 131, 132 in major requirements or prerequisites: MAT 125, 126, 127 or 141, 142. Equivalency for MAT courses achieved by earning the appropriate score on a University 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 "Beginning Mathematics Courses" under the entry for the Department of Mathematics and the individual course descriptions.
- In the Geology, Environmental Geoscience, and Engineering Geology tracks, the following physics courses are alternatives to PHY 131, 132: PHY

SAMPLE COURSE SEQUENCES IN THE GEOLOGY MAJOR

Track	Geology	Environmental Geoscience	Engineering Geology	Geological Oceanography
Freshman				
Fall:	D.E.C. A (3cr)	D.E.C. A (3cr)	D.E.C. A (3cr)	D.E.C. A (3cr)
	CHE 131 (4cr)	CHE 131 (4cr)	CHE 131 (4cr)	BIO 150 (3cr)
	GEO 102 (3cr)	GEO 102 (3cr)	GEO 102 (3cr)	CHE 131 (4cr)
	GEO 112 (1cr)	GEO 112 (1cr)	GEO 112 (1cr)	GEO 102 (3cr)
	D.E.C. (3cr)	D.E.C. (3cr)	D.E.C. (3cr)	GEO 112 (1cr)
Credits	14	14	14	14
Spring:	D.E.C. A (3cr)	D.E.C. A (3cr)	D.E.C. A (3cr)	D.E.C. A (3cr)
	CHE 132 (4cr)	CHE 132 (4cr)	CHE 132 (4cr)	CHE 132 (4cr)
	MAT 131 (4cr)	MAT 131 (4cr)	MAT 131 (4cr)	MAT 131 (4cr)
	GEO 103 (3cr)	GEO 101 (3cr)	GEO 101 (3cr)	MAR 104 (3cr)
	GEO 113 (1cr)	GEO 111 (1cr)	GEO 111 (1cr)	D.E.C. (3cr)
Credits	15	15	15	17
Sophomore				
Fall:	MAT 132 (4cr)	GEO Elec (3cr)	MAT 132 (4cr)	BIO 201 (4cr)
	PHY 131 (4cr)	MAT 132 (4cr)	PHY 131 (4cr)	MAT 132 (4cr)
	D.E.C. (3cr)	PHY 131 (4cr)	D.E.C. (3cr)	PHY 131 (4cr)
	D.E.C. (3cr)	D.E.C. (3cr)	D.E.C. (3cr)	D.E.C. (3cr)
		D.E.C. (3cr)		
Credits	14	17	14	15
Spring:	GEO 306 (4cr)	GEO Elec (3cr)	AMS 261 (4cr) or	GEO 306 (4cr)
	PHY 132 (4cr)	GEO 306 (4cr)	MAT 203 (4cr)	PHY 132 (4cr)
	D.E.C. (3cr)	PHY 132 (4cr)	GEO 306 (4cr)	D.E.C. (3cr)
	D.E.C. (3cr)	D.E.C. (3cr)	PHY 132 (4cr)	D.E.C. (3cr)
	D.E.C. (3cr)			D.E.C. (3cr)
Credits	17	14	12	17
Junior				
Fall:	GEO 401 (1cr)	GEO 401 (1cr)	MEC 260 (3cr)	AMS 361 (4cr)
	GEO 407 (3cr)	GEO 403 (4cr)	GEO 401 (1cr)	GEO 401 (1cr)
	GEO 403 (4cr)	GEO 316 (4cr)	GEO 403 (4cr)	GEO 403 (4cr)
	D.E.C. (3cr)	D.E.C. (3cr)	D.E.C. (3cr)	D.E.C. (3cr)
	D.E.C. (3cr)	D.E.C. (3cr)	D.E.C. (3cr)	UpperDiv Elec (3cr)
Credits	14	15	17	15
Spring:	GEO 309 (4cr)	ATM 397 (3cr) or	MEC 363 (4cr)	MAR 333 (3cr)
	GEO Elec (3cr)	GEO 309 (4cr)	GEO 315 (3cr)	D.E.C. (3cr)
	D.E.C. (3cr)	GEO 315 (3cr)	D.E.C. (3cr)	D.E.C. (3cr)
	UpperDiv D.E.C. (3cr)	D.E.C. (3cr)	D.E.C. (3cr)	UpperDiv Elec (3cr)
	D.E.C. (3cr)	D.E.C. (3cr)	UpperDiv Elec (3cr)	UpperDiv Elec (3cr)
	UpperDiv Elec (3cr)			
Summer:	GEO305 (3cr)			
Credits	19(+3 Summer)	12 or 13	16	15
Senior				
Fall:	GEO 310 (3cr)	AMS 210 (3cr) or	GEO 318 (3cr)	MAR 304 (3cr)
	GEO Elec (3cr)	GEO 310 (3cr)	GEO 310 (3cr)	MAR 346 (3cr)
	D.E.C. (3cr)	GEO Elec (3cr)	D.E.C. (3cr)	MAR 350 (2cr)
	UpperDiv Elec (3cr)	D.E.C. (3cr)	UpperDiv Elec (3cr)	D.E.C. (3cr)
	UpperDiv Elec (3cr)	UpperDiv Elec (3cr)	UpperDiv Elec (3cr)	UpperDiv Elec (3cr)
	UpperDiv Elec (3cr)			
Credits	18	15	15	14
Spring:	GEO Elec (3cr)	GEO Elec (3cr)	GEO 309 (4cr)	GEO/MAR 353 (3cr)
	UpperDiv Elec (3cr)	UpperDiv Elec (3cr)	GEO/MEC Elec (3)	D.E.C. (3cr)
	UpperDiv Elec (3cr)	UpperDiv Elec (3cr)	D.E.C. (3cr)	UpperDiv Elec (3cr)
	UpperDiv Elec (3cr)	Elective (3cr)	UpperDiv Elec (3cr)	Elective (3cr)
	D.E.C. (3cr)	Elective (3cr)	UpperDiv Elec (3cr)	Elective (3cr)
Credits	15	15	16	15

121/123 and 122/124, or PHY 125, 126, 127 or PHY 141, 142.

Honors Program in Geology

Students in the geology major who have maintained a grade point average of 3.50 in natural sciences and mathematics through the junior year may become candidates for departmental honors in geology by applying to the department.

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 3.50 grade point average in all coursework in natural sciences and mathematics, honors are conferred.

The Minor in Geology (GEO)

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.

All courses offered for the minor must be passed with a letter grade of C or higher. Completion of the minor requires 20 credits.

Geology Track

GEO 103 and 133

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 and GEO 111
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 304, 306, 307, 309, 310, 311, 316,
318, 401, 403

GER

Major and Minors in

Germanic Language and Literature

Department of European Languages, Literatures, and Cultures, College of Arts and Sciences

CHAIRPERSON: Charles Franco DIRECTOR OF UNDERGRADUATE STUDIES: Thomas Kerth UNDERGRADUATE SECRETARY: Marie Sweatt
OFFICE: N-4004 Melville Library PHONE: (631) 632-7440 E-MAIL: tkerth@notes.cc.sunysb.edu or msweatt@notes.cc.sunysb.edu
WEB ADDRESS: www.sunysb.edu/eurolangs/

Minors of particular interest to students majoring in German: business management (BUS), comparative literature (CLT), economics (ECO), English (EGL), history (HIS), international studies (LIS), linguistics (LIN), medieval studies (MVL), philosophy (PHI), political science (POL), other languages

The major in German is part of a liberal education and concerns itself primarily with the language, literature, and culture of the German-speaking countries. In a time of continuing political transformation in Europe and increasing cooperation between these nations in trade and commerce, technology and science, the environment, and the arts, a mastery of German and a deeper understanding of its societies and cultures can open opportunities for personal development and prepare students for diverse professional careers. The program places the study of German and its literature in the context of its culture, including its political, historical, and economic aspects.

The major in German is flexibly designed to permit emphasis on language, literature, or area studies. Students graduating with a major in German have found careers and job opportunities in international transportation, tourism, foreign trade and banking, government, science and technology, as well as in teaching and library sciences. For majors in the sciences, humanities, and social sciences, knowledge of German is important in international science and in areas of employment within the expanding East-West trade. It is often desired for admission to graduate school and for advanced graduate study in many disciplines.

Courses Offered in German

See the Course Descriptions listing in this *Bulletin* for complete information.

GER 101 Intensive Elementary German

GER 111, 112 Elementary German I, II

GER 211, 212 Intermediate German I, II

GER 311, 312 German Conversation and Composition I, II

GER 343-G Introduction to Germanic Studies

GER 344-G Survey of German Literature

GER 401 German Drama

GER 402 German Prose

GER 403 German Poetry

GER 404 Goethezeit

GER 411, 412 Advanced German Conversation and Composition I, II

GER 420 Special Topics in German Literature

GER 431, 432 Business German I, II

GER 438 Structure of German

Independent readings, internship, and senior honors courses

Courses Offered in German Literature and Culture Taught in English

See the Course Descriptions listing in this *Bulletin* for complete information.

HUG 221-D German Cinema Since 1945

HUG 229-I Germany Today

HUG 321-G Topics in the Literature of Germany

Placement in Language Courses for Incoming Students

The prerequisites for courses 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 believe the recommended course is inappropriate.

Requirements for the Major in Germanic Language and Literature (GER)

The major in German language and literature leads to the Bachelor of Arts degree. No previous knowledge of the language is required. All courses offered for the major must be passed with a letter grade of C or higher. Transfer students must complete at least 18 credits toward the major at Stony Brook.

Completion of the major requires 36 credits.

1. HUG 229 Germany Today

2. GER 343 Introduction to Germanic Studies

3. GER 344 Survey of German Literature

4. GER 311, 312 German Conversation and Composition I, II

5. GER 438 Structure of German

6. 18 additional credits to be chosen from among: GER 401 or higher; ECO 341; HUG 221, 321; HIS 311, 312; MVL 241; or POL 307

7. Upper-division writing requirement: In order to demonstrate proficiency in writing in German, 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 will be essays previously composed for upper-division courses in the department. Those originally in a foreign language must be rewritten in English. A faculty committee will judge the papers for clarity, accuracy, and appropriateness of style.

If the dossier is judged to be unsatisfactory, the student will be asked to rewrite and resubmit the work in the senior year. Students must demonstrate acceptable writing skills before they graduate.

Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Requirements for the Minor in German (GER)

For students majoring in other disciplines, a German minor, below, is available with two choices of emphasis. Students must complete Emphasis A or Emphasis B.

All upper-division courses in German offered to fulfill minor requirements below must be passed with a grade of C or higher. At least nine of the upper-division credits must be earned at Stony Brook. Completion of the minor requires 24 credits.

A. Emphasis on German Language and Literature

1. HUG 229 Germany Today
2. GER 343 Introduction to German Studies
3. GER 344 Survey of German Literature
4. GER 311, 312 German Conversation and Composition I, II
5. GER 438 Structure of German
6. Two additional German literature courses at the 400 level or above

B. Emphasis on German Language and Area Studies

1. HUG 229 Germany Today
2. GER 311, 312 German Conversation and Composition I, II
3. GER 438 Structure of German
4. POL 307 Politics in Germany
5. HIS 311 The Rise of Imperial Germany, 1806-1890
6. HIS 312 From Empire to Third Reich: Germany, 1890-1945
7. One additional course in German studies with a GER or HUG designator

Sample Course Sequence for the German Major

Freshman Fall	Credits
D.E.C. A	3
GER 111	4
HUG 229*	3
D.E.C.	3
D.E.C.	3
Total	16

Spring	Credits
D.E.C. A	3
GER 112	4
D.E.C.	3
D.E.C.	3
Total	13

Sophomore Fall	Credits
GER 211	3
HIS 311* or HUG course	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
GER 212	3
HIS 312* or HUG course	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Total	15

Junior Fall	Credits
GER 311*	3
GER 343*	3
D.E.C.	3
Upper-Division elective.	3
Upper-Division elective	3
Total	15

Spring	Credits
GER 312*	3
GER 344*	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
GER 401*	3
GER 403*	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Spring	Credits
GER 402*	3
GER 404*	3
GER 438*	3
Elective	3
Elective	3
Total	15

*Fulfills requirement for the major.

Interdisciplinary Minor in German for Business (GBS)

The interdisciplinary minor in German for Business provides students with the opportunity to combine academically their facility in the German language with a professional interest in economics or international commerce. Students completing the minor are expected to take the examination that leads to the certificate "Wirtschaftsprüfung Deutsch International," for which Stony Brook is a regional testing site.

Requirements for students with majors other than German

All upper-division courses offered to fulfill minor requirements must be passed with a letter grade of C or higher. At least nine upper-division credits must be earned at Stony Brook. Completion of the minor requires 24 credits.

1. HUG 229

2. GER 311, 312, 431, and 432
3. Two courses in business chosen from among:
BUS 340, BUS 348, BUS 440
4. ECO 341

Requirements for students majoring in German (GER)

All upper-division courses offered to fulfill minor requirements must be passed with a letter grade of C or higher. At least nine upper-division credits must be earned at Stony Brook. Completion of the minor requires 24 credits.

1. HUG 229
2. GER 431, 432
3. Three courses in business management:
BUS 340, BUS 348, and BUS 440

4. Two courses in economics:
ECO 341; one additional course in economics numbered 310 or higher

Honors Program in German

To be eligible, majors must have a cumulative g.p.a. of 3.00 and a g.p.a. of 3.50 in German through the junior year. An eligible student, with the approval of a faculty member who will serve as thesis advisor, must submit a written thesis proposal to the department's honors committee. Students selected enroll in GER 495 for the semester in which the thesis is written. The thesis is evaluated by the thesis advisor, another member of the department, and a third reader from outside the department. For further information and deadlines for submission, consult the director of undergraduate studies.

HAN

Major in Health Science

School of Health Technology and Management

PROGRAM DIRECTOR: Susan Cappello STUDENT SERVICES COORDINATOR: Traci Thompson
OFFICE: Level 2, Room 452, Health Sciences Center PHONE: (631) 444-BSHS (2747) E-MAIL: scappello@epo.hsc.sunysb.edu
WEB ADDRESS: www.uhmc.sunysb.edu/shtm

Minors or second majors of particular interest to students majoring in health science: biology (BIO), business management (BUS), chemistry (CHE), economics (ECO), computer science (CSE), environmental studies (ENS), health and wellness (LHW), psychology (PSY), sociology (SOC)

Faculty

Sabra Boughton, *Lecturer, M.S., University at Stony Brook*: Health care policy and management.

Susan Cappello, *Clinical Associate Professor, M.B.A., Iona College*: Clinical laboratory sciences and health care policy management.

Leo DeBobs, *Clinical Assistant Professor, M.A., New York University*: Clinical laboratory sciences.

Moshe Eisenberg, *Associate Professor, Ph.D., California Institute of Technology*: Pharmacology.

Kenneth J. Feldman, *Lecturer, Ph.D., LaSalle University*: Health care policy and management.

Deborah T. Firestone, *Clinical Assistant Professor, M.S., University at Stony Brook*: Clinical laboratory sciences.

Candace Golightly, *Clinical Assistant Professor, M.A., State University of New York at Westbury*: Clinical laboratory sciences.

Carol Gomes, *Lecturer, M.S., University at Stony Brook*: Health care policy and management.

Mary Hotaling, *Clinical Assistant Professor, M.S., St. John's University*: Clinical laboratory sciences.

Craig A. Lehman, *Professor, Ph.D., The Union Institute*: Clinical laboratory sciences.

Alan M. Leiken, *Associate Professor, Ph.D., University at Stony Brook*: Health care policy and management.

John Marchese, *Clinical Assistant Professor, M.S., University at Stony Brook*: Clinical laboratory sciences.

M. Veronica McKinnon, *Clinical Assistant Professor, J.D. Touro College*: Health care policy and management.

Karen J. Mendelsohn, *Clinical Assistant Professor, M.S., Indiana University*: Health care policy and management.

Edward O'Connell, *Clinical Assistant Professor, M.S., University at Stony Brook*: Clinical laboratory sciences.

Barbara J. Panessa-Warren, *Research Associate Professor, Ph.D., New York University*: Clinical laboratory sciences.

Nanci C. Rice, *Clinical Associate Professor, Ph.D., New York University*: Health care policy and management.

Deborah Zelizer, *Lecturer, M.S.W., University at Stony Brook*: Health care policy and management.

The School of Health Technology and Management offers a Bachelor of Science degree in Health Science with areas of concentration in environmental health, public health, community health education, health care management, and health care informatics. This major is designed to prepare students for entry into the non-clinical fields of health care. The curriculum requires that students receive a broad liberal arts education during their first three years. In the senior year, the curriculum focuses on health care-related topics. Graduates will be liberally educated and knowledgeable about health care; they can expect to be employed by hospitals, integrated health care delivery systems, physician group practices, health departments, nursing homes, and managed care, corporate and not-for-profit organizations. They can also pursue clinical degrees through appropriate admissions processes.

Courses Offered in Health Science

See the Course Descriptions listing in this *Bulletin* for complete information.

HAN 300 Health Care Issues

HAN 333 Communication Skills

HAN 335 Professional Ethics

HAN 364 Issues in Health Care Informatics

HAN 383 Professional Writing

HAN 432 Introduction to Health Care Management

HAN 434 Corporate Compliance and Regulation

HAN 436 Continuous Quality Improvement in Health Care

HAN 438 Coding ICD-9-CM/CPT

HAN 440 Introduction to Community Health Education

HAN 442 Community Health Education Models and Resources

HAN 444 Teaching Strategies

HAN 450 Introduction to Public Health

HAN 452 Epidemiology and Biostatistics

HAN 454 Issues in Public Health

HAN 456 Behavioral and Social Aspects of Health

HAN 462 Developing Health Information Systems

HAN 464 Health Information Systems Management

HAN 466 Applied Health Care Informatics

HAN 467 Utilization and Outcomes Research Methods

HAN 470 Environmental Health, Radiation Safety, and Safety Engineering

HAN 474 Industrial Hygiene

HAN 476 Hazardous Material, Emergency Response, and Environmental Auditing

HAN 478 Independent Study in Environmental Health

Requirements for Enrollment in Senior-Year Courses in the Major in Health Science

While there is no formal application process, students must complete the following requirements before advancing to the senior year courses in the program:

1. Completion of a total of 91 credits with a minimum g.p.a. of 2.00
2. Completion of the Diversified Education Curriculum (D.E.C.)
3. Completion of a minimum of 16 credits in the natural sciences (D.E.C. category E)
Note: Courses used toward D.E.C. requirements may be used to meet this requirement.
4. Completion of 21 credits in related electives courses (see listing below).

Note: Courses used to satisfy D.E.C. requirements or the 16 credits in natural sciences courses

in requirement 3 above may not be used to satisfy this requirement.

5. Completion of 10 credits at the upper-division level (courses numbered 300 or higher), including courses used to satisfy requirements 1 through 5 above.

Requirements for the Major in Health Science (HAN)

The major in health science leads to the Bachelor of Science degree. Completion of the degree requires a minimum of 29 credits after achieving senior status and advancement to senior-year courses. To be in good standing in the School of Health Technology and Management, the student must maintain a 2.00 minimum cumulative g.p.a. and a 2.50 minimum g.p.a. in required professional (HAN) courses. If a student fails a course in the professional curriculum, the course must be repeated.

Core Courses

To be completed during the first semester, senior year. Students must enroll in 15 credits of core health science courses including:

1. HAN 300 Health Care Issues
2. HAN 333 Communication Skills
3. HAN 335 Professional Ethics
4. HAN 364 Issues in Health Care Informatics
5. HAN 383 Professional Writing

Courses in the Concentration

To be completed during the second semester, senior year. Students may either complete 14 credits in courses from among health sciences or 14 credits within one concentration. Students are advised to select an area of concentration because it will offer greater career opportunities. Four upper-division courses are offered in each concentration listed below:

A. Health Care Management

This concentration provides the knowledge and skills to manage health care practices, plan health care programs, and utilize the fundamentals of health care management and health services administration.

1. HAN 432 Introduction to Health Care Management
2. HAN 434 Corporate Compliance and Regulation

3. HAN 436 Continuous Quality Improvement in Health Care

4. HAN 438 Coding ICD-9-CM/CPT

B. Community Health Education

This concentration provides students with the knowledge and skills needed to plan, implement, and evaluate health education programs in the community. Students who successfully complete this concentration may be eligible to apply for the national certification examination of health educators. Employment opportunities include public and private health-related agencies, hospitals, and HMOs.

1. HAN 440 Introduction to Community Health Education
2. HAN 442 Community Health Education Models and Resources
3. HAN 444 Teaching Strategies
4. HAN 456 Behavioral and Social Aspects of Health

C. Public Health

This concentration provides students with a basic foundation in public health, including epidemiology and biostatistics. Students who graduate with this concentration may find employment in health departments, public health agencies, health maintenance organizations, and health-related corporations.

1. HAN 450 Introduction to Public Health
2. HAN 452 Epidemiology and Biostatistics
3. HAN 454 Issues in Public Health
4. HAN 456 Behavioral and Social Aspects of Health

D. Health Care Informatics

This specialization prepares the student for a career in health care information systems, processing and managing health care data with computer and communication technologies. Emphasis is placed on health care information systems' architecture, computerized medical data processing, and clinical decision support systems. Note: Ten (10) credits of computer science/information systems electives are required as prerequisites. CSE 101, CSE 106, ISE 112, and CSE 114 are strongly recommended.

1. HAN 460 Utilization and Outcomes Research Methods

2. HAN 462 Developing Health Information Systems

3. HAN 464 Health Information Systems Management

4. HAN 466 Applied Healthcare Informatics

E. Environmental Health

This specialization explores the concepts and principles of various environmental health issues, including lead management, pest management, hazardous waste management, and food service sanitation. Emphasis is placed on the recognition, identification, and control of environmental contaminants in the workplace; prevention and preparedness for hazardous material incidents; and compliance with various regulatory agencies.

1. HAN 470 Environmental Health, Radiation Safety, and Safety Engineering
2. HAN 474 Industrial Hygiene
3. HAN 476 Hazardous Material, Emergency Response, and Environmental Auditing
4. HAN 478 Independent Study in Environmental Health

Related Electives

- AFS 283 Community Service
- AFS 319 The Politics of Race
- AFS 345 Culture and Gender: Women in Africa and the Caribbean
- AMS 102 Elements of Statistics
- AMS 110 Probability and Statistics in the Life Sciences
- ANP 300 Human Anatomy
- ANT 102 Introduction to Cultural Anthropology
- ANT 160 The Individual in Society
- ANT 290 Science and Technology in Ancient Society
- ANT 350 Medical Anthropology
- ANT 367 Male and Female
- BCP/MAR 394 Environmental Toxicology and Public Health
- BUS 347 Business Ethics
- BUS 114 Financial Accounting
- BUS 214 Managerial Accounting
- BUS 340 Management Information Systems
- BUS 348 Principles of Marketing
- BUS 349 Management Science

- BUS 351 Human Resource Management
 BUS 353 Entrepreneurship
 BUS 441 Business Strategy
 CSE 101 Introduction to Computers and Information Technologies
 CSE 106 Introduction to Programming
 CSE 114 Computer Science I
 CSE 214 Computer Science II
 CSE 220 Computer Organization and Systems Programming
 CSE/ISE 305 Principles of Database Systems
 CSE/ISE 308 Software Engineering I
 CSE/ISE 310 Data Communications and Networks
 ECO 107 Introduction to Economic Reasoning
 ECO 109 Introduction to Analytical Economics
 ECO 303 Intermediate Microeconomics
 HAD 210 Introduction to CLS
 HAS/HNI 190 Introduction to the Health Professions
 HAS 290 Medicine and Society
 HAT 210 Introduction to Respiratory Care
 HBP 390 Basic Mechanism in Pathology
 HDH 301 Independent Readings and Research (Dental Health)
 HIS 237, 238 Science, Technology and Medicine in Western Civilization I, II
 HIS/WST 316 The Healer and the Witch in History
 HIS 345/WST 345 Women and Gender in Chinese History
 HIS 365 Environmental History of North America
 HIS 394 Topics in History of Medicine and Reproduction
 HIS 398 Topics of Science and Technology
 HMC 331 Legal and Ethical Issues in Health Care
 HWC 210 Introduction to Social Work
 HWC 326 Social Work in Health Care with Diverse Populations
 HWC 349 Overview of Gay and Lesbian Issues
 ISE 112 Fundamentals of Computer Information Systems
 LCR 200 The Nature of Community
 LCR 201 Methods for Community-based Action Research
 LCR 488 Internship in Service Learning/Community Action Research
 LCR 490 Senior Seminar in Service Learning/Community Action Research
 LHD 101 Human Development Seminar for First-Year Students
 LHD 301 Human Sexual and Gender Development Issues
 LHD 302 Colloquium to Human Sexual and Gender Development
 LHD 305, 306 HIV Reduction in the Campus Community
 LHD 307, 308 Laboratory in HIV Reduction in the Campus Community
 LHD 401 Advanced Seminar in Human Sexual and Gender Development
 LHD 402 Parenting Children in the Next Generation
 LHW 102 Introductory Seminar to Health Professions
 LHW 301 Issues in Health and Wellness
 LHW 488 Internship in Health and Wellness
 LRN 104 The Person
 LRN 105 Ecology and Society
 LRN 131 Thinking About Science
 LRN 132 Thinking About Biology
 MAR 340 Environmental Problems and Solutions
 MEC 280 Pollution and Human Health
 PEC 225, 226 Instructor of Adapted Aquatics I, II
 PEC 229 Fieldwork in Adapted Aquatics Instruction
 PEC 240 Introduction to Wellness
 PEC 270 First Aid and Cardiopulmonary Resuscitation
 PEC 271 Instructor of Cardiopulmonary Resuscitation
 PEC 272 Instructor of First Aid
 PHI 376 Philosophy and Medicine
 PSY 103 Introduction in Psychology
 PSY 201 Statistical Methods in Psychology
 PSY 220 Survey in Developmental Psychology
 PSY 230 Survey in Abnormal and Clinical Psychology
 PSY 240 Survey in Social Psychology
 PSY 250 Survey in Biopsychology
 PSY 260 Survey in Cognition and Perception
 PSY 310 Research and Writing in Psychology
 PSY 325 Children's Cognitive Development
 PSY 326 Children's Social and Emotional Development
 PSY 346 Health Psychology
 PSY 347/WST 377 Psychology of Women
 SOC 105 Introduction to Sociology
 SOC 202 Statistical Methods in Sociology
 SOC 243 Sociology of Youth
 SOC 304 Sociology of the Family
 SOC 310 Ethnic and Race Relations
 SOC 315 Sociology of Technology
 SOC 337 Social Deviance
 SOC 380 Social Psychology
 SOC 384 Sociology of the Life Course
 SOC 387 Sociology of Education
 SOC/HMC 200 Medicine and Society
 SOC/WST 340 Sociology of Human Reproduction
 SSI 210 Human Development: The Family Context
 SSI 308 Abuse of Women and Children
 SSI 320 The Special Child
 SSI 327 Middle Childhood and Adolescent Growth and Development
 SSI 350 Foundation of Education
 WST/SSI 102 Introduction to Women's Studies in the Social Sciences
 WST 103 Introduction to Women's Studies in the Humanities
 WST/SOC 247 Sociology of Gender
- Note on Related Electives:**
 Health Care Management: Students are encouraged to choose courses in business, computer science, and economics.
 Health Care Informatics: Ten credits in computer science elective are required; CSE 101, CSE 106, ISE 112, and CSE 114 are strongly recommended. In addition, students are encouraged to choose courses with designators BUS, CSE, ECO, and PSY.
 Environmental Health: Students are encouraged to choose courses with designators BCP, BIO, BUS, CHE, ECO, HBP, HIS, HMC, MEC, and SOC.
 Public Health: Students are encouraged to choose courses with designators ANT, BUS, ECO, LHW, PSY, SOC.
 Community Health Education: Students are encouraged to choose courses with designators HMC, HWC, LHW, PSY, SOC, and SSI.

LHW

Living/Learning Center Interdisciplinary Minor in Health and Wellness

DIRECTOR OF THE MINOR: Richard Johnson, Physical Therapy

OFFICE: Health Sciences Center, Level 2, Room 052 PHONE: (631) 444-3251 E-MAIL: rjohnson@epo.hsc.sunysb.edu

The interdisciplinary minor in health and wellness is designed to give students a foundation in the concepts of healthy living and to help students select future studies/careers in the health professions. The minor is intended primarily, but not exclusively, for residents of Mount College Health and Wellness Living/Learning Center.

Courses Offered in Health and Wellness

See the Course Descriptions listing in this *Bulletin* for complete information.

LHW 102 Introductory Seminar to the Health Professions

LHW 301 Issues in Health and Wellness

LHW 488 Internship in Health and Wellness

Requirements for the Minor in Health and Wellness (LHW)

Before declaring the health and wellness minor, each student should plan his or her program in consultation with the director of the minor. All courses offered for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 19 credits.

1. LHW 102 Introductory Seminar to the Health Professions
or HAS 190 Introduction to Health Professions
2. Six credits chosen from the following:
 - BIO 201 Fundamentals of Biology: Organisms to Ecosystems
 - BIO 202 Fundamentals of Biology: Molecular and Cellular Biology
 - BIO 203 Fundamentals of Biology: Cellular and Organ Physiology
 - HMC/SOC 200 Medicine and Society
 - MEC 280 Pollution and Human Health
 - PSY 103 Introduction to Psychology
 - PSY 220 Developmental Psychology

3. Six credits chosen from the following:

- ANP 300 Human Anatomy
- ANT 350 Medical Anthropology
- BCP/MAR 394 Environmental Toxicology and Public Health
- BIO 320 General Genetics
- BIO 328 Mammalian Physiology
or HBY 350 Physiology
- BIO 350 Darwinian Medicine
- CBN 340/PSY 356 Physiological Psychology
- ECO 354 Special Topics (when topic is Health Economics)
- HBP 310 Pathology
- PSY 326 Children's Social and Emotional Development
- SOC 392 Special Topics (when topic is Health Care Delivery)

4. LHW 301 Issues in Health and Wellness
5. LHW 488 Internship in Health and Wellness

Note: At least 13 credits of coursework for the minor must be in courses that are outside the student's major.

Declaration of the Minor

Students should declare the health and wellness minor during their sophomore year or the beginning of the junior year, at which time they must consult the director and plan their course of study.

HIS

Major and Minor in History

Department of History, College of Arts and Sciences

CHAIRPERSON: Gary Marker DIRECTOR OF UNDERGRADUATE STUDIES: Sara Lipton STAFF ASSISTANT: Susan Grumet

OFFICE: S-301 Social and Behavioral Sciences PHONE: (631) 632-7500 WEB ADDRESS: www.sunysb.edu/history

Minors of particular interest to students majoring in history: Africana studies (AFS), international studies (LIS), Latin American and Caribbean Studies (LAC), political science (POL), women's studies (WST), program in teacher certification (SSI), foreign languages

Faculty

Michael Barnhart, *Distinguished Teaching 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 Emeritus, Ph.D., University of California, Berkeley*: England and Ireland.

David B. Burner, *Professor, Ph.D., Columbia University*: 20th-century U.S. political and social.

Floris Cash, *Assistant Professor, Ph.D., University at Stony Brook*: Joint appointment with Africana Studies; U.S. social and political history; African-American history; Latin American history.

Alix Cooper, *Assistant Professor, Ph.D., Harvard University*: Early modern Europe; history of science; environment.

Ruth Schwartz Cowan, *Professor, Ph.D., Johns Hopkins University*: History of biology and technology; women in modern society.

Mike Davis, *Professor, M.Phil., University of California at Los Angeles*: Urban and environmental history.

Elizabeth Garber, *Associate Professor, Ph.D., Case Western Reserve University*: History of physics and thermodynamics; European intellectual and social.

Robert Goldenberg, *Professor, Ph.D., Brown University*: History of religion; history of Judaism; Talmudic literature; ancient history.

Paul Gootenberg, *Professor, Ph.D., University of Chicago*: 19th-century Latin America; Andean; Mexican; economic.

Young Sun Hong, *Associate Professor, Ph.D., University of Michigan, Ann Arbor*: Modern Germany.

Temma Kaplan, *Professor, Ph.D., Harvard University*: Spain; comparative women's history; popular culture.

Thomas Klubock, *Associate Professor, Ph.D., Yale University*: Modern Latin America; labor; gender; environment.

Richard F. Kuisel, *Professor Emeritus, Ph.D., University of California, Berkeley*: Modern Europe; France.

Ned Landsman, *Professor, Ph.D., University of Pennsylvania*: Colonial U.S. history.

Brooke Larson, *Professor, Ph.D., Columbia University*: Latin America; social history; mining and agrarian change.

Herman E. Lebovics, *Professor, Ph.D., Yale University*: Modern European intellectual and social history.

Helen Rodnite Lemay, *Professor, Ph.D., Columbia University*: Medieval and Renaissance intellectual; paleography. Recipient of the President's Award for Excellence in Teaching, 1984.

Shirley Lim, *Assistant Professor, Ph.D., University of California, Los Angeles*: Asian-American immigration; women and culture; film.

Sara Lipton, *Associate Professor, Ph.D., Yale University*: Medieval Europe; gender; religion; culture.

William McAdoo, *Associate Professor, Ph.D., University of Michigan*: Joint appointment with Africana Studies; U.S. urban, social, and institutional history; immigration historiography; labor history; African-American history.

Iona Man-cheong, *Associate Professor, Ph.D., Yale University*: Modern China and Japan; modern Chinese women.

Gary Marker, *Professor, Ph.D., University of California, Berkeley*: 18th- and 19th-century Russian social history.

Wilbur R. Miller, *Professor, Ph.D., Columbia University*: 19th-century U.S.; Civil War and Reconstruction; crime and police.

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.

Ian Roxborough, *Professor, Ph.D., University of Wisconsin-Madison*: Joint appointment with Sociology; Comparative social structures; development; Latin American politics; social change; Latin American labor movements.

Warren Sanderson, *Professor, Ph.D., Stanford University*: Joint appointment with Economics; Economic history; economic demography.

Wolf Schäfer, *Professor, Ph.D., University of Bremen*: Social history of the sciences and science policy.

Christopher Sellers, *Associate Professor, Ph.D., Yale University*: Medical history; environmental history; science and technology.

Nancy Tomes, *Professor, Ph.D., University of Pennsylvania*: U.S. social, medical, and women's history.

Olufemi Vaughan, *Associate Professor, Ph.D., University of Oxford*: Joint appointment with Africana Studies; African politics and history; international relations.

Fred Weinstein, *Professor Emeritus, 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, *Associate Professor, Ph.D., Yale University*: Modern British social and intellectual history.

Judith Wishnia, *Associate Professor Emerita, Ph.D., University at Stony Brook*: Joint appointment with Interdisciplinary Program in Social Sciences; women's history; labor history; European history.

Roger Wunderlich, *Research Associate Professor, Ph.D., University at Stony Brook*: Long Island history.

Affiliated Faculty

Leslie H. Owens, *Africana Studies*

Eli Seifman, *Social Sciences Interdisciplinary*

Adjunct Faculty

Estimated number: 3

Teaching Assistants

Estimated number: 20

History is the systematic study of peoples, states, and societies from antiquity to our current times. Using both written records and material artifacts, historians attempt to reconstruct and interpret change over time in every facet of human experience, from political and economic systems to family life and gender roles, to name a few. The study of history is not only intrinsically interesting, but also contributes useful insights into the contemporary world and its problems.

History majors develop an in-depth knowledge of a specific region of the world, including its history, geography, and culture. In the process, they also learn

how to conduct historical research, and to develop convincing arguments based on the evidence they uncover. Effective oral and written communication skills are strongly emphasized in all history courses.

Many history majors choose careers in law, teaching, archival or library science, or museum work. Because it emphasizes research and writing, history is also excellent preparation for many fields, including journalism, diplomacy, and international business. Combined with a concentration in science, the history major is also a good background for medicine or other health science professions.

The department's offerings range over many eras, regions, and topics, concentrating on the United States, Europe, Latin America, East Asia, the history of science, and women's history. 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, as prerequisites for more advanced coursework. American and European courses at the 200 level customarily examine a specific period, 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.

Courses Offered in History

See the Course Descriptions listing in this *Bulletin* for complete information.

HIS 101-F European History: From Antiquity to Revolution

HIS 102-F Modern European History from 1789 to 1945

HIS 103-F American History to 1877

HIS 104-F United States Since 1877

HIS 109-F History through Documents

HIS 111-H Introduction to the Social History of Medicine

HIS 208-I Ireland from St. Patrick to the Present

HIS 209-I Imperial Russia

HIS 210-I Soviet Russia

HIS 213-J Colonial Latin America

HIS 214-J Modern Latin America

HIS 216-J History of U.S.-Latin American Relations

HIS 219-J Introduction to Chinese History and Civilization

HIS 220-J Introduction to Japanese History and Civilization

HIS 221-J Introduction to Modern African History

HIS 225-J The Formation of the Judaic Heritage

HIS 226-F The Shaping of Modern Judaism

HIS 227-J Islamic Civilization

HIS 235-I The Early Middle Ages

HIS 236-I The Late Middle Ages

HIS 237-H, 238-H Science, Technology, and Medicine in Western Civilization I, II

HIS 241-I The Holocaust: The Destruction of European Jewry—Causes and Consequences

HIS 248-I Europe, 1815-1914

HIS 249-I Modern Europe, 1914-1945

HIS 250-F The Second World War, 1939-1945

HIS 251-I Europe Since 1945

HIS 261-K Change and Reform in the United States, 1877-1919

HIS 262-K American Colonial Society

HIS 263-K Age of the American Revolution

HIS 264-K The Birth of Modern America

HIS 265-K Civil War and Reconstruction

HIS 266-K History of the United States West

HIS 268-K Recent U.S. History, 1919-Present

HIS 277-K The Modern Color Line

HIS 300-F Global History

HIS 301 Reading and Writing History

HIS 309-I Modern France, 1815-1900

HIS 310-I Modern France, 1900 to the Present

HIS 311-I The Rise of Imperial Germany, 1806-1890

HIS 312-I From Empire to Third Reich: Germany, 1890-1945

HIS 316-F The Healer and the Witch in History

HIS 317-F Expansion of Europe

HIS 318-I Social and Intellectual History of Europe

HIS 321-K Long Island History

HIS 325-K The Civil Rights Movement

HIS 326-K History of Popular Culture

HIS 327-K Origins of American Society

HIS 333-K Women in U.S. History

HIS 336-I Women, Work, and Family in Modern European History

HIS 340-J Topics in Asian History

HIS 341-J 20th-Century China

HIS 343-J Roots of Modern Japan

HIS 344-J 20th-Century Japan

HIS 345-J Women and Gender in Chinese History

HIS 346-J Political and Social History of Africa

HIS 348-J History of British India

HIS 349-J History of South Africa

HIS 350-J Topics in African History

HIS 360-I Women in Premodern Europe

HIS 361-F American History/American Film

HIS 362-F Making Peace with the Sixties

HIS 365-K Environmental History of North America

HIS 369-K American Social History to 1860

HIS 370-K U.S. Social History, 1860-1930

HIS 371-K American Economic History to 1860

HIS 374-F Historical Perspectives on Gender Orientation

HIS 375-K History of U.S. Foreign Relations to 1920

HIS 376-K History of U.S. Foreign Relations Since 1920

HIS 378-F War and the Military

HIS 380-J Topics in Latin American History

HIS 382-J Politics and Political Change in Latin America

HIS 385-J Aztec Civilization

HIS 386-J Modern Brazil

HIS 387-J Women, Development, and Revolution in Latin America

Sample Course Sequence in the History Major

Freshman Fall	Credits
D.E.C. A	3
HIS 101 or 103 or 109	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
HIS 102 or 104 or 110	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Sophomore Fall	Credits
Primary Field Course #1 (200 level)	3
D.E.C.	3
D.E.C.	3
Elective	3
D.E.C.	3
Total	15

Spring	Credits
Primary Field Course #2 (200 level)	3
Elective	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Total	15

Junior Fall	Credits
Primary Field Course #3 (300 level)	3
HIS 200-level outside primary field	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

Spring	Credits
Primary Field course #4 (300 level)	3
HIS 300-level outside primary field	3
Related discipline 300-level course	3
Upper-Division elective	3
Upper-Division elective	3
Elective	1-2
Total	16-17

Senior Fall	Credits
Primary Field course #5 (400-level special topics seminar)	3
HIS 300-level outside primary field	3
D.E.C.	3
Elective	3
Elective	3
Total	15

Spring	Credits
Related discipline course (300 or 400-level)	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

Requirements for the Major in History (HIS)

The major in history leads to the Bachelor of Arts degree. All courses taken to meet requirements A and B must be taken for a letter grade. No grade lower than C may be applied toward requirement A. At least 12 credits in requirement A must be taken within the Department of History at Stony Brook.

Completion of the major requires 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
 - 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

- HIS 388-J Slavery in Latin America and the Caribbean
- HIS 389-J Modern Mexico
- HIS 390-I Topics in Ancient and Medieval Europe
- HIS 391-I Topics in Early Modern Europe
- HIS 392-I Topics in European History
- HIS 393-I Topics in Modern European History
- HIS 394-H Topics in History of Medicine and Reproduction
- HIS 395-I Topics in Russian History
- HIS 396-K Topics in U.S. History
- HIS 397-K Topics in History of U.S. Immigration and Ethnicity
- HIS 398-H Topics in History of Science and Technology

- HIS 399-K Topics in U.S. History
 - HIS 401, 402, 403 Colloquia in European History
 - HIS 404 Colloquium in the History of the Social and Behavioral Sciences
 - HIS 411-414 Colloquia in American History
 - HIS 421, 422 Colloquia in Latin American History
 - HIS 431, 432 Colloquia in Asian History
 - HIS 441 Colloquium in World History
 - HIS 451 Colloquium in Medieval History
 - HIS 461 Colloquium in History of Science
- Independent reading, research, internship, and senior honors courses

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. No transferred course with a grade lower than C may be applied toward requirement A.
2. No more than six credits of HIS 447, 487, 488 may be applied toward requirement A.

- 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.

The Honors Program in History

Departmental majors with a minimum g.p.a. of 3.00 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 (HIS)

The minor 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 offered for the minor must be taken for a letter grade. Upper-division courses offered for the minor must be passed with a grade of C or higher.

Completion of the minor requires 18 credits. 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:

LHD

Living/Learning Center Interdisciplinary Minor in Human Sexual and Gender Development

DIRECTOR OF THE MINOR: Robyn Stein DeLuca

OFFICE: 008 Eisenhower College PHONE: (631) 632-6769 E-MAIL: rodeluca@notes.cc.sunysb.edu

The minor in human sexual and gender development is designed primarily, but not exclusively, for residents of Eisenhower 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.

Courses Offered in Human Sexual and Gender Development

See the Course Descriptions listing in this *Bulletin* for complete information.

LHD 101 Human Development Seminar for First-Year Students

LHD 301 Human Sexual and Gender Development Issues

LHD 302 Colloquium in Human Sexual and Gender Development

LHD 305, 306 HIV Risk Reduction in the Campus Context

LHD 307, 308 Laboratory in HIV Risk Reduction in the Campus Context

LHD 401 Advanced Seminar in Human Sexual and Gender Development

LHD 402 Parenting Children in the Next Generation

LHD 475, 476 Undergraduate Teaching Practicum I, II

LHD 487 Independent Study in Human Sexual and Gender Development

LHD 488 Internship

Requirements for the Minor in Human Sexual and Gender Development (LHD)

No more than one 3-credit course in the minor may be taken P/NC. All other courses, except S/U graded courses, must be passed with a letter grade of C or higher.

Completion of the minor requires 20 credits.

1. LHD 101 Human Development Seminar for First-Year Students *or* LHD 301 Human Sexual and Gender Development Issues
2. Twelve credits in social and behavioral sciences selected from the approved list of courses (available from the minor coordinator), including:
 - a. two 3-credit phase of life courses
 - b. two 3-credit gender studies courses
3. Four credits in Human Sexual and Gender Development coursework chosen from the following:
 - LHD 302 Colloquium in Human Sexual and Gender Development
 - LHD 305 HIV Risk Reduction in the Campus Context
 - LHD 307 HIV Risk Reduction in the Campus Context Laboratory
 - LHD 401 Advanced Seminar in Human Sexual and Gender Development
4. Three credits of Independent Study coursework chosen from the following:
 - LHD 475 Undergraduate Teaching Practicum I
 - LHD 487 Independent Study in Human Sexual and Gender Development
 - LHD 488 Internship

Note: At least 10 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.

HUM

Interdisciplinary Major in Humanities

Department of Comparative Studies, College of Arts and Sciences

DIRECTOR OF UNDERGRADUATE STUDIES: Robert Harvey, Comparative Studies ADMINISTRATIVE ASSISTANT: Mary Moran-Luba
OFFICE: E-4322 Library PHONE: (631) 632-7460 E-MAIL: robert.harvey@sunysb.edu WEB ADDRESS: www.sunysb.edu/complit/

Minors of particular interest to students majoring in humanities: art history (ARH), classics (CLS), comparative literature (CLT), English (EGL), French (FRN), German (GER), history (HIS), Italian (ITL), interdisciplinary arts (LIA), Judaic studies (JDS), medieval studies (MVL), music (MUS), Russian (RUS), Spanish (SPN), theatre arts (THR), women's studies (WST)

The interdisciplinary program in humanities, 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.

Courses Offered in Humanities

See the Course Descriptions listing in this *Bulletin* for complete information.

HUM 109-B Philosophy and Literature in Social Context

HUM 121-B Death and Afterlife in Literature

HUM 122-B Images of Women in Literature

HUM 123-B Sin and Sexuality in Literature

HUM 201-D Film and Television Studies: Genres

HUM 202-D Film and Television Studies: History and Theory

HUM 220-G Cross-Cultural Encounters

HUM 495 Humanities Honors Project

Requirements for the Major in Humanities (HUM)

The interdisciplinary major in the humanities leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher. In choosing courses to satisfy requirement B, the student should be careful to consider the relevant prerequisites for the epochs chosen to satisfy requirement D.

Completion of the major requires 48 credits. 24 of the 48 credits must be at the upper-division level.

A. Basic Humanities Courses

Six credits (two courses) of 100-level Humanities (HUM) courses.

B. Introductory Coursework

Twelve credits of introductory coursework (four courses numbered in the 100s or 200s) chosen from three of the following six areas:

1. Literature and Culture (CLT, EGL, HUF, HUG, HUI, HUM, HUR and other courses in literatures and cultures)
2. Cinema and Cultural Studies (CCS and courses which apply to the CCS minor)
3. Fine Arts: Art History (ARH), Music (MUS), Theatre Arts (THR)
4. History (HIS)
5. Philosophy (PHI)
6. Religious Studies (RLS and pertinent courses under other designators)

C. Language Study

Six credits (or the equivalent of one year) of college study of a language other than English at the intermediate level or beyond. Courses in literature or culture taught in the language may also apply.

D. Advanced Studies

Twenty-one upper-division credits (seven courses numbered 300 or higher) in courses with the listed designators, to be distributed as follows: three courses in one of the following epochs and two courses in each of two other epochs:

1. Ancient Worlds
[ANT, ARH, CLS, CLT, EGL, HIS, JDH, JDS, LAT, PHI, RLS]

2. The Middle Ages

[ARH, CLT, EGL, FRN, GER, HIS, ITL, LAT, MUS, MVL, PHI, RLS, RUS, SPN]

3. The Renaissance

[ARH, CLT, EGL, FRN, GER, HIS, ITL, MUS, PHI, RUS, SPN, THR]

4. Neoclassicism and Enlightenment

[ARH, CLT, EGL, FRN, GER, HIS, ITL, MUS, PHI, RUS, SPN]

5. Nineteenth-Century Frameworks

[AFS, ARH, CLT, EGL, FRN, GER, HIS, ITL, MUS, PHI, RUS, SPN]

6. Modern and Postmodern Societies and Cultures

[AFS, ARH, CCS, CLT, EGL, FRN, GER, HIS, ITL, HUF, HUG, HUI, HUM, HUR, JDH, JDS, MUS, PHI, RLS, RUS, SPN, THR]

E. HUM 435 Senior Seminar or HUM 447 Directed Readings

F. Upper-Division Writing Requirement

No later than seven weeks after the start of the first semester of the senior year, students majoring in humanities must submit, to the director of undergraduate studies, two papers (totalling at least ten pages altogether) written in two different areas or epochs for upper-division courses pertaining to the major. 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.

**Sample Course Sequence for the
Humanities Major**

Freshman Fall	Credits
D.E.C. A	3
Elementary Foreign Language	3-4
Area A course	3
D.E.C.	3
D.E.C.	3
Total	15-16

Spring	Credits
D.E.C. A	3
Area A course	3
Elementary Foreign Language	3-4
D.E.C.	3
D.E.C.	3
Total	15-16

Sophomore Fall	Credits
Area B course	3
Area B course	3
Intermediate Foreign Language	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
Area B course	3
Area B course (same dept. as another)	3
Intermediate Foreign Language	3
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
Area D epoch 1	3
Area D epoch 2	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
Area D epoch 1 (course #2)	3
Area D epoch 2 (course #2)	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
Area D epoch 1 (course #3)	3
Area D epoch 3	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

Spring	Credits
Area D epoch 3 (course #2)	3
HUM 435	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Honors Program in Humanities

Humanities majors who have maintained a grade point average of 3.50 in the major and 3.00 overall through their junior year may attempt the degree in humanities with honors.

The honors program requires an additional three credits above the 48 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.

ISE

Major in Information Systems

Department of Computer Science, College of Engineering and Applied Sciences

CHAIRPERSON: Arie Kaufman UNDERGRADUATE PROGRAM DIRECTOR: Philip M. Lewis UNDERGRADUATE SECRETARY: Grace Garufi

OFFICE: 1440 Computer Science PHONE: (631) 632-8470 E-MAIL: pml@cs.sunysb.edu or ggarufi@notes.cc.sunysb.edu

WEB ADDRESS: www.cs.sunysb.edu

The information systems major, which is housed in the Department of Computer Science, prepares its graduates to design and build 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.

Courses Offered in Information Systems

See the Course Descriptions listing in this *Bulletin* for complete information.

ISE 203 Using the Internet for Research

ISE 300 Writing in Information Systems

ISE 305 Principles of Database Systems

ISE 308 Software Engineering

ISE 310 Data Communication and Networks

ISE 315 Database Transaction Processing Systems

ISE 332 Introduction to Scientific Visualization

ISE 333 User Interface Development

ISE 334 Introduction to Multimedia Systems

ISE 336 Internet Commerce Programming

ISE 364 Advanced Multimedia Techniques

ISE 390 Special Topics in Information Systems

ISE 440 Information Systems Design
Independent research, teaching practica, and internship courses

Acceptance into the Information Systems Major

Qualified freshman and transfer applicants may be accepted directly into the Computer Science or Information Systems major upon admission to the University. Currently enrolled students may apply for acceptance to one of these majors after completing the following courses with a grade point average of 2.80 or higher and no grade in any of them lower than a C.

1. CSE 113 Foundations of Computer Science I
2. CSE 114 Computer Science I
3. AMS 151 *or* MAT 125 *or* MAT 131

Only one of these courses may be repeated, and repeated only one time.

Requirements for the Major in Information Systems (ISE)

The major in information systems leads to the Bachelor of Science degree. At least one of the courses under requirement A2 below and all of the courses under requirement A3 must be completed at Stony Brook.

Completion of the major requires approximately 70 credits.

A. Information Systems/Computer Science Courses

1. CSE 113 Foundations of Computer Science I
CSE 114 Computer Science I
CSE 213 Foundations of Computer Science II
CSE 214 Computer Science II
CSE 219 Computer Science III
CSE 220 Computer Organization and Systems Programming
2. ISE/CSE 305 Principles of Database Systems
ISE/CSE 308 Software Engineering
3. ISE/CSE 310 Data Communication
ISE 440 Information Systems Design

4. Twelve credits chosen from the following:

- CSE 306 Operating Systems
- CSE 307 Principles of Programming Languages
- CSE 326 Digital Image Processing
- CSE 328 Fundamentals of Computer Graphics
- CSE 366 Introduction to Virtual Reality
- CSE 373 Analysis of Algorithms
- CSE 491 Honors Seminar
- ISE/CSE 315 Database Transaction Processing Systems
- ISE/CSE 332 Introduction to Scientific Visualization
- ISE/CSE 333 User Interface Development
- ISE/CSE 334 Introduction to Multimedia Systems
- ISE/CSE 336 Internet Commerce Programming
- ISE/CSE 364 Advanced Multimedia Techniques
- ISE 390 Special Topics in Information Systems
- ISE 487 Research in Information Systems (minimum of 3 credits)

B. Mathematics Courses

1. AMS 151 Applied Calculus I
(*or* MAT 131 *or* MAT 141 *or* MAT 125, 126)
2. AMS 201 Matrix Methods and Models
or AMS 210 Applied Linear Algebra
or MAT 211 Introduction to Linear Algebra
3. AMS 310 Survey of Probability and Statistics
or ECO 320 Mathematical Statistics

C. Economics and Business Courses

1. ECO 109 Introduction to Analytical Economics
2. BUS 210 Financial Accounting

3. One course chosen from the following:

- BUS 214 Managerial Accounting
- BUS 346 Operations Management
- BUS 349 Management Science
- BUS 355 Investment Analysis
- BUS 356 Financial Engineering
- ECO 348 Analysis for Managerial Decision Making
- ECO 368 Modern Portfolio Theory
- ECO 389 Corporate Finance
- EST 392 Engineering and Managerial Economics *or* EST 393 Production and Operations Analysis

4. One course chosen from the following:

- BUS 347 Business Ethics
- BUS 348 Principles of Marketing
- ECO 326 Industrial Organization
- ECO 343 Transformation in Economic Systems
- ECO 345 Law and Economic Issues
- POL 319 Business Law
- POL 359 Public Policy Analysis
- POL 364 Organizational Decision Making
- SOC 381 Sociology of Organizations

5. One course chosen from the following:

- BUS 340 Management Information Systems
- BUS 343 Expert Systems in Business
- EST 302 Assessment of Computer-Based Technologies
- EST 305 Applications Software in Information Management
- EST 320 Communication Technology Systems
- EST 325 Technology in the Workplace

Sample Course Sequence in the Information Systems Major

Freshman Fall	Credits
CSE 113	3
AMS 151	3
BUS 110	3
D.E.C. A	3
EAS/USB 101	1
Total	13

Spring	Credits
CSE 114	4
BUS 210	4
D.E.C.	3
D.E.C.	3
Total	14

Sophomore Fall	Credits
CSE 213	3
CSE 214	3
AMS 201	3
ECO 109	4
D.E.C.	3
Total	16

Spring	Credits
CSE 219	3
CSE 220	4
Business/Economics course A	3
D.E.C.	3
Elective	3
Total	16

Junior Fall	Credits
ISE 305	4
ISE 308	3
AMS 310 or ECO 320	3
Business/Economics course B	3
D.E.C.	3
Total	16

Spring	Credits
CSE 310	3
ISE elective	3
Business/Economics course C	3
D.E.C.	3
Elective	3
Total	15

Senior Fall	Credits
ISE 300	1
ISE 440	3
ISE elective	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	16

Spring	Credits
ISE elective	3
ISE elective	3
D.E.C.	3
Elective	3
Elective	3
Total	15

Grading

All courses taken to satisfy requirements A through C 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 CSE and ISE courses.

D. Upper-Division Writing Requirement

All degree candidates must demonstrate writing skills in English at a level acceptable for information systems majors. To satisfy the requirement, the ISE student must 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. Students whose writing does not meet the required standards are directed to seek remedial help and resubmit their work.

LIA

Living/Learning Center Interdisciplinary Minor in Interdisciplinary Arts

DIRECTOR OF THE MINOR: Connie Koppelman, Women's Studies

OFFICE: Old Chemistry 105 PHONE: (631) 632-9176 or (631) 632-9858 E-MAIL: ckoppelman@notes.cc.sunysb.edu

The minor in interdisciplinary arts provides an interdisciplinary and collaborative perspective on the fine and performing arts. The minor is designed to explore the factors that unify the arts in modern culture and society. The interdisciplinary arts minor is also for students who would like to gain insight into the arts or to broaden their involvement in and knowledge of these exciting fields. It is designed primarily, but not exclusively, for residents of Greeley College who wish to add an academic dimension to their residential experience.

The minor in interdisciplinary arts serves as an excellent complement to any academic major and broadens the scope and depth of majors in art, cinema and cultural studies, English, music, and theatre arts.

Courses Offered in Interdisciplinary Arts

See the Course Descriptions listing in this *Bulletin* for complete information. See also listings for Art, Music, and Theatre Arts.

LIA 101-D Introduction to the Interdisciplinary Arts

LIA 102 Opportunities in the Arts

LIA 401 Senior Seminar

LIA 487 Projects in the Interdisciplinary Arts

LIA 488 Internship in Arts Management

Requirements for the Minor in Interdisciplinary Arts (LIA)

All courses for the minor must be passed with a letter grade of C or higher. Nine credits must be in courses numbered 300 or higher.

Completion of the minor requires 22 credits.

1. LIA 101 Introduction to the Interdisciplinary Arts
LIA 102 Opportunities in the Arts
LIA 401 Senior Seminar
2. Six credits each in two of the following disciplines:

Art History and Criticism/
Studio Art

Music

Theatre Arts/Dance

3. Three credits chosen from the following:

ARH 102 Art in Culture, ca. 1400 A.D. to Postmodernism

PHI 110 Arts and Ideas

PHI 264 Philosophy and the Arts

SOC 351 Sociology of the Arts

THR 110 Public Speaking

Notes:

1. Students majoring in art history and criticism, studio art, music, or theatre arts may not use courses in their major to fulfill requirement 2.
2. No more than three credits from ARH 487, ARS 487, MUS 487, or THR 487 may be applied to the minor.

Declaration of the Minor

Students must declare the interdisciplinary arts 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.

KIS

Living/Learning Center Interdisciplinary Minor in International Studies

DIRECTOR OF THE MINOR: Timothy Moran, Sociology

OFFICE: S-421 Social and Behavioral Sciences PHONE: (631) 632-6979 or (631) 632-4311 E-MAIL: tpmoran@notes.cc.sunysb.edu

The interdisciplinary minor in international studies is open to all undergraduates, with preference given to residents of Stimson International College who wish to add an academic dimension to their residential experience. The minor helps students gain a solid understanding of global issues and world cultures. Through an interdisciplinary and integrated program of study, the major social, economic, and political developments in the world today are examined. Students choose a region of specialization to gain deeper knowledge of a particular part of the world and are also urged to spend at least one semester abroad.

Courses Offered in International Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

LIS 201 Introductory Seminar in International Studies

LIS 302 Colloquium in International Studies

LIS 401 Advanced Seminar in International Studies

LIS 487 Independent Study in International Studies

Requirements for the Minor in International Studies (KIS)

No more than one 3-credit course offered for the minor may be taken under the Pass/No Credit option. All other courses must be passed with a letter grade of C or higher. At least 12 elective credits for the minor must be in courses numbered 300 or higher.

Completion of the minor requires 24 credits.

1. 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.
2. One course from the following:

ANT 102 Introduction to Cultural Anthropology

ANT 230 Peoples of the World

EGL 224 20th-Century Literature in English

PHI 105 Politics and Society

POL 101 World Politics

POL 103 Introduction to Comparative Politics

3. Fifteen credits selected from courses in the social and behavioral sciences and humanities and fine arts that relate to the world region the student has chosen to study, to be distributed as follows:

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; and

One additional course from either of the above two sets of topics.

4. LIS 201 Introductory Seminar in International Studies
5. LIS 302 Colloquium in International Studies
6. LIS 401 Advanced Seminar in International Studies
7. LIS 487 Independent Study for three credits
or a three-credit 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 the Study Abroad entry in the chapter entitled "Special Academic Programs."
2. 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.

ITL

Major and Minors in Italian Studies

Department of European Languages, Literatures, and Cultures, College of Arts and Sciences

CHAIRPERSON: Charles Franco DIRECTOR OF UNDERGRADUATE STUDIES: Thomas Kerth UNDERGRADUATE SECRETARY: Marie Sweatt
OFFICE: N-4004 Melville Library PHONE: (631) 632-7440 E-MAIL: tkerth@notes.cc.sunysb.edu or msweatt@notes.cc.sunysb.edu
WEB ADDRESS: www.sunysb.edu/eurolangs/

Minors of particular interest to students majoring in Italian: business management (BUS), comparative literature (CLT), economics (ECO), English (EGL), history (HIS), international studies (LIS), linguistics (LIN), medieval studies (MVL), philosophy (PHI), political science (POL), other languages

Italian Studies at Stony Brook is a versatile program that allows the student to concentrate on the study of Italian language, culture, and literature. Students may choose an individualized course of study to fit their needs. Students interested in teaching Italian should concentrate on courses taught in the Italian language, while those interested in other careers should choose courses in culture, film studies, and Italian-American social issues.

The Italian studies major consists of an intensive study of the Italian language along with the study of the culture that has shaped Italian society and its interaction with American society through the study of literature, culture, and film studies.

The undergraduate program in Italian studies provides training for secondary language teachers and for graduate studies in Italian. In conjunction with other disciplines, the Italian program also provides a basis for careers such as international business, law, and economics.

Courses Offered in Italian

See the Course Descriptions listing in this *Bulletin* for complete information.

- ITL 101 Intensive Elementary Italian
- ITL 111, 112 Elementary Italian I, II
- ITL 201 Intensive Intermediate Italian
- ITL 211, 212 Intermediate Italian I, II
- ITL 311, 312 Italian Conversation and Composition
- ITL 313 Italian Vocabulary
- ITL 395-G, 396-G Readings in Italian Literature
- ITL 410 Business Italian
- ITL 411 Advanced Conversation and Composition
- ITL 412 Advanced Conversation and Syntax
- ITL 424 History of the Italian Language
- ITL 425 Italian and Its Dialects

- ITL 426 Italian Linguistics
 - ITL 430, 431 Studies in 13th- and 14th-Century Literature
 - ITL 432 Studies in 15th- and 16th-Century Literature
 - ITL 433 Studies in 17th- and 18th-Century Literature
 - ITL 434 Studies in 19th-Century Literature
 - ITL 435 Studies in Contemporary Literature
 - ITL 440-I The Italian Scene
 - ITL 441 Free Seminar
- Independent readings, teaching practica, internship, and senior honors courses

Courses Offered in Italian Literature and Culture Taught in English

- See the Course Descriptions listing in this *Bulletin* for complete information.
- HUI 216-I Italian Civilization Through the Ages
 - HUI 231-D Sex and Politics in Italian Cinema
 - HUI 234-G Introduction to 20th-Century Drama
 - HUI 235-G Sex, Love, and Tragedy in Early Italian Literature
 - HUI 236-K The Italian-American Scene
 - HUI 237-K Images of Italian-American Women
 - HUI 239-I Modern Italy
 - HUI 331-G Italian Literature
 - HUI 333-K The Italian-American Experience in Literature
 - HUI 336-K Italian Americans and Ethnic Relations
 - HUI 338-K Images of Italian Americans in Film
 - HUI 390-G Italian-American Studies in the Humanities
 - HUI 392-F Italian-American Studies in the Social and Behavioral Sciences

- HUI 431 Special Topics in Italian Cinema
- Independent readings and teaching practica courses

Placement in Language Courses for Incoming Students

The prerequisites for courses 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 believe the recommended course is inappropriate.

Requirements for the Major in Italian Studies (ITL)

The major in Italian Studies leads to the Bachelor of Arts degree. Students must complete Concentration A or Concentration B. These concentrations are designed to allow maximum flexibility in the students' programs and to fulfill their varying needs and interests. Both require as a basis a solid preparation in the language of the major. Concentration A provides preparation for teaching at the secondary school level or for graduate study in literature; Concentrations A and B both provide appropriate background for students preparing for work in law, government, international relations, business, banking, hotel management, or translation and interpretation.

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.

All courses offered for the major, excluding those graded S/U, must be passed with a letter grade of C or higher. Transfer students must take at least 12 credits of the major language in residence at Stony Brook.

Completion of the major requires 36 credits for Concentration A. More credits may be required for Concentration B.

A. Concentration in Language and Literature

1. Required courses:

ITL 311 Italian Conversation and Composition I

ITL 395 Readings in Italian Literature I

ITL 396 Readings in Italian Literature II

ITL 411 Advanced Conversation and Composition

ITL 412 Advanced Conversation and Syntax

2. Elective courses

a. Two courses chosen from among the following: additional ITL courses numbered 200 or above or HUI courses numbered 100 or 200

b. Six additional courses in ITL or HUI (HUI 424 may also be used) numbered 300 or above, of which at least three courses must be taken with the ITL designator (See Note 4 below).

3. Upper-Division Writing Requirement: see C below.

B. Concentration in Italian and a Second Discipline

1. Required courses:

ITL 311 Italian Conversation and Composition I

ITL 395 Readings in Italian Literature I

ITL 396 Readings in Italian Literature II

ITL 411 Advanced Conversation and Composition

ITL 412 Advanced Conversation and Syntax

2. Elective courses

a. Six additional ITL or HUI courses chosen in consultation with the student's advisor, of which 4 must be numbered 300 or higher

b. Four additional courses in a discipline other than Italian chosen in consultation with the student's advisor and approved by the department, of which 3 must be numbered 300 or higher. (See Note 4 below)

3. Upper-Division Writing Requirement: see C below.

Sample Course Sequence for the Italian Studies Major Concentration in Language and Literature

Freshman Fall	Credits
D.E.C. A	3
ITL 201 or ITL 211	6
HUI or ITL elective	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
ITL 311 or ITL 212	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
ITL 395	3
HUI or ITL elective	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
ITL 396	3
ITL 411	3
ITL Upper-Division elective	3
Elective	3
Elective	3
Elective	3
Total	16-18

Junior Fall	Credits
ITL 412	3
HUI or ITL Upper-Division elective	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Spring	Credits
ITL Upper-Division elective	3
HUI or ITL Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

Senior Fall	Credits
ITL 432	3
HUI or ITL Upper-Division elective	3
ITL Upper-Division Elective	3
D.E.C.	3
Upper-Division Elective	3
Total	15

Spring	Credits
ITL 495 (Honors Project)	3
ITL Upper-Division elective	3
D.E.C.	3
Elective	3
Elective	3
Total	15

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. If 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 will be asked to rewrite and resubmit the work in the senior year.

Notes:

- Credits for ITL 411 and 412 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 311, 312 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 311 and 312 by English courses appropriate to their level of proficiency in that language.

4. Students in the foreign language teacher preparation program should include FLA 439 when choosing electives and should take no more than one additional course taught in English.
5. ITL 475 and HUI 475, 476 cannot be applied toward the requirements for the major in Italian.

Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Requirements for the Minor in Italian (ITL)

For students majoring in other disciplines, an Italian minor, is available with two choices of emphasis. Students must complete either Emphasis A Language or Emphasis B Italian Studies.

All courses for the minor must be taken for a letter grade, excluding those graded S/U. All upper-division courses for the minor must be passed with a letter grade of C or higher.

Transfer students who wish to graduate with a minor in Italian must take at least six credits of upper-division Italian courses in residence at Stony Brook.

Completion of the minor with either emphasis requires 21 credits.

A. Emphasis on Language

ITL 311 *or* 312 Italian Conversation and Composition

ITL 395 *or* 396 Readings in Italian Literature

ITL 411 Advanced Conversation and Composition

ITL 412 Advanced Conversation and Syntax

Three additional courses with the designator ITL or HUI, at least one of which must be 300 level or higher

B. Emphasis on Italian Studies

ITL 311 *or* 312 Italian Conversation and Composition

ITL 395 *or* 396 Readings in Italian Literature

Two HUI courses at the 100 or 200 level

Three additional courses at the 300 level or higher in Italian studies chosen in consultation with the student's advisor

Note: Credits for ITL 411 and 412 cannot be transferred from any other institution without prior permission of the department.

Honors Program in Italian

To be eligible to participate in the honors program, majors must have a cumulative grade point average of 3.00 and an average of 3.50 in 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. Students selected for the program must enroll in ITL 495 for the semester in which the thesis is written. The thesis is evaluated by the thesis advisor, another member of the department, and a third reader from outside the department. For further information consult the director of undergraduate studies.

IAM

Interdisciplinary Minor in

Italian-American Studies

Department of European Languages, Literature, and Cultures; College of Arts and Sciences

DIRECTOR OF THE MINOR: Fred Gardaphe, European Languages, Literatures, and Cultures UNDERGRADUATE SECRETARY: Marie Sweatt
OFFICE: N-4004 Melville Library PHONE: (631) 632-7440 E-MAIL: [msweatt@notes.cc.sunysb.edu](mailto:m sweatt@notes.cc.sunysb.edu) WEB ADDRESS: www.italianstudies.org/iam

Majors or other minors of particular interest to students minoring in Italian American studies: comparative literature (CLT), English (EGL), history (HIS), international studies (LIS), Italian (ITL), political science (POL), psychology (PSY), sociology (SOC)

Affiliated Faculty

Mary Jo Bona, *Italian American Studies*

Andrea Fedi, *Italian Studies*

Luigi Fontanella, *Italian Studies*

Charles Franco, *Italian and Medieval Studies*

Eva Gold, *Italian and Cultural Studies*

Mario Mignone, *Italian Studies*

Jacqueline Reich, *Italian and Cultural Studies*

Minor in Italian-American Studies

Interdisciplinary in nature, Italian-American studies considers the experiences of persons of Italian descent in North and South America with particular attention to experiences in the United States. The minor is designed to assist students in exploring the ways in which Italian and American cultures have combined to form a distinctive ethnic culture.

The minor in Italian-American studies offers students the opportunity to survey developments in the field of Italian-American studies, as well as to examine it in relation to the fields of history, literature, media, and language study.

Students are encouraged to approach Italian-American studies from the perspective of their major. Combined with a major in political science, history, or psychology, the minor provides students with an in-depth exploration of the role of ethnicity in the definition of what it means to be American. The study of the Italian-American experience will assist students with a major in sociology to understand the theoretical approaches to the study of urban and suburban cultures. Students of American literature or culture may use the minor to develop a specialty in the study of a specific ethnic American culture. Students intending careers in law and the health professions may use the minor to further their understanding of the community in which they may ultimately serve.

Under the direction of an advisor, students must establish an advising folder with the minor coordinator who supervises students in fulfilling the requirements.

Requirements for the Minor in Italian-American Studies (IAM)

All courses offered to for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 21 credits.

1. HUI 236 The Italian-American Scene
2. One of the following:
 - HUI 216 Italian Civilization through the Ages
 - HUI 237 Images of Italian-American Women
 - HUI 239 Modern Italy
3. ITL 311 Italian Conversation and Composition
or ITL 312 Italian Conversation and Composition
4. HUI 333 Italian-American Experience in Literature
5. HUI 336 Italian Americans and Ethnic Relations
6. HUI 338 Images of Italian Americans in Film
7. HUI 390 Humanities Topics in Italian-American Studies

JNH

Minor in

Japanese Studies

Department of Comparative Studies, College of Arts and Sciences

DIRECTOR: Sachiko Murata, Comparative Studies OFFICE: 131-B Old Chemistry PHONE: (631) 632-9364

In completing the minor in Japanese studies, 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 choose courses for the minor with the approval of the director of the minor.

Courses Offered in Japanese Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

JNH 240-J Introduction to Japanese Studies

JNH 251-J Japanese Literature

JNH, JNS 331, 332 Topics in Japanese Studies

JNH 351 Studies in Japanese Literature

JNH, JNS 447 Independent Study

JPN 111, 112 Elementary Japanese I, II

JPN 211, 212 Intermediate Japanese I, II

JPN 311, 312 Advanced Japanese I, II

JPN 475, 476 Undergraduate Teaching Practicum I, II

JNH, JNS 332 Topics in Japanese Studies

JNH 351 Studies in Japanese Literature

JNH, JNS 447 Independent Study

JPN 311 Advanced Japanese I

JPN 312 Advanced Japanese II

KRH 346 Philosophy of Education in Korea and Japan

PHI 344 Japanese Thought and Philosophy

RLS 246 Korean and Japanese Religions

RLS 406 Japanese Buddhism

Notes:

1. Students excused from JPN 211 because of previous Japanese language proficiency are required to take an extra course from requirement 2.
2. Independent study may fulfill only three credits.

Requirements for the Minor in Japanese Studies (JNH)

All courses offered for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 18 credits.

1. JPN 211 Intermediate Japanese I

2. Five of the following:

ECO 340 Japanese Economy

HIS 220 Introduction to Japanese History and Civilization

HIS 343 Roots of Modern Japan

HIS 344 20th-Century Japan

HIS 431 Colloquium in Asian History (appropriate topic only)

JNH 240 Introduction to Japanese Studies

JNH 251 Japanese Literature in Translation

JNH, JNS 331 Topics in Japanese Studies

JRN

Minor in Journalism

Department of English, College of Arts and Sciences

DIRECTOR OF THE MINOR: Fred Bruning, English UNDERGRADUATE SECRETARY: Janet Cea

OFFICE: 254 Humanities PHONE: (631) 632-7400

The journalism minor, 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.

Courses Offered in Journalism

See the Course Descriptions listing in this *Bulletin* for complete information.

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 389 Investigative Reporting

JRN 390 Computer-Assisted Reporting

JRN 394 Journalism Practicum

JRN 395 News Editing

JRN 488 Internship

B. One course to be chosen from

JRN 389 Investigative Reporting

JRN 390 Computer-Assisted Reporting

JRN 394 Journalism Practicum

JRN 488 Internship

Requirements for the Minor in Journalism (JRN)

All courses offered for the minor must be taken for a letter grade. Students interested in minoring in journalism should consult the director of the minor.

Completion of the minor requires 18 credits.

A. Required Courses

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

JDS

Minor in

Judaic Studies

Department of History, College of Arts and Sciences

DIRECTOR OF THE MINOR: Robert Goldenberg, History UNDERGRADUATE SECRETARY: Susan Grumet

OFFICE: S-315, S-301 Social and Behavioral Sciences PHONE: (631) 632-7484, (631) 632-7480 E-MAIL: rggoldenberg@notes.cc.sunysb.edu

Affiliated Faculty

Robert Goldenberg, *History*

Robert Hoberman, *Linguistics*

Sara Lipton, *History*

Ilona Rashkow, *Comparative Studies*

Stephen Spector, *English*

Adjunct Faculty

Estimated number: 1

The minor in Judaic studies offers students an opportunity to acquire background in Hebrew 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.

Courses Offered in Judaic Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

JDH 230-G Judaism

JDH 261-B The Bible as Literature

JDH 320 The Rabbinic Tradition

JDH 361-G Women in the Biblical World

JDH 369-G Topics in Biblical Interpretation

JDH 390-G Humanities Topics in Judaic Studies

JDH 415-G Judaic Responses to Catastrophe

JDH 447 Readings in Judaic Studies

JDS 225-J The Formation of the Judaic Heritage

JDS 226-F The Shaping of Modern Judaism

JDS 241-I The Holocaust: The Destruction of European Jewry—Causes and Consequences

JDS 327-F Women in Judaism

JDS 390-F Social Sciences Topics in Judaic Studies

JDS 447 Readings in Judaic Studies

Requirements for the Minor in Judaic Studies (JOS)

No more than one course offered for the minor may be taken under the Pass/No Credit option. All other courses for the minor must be taken for a letter grade. 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.

Completion of the minor requires at least 21 credits.

1. One year of Hebrew at a level appropriate to the student's previous background
2. Two of the following:
 - JDH/RLS 230 Judaism
 - JDS/HIS 225 The Formation of the Judaic Heritage
 - JDS/HIS 226 The Shaping of Modern Judaism
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 programs, 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 402 Contemporary Theologies

RLS 450 Philosophical Theology

Appropriate topics from any directed readings course and from the following:

ANT 310 Ethnography

EGL 375 Literature in English in Relation to Other Disciplines

RLS 430 Special Topics

KOR

Minor in

Korean Studies

Department of Comparative Studies, College of Arts and Sciences

DIRECTOR OF THE MINOR: Sung Bae Park, Comparative Studies UNDERGRADUATE SECRETARY: Carmela Basirico

OFFICE: 143A Old Chemistry; E-4309 Library PHONE: (631) 632-7311 E-MAIL: SBPark@notes.cc.sunysb.edu

WEB ADDRESS: www.ws.cc.sunysb.edu/complit

Teaching Assistants

Estimated number: 2

Students who undertake the Korean studies minor 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.

Courses Offered in Korean Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

KOR 111, 112 Elementary Korean I, II

KOR 211, 212 Intermediate Korean I, II

KOR 311 Advanced Korean

KOR 351 Studies in Korean Literature

KOR 475, 476 Undergraduate Teaching Practicum in Korean I, II

KRH 240-J Introduction to Korean Culture

KRH 251-J Korean Literature

KRH, KRS 331, 332 Topics in Korean Studies

KRH 346 Philosophy of Education in Korea and Japan

KRH 400 Seminar in Korean Studies

KRH, KRS 447 Directed Readings in Korean Studies in the Humanities

KRH 475, 476 Undergraduate Teaching Practicum I, II

Requirements for the Minor in Korean Studies (KOR)

Only one course offered for the minor may be taken under the Pass/No Credit option. All other courses for the minor must be taken for a letter grade.

Completion of the minor requires 21 credits (18 credits for those who fulfill requirement 1 by examination).

1. KOR 211 Intermediate Korean I or higher (or equivalent by examination)
2. One course chosen from among:
 - KRH 240 Introduction to Korean Culture
 - KRH 251 Korean Literature in Translation
 - RLS 246 Korean and Japanese Religions
3. Three courses chosen from among:
 - KOR 351 Studies in Korean Literature
 - KRH, KRS 331 Topics in Korean Studies
 - KRH, KRS 332 Topics in Korean Studies
 - KRH, KRS 447 Directed Readings in Korean Studies
 - KRH 346 Philosophy of Education in Korea and Japan
4. One course chosen from among the following:
 - ARH 203 History of Asian Art
 - ARH 318 History of Chinese Painting
 - HIS 219 Introduction to Chinese History and Civilization
 - HIS 220 Introduction to Japanese History and Civilization
 - HIS 341 20th-Century China
 - HIS 344 20th-Century Japan
 - PHI 342 History of Chinese Philosophy
 - PHI 344 Japanese Thought and Philosophy
 - RLS 240 Confucianism and Taoism
 - RLS 260 Buddhism

RLS 270 Christianity

RLS 341 Meditation and Enlightenment

5. KRH 400 Seminar in Korean Studies

Appropriate special topics from these or other departments may also be offered to fulfill minor requirements with permission of the program director.

Note: Students with advanced proficiency in Korean are urged to take courses in an additional Asian language.

LAC

Minor in Latin American and Caribbean Studies

Latin American and Caribbean Studies Center, College of Arts and Sciences

DIRECTOR: Paul Gootenberg, History ADMINISTRATIVE ASSISTANT: Domenica Tafuro
OFFICE: N-335 Social and Behavioral Sciences PHONE: (631) 632-7517/7569 E-MAIL: lacc@notes.sunysb.edu

WEB ADDRESS: www.sinc.sunysb.edu/lacc

Affiliated Faculty

Javier Auyero, *Sociology*
Angel Campos, *Social Welfare*
Jonathan Cohen, *Surgery*
Helen Cooper, *English*
Román de la Campa, *Hispanic Lang. and Lit.*
Mike Davis, *History*
Lou Deutsch, *Hispanic Lang. and Lit.*
Georges Fournon, *Social Sciences*
Barbara Frank, *Art*
Paul Gootenberg, *History*
Anthony E. Hurley, *French*
Bradford Jones, *Political Science*
Temma Kaplan, *Women's Studies and History*
Aisha Khan, *Africana Studies*
Thomas Klubock, *History*
Karen Kramer, *Anthropology*
Cora Lagos, *Hispanic Lang. and Lit.*
Brooke Larson, *History*
Marci Lobel, *Psychology*
Elizabeth Monasterios, *Hispanic Lang. and Lit.*
Timothy Moran, *Sociology*
Luis Orozco, *Physics*
Malcolm Read, *Hispanic Lang. and Lit.*
Ian Roxborough, *Sociology*
Jackie Smith, *Sociology*
Benigno Trigo, *Hispanic Lang. and Lit.*
Antonio Vera-León, *Hispanic Lang. and Lit.*
Kathleen Vernon, *Hispanic Lang. and Lit.*
Carlos Vidal, *Social Welfare*

The minor in Latin American and Caribbean studies allows students to pursue an interdisciplinary course of study that provides them with a broad overview of Latin America and the Caribbean. 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 region, such as the history of a particular country or the literature of a particular period.

Requirements for the Minor in Latin American and Caribbean Studies (LAC)

All courses offered for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 24 credits.

1. LAC 200 Introduction to Latin American and Caribbean Societies
2. SPN 211 Intermediate Spanish I (Emphasis on Latin America) (or SPN 210 Intermediate Spanish—Emphasis on Spain)
3. One literature or culture course, to be chosen from those listed in Group A
4. One 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. LAC 488 Internship
7. One 400-level seminar or three-credit upper-division independent study course in any department, approved by the director

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

AFH/HUF 212 French Caribbean Literature
AFH/HUF 213 Caribbean and American Connections in Literature
ARH 326 Arts of Ancient Mesoamerica
ARH 329 Arts of the African Diaspora
EGL 376 The Literature of Imperialism
HUS 254 Latin America Today
SPN 392 The Culture and Civilization of Spanish America
SPN 396 Introduction to Spanish-American Literature
SPN 410 Theory in Contexts
SPN 415 Hispanic Cultures in Contact
SPN 420 Topics in Latin American Cinema
SPN 435 Topics in Latin American Literature, Colonial Period-Present

The following topics courses may also be used when the topic is appropriate:
EGL 372 Topics in Women and Literature

EGL 374, 377 Literature in English in Relation to Other Disciplines
HUS 361 Latin American Literature
HUS 390 Latin American Cinema
MUS 311 Topics in Non-Western Music
SPN 405 Issues in Hispanic Cultural Studies

Group B: Social Sciences

AFH 329, 330 Pan-African Literature I, II
AFS 239 Introduction to the Caribbean Experience
AFS 240 Issues in Caribbean Society
AFS/HIS 350 Black Women and Social Change: A Cross-Cultural Perspective
AFS/ANT 380 Race and Ethnicity in Latin America and the Caribbean
AFS/HIS 388 Slavery in Latin America and the Caribbean
ANT 201 Peoples of South America
ANT 219 Peoples of the Caribbean
ANT 361 Peasants
ECO 358 Topics in Developing Economies (when topic is appropriate)
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 Aztec Civilization
HIS 386 Modern Brazil
HIS/WST 387 Women, Development, and Revolution in Latin America
HIS 389 Modern Mexico
HIS 421, 422 Colloquia in Latin American History
POL 372 Politics in the Third World
SOC 364 Sociology of Latin America

LIN

Major in Linguistics

Department of Linguistics, College of Arts and Sciences

CHAIRPERSON: Richard Larson DIRECTOR OF UNDERGRADUATE STUDIES: Robert Hoberman UNDERGRADUATE SECRETARY: Sandra Brennan
OFFICE: S-201 Social and Behavioral Sciences PHONE: (631) 632-7777 E-MAIL: ling@semlab1.sbs.sunysb.edu
WEB ADDRESS: www.semlab2.sbs.sunysb.edu/General/dept.html

Minors of particular interest to students majoring in linguistics: anthropology (ANT), computer science (CSE), foreign languages, international studies (LIS), philosophy (PHI)

Faculty

Frank Anshen, *Associate Professor and Graduate Studies Director, Ph.D., New York University*: Sociolinguistics.

Mark Aronoff, *Professor, Ph.D., Massachusetts Institute of Technology*: Morphology; writing systems.

John Bailyn, *Assistant Professor, Ph.D., Cornell University*: Syntax, language acquisition; Slavic linguistics.

Christina Y. Bethin, *Professor, Ph.D., University of Illinois*: Slavic linguistics, phonology; Russian; Polish; and Ukrainian.

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.

Robert D. Hoberman, *Associate Professor, Ph.D., University of Chicago*: Phonology; morphology; Semitic linguistics; Hebrew, Aramaic; and Arabic.

Marie Huffman, *Associate Professor, Ph.D., University of California, Los Angeles*: Phonetics; phonology.

Dorit Kaufman, *Research Associate Professor, Ph.D., University at Stony Brook*: TESOL; language attrition.

Richard Larson, *Professor, Ph.D., University of Wisconsin-Madison*: Syntax; semantics. Recipient of the State University Chancellor's Award for Excellence in Teaching and the President's Award for Excellence in Teaching.

Lori D. Repetti, *Associate Professor, Ph.D., University of California, Los Angeles*: Romance linguistics; phonology; Italian dialectology.

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.

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 6

Linguistics is the science of language. Language is at once the most diverse and the most clearly structured aspect of human behavior. It distinguishes humans from other species and much of human culture depends on it. Understanding the nature of human language is therefore a key to understanding human nature. Linguistics seeks to discover the common features of the languages of the world's peoples, to understand how languages change over time, and how language relates to other aspects of human society.

The major in linguistics is designed to provide graduates with a set of skills and a body of knowledge. A graduate will have the skills to analyze the most important features of language: sounds, words, sentences, and conversation, using both formal and experimental methods. Students will also learn what linguists know about the languages of the world, their history and structure, and how language interacts with many facets of all cultures.

The department also prepares its majors for provisional certification as teachers of English to speakers of other languages in New York State (TESOL) from kindergarten through grade 12. Candidates for TESOL certification must follow a specific track within the major that is included in the sample course sequence given below, which includes a semester of student teaching. Approximately half of linguistics majors elect this track in the major. It is also common for linguistics majors to have a second major, either in a language or in an adjacent field such as psychology or computer science.

Options for further education that are taken by graduates include professional school in such areas as speech pathology and law, and graduate school in linguistics, philosophy, psychology, and computer science. A few graduates have gone on

to technical positions in industry that involve speech engineering.

Instruction in uncommonly taught languages not offered elsewhere in the University is provided by the Department of Linguistics.

Courses Offered in Linguistics

See the Course Descriptions listing in this *Bulletin* for complete information.

ESL 475, 476 Undergraduate Teaching Practicum I, II

LIN 101-F Introduction to Linguistics

LIN 200-K Language in the United States

LIN 201-F Phonetics

LIN 211-F Syntax

LIN 250-K Languages and Cultures of Asian Americans

LIN 300 Writing in Linguistics

LIN 301 Phonology

LIN 307-F Sociolinguistics

LIN 330-F Language Acquisition

LIN 340-F Historical Linguistics

LIN 345-J Writing Systems of the World

LIN 346-F Language and Meaning

LIN 355-J Language and Life in a Selected Area of the World

LIN 356-I Language and Life in Europe

LIN 375, 378 Methods and Materials of Teaching English as a Second Language I, II

LIN 425, 426, 427 Special Topics in Linguistics

LIN 431 The Structure of an Uncommonly Taught Language

LIN 451 Supervised Student Teaching in English as a Second Language: Primary Grades N-6

LIN 452 Supervised Student Teaching in English as a Second Language: Secondary Grades 7-12

LIN 454 Student Teaching Seminar in English as a Second Language

LIN 464 Morphology and Word Formation

Independent readings, research, internship, teaching practica, and senior honors courses

Requirements for the Major in Linguistics (LIN)

The major in linguistics leads to the Bachelor of Arts degree. All linguistics courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 36 credits in linguistics and one year of a foreign language in addition to the University's entry skill requirement.

1. LIN 201 Phonetics
2. LIN 211 Syntax
3. LIN 301 Phonology
4. LIN 431 The Structure of an Uncommonly Taught Language (see Note 1)
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:

In the junior or senior year, students must successfully complete LIN 300 Writing in Linguistics, a one-credit course.

Notes:

1. A course on the structure of a language offered by a foreign language department may be substituted for LIN 431 with the permission of the director of undergraduate studies.
2. LIN 370 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 207, 300, 302
 - FLA 339, 439
 - GER 438

Sample Course Sequence in the Linguistics Major (including TESOL Certification Track)

Freshman Fall	Credits
D.E.C. A	3
LIN 101@	3
LIN 201*	4
Foreign language 111*	4
D.E.C.	3
Total	17

Spring	Credits
D.E.C. A	3
LIN 211*	4
LIN 301*	3
Foreign language 112*	4
D.E.C.	3
Total	17

Sophomore Fall	Credits
LIN 307#@	3
LIN 345@	3
Foreign language 211*	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
LIN 330@	3
LIN 375#@	3
Foreign language 212*	3
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
LIN 345@	3
LIN 340@	3
SSI 327#	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
LIN 346@	3
SSI 350#	3
LIN 300	1
D.E.C.	3
D.E.C.	3
Upper Division Elective	3
Total	16

Senior Fall	Credits
LIN 378#@	3
LIN 431*	3
Upper Division D.E.C.	3
Upper Division Elective	3
Total	12

Spring	Credits
LIN 451#	6
LIN 452#	6
LIN 454#@	3
or Upper Division Elective	3
Electives	12
Total	15

* Course must be taken for the major.

Course must be taken for certification.

@ Course fulfills the major requirement but is not obligatory.

HBW 415

HUL 424

PHI 220, 325

RUS 439

PSY 365

SPN 462, 463, 465

4. Students electing TESOL may not take any courses required for certification for Pass/No Credit. Requirements for TESOL certification are detailed following the linguistics minor and honors program listings.

Requirements for the Minor in Linguistics (LIN)

The minor requires 20 credits.

1. LIN 201 Phonetics
2. LIN 211 Syntax
3. Four additional linguistics courses, of which at least three must be upper division.

Notes:

1. One of the courses required for the minor may be taken for Pass/No Credit.

2. 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.
3. 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 3.50 in the major and a 3.00 overall grade point average. 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 member of the Department of Linguistics, and one faculty member from another department.

If the honors program is completed with distinction and the student retains a 3.50 g.p.a. for all linguistics courses taken in the senior year, honors are conferred.

Teaching English to Speakers of Other Languages (TESOL) Preparation Program

Note: The University is in the process of revising its teacher education curriculum to bring it into compliance with the new standards approved by the New York State Board of Regents. Students should consult a TESOL advisor for further details.

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 Pre-Kindergarten to grade 12. Students must consult with the program director as soon as they decide to seek certification.

Requirements

- A. All requirements for the major in Linguistics.
- B. A 3.00 g.p.a. in the major, and 2.75 g.p.a. overall.
- C. Courses in linguistics, social, and anthropological aspects of language: LIN 101, 201, and 307.
- D. Courses in professional preparation: SSI 350 Foundations of Education, SSI 327 Adolescent Growth and Development, LIN 375, 378, 451, 452, 454.
- E. Language Study: 4 college semesters of modern foreign language (e.g., Chinese, French, German, Italian, Hindi, Japanese) or American Sign Language.

Note: Courses taken for Pass/No Credit may not be used to satisfy the preparation in professional education component of the teacher preparation program.

See also the entry Education and Teacher Certification in the alphabetical listings of Approved Majors, Minors, and Programs.

MFE

Minor in

Manufacturing Engineering

Department of Materials Science and Engineering, College of Engineering and Applied Sciences

CHAIRPERSON: Michael Dudley UNDERGRADUATE PROGRAM DIRECTOR: Christopher C. Berndt

ADMINISTRATIVE ASSISTANT: Gertha Benoit-Hollis

OFFICE: 314 Engineering PHONE: (631) 632-8484 E-MAIL: ghollis@notes.cc.sunysb.edu WEB ADDRESS: <http://DOL1.eng.sunysb.edu/>

The Department of Materials Science and Engineering offers the minor in Manufacturing Engineering, suitable for Engineering Science students or for non-Engineering Science students who seek to obtain a more thorough understanding of the engineering sciences. Engineering Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, and Applied Mathematics and Statistics students can assemble a sequence of courses with 18-24 credits to satisfy the minor. Courses taken may not be used to satisfy requirements of another minor in engineering science. The student's program must be approved by the undergraduate program director, Department of Materials Science and Engineering, Engineering Building, Room 314.

Requirements for the Minor in Manufacturing Engineering (MFE)

Completion of the minor requires 21-24 credits.

Requirements for students majoring in Engineering Science (ESG)

1. ESM 334 Materials Engineering *and* ESM 335 Mechanical Properties of Materials
or MEC 310 Introduction to Machines Design *and* MEC 410 Design and Analysis of Machine Elements
2. Five courses chosen from:
 - AMS 310 Survey of Probability and Statistics
 - ESG 201 Engineering Responses to Society
 - ESM 302 Introduction to the Crystalline State
 - ESM 336 Electronic Materials
 - ESM 353 Biomaterials: Manufacture, Properties, and Applications
 - ESM 369 Polymers
 - ESM 488 Cooperative Industrial Practice
 - ESM 499 Research in Materials Science

EST 392 Engineering and Managerial Economics

MEC 305 Heat and Mass Transfer

Requirements for all other students

1. ESM 334 Materials Engineering *and* ESM 335 Mechanical Properties of Materials
or MEC 310 Introduction to Machines Design *and* MEC 410 Design and Analysis of Machine Elements
2. AMS 310 Survey of Probability and Statistics
3. One course chosen from the following:
 - ESE 123 Introduction to Electronic Design
 - ESG 100 Introduction to Engineering Science
 - MEC 100 Introduction to Mechanical Engineering
4. ESG 201 Engineering Responses to Society
5. ESM 335 Mechanical Properties of Materials
ESM 369 Polymers
6. Two courses from:
 - ESM 302 Introduction to the Crystalline State
 - ESM 353 Biomaterials: Manufacture, Properties, and Applications
 - ESM 488 Cooperative Industrial Practice
 - EST 392 Engineering and Managerial Economics
 - MEC 305 Heat and Mass Transfer

MAR

Minor in

Marine Sciences

Marine Sciences Research Center

DEAN AND DIRECTOR: Marvin A. Geller DIRECTOR OF UNDERGRADUATE STUDIES: Malcolm J. Bowman

ASSISTANT TO THE DIRECTOR: Nancy Glover

EDUCATION OFFICE: 105 Endeavour Hall PHONE: (631) 632-8681 E-MAIL: msrcugrad@notes.cc.sunysb.edu

WEB ADDRESS: www.msrc.sunysb.edu

The Marine Sciences Research Center (MSRC) is the center for marine research, education, and public service in the marine sciences for the State University of New York system. In addition, MSRC is the University at Stony Brook's center for research, education, and public service in the atmospheric sciences. MSRC is one of the leading coastal oceanographic and atmospheric institutions in the world. The primary focus of the MSRC faculty is on fundamental research designed to increase understanding of the processes that characterize the coastal ocean and the atmosphere. The Marine Sciences Research Center is also committed to applying the results of research to solve problems arising from society's uses and misuses of the environment.

MSRC offers undergraduate majors in atmospheric and oceanic sciences and environmental studies and minors in environmental studies and marine sciences. See the separate entries for atmospheric and oceanic sciences and environmental studies in the alphabetical listings of Approved Majors, Minors, and Programs. MSRC also offers several cooperative programs with departments in the College of Arts and Sciences and the College of Engineering and Applied Sciences. Research opportunities in marine sciences, atmospheric sciences, and waste management are available to undergraduates. Information on research opportunities may be found on the MSRC Website.

Courses Offered in Marine Sciences

See the Course Descriptions listing in this *Bulletin* for complete information.

MAR 101-E Long Island Sound: Science and Use

MAR 104-E Oceanography

MAR 301 Environmental Microbiology

MAR 302 Marine Microbiology and Microbial Ecology

MAR 303 Long Island Marine Habitats

MAR 304-E Waves, Tides, and Beaches

MAR 305 Experimental Marine Biology

MAR 307 Communication in Environmental Science

MAR 308 Principles of Instrumental Analysis

MAR 313 Marine Biochemistry

MAR 315 Conservation Biology and Marine Biodiversity

MAR 318 Engineering Geology and Coastal Processes

MAR 320 Limnology

MAR 333-H Coastal Oceanography

MAR 334-E Remote Sensing of the Environment

MAR 335 Primary Productivity in the Sea

MAR 336 Marine Pollution

MAR 340-H Environmental Problems and Solutions

MAR 346 Marine Sedimentology

MAR 350 Introduction to Ocean Physics

MAR 351 Introduction to Ocean Chemistry

MAR 366 Plankton Ecology

MAR 385 Principles of Fishery Biology and Management

MAR 391-H Environmental Policy

MAR 392-H Waste Management Issues

MAR 394-H Environmental Toxicology and Public Health

MAR 395 Topics in Marine Environmental Sciences

MAR 410 Modeling Techniques for Marine Geochemistry

MAR 475 Teaching Practicum in Marine Sciences

MAR 487 Research in Marine Sciences

MAR 488 Internship

Requirements for the Minor in Marine Sciences (MAR)

The minor in marine sciences 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. No more than three credits of courses taken under the Pass/No Credit option may be applied toward the minor. Completion of the minor requires 18 credits.

1. MAR 101 or 104

2. At least 15 credits from the following: All upper-division MAR courses, BIO 343, or BIO/GEO 353. No more than three credits each of MAR 487 and MAR 488 may be applied toward this requirement.

ESM

Minor in

Materials Science

Department of Materials Science and Engineering, College of Engineering and Applied Sciences

CHAIRPERSON: Michael Dudley UNDERGRADUATE PROGRAM DIRECTOR: Christopher C. Berndt

ADMINISTRATIVE ASSISTANT: Gertha Benoit-Hollis

OFFICE: 314 Engineering PHONE: (631) 632-8484 E-MAIL: ghollis@notes.cc.sunysb.edu WEB ADDRESS: <http://DOL1.eng.sunysb.edu/>

The Department of Materials Science and Engineering offers the Bachelor of Engineering degree program in engineering science and 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. Reflecting the breadth and variety of topics falling within the domain of engineering science, the department also offers five minors that afford undergraduate students the opportunity to enhance their engineering or science studies with knowledge in a specialized area. In addition to the minor in materials science, described in this section, the department offers minors in biomedical engineering; electronic, optical, and magnetic materials; manufacturing engineering; and physical metallurgy, each detailed under a separate heading in the alphabetical listings of Approved Majors, Minors, and Programs.

Requirements for the Minor in Materials Science (ESM)

The sequence of courses included in the minor in materials science 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 two versions of the minor: one for students enrolled in B.S. degree programs (e.g., physics and chemistry) and one 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.)

All courses offered for the minor must be passed with a letter grade of C or higher.

For students with majors leading to the B.S. degree, six courses are required:

1. ESG 100 Introduction to Engineering Science
2. Two courses chosen from
 - ESG 332 Materials Science I: Structure and Properties of Materials
 - ESG 333 Materials Science II: Electronic Properties
 - ESG 339 Thin Film Processing of Advanced Materials
3. Two courses from the following:
 - ESM 325 Diffraction Techniques and Structure of Solids
 - ESM 334 Materials Engineering
 - ESM 335 Mechanical Properties of Materials
 - ESM 353 Biomaterials: Manufacture, Properties, and Applications
 - ESM 355 Materials and Processes in Manufacturing Design

The course not completed for requirement 2 (ESG 332, 333, 339).

4. One of the following:
 - ESG 487 Cooperative Research in Technological Solutions
 - ESM 488 Cooperative Industrial Practice
 - ESM 499 Research in Materials Science
 - ESM 475 Undergraduate Teaching Practicum

For students in the engineering science major, six courses are required:

1. ESG 100 Introduction to Engineering Science
2. Four courses chosen from
 - ESM 302 Introduction to the Crystalline State
 - ESM 325 Diffraction Techniques and Structure of Solids
 - ESM 334 Materials Engineering

ESM 335 Mechanical Properties of Materials

ESM 353 Biomaterials: Manufacture, Properties, and Applications

ESM 355 Materials and Processes in Manufacturing Design

ESM 369 Polymers

ESG 332 Materials Science I: Structure and Properties of Materials

ESG 333 Materials Science II: Electronic Properties

ESG 339 Thin Film Processing of Advanced Materials

3. One of the following:

ESG 487 Cooperative Research in Technological Solutions

ESM 488 Cooperative Industrial Practice

ESM 499 Research in Materials Science

ESM 475 Undergraduate Teaching Practicum

At least three courses offered for the minor must be outside the requirements for the student's major.

MAT

Major and Minor in Mathematics

Department of Mathematics, College of Arts and Sciences

CHAIRPERSON: Detlef Gromoll DIRECTOR OF UNDERGRADUATE STUDIES: Daryl Geller ADMINISTRATIVE ASSISTANT: Lucille Meci

OFFICE: Mathematics P143 PHONE: (631) 632-8250 E-MAIL: UPD@math.sunysb.edu WEB ADDRESS: www.math.sunysb.edu

Minors of particular interest to students majoring in mathematics: applied mathematics and statistics (AMS), computer science (CSE), economics (ECO)

Faculty

Michael Anderson, *Professor, Ph.D., University of California, Berkeley*: differential geometry.

Alexandra Barcus, *Lecturer, Director of Mathematics Learning Center, Ph.D., Harvard University*.

William Barcus, *Professor, D. Phil, University of Oxford, England*: Algebraic topology.

Mark de Cataldo, *Assistant Professor, Ph.D., University of Norte Dame*: Higher dimensional geometry.

Weimin Chen, *James H. Simons Instructor, Ph.D., Michigan State University*: Low-dimensional topology and geometry.

Christopher Bishop, *Professor, Ph.D., University of Chicago*: Complex analysis.

Andrew Comech, *James H. Simons Instructor, Ph.D., Columbia University*: Partial differential equations; micro-local analysis.

Ian Dowker, *James H. Simons Instructor, Ph.D., Harvard University*: Gauge theory; complex geometry.

David Ebin, *Professor, Ph.D., Massachusetts Institute of Technology*: Global analysis; mathematics of continuum mechanics; partial differential equations.

Siddhartha Gadgil, *James H. Simons Instructor, Ph.D., California Institute of Technology*: Low dimensional topology.

Daryl Geller, *Professor, Ph.D., Princeton University*: Partial differential equations; harmonic analysis; several complex variables; Lie groups.

James Glimm, *Distinguished Professor, Ph.D., Columbia University*: Applied mathematics; numerical analysis; mathematical physics.

Detlef Gromoll, *Professor, Ph.D., University of Bonn, Germany*: Differential geometry.

Phyllis Heger-Heinen, *Lecturer, M.S., C.W. Post*.

C. Denson Hill, *Professor, Ph.D., New York University*: Partial differential equations; several complex variables.

Lowell Jones, *Professor, Ph.D., Yale University*: Topology; geometry.

Alexander Kirillov, Jr., *Assistant Professor, Ph.D., Yale University*: Representation theory low dimensional topology; mathematical physics.

Irwin Kra, *Distinguished Service Professor, Ph.D., Columbia University*: Complex analysis;

Kleinian groups, Reimann surfaces; Teichmuller theory; applications to mathematical physics and number theory.

Amy Ksir, *James H. Simons Instructor and VIGRE Fellow, Ph.D., University of Pennsylvania*: Algebraic geometry; integrable systems; mathematical physics.

Paul 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; algebraic geometry.

Claude LeBrun, *Professor, D. Phil, University of Oxford, England*: Complex analysis; mathematical physics; differential geometry; algebraic geometry.

Mikhail Lyubich, *Professor, Ph.D., Tashkent State University, former Soviet Union*: Dynamical systems.

Elyse Magram, *Lecturer and Coordinator of the Secondary Teacher Training Program, M.S.E., M.S., University at Stony Brook*.

Bernard Maskit, *Professor, Ph.D., New York University*: Riemann surfaces; Kleinian groups and deformation spaces.

Dusa McDuff, *Distinguished Professor, Ph.D., Cambridge University, England*: Symplectic topology.

Marie-Louise Michelsohn, *Professor, Ph.D., University of Chicago*: Differential geometry.

John Milnor, *Distinguished Professor and Director of the Institute for Mathematical Sciences, Ph.D., Princeton University*: Dynamical systems.

Yair Minsky, *Associate Professor, Ph.D., Princeton University*: Low-dimensional geometry and topology.

Robert Morahan, *Lecturer, Ed.C., St. John's University*.

Anthony Phillips, *Professor, Ph.D., Princeton University*: Differential topology and applications to mathematical physics.

Bradley James Plohr, *Professor, Ph.D., Princeton University*: Applied mathematics; partial differential equations.

Sorin Popescu, *Assistant Professor, Ph.D., University of Saarland, Germany*: Algebraic geometry; computational algebraic geometry.

Dennis Sullivan, *Distinguished Professor, Ph.D., Princeton University*: Dynamical systems; geometry; partial differential equations.

Scott Sutherland, *Associate Professor and Director of Computing, Ph.D., Boston University*: Dynamical systems; root finding algorithms; computing.

Leon Takhtajan, *Professor, Ph.D., Leningrad Branch of the Steklov Mathematical Institute, Russia*: Mathematical physics.

Kristopher Tapp, *VIGRE Fellow, Ph.D., University of Pennsylvania*: Differential geometry.

Jared Wunsch, *Assistant Professor, Ph.D., Harvard University*: Partial differential equations.

Tonghai Yang, *Assistant Professor, Ph.D., University of Maryland*: Number theory; algebraic geometry; algebra and representational theory.

Affiliated Faculty

Michael Taksar, *Applied Mathematics and Statistics*

Teaching Assistants

Estimated number: 60

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.

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.

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 also use it 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 Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Mathematics department faculty and teaching assistants hold regular hours in the Mathematics Learning Center/Calculus Resource Room, Physics A-127. The Center is open during the day and some evenings during the semester and offers additional hours toward the end of the semester. Undergraduate mathematics students who need help are encouraged to visit the Learning Center.

The department encourages students to seek information and advice on appropriate mathematics courses, programs, and career goals. Faculty are available as advisors on these matters in the Undergraduate Mathematics Office; advising hours can be obtained by visiting the department's Website at www.math.sunysb.edu. Mathematics majors can also seek advice from their specifically assigned faculty advisor.

Courses Offered in Mathematics

See the Course Descriptions listing in this *Bulletin* for complete information.

MAP 101 Fundamentals of Arithmetic and Algebra
 MAP 103 Proficiency Algebra
 MAT 118-C Mathematical Thinking
 MAT 122-C Overview of Calculus with Applications
 MAT 123-C Introduction to Calculus
 MAT 125-C Calculus A
 MAT 126-C Calculus B
 MAT 127 Calculus C
 MAT 130 Functions
 MAT 131-C Calculus I
 MAT 132 Calculus II
 MAT 141-C Honors Calculus I
 MAT 142 Honors Calculus II
 MAT 160 Mathematical Problems and Games
 MAT 200 Logic, Language, and Proof
 MAT 203 Calculus III with Applications
 MAT 205 Calculus III
 MAT 211 Introduction to Linear Algebra
 MAT 260 Problem Solving in Mathematics
 MAT 303 Calculus IV with Applications
 MAT 305 Calculus IV
 MAT 310 Linear Algebra
 MAT 311 Number Theory
 MAT 312 Applied Algebra
 MAT 313 Abstract Algebra
 MAT 316 Invitation to Modern Mathematics
 MAT 318 Classical Algebra
 MAT 320 Introduction to Analysis
 MAT 322 Analysis in Several Dimensions
 MAT 331 Computer-Assisted Mathematical Problem Solving
 MAT 341 Applied Real Analysis
 MAT 342 Applied Complex Analysis
 MAT 351 Differential Equations: Dynamics and Chaos
 MAT 360 Geometric Structures
 MAT 362 Differential Geometry of Surfaces
 MAT 364 Topology and Geometry
 MAT 371 Logic
 MAT 373 Analysis of Algorithms
 MAT 401, 402 Seminars in Mathematics

MAT 475 Undergraduate Teaching Practicum

MAT 487 Independent Study in Special Topics

MAT 495 Honors Thesis

Courses Offered in Mathematics Education

See the Course Descriptions listing in this *Bulletin* for complete information.

MAE 301 Foundations of Secondary School Mathematics

MAE 302 Methods and Materials for Teaching Secondary School Mathematics

MAE 311 Introduction to Methods of Teaching Secondary School Mathematics

MAE 312 Micro-Teaching

MAE 330 Technology in Mathematics Education

MAE 447 Directed Readings

MAE 451, 452 Supervised Teaching—Mathematics, Grade 7-9, Grades 10-12

MAE 454 Student Teaching Seminar

Requirements for the Major in Mathematics (MAT)

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 requires 33 to 37 credits.

A. Mathematics and Mathematics-Related Courses

1. One course in multivariate calculus: MAT 203 *or* AMS 261 *or* MAT 205 *and* one course in linear algebra: MAT 211 *or* AMS 210
2. Preparation in the language and logic of mathematics: this requirement can be met by either passing MAT 200 or by passing the MAT 200 challenge examination. (Note: the writing intensive course MAT 200 is a requirement for students in the Secondary Teacher Preparation option.)
3. One course in differential equations: MAT 303 *or* AMS 361 *or* MAT 305

Sample Course Sequence in the Mathematics Major

Freshman Fall	Credits
D.E.C. A	3
MAT 131 or 141 or 125*	3-4
D.E.C.	3
D.E.C.	3
Elective	3
Total	15-16

Spring	Credits
D.E.C. A	3
MAT 132 or 142 or 126*	3-4
D.E.C.	3
D.E.C.	3
MAT 200 or Elective	3
Total	15-16

Sophomore Fall	Credits
MAT 203 or 205 or AMS 261	3
MAT 211 or AMS 210	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
MAT 303 or 305 or AMS 361	3
MAT 260 or 312	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Junior Fall	Credits
MAT 310	3
MAT 320	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
MAT 322 or 341 or 342	3
MAT 331	3
D.E.C.	3
Upper-Division electives	6
Total	15

Senior Fall	Credits
Upper-Division MAT electives	9
D.E.C.	3
Elective	3
Total	15

Spring	Credits
Upper-Division MAT electives	9
Electives	6
Total	15

* Students who take MAT 125, 126 must also complete MAT 127.

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 departmental faculty member as being mathematically correct and well written.

Notes:

- Under special circumstances a student may request the director of undergraduate studies to allow substitution of an equivalent individual program for some or all of these requirements.
- 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.
- 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.

- One course in computer literacy: MAT 331 or MEC 111 or CSE 114 or (for students graduating with the Secondary Teacher Preparation option) MAE 330. MAT 331 may be used both here and in requirement 7.
- Two courses in algebra: MAT 310 and MAT 312 or 313 or 318
- Analysis: Students must satisfy either a or b:
 - Two courses in analysis: MAT 320 and MAT 322 or 341 or 342
 - For students graduating with the secondary teacher preparation option: MAT 320

- Five mathematics-related courses beyond those taken to satisfy requirements 5 and 6 (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 361 and 475
 - CSE courses numbered 301 or above except 475

A list of acceptable upper-division courses in chemistry, economics, philosophy, and physics is available in the Undergraduate Mathematics Office.

- 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.
- Six credits of graduate MAT courses may be used in place of undergraduate courses in requirement A7.

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 3.00 overall grade point average. A prospective hon-

ors major must declare to the director of undergraduate studies an intention to participate in the program before registering for the senior year.

The program consists of a set of six MAT courses, at least three of which are not used to fulfill the MAT major requirements. These courses must include: MAT 322, 401, or 402, a course in algebra other than MAT 310 or 318; and MAT 495. Substitution of appropriate graduate courses is permitted, and other substitutions are possible at the discretion of the undergraduate director. Conferral of honors is contingent upon:

1. Completion of the set of six courses with a grade point average of at least 3.50;
2. Approval for honors by the faculty member or members who supervise MAT 495.

Mathematics Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Requirements for the Minor in Mathematics (MAT)

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 requirements listed below do not include single variable calculus or MAT 200 Logic, Language, and Proof; these are prerequisites for some of the courses listed below.

1. MAT 211 or AMS 210
2. MAT 203 or AMS 261 or MAT 205
3. MAT 310 or 312 or 313 or 318
4. MAT 320 or 341 or 342
5. Three additional MAT courses numbered 300 or higher (excluding 475)

All courses used to fulfill the requirements for the minor must be passed with a letter grade of C or higher.

Beginning Mathematics Courses

The mathematics 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, MAT 141, and AMS 151. 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 or AMS 151, 161 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.

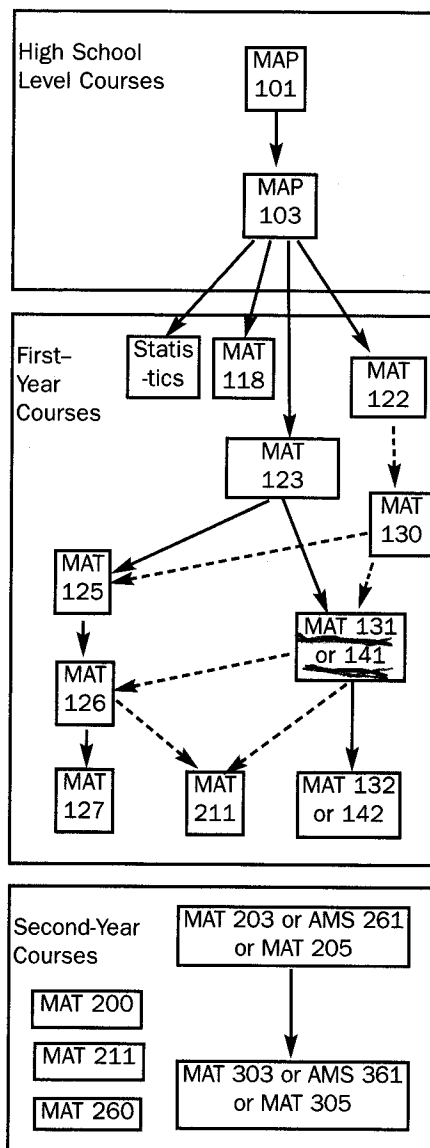
MAT 122 and MAT 123 combine precalculus and calculus for students who have not had 12th-year mathematics in high school. A student who completes MAT 122 will have learned some precalculus material and will have a good idea of what calculus is and how it is used. MAT 123 is designed to lead into MAT 125 or MAT 131. Students who begin with MAT 122 may follow that course with MAT 125 or MAT 131 if they take the one-credit course MAT 130 in the same semester as MAT 125 or 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 two review courses numbered MAP 101 and 103. These courses do not carry graduation credit. MAP 103, a skills course, is for students who need further work in high school algebra and related topics before continuing with calculus or other mathematics. 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 Department offers a placement examination which indicates the level of mathematical preparation of each student. The score on the examination is used to place the student in appropriate courses in Mathematics, Applied Mathematics and Statistics, Biology, Chemistry, and Physics. It tests 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.

Beginning Mathematics Courses



Currently, all incoming freshmen are required to take the placement examination. Transfer students should also take the examination under any of the following circumstances:

1. If they have not met the entry in basic mathematics competence skill requirement.
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. If they intend to take any mathematics, statistics or science courses at Stony Brook.

In taking the 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-grade 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 103
Level 3	MAT 118, 122, 123 or statistics
Level 4	MAT 125
Level 5	MAT 131 or 141 or AMS 151
Level 6	MAT 126
Level 7	MAT 132 or 142 or AMS 161
Level 8	MAT 127 or 132 or 142 or AMS 161
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 basic mathematics competence may be satisfied by attaining a score of level 3 or higher. The general education requirement in mathematical and statistical reasoning (D.E.C. category C) 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.

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 transferred 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 basic mathematics competence and the D.E.C. category C requirement; this evaluation does not depend on the result of the placement examination.

MEC

Major and Minor in

Mechanical Engineering

Department of Mechanical Engineering, College of Engineering and Applied Sciences

CHAIRPERSON: Fu-Pen Chiang UNDERGRADUATE PROGRAM DIRECTOR: John M. Kincaid UNDERGRADUATE SECRETARY: Patricia Brockbank
OFFICE: 113 Light Engineering Lab PHONE: (631) 632-8310 E-MAIL: pbrockbank@notes.cc.sunysb.edu FAX: (631) 632-8544
WEB ADDRESS: <http://me.eng.sunysb.edu>

Minors of particular interest to students majoring in mechanical engineering: science and engineering (LSE)

Faculty

Daniel Bluestein, *Assistant Professor, Ph.D., Tel Aviv University*: Biomedical engineering.

Fu-Pen Chiang, *Professor, Ph.D., University of Florida*: Experimental stress analysis; solid mechanics; optical nondestructive evaluation.

Q. Jeffrey Ge, *Associate 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.

Peisen S. Huang, *Associate Professor, Ph.D., University of Michigan: D. Eng., Tohoku University, Japan*: Optical measurement; precision engineering.

Thomas F. Irvine, Jr., *Professor Emeritus, Ph.D., University of Minnesota*: Thermal sciences; measurement of thermophysical properties; rheological fluid mechanics and heat transfer.

Imin Kao, *Associate Professor, Ph.D., Stanford University*: Robotics; control; MEMS; wafer manufacturing.

John Kincaid, *Professor, Ph.D., Rockefeller University*: Statistical mechanics; thermodynamics.

Robert V. Kukta, *Assistant Professor, Ph.D., Brown University*: Solid mechanics; thin films; crystal growth; micro-mechanics of defects in crystals.

Alan S. Kushner, *Professor, Ph.D., University of Maryland at College Park*: Solid and computational mechanics.

Foluso Ladeinde, *Associate Professor, Ph.D., Cornell University*: Fluid mechanics and heat transfer; turbulence; computational fluid dynamics.

Jon P. Longtin, *Assistant Professor, Ph.D., University of California, Berkeley*: Heat transfer; radiation interactions with materials; optical measurements.

Toshio Nakamura, *Associate Professor, Ph.D., Brown University*: Solid mechanics; computational fracture mechanics.

Edward E. O'Brien, *Professor Emeritus, Ph.D., Johns Hopkins University*: Fluid mechanics; chemically reactive flows; turbulence.

Alonso Peralta, *Assistant Professor, Ph.D., Arizona State University*: Solid mechanics; thin films; probabilistic design.

Vishwanath Prasad, *Professor, Ph.D., University of Delaware*: Heat transfer; transport processes.

Jahangir Rastegar, *Associate Professor, Ph.D., Stanford University*: Kinematics; dynamics; vibration control of high performance machinery; optimal design of mechanical systems.

Raman P. Singh, *Assistant Professor, Ph.D., University of Rhode Island*: Experimental mechanics; fracture; wave propagation; composite materials.

James Tasi, *Professor Emeritus, Ph.D., Columbia University*: Mechanics of solids.

Lin-Shu Wang, *Associate Professor, Ph.D., University of California, Berkeley*: Thermodynamics.

Hui Zhang, *Assistant Professor, Ph.D., Polytechnic University, Brooklyn*: Materials processing, solidification and free surface problems; computational fluid dynamics.

Lili Zheng, *Assistant Professor, Ph.D., Cambridge University*: Turbulent combustion; solidification; magnetohydrodynamics; two-phase flow.

Affiliated Faculty

Robert D. Cess, *Marine Sciences Research Center*

John Metzger, *Visiting Associate Professor*

Clinton Rubin, *Orthopaedics*

Messiha Saad, *Visiting Assistant Professor*

George Stell, *Chemistry*

Adjunct Faculty

Estimated number: 5

Teaching Assistants

Estimated number: 18

Mechanical engineering is one of the historical core disciplines of engineering and it encompasses a large number of subdisciplines that are at the heart of both traditional and leading edge technologies. It is a broad profession frequently concerned with activities such as energy conversion, power generation, design, and manufacturing. The theoretical and technical bases of knowledge include the pure sciences, mathematics, and the engineering sciences, especially the mechanics of solids and fluids, thermodynamics, and kinematics. Mechanical engineering requires aptitude and inter-

est in the physical sciences and the language of mathematics, and the ability to apply these to societal needs.

The undergraduate mechanical engineering program at Stony Brook recognizes that students have a variety of career objectives and a choice of industrial environments in which to pursue them. While the majority of our graduates are immediately employed in industry, a significant percentage pursue graduate study. Most of the students entering graduate schools continue mechanical engineering studies. However, some go to law, business, and medical schools. The undergraduate curriculum is specifically designed to provide students with the detailed mechanical engineering education and training required for immediate entry into the job market while at the same time maintaining enough flexibility to enable students to fully prepare for graduate studies and research careers.

The program in mechanical engineering provides students with a core education in mathematics and the physical sciences along with a broad sequence of courses covering thermal processes and fluid mechanics, mechanical design, solid mechanics, and the dynamic behavior and control of mechanical systems. Students also take courses that introduce them to the use of advanced computational methods for engineering design and analysis and data processing and analysis. A series of laboratory courses introduces them to modern instrumentation and experimental techniques used in engineering for tasks ranging from product evaluation and testing to research. The elective courses in the curriculum provide an opportunity for students to develop a concentration in an energy systems track or a mechanical systems track. In addition, students can select electives to provide either higher level academic training in preparation for graduate school or a broader exposure to subjects related to engineering practice

to enhance their preparation for a job after graduation.

The spectrum of activity within each career area includes research, development, design, testing, manufacturing, operations and maintenance, marketing and sales, administration, and consulting. Some of the industries that require the expertise of mechanical engineers are: aerospace, automotive, industrial machinery and equipment, power, transportation, environmental, mining, chemical, textile, petroleum, pharmaceutical, computing, electronics, office machinery, and consumer household products.

Courses Offered in Mechanical Engineering

MEC 100 Introduction to Mechanical Engineering
 MEC 104-E The Practical Science of Things
 MEC 105-E Everyday Science
 MEC 111 Computer Science for Engineers
 MEC 112 Practical C/C++ for Scientists and Engineers
 MEC 125 Fundamentals of Machining
 MEC 160-E Introduction to Nuclear Science and Technology
 MEC 200 Technical Communications in Mechanical Engineering I
 MEC 202 Technical Drawing and Computer-Aided Drafting I
 MEC 203 Technical Drawing and Computer-Aided Drafting II
 MEC 259 Particle and Rigid Body Mechanics
 MEC 260 Engineering Statistics
 MEC 262 Engineering Dynamics
 MEC 280-H Pollution and Human Health
 MEC 290-H Nuclear Technology: History, Society, Medicine, and the Environment
 MEC 300 Technical Communications in Mechanical Engineering II
 MEC 301 Thermodynamics
 MEC 305 Heat and Mass Transfer
 MEC 309 Numerical Methods for Engineering Analysis
 MEC 310 Introduction to Machine Design
 MEC 316 Mechanical Engineering Laboratory I

MEC 317 Mechanical Engineering Laboratory II
 MEC 320 Engineering Design Methodology and Optimization
 MEC 323 Internal Combustion Engine
 MEC 325 Manufacturing Processes
 MEC 342 Introduction to Experimental Stress Analysis
 MEC 350 Energy Conversion and Alternate Energy Technologies
 MEC 363 Mechanics of Solids
 MEC 364 Introduction to Fluid Mechanics
 MEC 381 Transport and Fate of Pollutants
 MEC 393 Engineering Fluid Mechanics
 MEC 398 Thermodynamics II
 MEC 402 Mechanical Vibrations
 MEC 406 Energy Management in Commercial Buildings
 MEC 410 Design and Analysis of Machine Elements
 MEC 411 System Dynamics and Control
 MEC 412 Computer-Aided Design
 MEC 417 Mechanical Engineering Laboratory III
 MEC 420 Turbomachinery and Applications
 MEC 421 Statistical Quality Control and Design of Experiments
 MEC 422 Thermal System Design
 MEC 440 Mechanical Engineering Design I
 MEC 441 Mechanical Engineering Design II
 MEC 455 Applied Stress Analysis
 MEC 490, 491, 492 Topics in Mechanical Engineering
 Independent research, teaching practice, and internship courses

Requirements for Acceptance to the Major in Mechanical Engineering

Freshman and transfer applicants who have specified their interest in the mechanical engineering major may be accepted directly into the major upon admission to the University. Students in good academic standing who are admitted to the University but not immediately accepted into the major may apply for acceptance in any semester. Priority for admission to the mechanical 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 3.00 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.

Requirements for the Major in Mechanical Engineering (MEC)

The major in mechanical engineering leads to the Bachelor of Engineering degree.

Completion of the major requires approximately 110 credits.

1. Mathematics

- a. AMS 151, 161 Applied Calculus I, II
- b. AMS 236 Statistics in Engineering Quality Control
- c. AMS 261 Applied Calculus III *or* MAT 203 Calculus III with Applications
- d. AMS 361 Applied Calculus IV: Differential Equations *or* MAT 303 Calculus IV with Applications

Note: The following alternate calculus course sequences may be substituted for AMS 151, 161 in major requirements or prerequisites:

MAT 125, 126, 127
or MAT 131, 132
or MAT 141, 142

2. Natural Sciences

- a. PHY 131, 132 Classical Physics I, II
- b. PHY 251 Modern Physics *and* PHY 252 Modern Physics Laboratory *or* ESG 281 An Engineering Introduction to the Solid State
- c. CHE 198 Chemistry for Engineers *and* CHE 199 General Chemistry Laboratory for Engineers

Notes:

The following alternate physics course sequences may be substituted for PHY 131, 132:

- i. PHY 125, 126, 127 Classical Physics A, B, C
or PHY 141, 142 Classical Physics I, II: Honors
- ii. The following chemistry course sequences may be substituted for CHE 198 and 199:
 CHE 131, 132 General Chemistry *and* CHE 133 General Chemistry Laboratory
or CHE 141, 142 Honors Chemistry

and CHE 143 Honors Chemistry Laboratory

3. Computer Programming

MEC 111 Computer Science for Engineers

4. Laboratories

MEC 316 Mechanical Engineering Laboratory I

MEC 317 Mechanical Engineering Laboratory II

MEC 417 Mechanical Engineering Laboratory III

5. Mechanical Engineering

MEC 100 Introduction to Mechanical Engineering

MEC 202 Technical Drawing and Computer-Aided Drafting I

MEC 203 Technical Drawing and Computer-Aided Drafting II

MEC 260 Engineering Statics

MEC 262 Engineering Dynamics

MEC 301 Thermodynamics

MEC 305 Heat and Mass Transfer

MEC 309 Numerical Methods for Engineering Analysis

MEC 363 Mechanics of Solids

MEC 364 Introduction to Fluid Mechanics

6. Materials Science

ESG 332 Materials Science I: Structure and Properties of Materials

7. Electrical Science

ESE 275 Fundamentals of Electrical Engineering
or ESE 271 Electrical Circuit Analysis

8. Engineering Design

MEC 310 Introduction to Machine Design

MEC 320 Engineering Design Methodology and Optimization

MEC 410 Design and Analysis of Machine Elements

MEC 411 System Dynamics and Controls

MEC 440 Mechanical Engineering Design I

MEC 441 Mechanical Engineering Design II

9. Engineering Economics

EST 392 Engineering and Manufacturing Economics (also satisfies D.E.C. category F)

Sample Course Sequence in the Mechanical Engineering Major

Freshman Fall	Credits
D.E.C. A	3
AMS 151	3
MEC 100	3
PHY 131	4
D.E.C.	3
Total	16

Spring	Credits
CHE 198	4
CHE 199	1
AMS 161	3
PHY 132	4
MEC 111	3
MEC 202	1
Total	16

Sophomore Fall	Credits
MEC 260	3
ESG 281 or PHY 251/252	4
ESG 332	4
AMS 261 or MAT 203	4
AMS 236	1
Total	16

Spring	Credits
MEC 200	1
MEC 262	3
MEC 363	4
AMS 361 or MAT 303	4
ESE 275 or 271	4
MEC 203	1
Total	17

Junior Fall	Credits
MEC 301	3
MEC 309	3
MEC 316	3
MEC 364	4
D.E.C.	3
Total	16

Spring	Credits
MEC 300	0
MEC 305	3
MEC 310	3
MEC 317	2
MEC 320	3
Technical Elective	3
D.E.C.	3
Total	17

Senior Fall	Credits
MEC 410	3
MEC 411	4
MEC 440	3
Technical Elective	3
EST 392 (D.E.C. F)	3
Total	16

Spring	Credits
MEC 417	2
MEC 441	3
Technical Elective	3
D.E.C.	3
D.E.C.	3
Total	14

10. Technical Electives

The mechanical engineering curriculum requires specialization in either of two tracks, Energy Systems or Mechanical Systems, through the completion of three upper-division technical electives. Two of the courses must be chosen from the three listed for each track below.

Energy Systems track:

MEC 398 Thermodynamics II and one of the following two courses:

MEC 393 Engineering Fluid Mechanics

MEC 422 Thermal Systems Design

Mechanical Systems track:

MEC 402 Mechanical Vibrations and one of the following two courses:

MEC 325 Manufacturing Processes

MEC 455 Applied Stress Analysis

The third course can be selected from those offered by various departments of the College of Engineering and Applied Sciences including the Department of Mechanical Engineering. A list of specific courses can be found in the department's Undergraduate Guide.

11. Writing and Oral Communication Requirement

MEC 200 Technical Communication in Mechanical Engineering I

MEC 300 Technical Communication in Mechanical Engineering II

Group B, Mechanical Systems: MEC 310, 320, 325, 342, 402, 411, 490, 491, 492

Grading

All courses taken to satisfy requirements 1 through 10 above must be taken for a letter grade. The average of the grades for the courses MEC 260, 262, 301, 305, 309, 310, 316, 317, 320, 363, 364, 410, 411, 417, 440, 441 and technical electives must be at least 2.00.

Minor in Mechanical Engineering

The minor in mechanical engineering is offered for students who want the record of their University studies to show a significant amount of upper-division work in one of the two tracks traditional to the mechanical engineering profession: energy systems and mechanical systems. Entry into this minor presupposes a background in mathematics and physics, represented by the prerequisite requirements for the courses listed below.

Requirements for the Minor in Mechanical Engineering (MEC)

Completion of the minor requires 21-23 credits of which 15-17 are from required core courses and several of which students may have taken as part of their major.

There are pairs of courses that can be selected to achieve a specific expertise. A student who wishes to pursue this minor should consult with the undergraduate program director in the Department of Mechanical Engineering before registering for the elective courses. All courses must be taken for a letter grade and a grade point average of 2.00 or higher is required for the six courses that constitute the minor.

1. Required courses:

MEC 259 (or MEC 260 and 262)

MEC 301 (or ESG 302)

MEC 309 (or equivalent course in numerical methods)

MEC 363

2. Two elective courses chosen from either group A or group B

Group A, Energy Systems: MEC 305, 323, 350, 364, 393, 398, 490, 491, 492

MDA

Minor in

Media Arts

Department of Theatre Arts, College of Arts and Sciences

DIRECTOR OF THE MINOR: Norm Prusslin, Theatre Arts ADMINISTRATIVE ASSISTANT: Ed Quinn

OFFICE: 3046 Staller Center for the Arts PHONE: (631) 632-7300 WEB ADDRESS: <http://ws.cc.sunysb.edu/theatrearts>

Other minors of particular interest to students minoring in media arts: dance (DAN), interdisciplinary arts (LIA), journalism (JRN), music (MUS), political science (POL), theatre arts (THR)

Students seeking a coordinated set of courses that examine media technology, theory, and practice may elect the minor in media arts. Students taking the media minor are provided with an overview of the range of media and explore their effect on contemporary culture.

There are two tracks that students choose in consultation with the director of the minor: mass media and new media. The mass media track not only provides students with an understanding of the history and theory of broadcast media, but the opportunity to gain practical experience in the production and broadcast of radio and television. The new media track is a project-based curriculum in digital media that introduces students to numerous visual, animation, and audio programs, while giving them the opportunity to explore the rapid cultural and social changes brought about by this revolutionary medium. Student select courses appropriate to the chosen track in consultation with the director of the minor.

The minor prepares students 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 and practical skills in order to live intelligently in this media-saturated world.

Requirements for the Minor in Media Arts (MDA)

All courses offered for the minor must be passed with a letter grade of C or higher. At least 12 of the 21 credits must be taken at Stony Brook.

Completion of the minor requires 21 credits.

A. Required Courses:

THR 117 Media: Analysis and Culture

THR 216 Introduction to Visual Interpretation

THR 277 The Media Industry

THR 403 Media: Theory and Criticism

One of the following courses:

THR 480 Projects in Media

THR 488 Internship (appropriate topic only)

B. Six credits, of which at least three must be numbered 300 or higher, to be chosen from among:

AFS 463 The Media and Black America I

AFS 464 The Media and Black America II

ARS/MUS/THR 208 Technology in the Arts

ARS/MUS/THR 318 Interactive Performance, Media, and MIDI

EST 100 Societal Impact of Computers

HUM 201 Film and Television: Genre

HUM 202 Film and Television: History and Theory

MUS 340 Introduction to Music Technology

MUS 437 Electronic Music

POL 367 Mass Media in American Politics

THR 256 Stage Design

THR 295 Special Workshop (appropriate topic only)

THR 298 Student Media Leadership

THR 356 Scene Design

THR 372 Introduction to Television

THR 325 Scriptwriting for Film and Television

THR 375 Television Production

THR 379 Radio News

THR 462 Acting for the Camera

THR 480 Projects in Media (see note 2)

THR 487 Independent Research

THR 298 Student Media Leadership

THR 487 Projects in Theatre

THR 298 Student Media Leadership

THR 488 Internship (appropriate topic only; see note 2)

Notes:

1. No more than six credits required for the media arts minor may be counted toward the theatre arts major.
2. No more than a total of six credits from THR 295, 480, and 488 may be applied to the minor.

MVL

Minor in

Medieval Studies

Department of European Languages, Literatures, and Cultures, College of Arts and Sciences

DIRECTOR OF THE MINOR: Charles Franco, European Languages, Literatures, and Cultures SECRETARY: Marie Sweatt

OFFICE: N-4006 Melville Library PHONE: (631) 632-7440 EMAIL: cfranco@notes.cc.sunysb.edu WEB ADDRESS: www.sunysb.edu/eurolangs/

Affiliated Faculty

Patricia Belanoff, *English*

Charles Franco, *European Languages, Literatures, and Cultures*

Sarah Fuller, *Music*

Aaron W. Godfrey, *European Languages, Literatures, and Cultures*

Jacques Guilmain, *Art*

Thomas Kerth, *European Languages, Literatures, and Cultures*

Helen Rodnite Lemay, *History*

Sara Lipton, *History*

Anita Moskovitz, *Art*

Joaquin Martinez-Pizarro, *English*

Joel Rosenthal, *History*

Stephen Spector, *English*

Louise Vasvari, *Comparative Studies*

The minor in medieval studies 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 advising folder with the minor coordinator upon declaration of the minor.

Requirements for the Minor in Medieval Studies (MVL)

All courses offered for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires at least 24 credits.

1. MVL 141 The Legend of King Arthur
2. Two courses chosen from the following:
 - HIS 235 The Early Middle Ages
 - HIS 236 The Late Middle Ages
 - HIS 360 Women in Premodern Europe
 - MVL 241 Heroes and Warriors

3. Three of the following courses, including at least two different designators, in medieval philosophy, art, music, or literature. At least two of the courses must be numbered 300 or higher.

ANT 361 Peasants

ARH 101 Art in Culture from Prehistoric Times to the Age of the Cathedrals, c. 1400 A.D.

ARH 303 The Art and Architecture of the Early Middle Ages, c. 400-1050

ARH 304 The Art and Architecture of the High and Late Middle Ages, c. 1050-1400

CLT 211 Literary Survey: Medieval through Late Renaissance

EGL 300 Old English Literature

EGL 302 Medieval Literature in English

EGL 340 Chaucer

HUI 235 Themes in Western European Literature: Sex, Love, and Tragedy in Early Italian Literature

HUL 424 The Linguistics of Romance Languages

ITL 396 Readings in Italian Literature II

ITL 424 History of the Italian Language

ITL 430, 431 Studies in 13th- and 14th-Century Literature

LAT 355 Early Medieval Latin

LAT 356 Late Medieval Latin

MUS 350 Western Music before 1600

MVL 241 Heroes and Warriors (if not used for requirement 2)

PHI 304 Medieval Philosophy

RLS 270 Christianity

RLS 310 Biblical Theology

Additional relevant courses may become available. Consult the director of the medieval studies minor.

4. HIS 451 Colloquium in Medieval History
or MVL 447 Directed Readings in Medieval Studies
5. Completion of intermediate level Latin (LAT 252) or a relevant intermediate-level European foreign language (course numbered 201 or 212 or higher).

MES

Minor in

Middle Eastern Studies

College of Arts and Sciences

DIRECTOR OF THE MINOR: Robert Hoberman, Linguistics

OFFICE: S-213 Social and Behavioral Sciences PHONE: (631) 632-7462

Affiliated Faculty

Said Arjomand, *Sociology*

Zainab Bahrani, *Art*

Ellen Broselow, *Linguistics*

William Chittick, *Comparative Studies*

Robert Goldenberg, *History*

Robert Hoberman, *Linguistics*

Nilufer Isvan, *Sociology*

Daniel Monk, *Art*

Sachiko Murata, *Comparative Studies*

John Shea, *Anthropology*

Elizabeth Stone, *Anthropology*

Jane Sugarman, *Music*

The interdisciplinary minor in Middle Eastern Studies allows students interested in the Middle East to design an individual program of study centered around a particular area of concentration in consultation with an advisor.

Requirements for the Minor in Middle Eastern Studies (MES)

All courses offered for the minor must be taken for a letter grade. Failure to obtain prior approval of the program may result in denial of credit for the minor.

Completion of the minor requires 18 credits.

1. SOC 264 Introduction to Middle Eastern Studies
2. 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:
 - a. 12 credits in courses on the student's approved topic
 - b. Three credits in a related course from another minor topic area in Middle Eastern studies

Note: Besides the required courses, it is strongly recommended that students take a year of language related to their chosen topic area.

Sample Programs

The following programs are suggested as examples only. Students should consult an advisor about 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

ANT 360 Ancient Mesopotamia

JDH/RLS 230 Judaism

JDH/RLS 320 The Rabbinic Tradition

JDS/HIS 225 The Formation of the Judaic Heritage

JDS/HIS 226 The Shaping of Modern Judaism

RLS 280 Islam

RLS 408 Islamic Classics

SOC 264 Introduction to Middle Eastern Society

SOC 386 State and Society in the Middle East

(ARB 111, 112 Elementary Arabic or HBW 111, 112 Elementary Hebrew)

Ancient Near East

ANT 290 Science and Technology in Ancient Society

ANT 358 Ways to Civilization

ANT 360 Ancient Mesopotamia

JDS/HIS 225 The Formation of the Judaic Heritage

SOC 264 Introduction to Middle Eastern Society

SOC 386 State and Society in the Middle East

(ARB 111, 112 Elementary Arabic or HBW 111, 112 Elementary Hebrew)

Middle Eastern Culture and Politics

ANT 310 Ethnography (appropriate topic only)

ANT 311 Immersion in Another Culture (appropriate topic only)

RLS 280 Islam

RLS 408 Islamic Classics

SOC 264 Introduction to Middle Eastern Society

SOC 386 State and Society in the Middle East

(ARB 111, 112 Elementary Arabic or HBW 111, 112 Elementary Hebrew)

MTD

Interdisciplinary Major in Multidisciplinary Studies

College of Arts and Sciences

PROGRAM DIRECTOR: Robert Hoberman, Linguistics PROGRAM ADVISORS: Darcy Lonsdale, Marine Sciences; Robert Harvey, Comparative Studies

OFFICE: E-3310 Melville Library PHONE: (631) 632-7080 E-MAIL: *Robert.Hoberman@sunysb.edu*

The multidisciplinary studies major, which offers no courses of its own, allows students who are interested in more than one discipline to design their own programs by drawing on courses from two or three different areas of study. For example, students who wish to enter the health professions frequently combine biology with psychology, English, or sociology. Others with interests in the social or physical sciences may choose courses from those areas in conjunction with study in art, music, or theatre. Courses from different departments may also be used to pursue career interests in journalism or media studies. Studies may be pursued to suit individual interests in one subject or time period such as international affairs or the colonial era. An academic minor such as Business Management, Chinese Studies, Women's Studies, Latin American and Caribbean Studies, Child and Family Studies, and the Federated Learning Community Program may also fulfill one of the student's areas.

The individual programs of study for multidisciplinary studies majors are so diverse that no general statement can be made about their career paths after graduation. Majors frequently enter graduate or professional school or seek careers in business, education, or government agencies. Since the program of study requires careful planning, students choosing this major must see one of the multidisciplinary studies advisors to plan their individual program.

Acceptance to the Major

Students seeking admission to the major must write a curricular plan stating the two or three areas of concentration in which they will satisfy the course distribution requirement and explaining how this selection serves their intellectual, professional, or personal goals. If any course to be credited toward one of the two or three areas of concentration does not bear the course designator of the corresponding department or program, the

inclusion of that course must be justified in the curricular plan. Upon acceptance of the plan by one of the multidisciplinary studies advisors, the student is admitted to the major. A student wishing to change areas of concentration or justify the inclusion of additional courses must submit a revised curricular plan for approval by one of the program advisors.

Requirements for the Major in Multidisciplinary Studies (MTD)

The major in multidisciplinary studies leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 45 credits.

A. Course Distribution

Courses from two or three departments or areas are distributed as follows:

1. 15 credits in department or area A;
2. 15 credits in department or area B;
3. 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 their final semester. Details of the writing requirement for each major are listed among the major requirements in each department. In cases where there is no clearly identified 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 upper-division courses, that is, courses numbered 300 or higher. 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 such as business, computer science, or health sciences courses.
3. The 45 credits must include at least 15 upper-division credits taken at Stony Brook.
4. No more than 6 credits of independent study (including directed readings, research, and projects), with no more than 3 credits in a single concentration, will be accepted toward the major.
5. No more than 3 credits of S/U graded courses, including teaching practica and internships, will be accepted toward the major.
6. No courses taken under the Pass/No Credit option will be accepted toward the major.
7. Students in the multidisciplinary studies major may not declare a second major.

Honors Program in Multidisciplinary Studies

The honors program is open to multidisciplinary studies majors who have a cumulative g.p.a. of 3.00 and a g.p.a. of 3.50 in their MTD areas of concentration. A student wishing to enter the honors program should begin the process during the junior year by finding a faculty mentor from one of the student's areas of concentration to supervise the writing of an honors thesis in that area. The student must write a proposal indicating both the topic of the planned thesis and the remaining courses to be taken for completion of the major, which must include two research courses or seminars chosen

Sample Course Sequence for the Multidisciplinary Studies Major

Freshman Fall	Credits
D.E.C. A	3
Lower-Division Area A course	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
Lower-Division Area B course	3
Lower-Division Area C course	3
D.E.C.	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
Lower-Division Area B course	3
Lower-Division Area C course	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
Upper-Division Area A course	3
D.E.C.	3
D.E.C.	3
Elective	3
Elective	3
Total	15

Junior Fall	Credits
Upper-Division Area A course	3
Upper-Division Area B course	3
Upper-Division Area C course	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
Upper-Division Area A course	3
Upper-Division Area B course	3
Upper-Division Area C course	3
Upper-Division elective	3
D.E.C.	3
Total	15

Senior Fall	Credits
Upper-Division Area A course	3
Upper-Division Area B course	3
Upper-Division Area C course	3
Elective	3
Elective	3
Total	15

Spring	Credits
Upper-Division elective	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

with the advice and approval of the mentor. Preferably the thesis topic and the courses will be of an interdisciplinary nature. The proposal, along with a statement by the mentor supporting the student's proposal and indicating the merit of the plan, must be submitted to the multidisciplinary studies advisory committee by the beginning of the semester before the semester of graduation (September for May or August graduation, January for December graduation).

The honors thesis is examined by the student's mentor, a faculty member in a different department which corresponds to another of the student's MTD areas of concentration, and a multidisciplinary studies faculty advisor. Submission of an acceptable thesis will satisfy the upper-division writing requirement. If the the-

sis is judged by these readers to be of sufficient merit and the student has completed the other elements of the approved plan and maintained the g.p.a. levels specified above, honors are conferred.

MUS

Major and Minors in Music

Department of Music, College of Arts and Sciences

CHAIRPERSON: Judith Lochhead DIRECTOR OF UNDERGRADUATE STUDIES: Perry Goldstein UNDERGRADUATE SECRETARY: Theresa Berndt
OFFICE: 3304 Staller Center for the Arts PHONE: (631) 632-7330 E-MAIL: pgoldstein@notes.cc.sunysb.edu
WEB ADDRESS: www.sunysb.edu/music

Minors of particular interest to students majoring in music: anthropology (ANT), art history (ARH), cinema and cultural studies (CCS), dance (DAN), English (EGL), history (HIS), philosophy (PHI), theatre arts (THR)

Faculty

Joseph Auner, *Associate Professor, Ph.D., University of Chicago*: 19th- and 20th-century history and theory.

Dan Faulk, *Lecturer, M.A., Rutgers University*: Jazz ensembles and jazz studies.

Sarah Fuller, *Professor, Ph.D., University of California, Berkeley*: Medieval and Renaissance history and theory. Recipient of the President's Award for Excellence in Teaching, 1984.

Perry Goldstein, *Associate Professor and Director of Musicianship, D.M.A., Columbia University*: Analysis; composition; musicianship; theory. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1997, and the President's Award for Excellence in Teaching, 1997.

Bonnie Gordon, *Assistant Professor, Ph.D., University of Pennsylvania*: Musicology.

Arthur Haas, *Professor, M.A., University of California, Los Angeles*: Harpsichord; performance of early music.

Gilbert Kalish, *Professor and Co-director of Contemporary Chamber Players, B.A., Columbia University*: Piano; chamber music.

David Lawton, *Professor, Ph.D., University of California, Berkeley*: Orchestral and opera conducting; 19th-century history.

Julius Levine, *Professor Emeritus, B.S., Juilliard School of Music*: String bass; chamber music.

Judith Lochhead, *Professor, Ph.D., University at Stony Brook*: 20th-century theory and history.

Timothy Mount, *Professor and Director of Choral Music, D.M.A., University of Southern California*: Choral conducting.

Joyce Robbins, *Professor Emerita, 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, *Professor, Ph.D., Brandeis University*: Composition; theory.

Mitchell Stern, *Professor, Curtis Institute, Juilliard School of Music*: Violin, viola.

Jane Sugarman, *Associate Professor, Ph.D., University of California, Los Angeles*: Ethnomusicology; world music cultures. Recipient of the State University Chancellor's

Award for Excellence in Teaching, 1995, and the President's Award for Excellence in Teaching, 1995.

Daniel Weymouth, *Associate Professor and Director of Computer Music Studio, Ph.D., University of California, Berkeley*: Composition; computer music and technology.

Peter Winkler, *Professor, M.F.A., Princeton University*: Composition; theory; popular music. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1977 and the President's Award for Excellence in Teaching, 1977.

Performing Artists in Residence

Elaine Bonazzi, *B. Mus., Eastman School of Music*: Voice; opera workshop.

Joseph Carver, *D.M.A., University at Stony Brook*: String bass.

Richard Cross, *B.A., Cornell University*: Voice; opera workshop.

Christina Dahl, *M.M., Peabody Conservatory*: Piano, accompaniment, chamber music.

Raymond Des Roches, *Co-director of 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.

Timothy Long, *M.M., Eastman School of Music*: Vocal coach.

Michael Powell, *B. Mus., Wichita State*: Trombone.

William Purvis, *B.A., Haverford College*: Horn; chamber music.

Susan Radcliffe, *D.M.A., University at Stony Brook*: Trumpet.

Stephen Taylor, *Diploma, Juilliard School of Music*: Oboe, chamber music.

Carol Wincenc, *M.Mus., Juilliard School of Music*: Flute.

Jerry Willard, *Cleveland Institute of Music; study with John Williams and Misha Mishakoff*: Guitar; chamber music.

Teaching Assistants

Estimated number: 58

The study of music entails training in performance, theory, musicianship, and history in the context of a liberal arts degree. Technical study on an instrument or in voice and in music theory is coupled with broad historical and critical study of music.

The undergraduate major in music at Stony Brook is designed as a balanced educational program that serves as preparation for professional careers and advanced training in performance, composition, scholarship, teaching, and other arts-related careers.

Students graduating with a major in music pursue graduate study in musical performance, composition, history, and theory, teach music in private and public schools, take jobs in arts-related industries, and pursue advanced study in non-music fields, often in the health professions.

Courses Offered in Music

See the Course Descriptions listing in this *Bulletin* for complete information.

MUS 101-D Introduction to Music

MUS 105-G, 106-G Musics of the World I, II

MUS 119-D The Elements of Music

MUS 120 Elementary Sight-Singing and Dictation

MUS 121 Musicianship I

MUS 122 Beginning Keyboard

MUS 130-D Sound Structures

MUS 141, 142 Keyboard Harmony A, B

MUS 161-187 Performance Study in Piano, Harpsichord, Violin, Viola, Cello, String Bass, Classical Guitar, Flute, Oboe, Clarinet, Bassoon, Horn, Trumpet, Trombone, Percussion, Voice, and Other Instruments

MUS 208 Technology in the Arts

MUS 220, 221 Musicianship II, III

MUS 261 Stony Brook Chorale

MUS 262 University Orchestra
 MUS 263 University Wind Ensemble
 MUS 264 Big Band Jazz Ensemble
 MUS 265 Workshop in Performance
 MUS 266 Guitar Workshop
 MUS 267 Jazz Combo
 MUS 290 Vocal Repertory
 MUS 301-I Music of the Baroque
 MUS 302-I The Music of J.S. Bach
 MUS 303-I The Music of Beethoven
 MUS 304-K Contemporary Traditions in American Music: 1900 to the Present
 MUS 305-G Music in the Romantic Era
 MUS 306-G The Symphony
 MUS 307-I Imaginative Worlds of Opera
 MUS 308-K History of Jazz
 MUS 309-G Music Since 1900
 MUS 310-G Music and Culture in the 1960s
 MUS 311-J Topics in Non-Western Music
 MUS 312-J Music in the Middle East
 MUS 313-G Cross-Cultural Musics from Stravinsky to World Beat
 MUS 314-G Women Making Music
 MUS 315, 316 The Structural Principles of Music I, II
 MUS 317 Interactive Performance, Media, and MIDI
 MUS 318 Music and the Moving Image
 MUS 321, 322 Tonal Harmony I, II
 MUS 323 Techniques of Music, 1880 to the Present
 MUS 331 Musicianship IV
 MUS 339 Beginning Composition
 MUS 340 Introduction to Music Technologies
 MUS 350-G Western Music Before 1600
 MUS 351-I Western Music, 1600-1830
 MUS 352-G Western Music from 1830 to the Present
 MUS 355-G Special Topics in Music
 MUS 361-387 Advanced Performance Study in Piano, Harpsichord, Violin, Viola, Cello, String Bass, Classical Guitar, Flute, Oboe, Clarinet, Bassoon, Horn, Trumpet, Trombone, Percussion, Voice, and Other Instruments
 MUS 388 Fundamentals of Accompanying
 MUS 389 Jazz Improvisation
 MUS 391 Chamber Music
 MUS 393 Women's Chorus

MUS 421 Analysis of Tonal Music
 MUS 422 Analysis of Post-Tonal Music
 MUS 432 Tonal Counterpoint
 MUS 434 Orchestration
 MUS 437 Electronic Music
 MUS 439 Composition
 MUS 450 Seminar in the History of Music
 MUS 491 Conducting
 Independent project, teaching practica, and internship courses

Requirements for the Major in Music (MUS)

The major in music leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 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 122 Beginning Keyboard
 MUS 141, 142 Keyboard Harmony A, B
 MUS 220, 221 Musicianship II, III
 MUS 321, 322 Tonal Harmony I, II
 MUS 323 Techniques of Music, 1880 to the Present
 MUS 331 Musicianship IV
 MUS 421 Analysis of Tonal Music
 MUS 422 Analysis of Post-Tonal Music

2. History and Literature:

MUS 130 Sound Structures
 MUS 350 Western Music before 1600

MUS 351 Western Music, 1600-1830
 MUS 352 Western Music from 1830 to the Present

Two additional history courses numbered 450 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 semester of MUS 450.

3. Performance:

- a. A minimum of four semesters from courses in the series MUS 161-187 Performance Study (2 credits each) or MUS 361-387 Advanced Performance Study (4 credits each).
- b. Mandatory co-registration in a performance ensemble for each semester of lessons. Instrumentalists should enroll in MUS 262 University Orchestra, MUS 263 University Wind Ensemble, or MUS 264 Jazz Ensemble. Vocalists should enroll in MUS 261 Stony Brook Chorale or MUS 393 Chamber Chorus. Pianists and guitarists should enroll in MUS 391 Chamber Music.
- c. Study for a minimum of four semesters from the following: MUS 261 Stony Brook Chorale or MUS 262 University Orchestra or MUS 263 University Wind Ensemble or MUS 264 Jazz Ensemble or MUS 393 Chamber Chorus. MUS 391 Chamber Music may be used to satisfy two semesters of the four semester requirement. Pianists and guitarists who do not pass the audition for one of the ensembles may fulfill the four semesters with MUS 391 Chamber Music; pianists may also substitute MUS 388. Fundamentals of Accompanying; guitarists may substitute MUS 266 Guitar Workshop for two of the semesters.

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.

Sample Course Sequence in the Music Major

Freshman Fall	Credits
D.E.C. A	3
MUS 121	2
MUS 122	1
MUS 130	3
MUS 321	3
Performance Study	2
Ensemble	1-2
Total	15-16

Spring	Credits
D.E.C. A	3
MUS 220	2
MUS 141	1
MUS 332	3
MUS 350	4
Performance Study	2
Ensemble	1-2
Total	16-17

Sophomore Fall	Credits
MUS 221	2
MUS 142	1
MUS 323	3
MUS 351	4
Performance Study	2
Ensemble	1-2
D.E.C.	3
Total	16-17

Spring	Credits
MUS 331	2
MUS 421	1
MUS 352	4
Performance Study	2
Ensemble	1-2
D.E.C.	3
D.E.C.	3
Total	16-17

Junior Fall	Credits
MUS 422	3
MUS 342	4
Performance Study	2-4
Ensemble	1-2
D.E.C.	3
D.E.C.	3
Total	16-19

Spring	Credits
Performance Study	2-4
Ensemble	1-2
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	12-15

Senior Fall	Credits
MUS 450 or (434 or 432)	3
Performance Study	2-4
Ensemble	1-2
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15-18

Spring	Credits
MUS 450 (or 434 or 432)	3
Performance Study	2-4
Ensemble	1-2
D.E.C. (Upper-Division)	3
D.E.C. (Upper-Division)	3
D.E.C.	3
Total	15-18

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 350, 351, 352 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 humanities or fine arts, such as English, theatre arts, or foreign languages. 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 assessment 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 Pass/No Credit option.)

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 Department of Music's undergraduate studies committee. To be eligible, a student must have maintained at least a 3.00 cumulative g.p.a., and a 3.00 g.p.a. in music. After entering the honors program, a student must maintain at least a 3.50 g.p.a. 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 from the director of undergraduate studies.

The 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.

Requirements for the Minor in Music (MUS)

All courses offered for the minor must be passed with a letter grade of C or higher. At least three credits from requirement 2 or 3 in either track must be upper division. The general track requires 20 to 22 credits; the theory track requires 24 credits.

A Note on the Performance**Requirement:**

With the permission of the director of undergraduate studies, students who do not pass the audition for one of the ensembles may fulfill the performance requirement through private lessons (MUS 161-187). For students in the minor who fulfill the performance requirement through lessons, the ensemble corequisite for private lessons (MUS 161-187) will be waived.

MUS 264 Jazz Ensemble
 MUS 266 Guitar Workshop
 MUS 391 Chamber Music
 MUS 393 Chamber Chorus

General Track

1. Theory:

MUS 119 Elements of Music
or MUS 130 Sounds Structures
 MUS 315, 316 Structural Principles
 of Music

2. History:

MUS 101 and two courses chosen
 from the following: MUS 105, 106,
 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 266 Guitar Workshop
 MUS 391 Chamber Music
 MUS 393 Chamber Chorus

Theory Track

1. Theory:

MUS 121 Musicianship I
 MUS 130 Sound Structures
 MUS 220 Musicianship II
 MUS 221 Musicianship III
 MUS 321 Tonal Harmony I
 MUS 322 Tonal Harmony II

2. History:

Two courses from the following:
 MUS 105, 106, 301-314

3. Performance:

Three credits from the following:

MUS 261 Stony Brook Chorale
 MUS 262 University Orchestra
 MUS 263 University Wind
 Ensemble

OPT

Minor in Optics

Department of Physics and Astronomy, College of Arts and Sciences

DIRECTOR OF THE MINOR: Harold J. Metcalf, Physics and Astronomy UNDERGRADUATE SECRETARY: Elaine Larsen

OFFICE: Room P-110 Graduate Physics PHONE: (631) 632-8100 E-MAIL: Harold.Metcalf@sunysb.edu

WEB ADDRESS: <http://insti.physics.sunysb.edu/Physics>

The minor in optics, which is housed in the Department of Physics and Astronomy, 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 and Astronomy or the College of Engineering and Applied Sciences.

Requirements for the Minor in Optics (OPT)

All courses offered for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 21 credits.

A. Basic courses:

PHY 132 or 142 Classical Physics II

PHY 251/252 Modern Physics and Laboratory

or ESG 281 An Engineering Introduction to Solid State

PHY 301 Electromagnetic Theory
or ESE 319 Introduction to Electromagnetic Fields and Waves

PHY 352 Optics and Waves

B. At least two of the following:

ESE 321 Electromagnetic Waves and Fiber Optics

ESE 362 Optoelectronic Devices and Optical Imaging Techniques

ESE 441 Engineering Design I*

ESE 499 Research in Electrical Sciences*

ESG 441 Engineering Science Design IV*

ESM 499 Research in Materials Science*

MEC 342* Introduction to Experimental Stress

MEC 441 Mechanical Engineering Design II*

MEC 499 Research in Mechanical Engineering*

PHY 302 Electromagnetic Theory

PHY 452 Lasers

PHY 455 Principles of Microscopy

PHY 487 Research*

*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 and Astronomy for his or her research proposal before starting research.

BCP

Major in

Pharmacology

Department of Pharmacological Sciences, Health Sciences Center and College of Arts and Sciences

INTERIM CHAIRPERSON: David Williams ACTING DIRECTOR OF UNDERGRADUATE STUDIES: Francis Johnson

ASSISTANT DIRECTOR: Janice Kito

OFFICE: T7-166, Health Sciences Center PHONE: (631) 444-3027 E-MAIL: janice@pharm.sunysb.edu WEB ADDRESS: www.pharm.sunysb.edu*Minors of particular interest to students majoring in pharmacology: biomedical engineering (BME), bioengineering (BNG), chemistry (CHE), English (EGL), philosophy (PHI), political science (POL)*

Faculty

Paul R. Adams, *Professor, Ph.D., London University, England*: 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 biology; 5S RNA gene expression.

Kim Colon, *Research Assistant Professor, Ph.D., University of Connecticut*: Nuclear structure and function; the cell biology of oxidative DNA damage and repair.

Margery Connelly, *Research Assistant Professor, Ph.D., University at Stony Brook*: HDL receptor SR-BI; scavenger receptor class B type I; cholesterol trafficking.

Carlos de los Santos, *Research Assistant Professor, Ph.D. University of Buenos Aires, Argentina*: NMR solution structure of nucleic acids and proteins.

Jean M. Devlin, *Adjunct Assistant Professor, B.S., London University, England*: Physiological and molecular pharmacology.

James Dilger, *Associate Professor, Ph.D., University at Stony Brook*: Joint appointment with Anesthesiology; mechanisms by which general anesthetics affect cells in the central nervous system.

Colin Dingwall, *Assistant Professor, Ph.D. University of Cambridge, England*: Nuclear protein transport and the biochemistry of the nuclear pore complex.

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 karyoskeleton/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., Johns Hopkins University*: Molecular mechanism of carcinogenesis and DNA repair.

Charles R. Iden, *Associate Professor, Ph.D., Johns Hopkins University*: DNA damage pro-

duced 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.

Caroline F. Kisker, *Assistant Professor, Ph.D., Freie Universitat Berlin*: Structural biology; x-ray crystallography in combination with biochemical methods.

Craig C. Malbon, *Leading Professor, Ph.D., Case Western Reserve University*: Signal transduction during differentiation and development: roles of G-proteins.

Holly Miller, *Research Assistant Professor, Ph.D., Wake Forest University*: DNA replication and mutagenesis.

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., Ph.D., Johns Hopkins University*: Biochemistry of plasma proteins; new therapeutic systems.

Thomas A. Rosenquist, *Research Assistant Professor, Ph.D., University of Wisconsin*: Genetic analysis of mammalian DNA repair; genetic analysis of fibroblast growth factors.

Shinya Shibutani, *Research Associate Professor, Ph.D., Toyama Medical and Pharmaceutical University*: Mechanisms of translesional DNA synthesis.

Susan Smith, *Instructor, Ph.D./M.D., University of North Carolina at Chapel Hill*: Joint appointment with Medicine; vascular biology and molecular mechanisms of thrombosis.

Sidney Strickland, *Adjunct Professor, Ph.D., University of Michigan*: Protease function in mammalian memory and neuronal degeneration; genetics of early development.

Joel L. Sussman, *Research Professor, Ph.D. Massachusetts Institute of Technology*: 3-D structural studies of proteins and nucleic acid.

Stella-Anna E. Tzirka, *Research Assistant Professor, Ph.D., Aristotelian University of Thessaloniki*: Extracellular proteolysis in hippocampal function and degeneration.

William Van der Kloot, *Professor, Ph.D., Harvard University*: Acetylcholine; quanta; neuromuscular junction; synapse; neurotransmitter.

David Williams, *Professor, Ph.D., University of Illinois at Urbana-Champaign*: Hormonal regulation of mRNA stability; molecular biology of carcinogenesis and DNA repair.

Affiliated Faculty

Roy T. Steigbigel, *Infectious Diseases*

Stephen A. Vitkun, *Anesthesiology*

Pharmacology is an interdisciplinary science which investigates the actions of drugs and chemicals on biological systems. It requires a knowledge of the sources, chemical properties, biological effects, and therapeutic uses of drugs. It is a science that is basic not only to medicine but also to pharmacy, nursing, dentistry, and veterinary medicine. Pharmacological studies range from those that determine the effects of chemical agents upon subcellular mechanisms, to those that deal with the potential hazards of drug therapy for major diseases. By unlocking mysteries of drug action, discovering new therapies, and developing new medicinal products, pharmacology inevitably touches upon all of our lives.

The curriculum in pharmacology, leading to the Bachelor of Science degree, is designed to prepare students for careers in drug research and development and to provide a solid background for those students who choose to pursue graduate studies in the pharmacological sciences. Focusing on cellular, molecular, and human pharmacology, the program allows students to develop an understanding of this discipline in a basic science teaching and research environment.

Students majoring in pharmacology have the conceptual and practical knowledge to pursue technical and professional careers in all areas of drug research and development within the pharmaceutical and biotechnology industry, research institutes, and government agencies. The program provides an excellent foundation for graduate programs in pharmacology, toxicology, and molecular biology. The pharmacology curriculum teaches students the principles of pharmacology

and toxicology and mechanisms of drug action to students whose career interests lie in medicine, pharmacy, and other branches of health care and life sciences. Current career objectives in order of choice are Ph.D. programs in pharmacology, M.D./Ph.D., and M.D. degrees, and entry-level scientist positions in industry.

Courses Offered in Pharmacology

See the Course Description listing in this *Bulletin* for complete information.

BCP 394-H Environmental Toxicology and Public Health

BCP 400 Writing in Pharmacology

BCP 401 Principles of Pharmacology

BCP 402 Advanced Pharmacology

BCP 403 Principles of Pharmacology Laboratory

BCP 404 Advanced Pharmacology Laboratory

BCP 406 Pharmacology Colloquium

BCP 475 Undergraduate Teaching Practicum in Pharmacology

BCP 487 Research in Pharmacology

BCP 488 Internship

Requirements for the Major in Pharmacology (BCP)

The major in pharmacology leads to the Bachelor of Science degree. 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 3.00 must be obtained for all 100-level and upper-division courses.

Completion of the major requires approximately 66-67 credits.

A. Courses in Related Fields

- CHE 131, 132 General Chemistry or CHE 141, 142 Honors Chemistry
- CHE 133, 134 General Chemistry Laboratory or CHE 143, 144 Honors Chemistry Laboratory
- CHE 321, 322 Organic Chemistry or CHE 331, 332 Honors Organic Chemistry
- CHE 327 Organic Chemistry Laboratory A or CHE 333 Organic Chemistry Laboratory B
- MAT 131, 132 Calculus I, II (See note 1)
- PHY 121/123, 122/124 Physics for the Life Sciences (See note 1)

B. Courses in Biological Sciences

- BIO 202 and 203 Fundamentals of Biology
- BIO 310 Cell Biology
- HBY 350 Physiology
- BIO 361, 362 Biochemistry I, II
- BIO 365 or BIO 311 Biochemistry Laboratory

C. Pharmacology

- BCP 400 Writing in Pharmacology
- BCP 401 Principles of Pharmacology
- BCP 402 Advanced Pharmacology
- BCP 403 Principles of Pharmacology Laboratory
- BCP 404 Advanced Pharmacology Laboratory
- BCP 406 Pharmacology Colloquium

Sample Course Sequence for the Pharmacology Major

Freshman Fall	Credits
D.E.C. A	3
CHE 131	4
CHE 133	1
MAT131	4
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
CHE 132	4
CHE 134	1
MAT 132	4
D.E.C.	3
Total	15

Sophomore Fall	Credits
CHE 321	3
BIO 202	4
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	16

Spring	Credits
BIO 203	3
CHE 322	3
CHE 327	2
D.E.C.	4
D.E.C.	3
Total	15

Junior Fall	Credits
PHY 121/123	4
BIO 361	3
BIO 365 or 311	2
HBY 350	3
D.E.C.	3
Total	15

Spring	Credits
PHY 122/124	4
BIO 362	3
BIO 310	3
D.E.C.	3
D.E.C.	3
Total	16

Senior Fall	Credits
BCP 401	3
BCP 403	2
Upper-Division elective	3
Elective	3
Elective	3
Total	14

Spring	Credits
BCP 402	3
BCP 404	2
BCP 406	1
BCP 487	3
Elective	3
Elective	3
Total	15

- 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.

E. Courses Recommended but not Required for the Major

BCP/MAR 394 Environmental Toxicology and Public Health

BCP 475 Undergraduate Teaching Practicum I

BCP 488 Internship

BIO 320 General Genetics

CHE 301 Physical Chemistry I

CHE 302 Physical Chemistry II

CHE 312 Physical Chemistry (Short Course)

Note:

The following alternate sequences may be substituted for major requirements: MAT 125, 126, 127 or 141, 142 for MAT 131, 132; PHY 131, 132 or 141, 142 or 125, 126, 127 for PHY 121/123, 122/124.

bers. 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.

Honors Program in Pharmacology

Graduation with honors in pharmacology requires: 1) a cumulative grade point average of 3.50 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 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 mem-

PHI

Major and Minors in

Philosophy

Department of Philosophy, College of Arts and Sciences

CHAIRPERSON: Kelly Oliver DIRECTOR OF UNDERGRADUATE STUDIES: Harvey Cormier

OFFICE: 213 Harriman Hall PHONE: (631) 632-7580 E-MAIL: jrotolo@notes.cc.sunysb.edu WEB ADDRESS: www.sunysb.edu/philosophy/

Minors of particular interest to students majoring in philosophy: art history (ARH), studio art (ARS), biology (BIO), comparative literature (CLT), English (EGL), mathematics (MAT), political science (POL), religious studies (RLS), women's studies (WST)

Faculty

David B. Allison, *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*: Psychoanalysis; aesthetics; phenomenology; philosophy of mind; philosophy of place and space.

Harvey Cormier, *Assistant Professor, Ph.D., Harvard University*: American philosophy; William James and Pragmatism; philosophy and culture.

Robert Crease, *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.

Jeffrey Edwards, *Associate Professor, Ph.D., Universität Marburg*: History of modern philosophy; Kant and German idealism; ethics and political philosophy.

Patrick Grim, *Professor, Ph.D., Boston University*: Ethics; logic; contemporary analytic philosophy. Recipient of the State University President's and Chancellor's Award for Excellence in Teaching, 1988, Academy of Teacher-Scholars, 1996.

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; ethics; political and social philosophy.

Peter Ludlow, *Associate Professor, Ph.D., Columbia University*: Philosophy of linguistics; philosophy of cognitive science; philosophy of language.

Peter Manchester, *Associate Professor, Ph.D., Graduate Theological Union*: History of Greek philosophy; phenomenology; philosophical theology.

Gary Mar, *Associate Professor, Ph.D., University of California, Los Angeles*: Logic; philosophy of mathematics; contemporary analytic philosophy; Asian American studies; philosophy of reli-

gion. Recipient of the State University President's and Chancellor's Award for Excellence in Teaching, 1993, Alumni Association Outstanding Professor Award, 1995, the Pew Foundation Fellowship, 1995-1996, Academy of Teacher-Scholars, 1996.

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, NY State/UUP Excellence Award, 1991, and the SPD Bentley Glass Great Teacher Award, 1996, Academy of Teacher-Scholars, 1999.

Rita D. Nolan, *Professor, Ph.D., University of Pennsylvania*: Theory of knowledge; philosophy of language; foundations of cognitive science; Wittgenstein; feminism.

Kelly Oliver, *Associate Professor, Ph.D., Northwestern University*: Joint appointment with women's studies. 20th-century French philosophy; continental feminist theory; Nietzsche.

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 President's and Chancellor's Award for Excellence in Teaching, 1994.

Hugh J. Silverman, *Professor, Ph.D., Stanford University*: Continental philosophy; cultural and aesthetic theory; philosophy and literature. 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*: Social and legal philosophy; philosophy of science.

Lorenzo Simpson, *Professor, Ph.D., Yale University*: Contemporary continental philosophy; philosophy of the social sciences; philosophy of science and technology; neopragmatism and post analytic philosophy; philosophy and race. Recipient of commonwealth of Virginia's Outstanding Faculty Award, 1990; University of Richmond's Distinguished Educator Award, 1984.

Marshall Spector, *Professor, Ph.D., Johns Hopkins University*: Philosophy of science; philosophy of technology; environmental issues.

Donn Welton, *Professor, Ph.D., Southern Illinois University*: Phenomenology; theories of meaning and truth; philosophical psychology; Husserl studies.

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*

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 17

Philosophy explores and critically examines the deeper meanings of human life and the world in which we live. It studies the foundations of all forms of knowledge and human activity and the interconnections among them. Its studies include the nature of existence, knowledge, and value; human reasoning and its limits; art, science, literature, and the human condition; and justice and the nature of the good. It unifies these diverse topics by concentrating on the fundamental nature of human experience and cognition as well as the conceptual foundations of the sciences.

A major in philosophy gives students access to the fruits of 2500 years of thought on matters of ultimate concern. It encourages and provides the means of thinking effectively about timeless questions through a study of important writings on these topics. A successful student of philosophy is equipped to engage in intellectual conversation on a range of topics of both classical and contemporary concern. The study of philosophy encourages breadth and depth of understanding and promotes the ability to think cogently and rigorously.

Philosophy majors prepare themselves for a wide range of professional and business occupations that value highly developed skills of analysis, comprehensive thinking, and communication. Students majoring in philosophy commonly pursue careers in law, medicine, business, technology, public service, teaching, and editing and publishing. In addition to its

focus on the broader intellectual aspects of liberal studies, the Department of Philosophy stresses interdisciplinary studies in emerging fields such as feminism, computation and consciousness, environmentalism, philosophy of technology, and cross-cultural philosophies from a global perspective.

Courses Offered in Philosophy

See the Course Descriptions listing in this *Bulletin* for complete information.

PHI 100-B Concepts of the Person (II)
 PHI 103-B Philosophic Problems (II)
 PHI 104-B Moral Reasoning (II)
 PHI 105-G Politics and Society (II)
 PHI 108-B Logical and Critical Reasoning (II)
 PHI 109-B Philosophy and Literature in Social Context (III)
 PHI 110-B Arts and Ideas (III)
 PHI 111-B Introduction to Eastern Philosophy (I)
 PHI 200-G Introduction to Ancient Philosophy (I)
 PHI 206-G Introduction to Modern Philosophy (17th- and 18th-Century) (I)
 PHI 208-G Introduction to 19th-Century Philosophy (I)
 PHI 215-B Argumentative Writing (II)
 PHI 220-C Introduction to Symbolic Logic (II)
 PHI 230-H The Nature and Practice of Science (III)
 PHI 247-G Existentialism (I)
 PHI 249-G Marxism (I)
 PHI 264-D Philosophy and the Arts (III)
 PHI 277-G Political Philosophy (II)
 PHI 284-G Introduction to Feminist Theory (III)
 PHI 285-G The Uses of Philosophy (III)
 PHI 300-I Ancient Philosophy (I)
 PHI 304-I Medieval Philosophy (I)
 PHI 306-I Modern Philosophy (I)
 PHI 308-I 19th-Century Philosophy (I)
 PHI 309-I 20th Century Philosophy (I)
 PHI 310-K American Philosophy (I)
 PHI 312-I Topics in Contemporary European Thought (I)
 PHI 315 Majors' Introductory Seminar A
 PHI 316 Majors' Introductory Seminar B
 PHI 320-G Metaphysics (II)
 PHI 323-G Philosophy of Perception (II)

PHI 325-G Contemporary Philosophies of Language (II)
 PHI 330 Advanced Symbolic Logic (II)
 PHI 332-G Theories of Knowledge (II)
 PHI 335-G Philosophy of Time (II)
 PHI 336-G Philosophy of Religion (II)
 PHI 340-J Philosophical Traditions of East Asia (I)
 PHI 342-J History of Chinese Philosophy (I)
 PHI 344-J Japanese Thought and Philosophy (I)
 PHI 347-G Hermeneutics and Deconstruction (II)
 PHI 353-G Philosophy of Mind (II)
 PHI 360-G Philosophy of Education (III)
 PHI 363-G Philosophy of the Social Sciences (III)
 PHI 364-H Philosophy of Technology (III)
 PHI 365-H Philosophy and Computers (III)
 PHI 366-G Philosophy and the Environment (III)
 PHI 368-H Philosophy of Science (III)
 PHI 369 Philosophy of Mathematics (III)
 PHI 370-G Philosophical Psychology (III)
 PHI 372-G Ethical Inquiry (II)
 PHI 373-G, 374-G Philosophy in Relation to Other Disciplines (III)
 PHI 375-G Philosophy of Law (III)
 PHI 376-G Philosophy and Medicine (III)
 PHI 377 Contemporary Political Philosophy (II)
 PHI 378-K Philosophical Topics in Asian-American History (III)
 PHI 379-K Philosophy of Race (III)
 PHI 380-G Literature and Philosophy (III)
 PHI 381-G Aesthetics (II)
 PHI 383-G Philosophical Issues of Race and Gender (III)
 PHI 384-G Advanced Topics in Feminist Philosophy (III)
 PHI 400-G, 401-G Individual Systems of the Great Philosophers (I)
 PHI 402-G Analysis of Philosophic Texts (I)
 PHI 420 Advanced Topics in Philosophy (I,II,III)
 PHI 421 Research Tracks in Philosophy (I,II,III)

PHI 435 Senior Seminar
 Independent readings, research, and teaching practica courses

Requirements for the Major in Philosophy (PHI)

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. Courses offered for the major must be passed with a letter grade of C or higher. No more than two 100-level philosophy courses may be used to satisfy major requirements.

Completion of the major requires 36 credits.

1. PHI 300 Ancient Philosophy *and* PHI 306 Modern Philosophy
2. PHI 400 Individual Systems of the Great Philosophers
or PHI 401 Individual Systems of the Great Philosophers
or PHI 402 Analysis of Philosophic Texts
3. Two courses in Category I, Styles and Systems of Philosophy in Historical Perspective, excluding those in requirements 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. Two upper-division courses in another discipline, if appropriately related to a student's major program, may be substituted for one Category III course. Approval for such a substitution must be obtained from the undergraduate director prior to course election.
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 writ-

Sample Course Sequence for the Major in Philosophy

Freshman Fall	Credits
D.E.C. A	3
PHI Category I course	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
PHI Category I course	3
PHI Category II course	3
D.E.C.	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
PHI Category II course	3
PHI Category II course	3
PHI Cat. III course	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
PHI 300	3
PHI Category III elective	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Junior Fall	Credits
PHI Category III course	3
PHI elective	3
Upper-Division elective	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Spring	Credits
PHI 306	3
PHI Upper-Division elective	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
PHI 400 or 401 or 402	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Total	15

Spring	Credits
PHI 435	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

ing 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. PHI 200 and 206 may not be counted for the major if taken after 300 and 306, respectively.
2. Students who expect to pursue graduate study should include PHI 220 in their programs.
3. 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 in the

major with an overall g.p.a. of at least 3.00 and a g.p.a. in philosophy of 3.50. 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.

The Minor in Philosophy (PHI)

The minor in philosophy requires 18 credits, which must include at least nine credits in upper-division courses. The minor must be approved by the director of undergraduate studies. Students anticipating a minor may select one of the following emphases: history of philosophy; logic, science, and technology; moral, political, and legal issues; literature and the arts. Students pursuing the political theory/philosophy track in the political science major may fulfill the philosophy minor with 15 PHI credits, counting two of their upper-division POL electives in place of one PHI course. Alternatively, a student may design a minor in philosophy tailored to his or her own interests, subject to approval by the director of undergraduate studies. Courses offered for the minor must be passed with a letter grade of C or higher. No more than one 100-level course can be counted toward satisfying the minor requirements.

Undergraduate Research Tracks in Philosophy

The undergraduate research tracks in philosophy offer an opportunity to do sophisticated and concentrated research, while still an undergraduate, on a particular topic in philosophy. Seven courses are required over a three-year period. The first five courses provide important skills and background. In the third year, the research team, which consists of a faculty member and a small group of students, spends two semester-long research courses on a philosophical project of professional caliber, doing work that may even lead to publication. More specific information on Undergraduate Research Tracks, including particular topics beginning each year and the courses designed for them, are available from the Undergraduate Office.

Study Abroad

Philosophy majors and other interested students who would like to spend a semester or a year studying in France, Germany, England, Spain, Italy, or other countries, should consult the department's director of undergraduate studies. With the permission of the department, philosophy majors may also use credits from other study abroad programs to satisfy major requirements. See also "Special Academic Opportunities."

PEC

Courses in

Physical Education

Department of Physical Education

CHAIRPERSON: John DeMarie SECRETARY: Carol Sliwkoski

OFFICE: Sports Complex, Main Office PHONE: (631) 632-7047 WEB ADDRESS: www.sinc.sunysb.edu/dept/physed/

Faculty

Peter G. Angelo, *Associate Professor, Ph.D., University at Stony Brook*: Aquatics; first aid and cardiopulmonary resuscitation. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1998, and the President's Award for Excellence in Teaching, 1998.

Norman Berhannan, *Lecturer, M.A.L.S., University at Stony Brook*: General physical education.

David Caldiero, *Instructor, M.S., University of Bridgeport*: General physical education.

John DeMarie, *Associate Professor, M.A., Adelphi University*: General physical education.

Susan DiMonda, *Associate Professor and Director of Intramurals, M.A., Adelphi University*: General physical education.

Paul J. Dudzick, *Associate Professor, M.A., University at Stony Brook*: General physical education.

John Espey, *Associate Professor, M.A., University of North Carolina at Chapel Hill*: Lacrosse; general physical education.

Keri Going, *Lecturer, M.A.L.S., University at Stony Brook*: General physical education.

Nobuyoshi Higashi, *Associate Professor, part time, M.A., New York University*: Self-defense; judo.

Samuel B. Kornhauser, *Associate Professor, M.S., Southern Illinois University*: Football; general physical education.

Kathryn Ann Koshansky, *Associate 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.

Richard Laskowski, *Professor and Dean of Physical Education and Athletics, Ed.D., St. John's University*: General physical education.

Gregory Laub, *Lecturer, part time, M.B.A., Adelphi University*: First aid and cardiopulmonary resuscitation.

Nell Lee, *Lecturer, part time, M.A.L.S., University at Stony Brook*: General physical education.

Winston Lee, *Lecturer, B.A., B.S., University at Stony Brook*: First aid and cardiopulmonary resuscitation.

George Lukemire, *Assistant Professor, part-time, B.S., Cornell University*: Horsemanship.

Colin A. Martindale, *Professor Emeritus, Ph.D., City University of New York*: General physical education.

Jeannean Mercuri, *Lecturer, part-time, B.A., University at Stony Brook*: General physical education.

Richard B. Miekley, Jr., *Instructor, M.S., Ohio University*: Athletic training; general physical education.

Susan Ryan, *Assistant Professor, M.A., University at Stony Brook*: Soccer; general physical education.

Giny Rae Scieurca, *Lecturer, B.A., University of Wyoming*: General physical education.

Shu Takahashi, *Lecturer, B.F.A., Tokyo National University*: Karate.

Eric Teepe, *Lecturer, B.S., Averett College*: Soccer; general physical education.

Theresa Tiso, *Associate Professor and Director of Professional Studies, M.S., State University College at Cortland*: Wellness; general physical education.

Sandra Weeden, *Associate Professor and Director of Athletics, M.Ed., University of North Carolina at Greensboro*: General physical education.

Adjunct Faculty

Estimated number: 5

Teaching Assistants

Estimated number: 20

The Department of Physical Education seeks to incorporate the concept of the whole person into the fabric of the undergraduate experience. The department strives to educate and instill in all students an appreciation of a physically fit, active, and healthy lifestyle through a curriculum that incorporates a wide variety of lifetime sports and activities. Additional academic content courses are provided leading to personal, professional, and teacher-training certifications and credentials in areas of safety, emergency response care, athletic training, and aquatics.

Facilities

Indoor sports facilities are housed in the Indoor Sports Complex, which has a main arena that seats 4,000 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, a Nautilus weight room, 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; single-wall handball/paddleball courts; tennis 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. All students are required to sign an Assumption of Risk form at the beginning of each semester.

A maximum of ten PEC credits, including no more than four credits of 100-level courses, may be used toward the 120 credits required for the Bachelor of Arts or Bachelor of Science degrees or the 128 credits required for the Bachelor of Engineering degree.

Areas of Activity

Individual and Team Sports, Self-Defense, Physical Conditioning

- PEC 101 Racquetball
- PEC 102 Racquetball II
- PEC 103 Beginning Squash
- PEC 104 Power Walking
- PEC 105 Introduction to Fitness
- PEC 106 Basic Karate
- PEC 107 Intermediate Karate
- PEC 108 Judo
- PEC 109 Self-Defense
- PEC 110 Basic Aikido (Tomiki Style)
- PEC 113 Basic Fencing
- PEC 133 Aerobic Dancing
- PEC 134 Step Aerobics
- PEC 135 Yoga
- PEC 136 Basic Social Dance
- PEC 137 Intermediate Social Dance
- PEC 145 Basic Physical Conditioning
- PEC 146 Advanced Physical Conditioning
- PEC 147 Aerobic Running
- PEC 148 Advanced Aerobic Running
- PEC 151 Tennis/Badminton
- PEC 152 Tennis/Volleyball
- PEC 153 Basic Golf
- PEC 159 Badminton
- PEC 164 Volleyball
- PEC 240 Introduction to Wellness

Swimming and Water Safety

- PEC 120 Basic Swimming
- PEC 121 Intermediate Swimming
- PEC 122 Advanced Swimming and Basic Rescue

- PEC 125 Aerobic Swimming
- PEC 127 Hydro-Aerobics
- PEC 221, 222 Lifeguard Training I, II
- PEC 223 Water Safety Instructor
- PEC 225, 226 Instructor of Adapted Aquatics I, II
- PEC 227, 228 Instructor of Lifeguard Training I, II
- PEC 229 Fieldwork in Adapted Aquatics Instruction

Horsemanship

- PEC 180, 181 Horsemanship I, II
- PEC 182 Riding

First Aid and Athletic Training

- PEC 270 First Aid and Cardiopulmonary Resuscitation
- PEC 271 Instructor of Cardiopulmonary Resuscitation
- PEC 272 Instructor of First Aid
- PEC 310 Basic Athletic Training
- PEC 311 Advanced Athletic Training
- PEC 312, 313, 314 Athletic Training Practicum

Participation in Intercollegiate Athletics

- PEC 188 Softball
- PEC 189 Basketball
- PEC 190 Baseball
- PEC 191 Cross-Country
- PEC 192 Football
- PEC 193 Lacrosse
- PEC 194 Soccer
- PEC 196 Swimming
- PEC 197 Tennis
- PEC 198 Volleyball
- PEC 199 Track and Field
- PEC 475, 476 Undergraduate Teaching Practicum I, II

PME

Minor in

Physical Metallurgy

Department of Materials Science and Engineering, College of Engineering and Applied Sciences

CHAIRPERSON: Michael Dudley, Materials Science and Engineering UNDERGRADUATE PROGRAM DIRECTOR: Christopher C. Berndt

ADMINISTRATIVE ASSISTANT: Gertha Benoit-Hollis

OFFICE: 314 Engineering PHONE: (631) 632-8484 E-MAIL: ghollis@notes.cc.sunysb.edu WEB ADDRESS: <http://DOL1.eng.sunysb.edu/>

The Department of Materials Science and Engineering offers the minor in Physical Metallurgy, suitable for Engineering Science students or for non-Engineering Science students who seek to obtain a more thorough understanding of the engineering sciences. Computer engineering, engineering science, electrical engineering, mechanical engineering, and applied mathematics and statistics students can assemble a sequence of courses with 18-24 credits to satisfy an engineering science minor. Courses used to satisfy the requirements of the minor may not be used to satisfy requirements of another minor in engineering science. The student's program must be approved by the Undergraduate Program Director, Department of Materials Science and Engineering, Engineering Building, Room 314.

Requirements for the Minor in Physical Metallurgy (PME)

Completion of the minor requires 18-24 credits.

Requirements for students majoring in engineering science:

1. ESM 334 Materials Engineering
ESM 335 Mechanical Properties of Materials
ESM 353 Biomaterials: Manufacture, Properties, and Applications
2. Four courses chosen from:
BNG/ESG 201 Engineering Responses to Society
ESM 309 Thermodynamics of Solids
ESM 325 Diffraction Techniques and Structure of Solids
ESM 488 Cooperative Industrial Practice
ESM 499 Research in Materials Science
MEC 305 Heat and Mass Transfer

Requirements for all other students:

1. BNG/ESG 201 Engineering Responses to Society
2. ESG 100 Introduction to Engineering Science
or MEC 100 Introduction to Mechanical Engineering
or ESE 123 Introduction to Electronic Design
3. ESM 334 Materials Engineering
ESM 335 Mechanical Properties of Materials
ESM 353 Biomaterials: Manufacture, Properties, and Applications
4. Two courses chosen from:
ESM 488 Cooperative Industrial Practice *or* ESM 499 Research in Materials Science
ESM 309 Thermodynamics of Solids
ESM 325 Diffraction Techniques and Structure of Solids

PHY

Major and Minor in Physics

Department of Physics and Astronomy, College of Arts and Sciences

CHAIRPERSON: Janos Kirz DIRECTOR OF UNDERGRADUATE STUDIES: Philip B. Allen ASTRONOMY COORDINATOR: Frederick Walter UNDERGRADUATE SECRETARY: Elaine Larsen

OFFICE: P-110 Physics PHONE: (631) 632-8100 E-MAIL: Philip.Allen@sunysb.edu WEB ADDRESS: <http://insti.physics.sunysb.edu/Physics/>

Minors of particular interest to students majoring in physics: electrical engineering (ESE), mathematics (MAT), optics (OPT), science and engineering (LSE)

Faculty

Alexander Abanov, *Assistant Professor, Ph.D., University of Chicago*: Theoretical condensed matter physics.

Igor Aleiner, *Assistant Professor, Ph.D., University of Minnesota*: Theoretical condensed matter physics.

Philip B. Allen, *Professor, Ph.D., University of California, Berkeley*: Theoretical solid-state physics; superconductors and superconductivity.

Dimitri Averin, *Associate Professor, Ph.D., Moscow State University*: Solid-state physics.

Ilan Ben-Zvi, *Adjunct Professor, Ph.D., Weizmann Institute*: Accelerator and beam physics.

Thomas Bergeman, *Research Professor, Ph.D., Harvard University*: Theoretical atomic 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 Emeritus, Ph.D., University of Maryland at College Park*: Experimental atmospheric sciences; remote sensing; stratospheric dynamics and trace constituent measurements; millimeter-wave spectroscopy.

Klaus Axel Drees, *Assistant Professor, Ph.D., University of Heidelberg*: Experimental nuclear physics; relativistic ions.

Roderich Engelmann, *Professor, Ph.D., University of Heidelberg*: Experimental elementary particle physics.

Aaron Evans, *Assistant Professor, Ph.D., University of Hawaii*: Observational extragalactic astronomy.

Miriam Forman, *Adjunct Professor, Ph.D., University at Stony Brook*: Cosmic rays.

David B. Fossan, *Professor, Ph.D., University of Wisconsin-Madison*: Experimental nuclear physics; nuclear structure and reactions.

Johnathan Friedman, *Research Assistant Professor, Ph.D., City College of New York*: Experimental condensed matter physics.

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 J. Goldman, *Professor, Ph.D., University of Maryland at College Park*: Experimental condensed matter physics.

Erlend H. Graf, *Associate Professor, Ph.D., Cornell University*: Experimental low-temperature physics.

Paul D. Grannis, *Distinguished Professor, Ph.D., University of California, Berkeley*: Experimental high-energy physics; elementary particle reactions.

Michael Gurvitch, *Professor, Ph.D., University at Stony Brook*: Experimental solid-state physics.

Thomas Hemmick, *Associate Professor, Ph.D., University of Rochester*: Experimental relativistic heavy-ion nuclear physics. Recipient of the State University President's Award for Excellence in Teaching, 1996, and the State University Chancellor's Award for Excellence in Teaching, 1996.

John Hobbs, *Assistant Professor, Ph.D., University of Chicago*: Experimental high-energy physics.

Barbara Jacak, *Professor, Ph.D., Michigan State University*: Experimental nuclear physics; relativistic heavy ions.

Chris Jacobsen, *Professor, Ph.D., University at Stony Brook*: X-ray physics.

Chang Kee Jung, *Professor, Ph.D., Indiana University*: Experimental high-energy physics.

Peter B. Kahn, *Professor, Ph.D., Northwestern University*: Theoretical physics; nonlinear dynamics.

Zurab Kakushadze, *Assistant Professor, Ph.D., Cornell University*: String theory.

Janos Kirz, *Distinguished Professor, Ph.D., University of California, Berkeley*: X-ray optics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1976.

Peter M. Koch, *Professor, Ph.D., Yale University*: Experimental atomic physics; quantum chaos; nonlinear dynamics.

Vladimir Korepin, *Professor, Ph.D., Leningrad University*: Exactly solvable models in quantum field theory. Member, Institute for Theoretical Physics.

Alexander Korotkov, *Research Assistant Professor, Ph.D., Moscow State University*: Theoretical condensed matter physics.

T.T.S. Kuo, *Professor, Ph.D., University of Pittsburgh*: Nuclear theory.

Kenneth M. Lanzetta, *Associate Professor, Ph.D., University of Pittsburgh*: Observational cosmology.

James Lattimer, *Professor, Ph.D., University of Texas*: Nuclear astrophysics.

Linwood L. Lee, Jr., *Professor Emeritus, Ph.D., Yale University*: Experimental nuclear structure.

Konstantin Likharev, *Professor, Ph.D., Moscow State University*: Solid-state physics.

Jack J. Lissauer, *Adjunct Professor, Ph.D., University of California, Berkeley*: Planetary science.

Robert Lourie, *Adjunct Professor, Ph.D., Massachusetts Institute of Technology*: Experimental nuclear physics; relativistic heavy ions.

James Lukens, *Professor, Ph.D., University of California, San Diego*: Experimental solid-state physics.

Mikhail Lukin, *Assistant Professor, Ph.D., Texas A&M University*: Atomic 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, Provost and Vice President of Brookhaven Affairs; Ph.D., University of Iowa*: Experimental physics; nuclear structure.

John H. Marburger, *Professor, former President of the University at Stony Brook and Director of Brookhaven National Laboratory; Ph.D., Stanford University*: Laser theory.

Michael Marx, *Professor, Ph.D., Massachusetts Institute of Technology*: Experimental high-energy and relativistic heavy ion physics.

Emilio Mendez, *Professor, Ph.D., Director of the Institute for Interface Phenomena, Massachusetts Institute of Technology*: Solid-state experimental physics.

Harold J. Metcalf, *Professor, Ph.D., Brown University*: Atomic physics; laser cooling and trapping; atom optics; precision Stark spectroscopy; lasers and optics teaching. 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.

Richard A. Mould, *Associate Professor Emeritus, Ph.D., Yale University*: Theoretical physics; general relativity; quantum theory of measurements.

Herbert R. Muether, *Emeritus 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 Emeritus, Ph.D., University of Pennsylvania*: Energy; policy planning.

Luis Orozco, *Associate Professor, Ph.D., University of Texas at Austin*: Experimental atomic physics.

Peter Paul, *Distinguished Service Professor, Ph.D., University of Freiburg*: Experimental nuclear physics.

Stephen G. Peggs, *Adjunct Professor, Ph.D., Cornell University*: Accelerator physics.

Deane M. Peterson, *Associate Professor, Ph.D., Harvard University*: Observational stellar astronomy.

Madappa Prakash, *Research Assistant Professor, Ph.D., University of Bombay, India*: Theoretical 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.

Vasili Semenov, *Research Associate Professor, Ph.D., Moscow State University*: Experimental condensed matter physics.

Robert Shrock, *Professor, Ph.D., Princeton University*: Theoretical physics; gauge theories, statistical mechanics. 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.

Michal Simon, *Professor, Ph.D., Cornell University*: Observational astronomy.

John Smith, *Professor, Ph.D., University of Edinburgh*: Elementary particle physics. Member, Institute for Theoretical Physics.

Philip M. Solomon, *Distinguished Professor, Ph.D., University of Wisconsin*: Galactic and extragalactic astronomy.

Gene D. Sprouse, *Professor, Ph.D., Stanford University*: Experimental nuclear structure.

Peter W. Stephens, *Professor, Ph.D., Massachusetts Institute of Technology*: Experimental solid-state physics.

George Serman, *Professor, Ph.D., University of Maryland at College Park*: Theoretical physics; elementary particles. Member, Institute for Theoretical Physics.

Clifford E. Swartz, *Professor Emeritus, Ph.D., University of Rochester*: School curriculum revision.

F. Douglas Swesty, *Research Assistant Professor, Ph.D., University at Stony Brook*: Computational nuclear astrophysics.

Peter Van Nieuwenhuizen, *Professor and Director of Yang Institute of Theoretical Physics, Ph.D., Utrecht University*: Theoretical physics. Member, Institute for Theoretical Physics.

Jacobus Verbaarschot, *Professor, Ph.D., University of Utrecht*: Nuclear theory.

Frederick M. Walter, *Associate Professor, Ph.D., University of California, Berkeley*: Observational stellar astronomy.

William I. Weisberger, *Professor, Ph.D., Massachusetts Institute of Technology*: Theoretical physics. Member, Institute for Theoretical Physics.

Ralph Wijers, *Assistant Professor, Ph.D., University of Amsterdam*: Theoretical high-energy astrophysics.

Amos Yahil, *Professor, Ph.D., California Institute of Technology*: Astronomy.

Chen Ning Yang, *Einstein Professor Emeritus, D.Sc., Princeton University; Ph.D., University of Chicago*: Theoretical physics; field theory; statistical mechanics; particle physics.

Ismail Zahed, *Professor, Ph.D., Massachusetts Institute of Technology*: Theoretical nuclear physics.

Teaching Assistants

Estimated number: 46

Physics is the study of the basic physical principles that govern our universe. This study uses the language of mathematics and is applied in all other natural sciences (astronomy, chemistry, biology, geology, etc.) and engineering.

The objective of the major in physics is to teach students how to think in a scientific manner about the world.

This basic education is applicable to many fields (physics, engineering, computer programming, astronomy, geology, biophysics, medicine, medical technology, teaching, law, business, etc.). Since the basic principles of physics do not go out of style, and will be the basis for all new technology, the physics major provides knowledge of permanent value, hence the ability to adapt to new conditions. After graduation approximately half of our physics majors go on to graduate school, either in physics or in a related field (such as those mentioned above).

The other half initially take positions in industry (in areas such as those mentioned above), but many of these return to graduate school at a later time.

Astronomy

See the Astronomy entry in the alphabetical listings of Approved Majors, Minors, and Programs for astronomy courses and major requirements.

Courses Offered in Physics

See the Course Descriptions listing in this *Bulletin* for complete information.

PHY 112-E Light, Color, and Vision

PHY 117-E, 118-E Physics and Biological Systems

PHY 119-E Physics for Environmental Studies

PHY 121-E, 122-E Physics for the Life Sciences I, II

PHY 123, 124 Physics for Life Sciences Laboratory

PHY 125-E Classical Physics A

PHY 126-E Classical Physics B

PHY 127-E Classical Physics C

PHY 131-E, 132-E Classical Physics I, II

PHY 141-E, 142-E Classical Physics I, II: Honors

PHY 191, 192 Transitional Study

PHY 237-H Current Topics in World Climate and Atmosphere

PHY 251 Modern Physics

PHY 252 Modern Physics Laboratory

PHY 262 An Introduction to Solid-State Physics

PHY 263 Introduction to Solid-State Physics Laboratory

PHY 287 Introduction to Research

PHY 291 Transitional Study

PHY 301, 302 Electromagnetic Theory I, II

PHY 303 Mechanics

PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics

PHY 308 Quantum Physics

PHY 311 Connections in Science

PHY 313-H Mystery of Matter

PHY 335 Electronics and Instrumentation Laboratory

PHY 352 Optics and Waves

PHY 403 Nonlinear Dynamics

PHY 405 Advanced Quantum Physics

PHY 407 Physics of Continuous Media
 PHY 408 Relativity
 PHY 431 Nuclear and Particle Physics
 PHY 445, 446 Senior Laboratory I, II
 PHY 447 Tutorial in Advanced Topics
 PHY 452 Lasers
 PHY 455 Principles of Microscopy
 PHY 472 Solid-State Physics
 PHY 475 Undergraduate Teaching Practicum
 PHY 487 Research

Requirements for the Major in Physics (PHY)

The major in physics leads to the Bachelor of Science degree. Up to three physics courses passed with a C- may be applied to the major; all other courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires approximately 64 credits.

A. Courses in Physics

PHY 131, 132 Classical Physics I, II (see note)
 PHY 251 Modern Physics
 PHY 262/263 An Introduction to Solid-State Physics and Laboratory
 PHY 301 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
 PHY 445 Senior Laboratory I

Each course numbered above 300 must be completed with a grade of C or higher. At least four of these courses numbered above 300 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 Calculus I, II
 or MAT 141, 142 Honors Calculus I, II
 or MAT 125, 126, 127 Calculus A, B, C
2. One of the following:
 MAT 205 Calculus III
 or MAT 203 Calculus III with Applications
 or AMS 261 Applied Calculus III
3. One of the following:
 MAT 305 Calculus IV
 or MAT 303 Calculus IV with Applications
 or AMS 361 Applied Calculus IV: Differential Equations

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 and Astronomy Undergraduate Office.

D. Upper-Division Writing Requirement

Students satisfy this requirement in conjunction with their laboratory work in PHY 262/263, 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.

Notes:

1. Students taking the PHY 125, 126, 127 sequence will have to delay portions of this program by one semester.
2. For the choices of physics electives, see the 400-level physics courses. Students are encouraged to include biology (BIO 201, 202) and chemistry (CHE 198 or CHE 131, 132) among their electives.

Honors

To receive the Bachelor of Science in physics with honors, a student must take ten courses in the department numbered 300 or higher, receiving an overall grade point average in these courses of at least 3.30. Two of the ten courses must be chosen from among the following: PHY 445, 446 Senior Laboratory, and PHY 487 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 PHY 141 Classical Physics I: Honors
 PHY 132 Classical Physics II
 or PHY 142 Classical Physics II: Honors
 MAT 131 Calculus I
 MAT 132 Calculus II

Sophomore Year

PHY 251/252 Modern Physics and Laboratory
 PHY 262/263 Introduction to Solid-State Physics and Laboratory
 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

Sample Course Sequence for the Major in Physics

Freshman, Fall		Credits	
D.E.C. A.	3		
PHY 131	4		
MAT 131	4		
D.E.C.	3		
Total	14		

Spring		Credits	
D.E.C. A	3		
PHY 132	4		
MAT 132	4		
D.E.C.	3		
D.E.C.	3		
Total	17		

Sophomore, Fall		Credits	
PHY 251/252	4		
MAT 205	3		
D.E.C.	3		
D.E.C.	3		
D.E.C.	3		
Total	16		

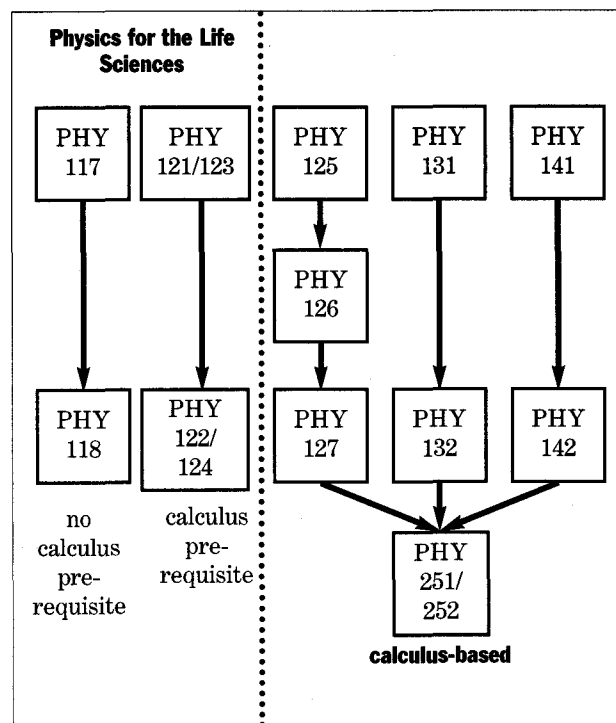
Spring		Credits	
PHY 262/263	4		
MAT 305	3		
PHY 306	3		
D.E.C.	3		
D.E.C.	3		
Total	16		

Junior, Fall		Credits	
PHY 301	3		
PHY 303	3		
PHY 335	3		
MAT 341	3		
D.E.C.	3		
Total	15		

Spring		Credits	
PHY 302	3		
PHY 308	3		
PHY 352	3		
MAT 342	3		
Elective	3		
Total	15		

Senior, Fall		Credits	
PHY 487	3		
Upper-Division PHY elective	3		
PHY elective	3		
D.E.C.	3		
D.E.C.	3		
Total	15		

Spring		Credits	
PHY 445	3		
PHY elective	3		
PHY elective	3		
D.E.C.	3		
Elective	3		
Total	15		



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 Tutorial in Advanced Topics
- PHY 472 Solid-State Physics
- PHY 487 Research

Note: Of the courses explicitly mentioned above, MAT 341, MAT 342, PHY 302, and PHY 487 are not required for the B.S. in Physics.

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.

Physics Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in alphabetical listings of Approved Majors, Minors, and Programs.

Basic Physics Sequences

The courses PHY 131, 132 (or 141, 142 or 125, 126, 127) and 251/252 present an intensive introduction to classical and modern physics for those who may major in physics, other physical sciences, or engineering. Entering students interested in this course sequence will be tested to determine 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.)

Any course numbered 200 or higher that is to be used as a prerequisite for a physics course must be completed with a grade of C or higher.

The Minor in Physics (PHY)

The minor in physics is available for those who want their formal university records to emphasize a serious amount of upper-division work in physics.

All courses offered for the minor must be passed with a letter grade of C or higher. Completion of the minor requires 18 credits.

Requirements for the minor in physics for students with majors in the College of Arts and Sciences:

1. PHY 251 Modern Physics
2. PHY 262/263 An Introduction to Solid-State Physics and Laboratory
3. PHY 301 Electromagnetic Theory
4. PHY 303 Mechanics
5. PHY 335 Electronics and Instrumentation Laboratory
6. One of the following:
PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics
CHE 302 Physical Chemistry II

Requirements for the minor in physics for students with majors in the College of Engineering and Applied Sciences:

1. PHY 251 Modern Physics
2. One of the following:
PHY 262/263 An Introduction to Solid-State Physics and Laboratory
ESG 281 An Engineering Introduction to the Solid State
3. One of the following:
PHY 301 Electromagnetic Theory
ESE 319 Introduction to Electromagnetic Fields and Waves
4. PHY 303 Mechanics
5. One of the following:
PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics
ESM 309 Thermodynamics of Solids
MEC 398 Thermodynamics II
6. One of the following:
PHY 335 Electronics and Instrumentation Laboratory
ESE 314 Electronics Laboratory B

POL

Major and Minor in Political Science

Department of Political Science, College of Arts and Sciences

CHAIRPERSON: Mark Schneider DIRECTOR OF UNDERGRADUATE STUDIES: Frank Myers UNDERGRADUATE SECRETARY: Josephine Vasient
OFFICE: S-701 Social and Behavioral Sciences PHONE: (631) 632-7632 E-MAIL: jvasient@datalabs.sbs.sunysb.edu
WEB ADDRESS: www.sunysb.edu/polsci/index.html

Minors of particular interest to students majoring in political science: Africana studies (AFS), applied mathematics and statistics (AMS), anthropology (ANT), economics (ECO), environmental studies (ENS), history (HIS), international studies (LIS), philosophy (PHI), service learning research (LCR), sociology (SOC), technology and society (EST), women's studies (WST)

Faculty

Scott Basinger, *Assistant Professor, Ph.D., University of California, San Diego*: American politics; political economy.

Mark Berger, *Assistant Professor, Ph.D., Duke University*: American politics; elections.

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, Ph.D., University of Minnesota*: Political behavior and political sociology; logic of inquiry and research design; statistics.

Patricia Filiberto, *Lecturer, part-time, J.D., St. Johns University*: Criminal law.

Leonie Huddy, *Associate Professor, Ph.D., University of California, Los Angeles*: Political psychology; public opinion.

Brad Jones, *Associate Professor, Ph.D., University at Stony Brook*: Congress; elections; political methodology.

Elliot Kleinman, *Lecturer, part-time, J.D., Brooklyn Law School*: Business law.

Lee E. Koppelman, *Professor, D.P.A., New York University*: Regional planning; resource management.

Gallya Lahav, *Assistant Professor, Ph.D., City University of New York*: Comparative politics; European integration.

Noel Lateef, *Lecturer, part-time, J.D., Yale Law School*: International law.

Howard Lavine, *Assistant Professor, Ph.D., University of Minnesota*: Political psychology; attitudes and persuasion.

Milton Lodge, *Professor, Ph.D., University of Michigan*: Political psychology; political behavior.

Michael Manoussos, *Lecturer, part-time, J.D., Detroit College of Law*: Constitutional law.

Frank Myers, *Professor, Ph.D., Columbia University*: Comparative politics; political theory.

Helmut Norpoth, *Professor, Ph.D., University of Michigan*: Elections; comparative politics.

Robert Ortiz, *Lecturer, part-time, J.D., St. John's University*: Business law.

Peter Salins, *Professor, State University of New York Provost and Vice Chancellor for Academic*

Affairs, Ph.D., Syracuse University: Urban politics; public policy.

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, *Associate Professor, Ph.D., University of Illinois at Urbana-Champaign*: International relations; political psychology; foreign policy.

Paul Teske, *Associate Professor and Graduate Studies Director, Ph.D., Princeton University*: Political economy; urban politics; regulatory policy.

Steven R. Van Winkle, *Assistant Professor, Ph.D., Ohio State University*: American politics, statistical methods and formal theory; public opinion.

Affiliated Faculty

Jeff T. Casey, *Harriman School*

Lester Paldy, *Technology and Society*

Olufemi O. Vaughan, *Africana Studies*

Teaching Assistants

Estimated number: 6

Political Science is the study of how societies make collective decisions through politics and government. It is subdivided into the following areas: American politics (study of American institutions and practices); comparative politics (study of foreign governments); international relations (study of war, international organization, and foreign policies); political theory (study of the bases of legitimate political authority); political behavior (study of why people vote and act as they do in political matters); and public policy

(study of organizational decision-making and the consequences of government action).

The objective of the political science major is to give the student a general introduction to all the major subfields of the discipline and an in-depth exposure to one or two of them. Students study not only the major literature of the subfields, but also learn research methods and become familiar with ongoing research. Internships in Long Island, Albany, and Washington offer selected students the opportunity to gain practical experience.

The political science major provides a strong liberal arts background for students who may enter such fields as journalism, business, public administration, social welfare, teaching, and law. Those who graduate from law school go on to work in law firms, in businesses, and in government agencies at all levels. Most political science majors who apply to law school are admitted, many of them to top-ranking institutions. Some political science majors attend graduate school in the field, leading to careers as teachers and researchers of politics at colleges and universities.

Courses Offered in Political Science

See the Course Descriptions listing in this *Bulletin* for complete information.

POL 101-F World Politics

POL 102-F Introduction to American Government

POL 103-F Introduction to Comparative Politics

POL 105-F Honors Introduction to American Government

POL 201-C Introduction to Statistical Methods in Political Science

POL 214-J Modern Latin America

POL 216-J History of U.S.-Latin American Relations

POL 287 Introductory Research in Political Science
 POL 302 Graphical Analysis in Political Science
 POL 305-I Government and Politics of the United Kingdom
 POL 307-I Politics in Germany
 POL 309-I Politics in the European Union
 POL 311 Introduction to International Law
 POL 313-F Problems of International Relations
 POL 316-F Federalism and Intergovernmental Relations
 POL 317-F American Election Campaigns
 POL 318-F Voters and Elections
 POL 319 Business Law
 POL 320-F Constitutional Law and Politics: United States
 POL 321-F Law and Politics
 POL 322-F The Presidency in the American Political System
 POL 323-F U.S. Congress
 POL 324-F American Political Parties and Pressure Groups
 POL 325-F Civil Liberties and Civil Rights
 POL 326-F Politics of New York State
 POL 327-K Urban Politics
 POL 328-F Criminal Law
 POL 329-F Administrative Law
 POL 330-K Gender Issues in the Law
 POL 331-F Law and Political Representation
 POL 332-F Politics of Criminal Due Process
 POL 336-F U.S. Foreign Policy
 POL 337-J The Politics of Africa
 POL 343-F Behavioral Assumptions of the Law
 POL 344-F American Political Ideology and Public Opinion
 POL 346-F Political Psychology
 POL 347-K Women and Politics
 POL 348-F Political Beliefs and Judgments
 POL 349-F Social Psychology of Politics
 POL 350-I Contemporary European Political Theory
 POL 351 Social Surveys in Contemporary Society

POL 359-F Public Policy Analysis
 POL 364-F Organizational Decision Making
 POL 365-F Economy and Democracy
 POL 366-F Government Regulation of Business
 POL 367-F Mass Media in American Politics
 POL 368-F American Political Development
 POL 372-J Politics in the Third World
 POL 377 Contemporary Political Philosophy
 POL 382-J Politics and Political Change in Latin America
 POL 401-404 Seminars in Advanced Topics
 POL 405 Colloquium in Comparative Politics and Political Theory
 POL 406 Strategic Models of Politics
 POL 411-H Science, Technology, and Arms Control
 POL 412 Intelligence Organizations, Technology, and Democracy
 POL 413-J Asian Security and Technology Issues
 POL 418 Legal Processes and Social Structures
 POL 434-F Supreme Court Decision Making
 POL 489 Washington or Albany Internship
 POL 490 Washington or Albany Seminar
 Independent readings, research, teaching practica, internship, and senior honors courses

Requirements for the Major in Political Science (POL)

The major in political science leads to the Bachelor of Arts degree. All political science courses numbered 200 or higher offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 39 credits.

A. Study Within the Area of the Major

1. Required courses: (9 credits)

POL 101 World Politics
 POL 102 American Government or 105 Honors American Government
 POL 103 Comparative Politics

Note: Above courses must be taken for a letter grade and passed with a grade of C or higher in order to be counted toward completion of the major requirements.

2. Political Science electives: (24 credits)

- 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 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 (6 credits)

Two courses numbered 300 or higher, offered by another department (and not crosslisted with a political science course or included as a philosophy course in the political theory/philosophy program of study) 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, or SOC 202. 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:

Sample Course Sequence for the Major in Political Science

Freshman Fall	Credits
D.E.C. A	3
POL 100-level*	3
POL 100-level*	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
POL 100-level*	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
POL 201**	3
POL 200-level	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
POL 300-level	3
Introductory course in related area	3
Introductory course in related area	3
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
POL Upper-Division course from selected Program of Study***	3
POL Upper-Division course from selected Program of Study***	3
Upper-Division course in related area	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
POL Upper-Division course from selected Program of Study***	3
POL Upper-Division course from selected Program of Study***	3
Upper-Division course related in area	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Senior Fall	Credits
POL Upper-Division elective	3
POL Upper-Division elective	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Spring	Credits
Electives, directed research, internship, or honors	15
Total	15

* Every political science major must take POL 101, 102, and 103. The three courses are independent of one another and may be taken in any sequence.

** Any of the following courses may be substituted for POL 201: AMS 102, ECO 320, PSY 201, or SOC 202.

*** See the lists under "Programs of Study" (right).

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 stud-

ies on further steps to fulfill the writing requirement.

Note:

Students must take four 300-level courses in one of the following programs of study within the major:

1. Comparative Politics and International Relations;
2. American Government, Law, and Public Policy;
3. Political Behavior and Political Psychology;
4. Political Theory/Philosophy.

Programs of Study

Comparative Politics and International Relations

POL 214, 216, 305, 307, 309, 311, 313, 336, 337, 350, 372, 382, 405, 411, 412, 413. Also 287, 401, 402, 403, 404, 447, 487, and 495 when the topic is appropriate.

American Government, Law, and Public Policy

POL 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 336, 343, 344, 347, 350, 351, 359, 364, 365, 366, 367, 406, 434. Also 287, 401, 402, 403, 404, 447, 487, and 495 when the topic is applicable.

Political Behavior and Political Psychology

POL 316, 317, 318, 323, 343, 344, 346, 347, 348, 349, 350, 364, 367, 368, 377, 434. Also 287, 401, 402, 403, 404, 447, 487, and 495 when the topic is applicable.

Political Theory/Philosophy

Students may choose from the following courses in political science and philosophy to complete this program of study:

PHI 249 Marxism
 PHI 277 Political Philosophy
 PHI 363 Philosophy of the Social Sciences
 PHI 366 Philosophy and the Environment
 PHI 372 Ethical Inquiry
 PHI 375 Philosophy of Law
 PHI 377 Contemporary Political Philosophy
 PHI 379 Philosophy of Race
 PHI 384 Advanced Topics in Feminist Theory
 Also POL 321, 325, 344, 350, 418.
 Also POL 402, 403, 404, and 405 when the topic is applicable.

Honors Program

Departmental majors with a 3.50 g.p.a. in political science courses and a 3.00 cumulative g.p.a. 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 (POL)

The minor in political science is organized around one of the four programs of study listed for the major and must be approved by the department's director of undergraduate studies.

Completion of the minor requires 24 credits distributed as follows:

1. Two 100-level POL courses selected from 101, 102 (or 105), and 103
2. Six POL courses numbered 200 or higher (excluding POL 201), of which at least three must be at the upper-division level. 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.

B.A./M.A. Combined Degree Program in Political Science

Undergraduate Stony Brook students currently enrolled with a major in political science are eligible for the five-year combined B.A./M.A. in Political Science/Public Policy Program, in which up to six graduate credits are earned during the senior year, while also fulfilling the B.A. requirements. Upon admission to the program, the student takes the following two courses (or others approved by the Graduate Program Director) in the senior year:

POL 535 Public Policy Analysis and Evaluation

POL 536 Public Management and Organizational Behavior

These six credits will also be applied to the 24-credit, upper-level undergraduate elective requirement for political science majors. The student then completes the remaining graduate requirements during the fifth year of full-time study.

PSY

Majors and Minor in Psychology

Department of Psychology, College of Arts and Sciences

CHAIRPERSON: Grover J. Whitehurst DIRECTOR OF UNDERGRADUATE STUDIES: John K. Robinson UNDERGRADUATE SECRETARY: Donna Hildenbrand

OFFICE: 156 Psychology B PHONE: (631) 632-7802 WEB ADDRESS: <http://psychology.psy.sunysb.edu>

Minors of particular interest to students majoring in psychology: child and family studies (CFS), human and gender development (LHD), women's studies (WST)

Faculty

- Brenda J. Anderson, *Assistant Professor, Ph.D., University of Illinois*: Physiological mechanisms of learning and memory; human brain mapping.
- Arthur Aron, *Professor, Ph.D., University of Toronto*: Motivation and cognition in close relationships; intergroup relations; methodology.
- Robert Boice, *Professor Emeritus, Ph.D., Michigan State University*: Procrastination and blocking in writing.
- Dana Bramel, *Professor Emeritus, Ph.D., Stanford University*: Intergroup attitudes; social class.
- Jasper Brener, *Professor, Ph.D., University of London*: Cardiovascular psychophysiology; behavioral energetics; autonomic learning.
- Susan Brennan, *Associate Professor, Ph.D., Stanford University*: Psycholinguistics; human-computer interaction.
- Barbara Burkhard, *Adjunct Assistant Professor, Ph.D., University at Stony Brook*: Director, North Suffolk Child Treatment Program; child abuse and neglect.
- Edward G. Carr, *Leading Professor, Ph.D., University of California, San Diego*: Behavior modification; developmental disabilities.
- David Cross, *Associate Professor Emeritus, Ph.D., University of Michigan*: Psychophysics; mathematical models.
- Thomas J. D'Zurilla, *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*: Learning and memory mechanisms in insects; human learning and memory changes with age.
- David S. Emmerich, *Professor, Ph.D., Indiana University*: Sensory processing; perception.
- Nancy J. Franklin, *Associate Professor, Ph.D., Stanford University*: Memory; spatial cognition; mental models of dynamic physical systems.
- Robert W. Frick, *Adjunct Assistant Professor, Ph.D., University of Washington*: Cognitive psychology; human learning.
- Ronald Friend, *Professor, Ph.D., University of Toronto*: Social psychology; health psychology.
- Richard Gerrig, *Professor, Ph.D., Stanford University*: Cognitive psychology; understanding literature.
- Marvin R. Goldfried, *Professor, Ph.D., State University of New York at Buffalo*: Behavioral assessment; cognitive behavior therapy.
- Richard Heyman, *Research Associate Professor, Ph.D., University of Oregon*: Escalation and de-escalation of marital conflict; observation of marital interactions; assessment and treatment of spouse abuse; prevalence of partner abuse.
- Paul S. Kaplan, *Adjunct Assistant Professor, Ph.D., New York University*: Child and human development; behavior disorders of children; teaching of psychology.
- Edward S. Katkin, *Professor Emeritus, Ph.D., Duke University*: Psychophysiological disorders; assessment of emotions.
- Daniel N. Klein, *Professor, Ph.D., State University of New York at Buffalo*: Mood disorders; psychopathology.
- Marvin Levine, *Professor Emeritus, Ph.D., University of Wisconsin-Madison*: Human learning with emphasis on cognitive functions.
- Sheri Levy, *Assistant Professor, Ph.D., Columbia University*: Determinants of prejudice; prejudice reduction; intragroup and intergroup relations.
- Robert M. Liebert, *Professor, Ph.D., Stanford University*: Observational learning; laboratory methodology; statistics.
- Marci Lobel, *Associate Professor, Ph.D., University of California, Los Angeles*: Health psychology; stress and coping; women's health.
- Elizabeth Mezzacappa, *Research Assistant Professor, Ph.D., Uniformed Services University of the Health Sciences*: Maternal health effects of breast-feeding; stress.
- H. William Morrison, *Associate Professor Emeritus, Ph.D., University of Michigan*: Perception of abstract relations; instructional techniques.
- John Neale, *Professor Emeritus, 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., University at Stony Brook*: Child and family problems.
- Anne Peterson, *Adjunct Assistant Professor, Ph.D., Ohio University*: Associate Director, University Counseling Center; psychodynamic psychotherapy.
- David M. Pomeranz, *Associate Professor Emeritus, Ph.D., University of Rochester*: Environmental psychology; behavior modification.
- Howard C. Rachlin, *Distinguished Professor, Ph.D., Harvard University*: Choice; self-control; gambling; decision making.
- Suparna Rajaram, *Associate Professor, Ph.D., Rice University*: Human memory.
- John Robinson, *Associate 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.
- Amy Smith Slep, *Research Associate Professor, Ph.D., University at Stony Brook*: Parental discipline practices; maternal attributions and parenting; partner abuse and child maltreatment.
- Nancy K. Squires, *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, *Research Assistant Professor, Ph.D., Vanderbilt University*: Behavioral problems in children; abnormal psychology; developmental psychology; aggression.
- Stuart Valins, *Professor Emeritus, Ph.D., Columbia University*: Stress and social interaction.
- Dina Vivian, *Research Assistant Professor, Ph.D., University 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.
- Lee Westmass, *Assistant Professor, Ph.D., University of California, Los Angeles*: Stress and coping; social support.
- Patricia Whitaker-Azmitia, *Professor, Ph.D., University of Toronto*: Neuropharmacology.
- 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.

Gregory Zelinsky, *Assistant Professor, Ph.D., Brown University*: Cognitive science; visual attention and perception.

Affiliated Faculty

Beverly Birns, *Social Sciences*

Janet Fischel, *Pediatrics*

John H. Gagnon, *Sociology*

Lauren Krupp, *Neurology*

Manuel London, *Harriman School*

Jan Loney, *Psychiatry*

Lawrence P. Morin, *Psychiatry*

Joyce Sprafkin, *Psychiatry*

Arthur A. Stone, *Psychiatry*

Rex Wang, *Psychiatry*

James Weisberg, *Psychiatry*

Gerrit Wolf, *Harriman School*

Teaching Assistants

Estimated number: 36

Psychology is defined as the science that focuses on behavior and mental processes. The study of psychology provides an understanding of the biological, cognitive, social, and clinical origins of behavior, and the methodologies employed in the study of these processes. Knowledge of psychological principles and of the methods for evaluating theories and research is essential in our rapidly changing society.

The Department of Psychology offers undergraduate programs leading to either a Bachelor of Science degree or a Bachelor of Arts degree. The objective of both programs is to provide a broad overview of psychology, and both require extensive exposure to areas other than psychology as context for study in the major. The B.S. program places relatively more emphasis on the natural sciences and mathematics. Both the B.S. and B.A. programs provide good preparation for graduate school.

The psychology major provides students with a background of fundamental subject matter that will equip them for subsequent graduate study in experimental psychology or clinical psychology and related mental health fields. The major is also beneficial for students seeking careers that involve knowledge about

interpersonal relationships such as medicine, education, law, or management. Psychology expertise is also relevant to standard business settings in which a major goal is to adapt products and services to closely reflect human needs and capabilities.

Courses Offered in Psychology

See the Course Descriptions listing in this *Bulletin* for complete information.

PSY 103-F Introduction to Psychology

PSY 201-C Statistical Methods in Psychology

PSY 220-F Survey in Developmental Psychology

PSY 230-F Survey in Abnormal and Clinical Psychology

PSY 240-F Survey in Social Psychology

PSY 250-F Survey in Biopsychology

PSY 260-F Survey in Cognition and Perception

PSY 273 Supervised Research in Psychology

PSY 283 Applications and Community Service

PSY 300-F Research Methodology

PSY 301 Advanced Statistics

PSY 310-F Research and Writing in Psychology

PSY 325 Children's Cognitive Development

PSY 326 Children's Social and Emotional Development

PSY 329 Special Topics in Developmental Psychology

PSY 335 Clinical Behavior Modification

PSY 336 Schizophrenia

PSY 338 Behavior Deviation in Children

PSY 339 Special Topics in Clinical Psychology

PSY 345 Theories of Personality

PSY 346 Health Psychology

PSY 347-F Psychology of Women

PSY 349 Special Topics in Social Psychology

PSY 355 Human Brain Function

PSY 356 Physiological Psychology

PSY 357 Animal Learning

PSY 359 Special Topics in Biopsychology

PSY 365 The Psychology of Language

PSY 366 Human Problem Solving

PSY 367 Memory

PSY 368 Sensation and Perception

PSY 369 Special Topics in Cognition and Perception

PSY 375 History and Systems of Psychology

PSY 380 Research Lab: Human Cognition

PSY 381 Research Lab: Cognition/Computers/Learning

PSY 382 Research Lab: Social Psychology

PSY 383 Research Lab: Physiological Psychology

PSY 384 Research Lab: Human Factors

PSY 399 Junior Honors Seminar

PSY 491, 492 Advanced Seminars in Psychology

Independent reading, research, internship, teaching practica, and senior honors courses

Requirements for the Majors in Psychology (PSY)

Completion of the major for either a B.S. or a B.A. in psychology requires 57 to 63 credits.

All courses required for either the B.S. or B.A. degree must be passed with a letter grade of C or higher.

Study within Psychology

For both degree programs, 33-34 credits in psychology to be distributed as follows:

1. Core Program

PSY 103 Introduction to Psychology (3 credits)

PSY 201 Statistical Methods in Psychology or another allowed statistics course (3 credits)

PSY 300 Research Methodology or PSY 310 Research and Writing in Psychology (4 credits)

2. Survey Courses in Psychology

Three survey courses from the list below, two from either Group A or B, and one from the other group:

Group A

PSY 220 Survey in
Developmental Psychology (3
credits)

PSY 230 Survey in Clinical
Psychology (3 credits)

PSY 240 Survey in Social
Psychology (3 credits)

Group B

PSY 250 Survey in
Biopsychology (3 credits)

PSY 260 Survey in Cognition
and Perception (3 credits)

3. Any one course numbered 200 and above (3 credits) Note: PSY 273, 283, 399, 447, 475, 476, 487, 488, and 495-496 may not be used.

4. Advanced Additional Courses

A minimum of 12 credits (or 13 credits for the B.S. student) from among advanced courses numbered 301 to 384.

For the B.S. student, selection among the advanced courses must include a laboratory course (PSY 380-384) and PSY 301 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 380-384. For the honors student in the B.A. program, one of the advanced courses must be a laboratory course.

5. 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 may consist of one or more reports or term papers that are prepared as part of the regular assignments for a course, or the sample may 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 Undergraduate Psychology Office must be submitted to the instructor with the writing sample.

Sample Course Sequence for the
Psychology Major (B.A. Degree)

Freshman Fall	Credits
D.E.C. A	3
PSY 103	3
MAT course*	3-4
BIO course	3-4
D.E.C.	3
Total	15-17

Spring	Credits
D.E.C. A	3
PSY Group A (220 or 230 or 240) OR PSY Group B (250 or 260)	3
PHI course	3
SOC or ANT or POL course**	3
Statistics course***	3
Total	15

Sophomore Fall	Credits
PSY Group B (if Group A taken) OR Group A (if Group B taken)	3
Course outside concentration (#1)	3
PSY 300 (or D.E.C. course and take PSY 300 in spring)	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
PSY Group A or B course	3
PSY 200 and above elective	3
D.E.C. (or PSY 300 of not taken in fall)	3
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
PSY Upper-Division elec. (301 to 384)	3
Course outside concentration (#2)	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	1-3
Total	16-18

Spring	Credits
PSY Upper-Division elective (301-384)	3
Upper-Division course outside concentration (#3)	3
PSY Upper-Division elective (301-384)	3
D.E.C.	3
Elective	3
Total	15

Senior Fall	Credits
Upper-Division outside concentration (course #4)	3
PSY Upper-Division elective (301-384)	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Spring	Credits
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

* One course from among the following: AMS 101, CSE 110, MAT 122 or any higher AMS, CSE, or MAT course except AMS 102. (Students who pass the current Department of Mathematics placement examination with a score of 4 or higher have fulfilled this requirement.)

** Any course offered by these departments except SOC 202 or POL 201

*** Choose one of the following: AMS 102, ECO 320, POL 201, PSY 201, or SOC 202

A student who receives an "unsatisfactory" on the writing sample may, with the permission of the instructor, revise and re-submit 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.

Courses outside the Psychology Department

In addition to the 33 to 34 credits in psychology, students must also complete 24 to 29 credits of courses outside the department. This requirement differs in some aspects between the B.S. and B.A. degrees.

Sample Course Sequence for the Psychology Major (B.S. Degree)

Freshman Fall	Credits
D.E.C. A	3
PSY 103	3
MAT 125 or 131 or 141	3-4
CHE 111 or 131*	3-4
D.E.C.	3
Total	15-17

Spring	Credits
D.E.C. A	3
PSY Group A (220 or 230 or 240) OR PSY Group B (250 or 260)	3
BIO 201, 202, or 203	4
MAT 126 or 132 or 142	3-4
D.E.C.	3
Total	16-17

Sophomore Fall	Credits
PSY 201**	3
PSY Group B (if Group A taken) OR Group A (if Group B taken)	3
BIO 201, 202, or 203	4
D.E.C.	3
D.E.C.	3
Total	16

Spring	Credits
PSY 300 or 310	3
PSY Group A or B	3
PSY elective***	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	18

Junior Fall	Credits
PSY advanced laboratory (380 or 381 or 381 or 383 or 384)	3-4
Science sequence elective	3
PSY Upper-Division elective***	3
Upper-Division elective	3
D.E.C.	3
Total	15-16

Spring	Credits
PSY 301 or AMS 315	3
Science sequence elective	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
PSY Upper-Division elective***	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Spring	Credits
PSY Upper-Division elective ***	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

Note: Passing a placement test at the appropriate level also satisfies the calculus requirement.

- * CHE 111 or 131 is a prerequisite to the 200-level BIO courses. CHE 111 may not be used for the required science sequence in chemistry.
- ** Other statistics courses allowed are AMS 102, ECO 320, POL 201, or SOC 202.
- *** May not use any of the following to fulfill this requirement: PSY 273, 283, 399, 447, 475, 476, 487, 488, or 495-496.

For the B.A. Student

One course from each of the 5 categories below:

1. Mathematics (3-4 credits)

Choose from among the following:
AMS 101, CSE 110, MAT 122, or any higher AMS, CSE, or MAT course, except AMS 102, or passing at the appropriate level a placement test.

- 2. Biology (3-4 credits): Any one-semester BIO course
- 3. Philosophy (3 credits): Any one-semester PHI course
- 4. Social Sciences (3 credits): Any one-semester SOC, ANT, or POL course except SOC 202 or POL 201
- 5. A 12-credit concentration in one of the departments listed below. At least two courses must be upper-

division (numbered between 300 and 499).

- 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 category 5 above (see the Department of Psychology for details):

- i. A minor program
- ii. A second major
- iii. Student-designed options if approved by the departmental undergraduate committee

Note: Many students will do a concentration in one of the departments that fulfills requirements 1 to 4. If so, the concentration will automatically fulfill that specific area requirement.

For the B.S. Student

All three categories below are required.

1. Mathematics:

- a. MAT 125 and 126; or
- b. MAT 131 and 132; or
- c. MAT 141 and 142; or
- d. Passing a placement test at the appropriate level

2. Biology:

Two courses from BIO 201, 202, and 203

Note: One course of the two-course requirement is waived if students elect the biology concentration (below).

3. Two of the following groups of courses:

- a. Biology: Two BIO or biology-related courses. The list of approved courses to satisfy this requirement may be obtained from the Undergraduate Psychology Office.
- b. Chemistry: CHE 131 and 133, CHE 132 and 134. This requirement may also be fulfilled by substituting CHE 141 and 143, CHE 142 and 144.

- c. Mathematics: Two courses. The list of approved courses to satisfy this requirement may be obtained from the Undergraduate Psychology Office.
- d. Physics: PHY 117 and 118; or PHY 121/123 and PHY 122/124; or PHY 125, 126, and 127; or PHY 131 and 132; or PHY 141 and 142.
- e. Computer Science: CSE 113 and 114.

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.

Notes:

1. Transfer students must take at least 12 credits of psychology in residence at Stony Brook.
2. No more than six credits from among PSY 273, 283, 447, and 487 may be taken in one semester. See also Course Credit and Grading Option Limits in the "Academic Policies and Regulations" chapter.

Honors Program in Psychology

The psychology honors program features: 1) a faculty mentor for each honors student, and 2) 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 Undergraduate Psychology Office. For acceptance into the honors program a student must have a cumulative grade point average of 3.20 or higher. A student whose cumulative grade point average falls below 3.00 may be dropped from the honors program. Conferral of honors in psychology requires the following:

1. A cumulative g.p.a. of 3.00 and a 3.50 g.p.a. in psychology.
2. A grade of C or higher in a laboratory course in psychology (PSY 380-384).
3. 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

RLS

Major in Religious Studies

Program in Religious Studies, College of Arts and Sciences

PROGRAM DIRECTOR: William C. Chittick, Comparative Studies

OFFICE: 131-A Old Chemistry PHONE: (631) 632-7316 E-MAIL: wchittick@notes.cc.sunysb.edu

Minors of interest to students majoring in religious studies: classics (CLS), Judaic studies (JDS), philosophy (PHI), Middle Eastern studies (MES)

Teaching Assistants

Estimated Number: 4

Adjuncts

Estimated Number: 2

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, the program brings the techniques and questions of philosophy, history, literature, and the human sciences. Designed for flexibility in meeting students' interests and needs, the religious studies program offers a major, a minor, an honors program, and a variety of 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 general education requirements.

The major in religious studies is an attractive option for students seeking a general liberal arts education with strength in humanities. It develops skills in reading texts with sophisticated critical awareness, and in expressing complex ideas orally and in writing. It affords insight into the fundamental traditions that shape historic cultures, east and west, and forms habits of tolerance and appreciation of unfamiliar ideas and values.

Students also major in religious studies intending to go on to further professional training in this field or in closely related ones like law and diplomacy. Those who wish to pursue graduate studies are encouraged to study the languages needed for their areas of interest, and to supplement their major requirements with related work in history, philosophy, and the arts.

Further information and advising in regard to any of the program's services are available through the program director.

Courses Offered in Religious Studies

See the Course Descriptions listing in this Bulletin for complete information.

RLS 101-B Western Religions

RLS 102-B Eastern Religions

RLS 110-B The Bible: A Critical Introduction

RLS 220-G Studies in Religion

RLS 230-G Judaism

RLS 240-J Confucianism and Taoism

RLS 246-J Korean and Japanese Religions

RLS 250-J Hinduism

RLS 260-J Buddhism

RLS 270-I Christianity

RLS 280-J Islam

RLS 301-G Sources and Methods

RLS 310-G Biblical Theology

RLS 320-G The Rabbinic Tradition

RLS 341-J Meditation and Enlightenment

RLS 400 Religious Studies Seminar

RLS 406 Japanese Buddhism

RLS 408 Islamic Classics

RLS 415-G Judaic Response to Catastrophe

RLS 426-G Feminine Spirituality

RLS 430-G, 431-G Special Topics

Independent reading, teaching practica, and senior honors courses

Related Courses in Other Programs

See the Course Descriptions listing in this *Bulletin* for complete information.

AFS 395-J Religions of the Caribbean

ANT 351-F Comparative Religion

ANT 358-J Ways to Civilization

ARH 303-I The Art and Architecture of the Early Middle Ages, ca. 400-1050

ARH 304-I The Art and Architecture of the High and Late Middle Ages, ca. 1050-1400

ARH 326-J Arts of Ancient Mesoamerica

ARH 328-J Arts of West Africa

CLS 215-I Classical Mythology

EGL/JDH 261-B The Bible as Literature

EGL 342-G Milton

HIS 235-I The Early Middle Ages

HIS 236-I The Late Middle Ages

JDS/HIS 225-J The Formation of the Judaic Heritage

JDS/HIS 226-F The Shaping of Modern Judaism

JDH 369-G Topics in Biblical Interpretation

KRH 346 Philosophy of Education in Korea and Japan

PHI 304-I Medieval Philosophy

PHI 336-G Philosophy of Religion

PHI 340-J Philosophical Traditions of East Asia

PHI 342-J History of Chinese Philosophy

PHI 344-J Japanese Thought and Philosophy

SOC 264-J 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.

Requirements for the Major in Religious Studies (RLS)

Attentive and personal advising is a primary commitment of the religious studies faculty, and students who enter the program are assigned to an individual advisor who will help them find the courses best suited to their area of interest in the major and make productive use of their electives outside the major and the general education requirements of the University. Students commonly complete minors or even second majors in related fields. 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 under "Related Courses in Other Programs" above. Students wishing to satisfy the requirements with yet other courses may do so with the approval of the major advisor.

The major in religious studies leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 30 credits.

A. Core Courses

RLS 301 Sources and Methods (ordinarily taken in the fall of the junior year; may be taken in the senior year by those who do not meet the prerequisites as juniors)

RLS 400 Religious Studies Seminar

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

Sample Course Sequence for the Religious Studies Major

Freshman Fall	Credits
D.E.C. A	3
RLS 101 or 102	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
D.E.C. A	3
Selected Area Emphasis course #1 (200 level)	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
Selected Area Emphasis course #2 (200 level or higher)	3
RLS elective outside Area Emphasis	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
Selected Area Emphasis course #3 (300 level or higher)	3
RLS elective outside Area Emphasis	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Junior Fall	Credits
RLS 301	3
Selected Area Emphasis course #4 (300 level or higher)	3
RLS Up-Div elec outside Area Emphasis	3
D.E.C.	3
Upper-Division elective	3
Total	15

Spring	Credits
RLS Up-Div elec outside Area Emphasis	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Senior Fall	Credits
RLS 400	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

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 director.

The Honors Program in Religious Studies

Religious studies majors who have maintained a grade point average of 3.50 in the major and 3.00 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 wish 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 (RLS)

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: 1) an encounter with the variety of world religions; 2) a grasp of problems of method and the critical use of sources in the study of religion; and 3) sufficient depth in a single area emphasis to read advanced work in the area with experience and judgment. Requirements to meet these goals are:

1. RLS 101 or 102 or 150
2. One 200-level RLS course
3. RLS 301
4. At least three courses in one of the area emphases listed for the major

Students consult the program director 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.

RUS

Major and Minor in

Russian Language and Literature

Department of European Languages, Literatures, and Cultures, College of Arts and Sciences

CHAIRPERSON: Charles Franco DIRECTOR OF UNDERGRADUATE STUDIES: Thomas Kerth UNDERGRADUATE SECRETARY: Marie Sweatt
OFFICE: N-4004 Melville Library PHONE: (631) 632-7440 E-MAIL: tkerth@notes.cc.sunysb.edu or msweatt@notes.cc.sunysb.edu
WEB ADDRESS: www.sunysb.edu/eurolangs/

Minors of particular interest to students majoring in Russian: business management (BUS), comparative literature (CLT), economics (ECO), English (EGL), history (HIS), international studies (LIS), linguistics (LIN), medieval studies (MVL), philosophy (PHI), political science (POL), other languages

Russian language, literature, and culture studies are part of a broad humanistic education. The works of Tolstoy, Dostoevsky, Chekhov, and Bulgakov stand among the best in world literature. Russian cultural studies is a multidisciplinary approach to Russian civilization that combines cultural theory and methodology with a broad historical survey of the evolution of Russian culture. This discipline is predicated on the eventual mastery of the language, and it includes the study of history, linguistics, literature, drama, film, and theatre.

The major in Russian Language and Literature is flexible and gives students the opportunity to select a particular area of emphasis. A student who successfully completes a major in Russian attains a broadly-based background in Russian culture; depending on which electives are chosen, the major also acquires a more specialized knowledge of language, literature, or cultural studies. The department offers courses in Russian as well as in translation, and the Russian major may be combined with work in other disciplines.

Russian majors have found employment in teaching, government service, foreign trade and banking, communications, translating, and interpreting. The expansion of East-West trade and the new business ventures in Russia seeking cooperation with Europe, Asia, and Africa offer creative career opportunities. Some Russian majors have continued graduate work in Russian or Slavic Studies at Yale, Harvard, Northwestern, Berkeley, and American University. Others have become certified as secondary school teachers. Science, social science, and pre-med majors have found the study of Russian to be particularly useful in their careers.

Courses Offered in Russian

See the Course Descriptions listing in this *Bulletin* for complete information.

RUS 111, 112 Elementary Russian I, II

RUS 211, 212 Intermediate Russian I, II

RUS 213 Intermediate Russian for Students of Russian-Speaking Background

RUS 311, 312 Russian Conversation and Composition

RUS 423 Russian Literary Texts

RUS 439 Structure of Russian

RUS 491 Special Author

RUS 492 Special Genre or Period

Independent reading and senior honors courses

Courses Offered in Russian Literature and Culture Taught in English

See the Course Descriptions listing in this *Bulletin* for complete information.

HUR 141-B Russian Literature and Empire

HUR 142-B Russian Literature and Revolution

HUR 145-D Russian Film and Culture

HUR 231-I Saints and Fools

HUR 232-I Rebels and Tyrants

HUR 235-G Crime and Punishment in World Literature

HUR 249-I Russia Today

HUR 341-G Russian Literature

HUR 393-G Literary Analysis of Russian Texts

Placement in Language Courses for Incoming Students

The prerequisites for courses 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 believe the recommended course is inappropriate.

Requirements for the Major in Russian Language and Literature (RUS)

The major in Russian language and literature leads to the Bachelor of Arts degree. No previous knowledge of the language is required. All courses offered for the major must be completed with a letter grade of C or higher, but one course taken under the Pass/No Credit option may be used toward major requirements.

Completion of the major requires 33 credits.

1. HUR 249 Russia Today
2. HUR 141, 142 Introduction to Russian Literature I, II
3. RUS 311, 312 Russian Conversation and Composition
4. RUS 439 Structure of Russian
5. Three credits to be chosen from among: 200-level HUR/HUE courses, HIS 209 Imperial Russia, HIS 210 Soviet Russia
6. Twelve credits to be chosen from among: RUS 423, 491, 492; HUR 341, 393. HIS 395 or one 300-level CLT course may be substituted for one RUS/HUR course, with the approval of the undergraduate advisor.
7. 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 will be essays previously composed for upper-division courses in the department. Those originally in a foreign language must be re-written in English. A faculty committee will judge the papers for clarity,

accuracy, and appropriateness of style. If the dossier is judged to be unsatisfactory, the student will be asked to re-write and re-submit the work in the senior year. Students must demonstrate acceptable writing skills before they graduate.

Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Requirements for the Minor in Russian (RUS)

The minor in Russian requires 18 credits in RUS/HUR courses above the intermediate level, nine of which must be in upper-division RUS/HUR courses. Students should consult with the undergraduate director in planning a minor concentration.

Departmental Honors

To be eligible to participate in the honors program, departmental majors must have a cumulative grade point average of 3.00 and an average of 3.50 in Russian 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 for 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. Students selected for the program must enroll in the appropriate honors project course (numbered 495) for the semester in which the thesis is written. The thesis is evaluated by the thesis advisor, another member of the department, and a third reader from outside the department. For further information consult the director of undergraduate studies.

Honors Program in Russian

To be eligible to participate in the honors program, majors must have a cumulative grade point average of 3.00 and an average of 3.50 in Russian 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

Sample Course Sequence for the Russian Major

Freshman Fall	Credits
D.E.C. A	3
RUS 111	4
HUR 141*	3
D.E.C.	3
Total	13

Spring	Credits
D.E.C. A	3
RUS 112	4
HUR 142*	3
D.E.C.	3
D.E.C.	3
Total	16

Sophomore Fall	Credits
RUS 211	3
HUR 249*	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
RUS 212	3
HUR 235 or HIS 210	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Total	15

Junior Fall	Credits
RUS 311*	3
Upper-Division RUS/HUR or HIS*	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Elective	1-3
Total	16-18

Spring	Credits
RUS 312*	3
Upper-Division RUS/HUR*	3
D.E.C.	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Senior Fall	Credits
Upper-Division HUR/RUS literature course*	3
RUS 439	3
Upper-Division elective	3
Upper-Division elective	3
D.E.C.	3
Total	15

Spring	Credits
Upper-Division HUR/RUS course	3
Upper-Division literature course*	3
Upper-Division elective	3
D.E.C.	3
Elective	3
Total	15

*Fulfills major requirement

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. Students selected for the program must enroll in RUS 495 for the semester in which the thesis is written. The thesis is evaluated by the thesis advisor, another member of the department, and a third reader from outside the department. For further information consult the director of undergraduate studies.

LSE

Living/Learning Center Interdisciplinary Minor in Science and Engineering

DIRECTOR OF THE MINOR: Thomas Robertazzi, Electrical and Computer Engineering

OFFICE: 249 Light Engineering & Keller College PHONE: (631) 632-8412/9437 E-MAIL: tom@ece.sunysb.edu

Because scientists and engineers increasingly work together in industry, government, and higher education, Stony Brook offers an interdisciplinary minor in science and engineering. The interdisciplinary minor in science and engineering is designed to give students an appreciation of the many fields in science and engineering and of the relationships of these fields to each other and to society. Through the minor, students receive broad exposure to the many science and engineering disciplines represented at Stony Brook. Students unsure about a major can also use the minor to learn about various science and engineering disciplines before selecting a major.

The minor is intended primarily, but not exclusively, for residents of the Keller College Science and Engineering Living/Learning Center.

Courses Offered in Interdisciplinary Science and Engineering

See the Course Descriptions listing in this *Bulletin* for complete information.

LSE 101 University Studies in Science and Engineering

LSE 102 Opportunities in Science and Engineering

LSE 301 Colloquium in Science and Engineering Research

LSE 310-H Issues in Science and Engineering

LSE 475 Undergraduate Teaching Practicum

Requirements for the Minor in Science and Engineering (LSE)

Before declaring the science and engineering minor, each student should plan his or her program in consultation with the director of the minor. All courses for the minor must be passed with a letter grade of C or higher.

Completion of the minor requires 19 credits.

1. LSE 102 Opportunities in Science and Engineering

2. Majors in any engineering area listed below must take 12 credits in courses with designators listed under "Natural Science Courses."

Majors in any natural science area must take 12 credits in courses with designators listed under "Engineering Courses."

All other students must take at least six credits from the natural sciences list and six credits from the engineering list. For all students, at least three credits must be upper-division.

Natural Sciences Courses:

AST (Astronomy), ATM (Atmospheric and Oceanic Sciences), BIO (Biology), CHE (Chemistry), GEO (Geosciences), MAR (Marine Sciences), PHY (Physics)

Engineering Courses:

ESE (Electrical and Computer Engineering), ESG (Engineering Science), ESM (Materials Science and Engineering), MEC (Mechanical Engineering)

3. One of the following courses:

EST 391 Technology Assessment

HIS 398 Topics in History of Science and Technology

PHI 364 Philosophy of Technology

PHI 365 Philosophy of Computers

PHI 368 Philosophy of Science

SOC 315 Sociology of Technology

4. LSE 310 Issues in Science and Engineering

Notes:

1. Three credits in requirement 2 may be in independent research in a department approved by the minor coordinator. These credits do not meet the requirement for three credits of upper-division coursework.

2. For students with majors in engineering, only PHY courses numbered 200 or higher may be applied toward the minor.

Declaration of the Minor

Students must declare the interdisciplinary science and engineering 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.

LCR

Living/Learning Center Interdisciplinary Minor in Service Learning for Community-Based Action Research

OFFICE: Faculty Director's Office, Douglass College PHONE: (631) 632-4387

The interdisciplinary minor in service learning for community-based action research is open to all undergraduates, with preference given to residents of Douglass College who wish to add an academic dimension to their residential experience. The program, housed in Douglass College, is designed to use the special educational opportunities available at Stony Brook to create citizens with the depth of commitment to community service that the 21st century will demand. Acquisition of skills and knowledge is combined with a fostering of appreciation by students of their role as citizens both in the University and in the surrounding communities. The learning arena is extended into the community by addressing local social issues. After completion of academic course work, student interns are partnered and assigned to work in specific communities to address community concerns.

Courses Offered in Service Learning for Community-Based Action Research

See the Course Descriptions listing in this *Bulletin* for complete information.

LCR 200 The Nature of Community

LCR 201 Methods for Community-Based Action Research

LCR 488 Internship in Service Learning for Community-Based Action Research

LCR 490 Senior Seminar in Service Learning for Community-Based Action Research

Requirements for the Minor in Service Learning for Community-Based Action Research (LCR)

Before declaring the minor in service learning for community-based action research, each student should plan his or her program in consultation with the faculty director. All courses must be passed with a letter grade of C or higher.

Completion of the minor requires 23 credits.

1. LCR 200 The Nature of Community
2. LCR 201 Methods for Community-Based Research
3. Elective Course Sequence:
Three lower-division credits and three upper-division credits in courses to be chosen in consultation with the faculty director
4. Internship
Students are required to register for LCR 488 Service Learning for Community-Based Action Research Internship for two semesters (a total of 8 credits)
5. LCR 490 Senior Seminar in Service Learning for Community-Based Action Research

Declaration of the Minor

Students must declare the service learning for community-based action research 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.

SSI

Interdisciplinary Major in Social Sciences

Interdisciplinary Program in Social Sciences, College of Arts and Sciences

PROGRAM DIRECTOR: Georges Fournon ADMINISTRATIVE ASSISTANT: Lorraine Geiger
OFFICE: N-507 Social and Behavioral Sciences PHONE: (631) 632-7685

Minors of particular interest to students majoring in social sciences: *Africana studies (AFS)*, *child and family studies (CFS)*, *Chinese studies (CNS)*, *history (HIS)*, *political science (POL)*, *service learning for community-based action research (LCR)*, *women's studies (WST)*

Faculty

Barbara Baskin, *Associate Professor Emerita, 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 E. Fournon, *Associate Professor, Ed.D., Columbia University*: Social studies education; bilingual education.

Joan F. Kuchner, *Lecturer, Ph.D., University of Chicago*: Child and family studies; child development; social policy.

Shi Ming Hu, *Distinguished Teaching Professor Emerita, Ed.D., Columbia University*: Chinese; Asian studies; social science education. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1989; the President's Award for Excellence in Teaching, 1989; and the Alumni Association Outstanding Professor Award, 1996.

Jody A. Resko, *M.S., A.B.D., City University of New York Graduate Center*: Psychology, childhood trauma.

Gregory A. Ruf, *Assistant Professor, Ph.D., Columbia University*: Modern China; cultural anthropology.

Eli Seifman, *Distinguished Service Professor Emeritus, Ph.D., New York University*: Asian studies; modern China; social science education.

Judith Wishnia, *Associate Professor Emerita, Ph.D., University at Stony Brook*: Women's history; labor history; European history.

Affiliated Faculty

Joel T. Rosenthal, *History*

Adjunct Faculty

Estimated number: 10

The interdisciplinary major in Social Sciences 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 210). The student must complete work in at least four of these fields.

The interdisciplinary program in social sciences 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 listings of Approved Majors, Minors, and Programs. Further information on the minors is available at the Interdisciplinary Program in Social Sciences Office.)

Most alumni of the program have gone on to advanced study in one of the social sciences, social welfare, business administration, or law. Others have found employment as secondary school social studies teachers or in government service, business management, and social welfare agencies.

Courses Offered in Social Sciences

See the Course Descriptions listing in this *Bulletin* for complete information.

SSI 102-F Introduction to Women's Studies in the Social Sciences

SSI 210-F Human Development: The Family Context

SSI 249-J Chinese Culture and Society: Traditional China

SSI 250-J Chinese Culture and Society: Modern China

SSI 283 Practicum in Child Development

SSI 287 Supervised Research in Social Science

SSI 308 Abuse of Women and Children

SSI 310 Contemporary Feminist Issues

SSI 311 Interdisciplinary Problems in the Social Sciences

SSI 320-F The Special Child

SSI 321-F Early Childhood Environments

SSI 322-F The Infant and Young Child

SSI 327 Middle Childhood and Adolescent Growth and Development

SSI 339-F Children's Play

SSI 345 Parental Roles in a Pluralistic Society

SSI 350 Foundations of Education

SSI 381-F Seminar in Child Development

SSI 397 Teaching Social Studies

SSI 398 Social Studies Teaching Strategies

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 451 Supervised Teaching—Social Studies, Grades 7-9

SSI 452 Supervised Teaching—Social Studies, Grades 10-12

SSI 454 Student Teaching Seminar

SSI 475, 476 Undergraduate Teaching Practicum I, II

SSI 487 Independent Project in the Social Sciences

SSI 488 Internship

Requirements for the Major in Social Sciences (SSI)

The interdisciplinary major in social sciences leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a grade of C or higher.

Completion of the major requires 48 credits.

Courses with at least four of the social science designators (AFS, ANT, CNS, ECO, HIS, LIN, POL, PSY, SOC, SSI, and WST crosslisted with social science courses) 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 WST courses: CNS 447, 461, 487, SSI 308, 310, 321, 339, 345, 405, 417, 447, 487, WST/HIS 333, WST 334/HIS 336, or WST 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.

Notes:

1. No more than nine credits of independent work (273, 447, 487, or 488) 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 may count toward the major.
2. 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 Interdisciplinary Program in Social Sciences 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.

Sample Course Sequence for the Social Sciences Interdisciplinary Major

Freshman Fall	Credits
D.E.C. A	3
SSI Requirement A course	3
SSI Requirement A course	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
SSI Requirement A course	3
SSI Requirement A course	3
D.E.C.	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
SSI Requirement B course	3
SSI Requirement B course	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
SSI Requirement B course	3
SSI Requirement B course	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
SSI Req. B Upper-Division course	3
SSI Req. B Upper-Division course	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Spring	Credits
SSI Req. B Upper-Division course	3
SSI Req. B Upper-Division course	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
SSI Req. C Upper-Division course	3
SSI Req. C Upper-Division course	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

Spring	Credits
SSI Req. C Upper-Division course	3
SSI Req. C Upper-Division course	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

3. 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, upper-division Africana studies courses with the AFH designator, upper-division Chinese studies courses with the CNH designator, and upper-division WST courses crosslisted with humanities courses.
4. AFS 283, PSY 283, SSI 283, 451, 452, the lower-division language courses taught by the Department of Linguistics, and lower-division AFH and CNH courses may not be used to fulfill major requirements. Only one teaching practicum (475) may be counted.

Social Studies Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

SOC

Major in Sociology

Department of Sociology, College of Arts and Sciences

CHAIRPERSON: Norman Goodman DIRECTOR OF UNDERGRADUATE STUDIES: Andrea Tyree UNDERGRADUATE SECRETARY: Sharon Workman

OFFICE: S-401 Social and Behavioral Sciences PHONE: (631) 632-7700 WEB ADDRESS: www.sunysb.edu/sociology

Minors of particular interest to students majoring in sociology: anthropology (ANT), business management (BUS), human sexual and gender development (LHD), political science (POL), service learning for community-based action research (LCR)

Faculty

Said Amir Arjomand, *Professor, Ph.D., University of Chicago*: Comparative, historical, political sociology; religion.

Elizabeth Arias, *Assistant Professor, Ph.D., University of Wisconsin*: Family; demography; quantitative methods.

Javier Auyero, *Assistant Professor, Ph.D., The New School for Social Research*: Culture; urban poverty and social inequality; Latin American studies.

Diane Barthel, *Professor, 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.

Ivan D. Chase, *Associate Professor, Ph.D., Harvard University*: Social inequality; social structure; resource allocation; cross-species comparisons.

Maria Cole, *Adjunct Professor, Ph.D., University of Warsaw*: Gender; social stratification.

Stephen Cole, *Professor, Ph.D., Columbia University*: Science; theory; culture. Recipient of the State University Chancellor's Award for Excellence in Teaching and the President's Award for Excellence in Teaching, 1992.

O. Andrew Collver, *Associate Professor Emeritus, Ph.D., University of California, Berkeley*: Complex organizations; demography; ecology.

Kenneth A. Feldman, *Professor, Ph.D., University of Michigan*: Social psychology; higher education; socialization. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1995; and the President's Award for Excellence in Teaching, 1995.

John H. Gagnon, *Professor Emeritus, Ph.D., University of Chicago*: Deviance; family simulations; sexual conduct; social change.

Erich Goode, *Professor, Ph.D., Columbia University*: Deviance; criminology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1997, and the President's Award for Excellence in Teaching, 1997.

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.

Nilufer Isvan, *Assistant Professor, Ph.D., University of Michigan*: Rural sociology; gender; comparative; social change.

Michael Kimmel, *Professor, Ph.D., University of California, Berkeley*: Comparative and historical development; social movements; gender and sexuality.

Hermann Kurthen, *Assistant Professor, Ph.D., Freie Universität Berlin*: International migration; national identity.

Daniel Levy, *Assistant Professor, Ph.D., Columbia University*: International migration; national identity; political sociology.

Timothy Moran, *Assistant Professor, Ph.D., University of Maryland*: Comparative, inequality, economic sociology; globalization; quantitative methods.

Ian Roxborough, *Professor, Ph.D., University of Wisconsin-Madison*: Joint Appointment with History; 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.

Jackie Smith, *Assistant Professor, Ph.D., University of Notre Dame*: Collective behavior/social movements, environmental sociology.

Judith Tanur, *Distinguished Teaching Professor, Ph.D., University 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.

Affiliated Faculty

Richard Howard, *Philosophy*

Joseph Schwartz, *Psychiatry*

H. Barry Waldman, *Dental Health*

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 25

Sociology is the systematic study of social life. It is based on the assumption that there is a certain pattern to the way people live and think and that by studying their behavior and attitudes, this pattern can be discovered and explained. Sociologists investigate how the group influences behavior, from the smallest (a two-person relationship, like husband and wife) to the largest (huge organizations, such as General Motors or the Catholic Church). Anything having to do with social behavior is the subject matter of sociology.

The Bachelor of Arts program at Stony Brook seeks to develop in students both an understanding of a history of social thought and skills in the collection and analysis of social data. The core program includes two semesters of sociological theory, one semester of research methods, and one semester of statistics.

Students who have completed this program have attended graduate schools in sociology or related disciplines, law school, social welfare, and pursued careers in advertising, marketing, and business management. Some work at market research (studying for large companies what products people want to buy), demography (studying the population scientifically, as in the United States census), criminology (investigating the causes and nature of crime and criminal justice), urban planning, polling, and public opinion (like the Gallup or Harris Polls).

Courses Offered in Sociology

See the Course Description listing in this *Bulletin* for complete information.

- SOC 105-F Introduction to Sociology
- SOC 150 Topics in Introductory Sociology
- SOC 200 Medicine and Society
- SOC 201 Research Methods in Sociology
- SOC 202-C Statistical Methods in Sociology
- SOC 204-F Intimate Relationships
- SOC 243-F Sociology of Youth
- SOC 247-K Sociology of Gender
- SOC 264-J Introduction to Middle Eastern Society
- SOC 268 Theory and Practice in Student Leadership
- SOC 302-K American Society
- SOC 303 Social Stratification
- SOC 304 Sociology of the Family
- SOC 309 Social Conflicts and Movements
- SOC 310-K Ethnic and Race Relations
- SOC 315-H Sociology of Technology
- SOC 320 Population and Society
- SOC 323 Urban Society
- SOC 336 Social Change
- SOC 337 Social Deviance
- SOC 338 The Sociology of Crime
- SOC 339 Sociology of Alcoholism and Drug Abuse
- SOC 340-H Sociology of Human Reproduction
- SOC 341 Historical Sociology
- SOC 344 Environmental Sociology
- SOC 348 Global Sociology
- SOC 351 Sociology of the Arts
- SOC 352 Sociology of Religion
- SOC 355-H Social World of Humans and Animals
- SOC 356 Political Sociology
- SOC 361 Historical Development of Sociological Theory
- SOC 362 Contemporary Sociological Theory
- SOC 364-J Sociology of Latin America
- SOC 371-K Gender and Work
- SOC 373 Collective Behavior
- SOC 378-F War and the Military
- SOC 380 Social Psychology
- SOC 381 Sociology of Organizations
- SOC 382 Small Groups
- SOC 384 Sociology of the Life Course

Sample Course Sequence in the Sociology Major

Freshman Fall	Credits
D.E.C. A	3
SOC 105	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
SOC elective	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
SOC 201	3
SOC elective	3
Social science elective	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
SOC 202 or AMS 102	3
SOC elective	3
Social science elective	3
D.E.C.	3
D.E.C.	3
Total	15

Junior Fall	Credits
SOC 361	3
SOC Upper-Division elective	3
Social science elective	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
SOC 362	3
SOC Upper Division elective	3
SOC Upper Division elective	3
SOC Upper Division elective	3
SOC elective	3
Total	15

Senior Fall	Credits
SOC Upper-Division elective	3
SOC Upper-Division elective	3
SOC Upper-Division elective	3
SOC Upper-Division elective	3
SOC elective	3
Total	15

Spring	Credits
SOC Upper-Division elective	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

SOC 386-J State and Society in the Middle East

SOC 387 Sociology of Education

SOC 390-394 Special Topics

SOC 395-H Topics in Science, Technology, and Society

Independent reading, research, teaching practica, internship, and senior honors courses

Requirements for the Major in Sociology (SOC)

The major in sociology leads to the Bachelor of Arts degree. All sociology courses offered for the major, except those graded S/U, must be passed with a letter grade of C or higher. Of courses outside the department offered for the major, only one may be taken with the Pass/No Credit option.

Completion of the major requires 39 credits, of which 30 to 33 are in sociology courses.

A. Study within the Area of the Major

1. Required courses

SOC 105 Introduction to Sociology

SOC 201 Research Methods

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:

1. If any required course is waived for any reason, it must be replaced with an additional elective.
2. Only six credits of independent study courses (SOC 447, 487, and 488) may be used toward the requirements 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 (only those WST courses crosslisted with social sciences courses). 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.

Notes for Transfer Students:

1. The Department of Sociology requires that transfer students take at least 12 credits in sociology in residence at Stony Brook to complete the sociology major.
2. No transferred sociology course with a grade lower than C is accepted for credit in the major.

Honors Program

The honors program is open to seniors majoring in sociology who have maintained a g.p.a. of 3.50 in the major and 3.00 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.

In 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 3.50 g.p.a. in all sociology courses taken in the senior year, honors are conferred.

SOA

Interdisciplinary Minor in

South Asian Studies

Department of Linguistics, College of Arts and Sciences

DIRECTOR OF THE MINOR: Kamal K. Sridhar

OFFICE: E-5350 Melville Library PHONE: (631) 632-9742 E-MAIL: indstudy@ccmail.sunysb.edu WEB ADDRESS: www.sunysb.edu/~indstudy/

Other minors of particular interest to students minoring in South Asian studies: anthropology (ANT), Chinese studies (CNS), international studies (LIS), Japanese studies (JNS), religious studies (RLS)

Affiliated Faculty

Mark Aronoff, *Linguistics*

William Chittick, *Religious Studies*

Sung-Taek Cho, *Religious Studies*

Rhonda Cooper, *Art*

David Hicks, *Anthropology*

Theresa Kim, *Theatre Arts*

Sung-Bae Park, *Religious Studies*

Kamal K. Sridhar, *Linguistics*

S.N Sridhar *Linguistics*

John A. Williams, *History*

Adjunct Faculty

Estimated Number: 5

The minor in South Asian studies provides a broad introduction to a major world civilization through a set of coordinated courses in selected areas of South Asian society and culture. Courses are offered in South Asian languages, religions, philosophy, history, culture, literatures, linguistics, and performing arts. Both traditional and contemporary aspects are covered. The minor serves as a foundation for specialization in area studies (South Asia), complements knowledge of other areas in Asian Studies, and offers cross-cultural experience valued in many fields, including international business. With the approval of the director of the minor, the student constructs a coherent and individualized program of study.

Courses Offered in South Asian Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

SAS 240-J Introduction to the Civilization of the Indian Subcontinent

SAS 320-G Literature of India

SAS 381-G Special Topics in South Asian Literature and Philosophy

SAS 401, 402 Special Topics in South Asian Studies

SAS 447 Directed Readings in South Asian Studies

SAS 475 Undergraduate Teaching Practicum

SAS 487 Supervised Research in South Asian Studies

Requirements for the Minor in South Asian Studies (SOA)

All courses offered for the minor must be passed with a letter grade of C or higher. At least nine credits toward the minor must be upper-division.

Completion of the minor requires 21 credits.

1. SAS 240 Introduction to the Civilization of the Indian Subcontinent
2. HIS 348 History of British India
3. One of the following:
 - RLS 250 Hinduism
 - RLS 260 Buddhism
 - RLS 280 Islam
4. LIN 355 Language and Life in South Asia
or SAS 320 Literature of India
5. Nine additional credits chosen from the courses listed below:
 - ANT 311 Immersion in Another Culture (appropriate topic only)
 - ARH 203 History of Asian Art
 - CLT 220 Non-Western Literature (appropriate topic only)
 - EGL 373 Literature in English from Non-Western Cultures (appropriate topic only)
 - EGL 374 Literature in Relation to Other Disciplines (appropriate topic only)
 - HIN 111 Elementary Hindi I
 - HIN 112 Elementary Hindi II
 - HIN 211 Intermediate Hindi I
 - HIN 212 Intermediate Hindi II
 - LIN 431 Analysis of an Uncommonly Taught Language (appropriate topic only)

MUS 355 Special Topics in Music (appropriate topic only)

RLS 341 Meditation and Enlightenment

RLS 408 Islamic Classics

SAS 320 Literature of India

SAS 381 Topics in South Asian Studies

SAS 401, 402 Special Topics in South Asian Studies

SAS 447 Directed Readings

SAS 487 Directed Research

SKT 111 Elementary Sanskrit I

SKT 112 Elementary Sanskrit II

THR 313 Asian Theatre and Drama

WST 250 Women in the Third World

SPN

Major and Minor in

Spanish Language and Literature

Department of Hispanic Languages and Literature, College of Arts and Sciences

CHAIRPERSON: Román de la Campa DIRECTOR OF UNDERGRADUATE STUDIES: Elizabeth Monasterios

UNDERGRADUATE SECRETARY: Betty DeSimone

OFFICE: N-3017 Melville Library PHONE: (631) 632-6959 WEB ADDRESS: www.sunysb.edu/hispanic

Other minors of particular interest to students minoring in Spanish: comparative literature (CLT), international studies (LIS), Latin American and Caribbean studies (LAC)

Faculty

Román de la Campa, *Professor, Ph.D., University of Minnesota*: Latin American and Caribbean literature; contemporary critical theory. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1998.

Lou Charnon-Deutsch, *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.

Cora Lagos, *Assistant Professor, Ph.D., University of Michigan*: Colonial Latin American literature.

Pedro Lastra, *Professor Emeritus, University of Chile; (University Professor, University of Chile, 1960-1973)*: Colonial, modern, and contemporary Spanish-American literature.

James B. McKenna, *Professor Emeritus, Ph.D., Harvard University*: 20th-century Hispanic culture and literature.

Elizabeth Monasterios, *Associate Professor, Ph.D., University of Toronto*: Latin American poetry; Amerindian literatures and cultural theory.

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*: Sociology of culture; Marxist and psychoanalytic literary criticism.

Elias L. Rivers, *Professor Emeritus, Ph.D., Yale University*: 16th- and 17th-century literature of Spain; sociolinguistic theory of literature.

Victoriano Roncero-López, *Associate Professor, Ph.D., University of Illinois at Urbana/Champaign and Universidad Complutense*: 16th- and 17th-century literature of Spain.

Georgina Sabat-Rivers, *Professor Emerita, Ph.D., Johns Hopkins University*: Spanish Golden Age and Spanish-American colonial literature.

Lilia Ruiz-Debbe, *Assistant Professor, Ph.D., Université de Genève, Switzerland*: Applied linguistics and language pedagogy; second language acquisition and research.

Benigno Trigo, *Assistant Professor, Ph.D., Yale University*: 19th-century Latin American literature; contemporary critical theory.

Antonio Vera-León, *Associate Professor, Ph.D., Princeton University*: 19th- and 20th-century Caribbean literatures; literary theory; interdisciplinary study of narrative.

Kathleen Vernon, *Associate Professor, Ph.D., University of Chicago*: 20th-century Hispanic narrative and film.

Affiliated Faculty

Temma Kaplan, *History and Women's Studies*

Mikle Ledgerwood, *European Languages, Literatures, and Cultures*

Louise Vasvari, *Comparative Studies*

Adjunct Faculty

Estimated number: 10

Teaching Assistants

Estimated number: 23

Spanish studies involves language, literature, cultural history, and linguistics as applied to Spain, Spanish America, and Latino communities in the United States. The field combines the humanities and the social sciences to give the student an understanding of the diverse aspects of Hispanic culture.

Because so many facets of North American life—business, industry, commerce, communications media, the arts, science, and technology—have become truly international in scope, many career opportunities exist for persons with language skills and knowledge of other cultures. A student majoring in Spanish could begin preparation for a career in any of these fields as well as in teaching. A student minoring in Spanish could combine such studies with plans for governmental service, international business, the health professions, or a major in another language and literature.

The department offers a major program leading to the Bachelor of Arts degree in Spanish language and literature and a minor in Spanish. Students wishing to major in Spanish should consult with a departmental advisor to choose individual programs.

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 Offered in Spanish

See the Course Descriptions listing in this *Bulletin* for complete information.

SPN 111, 112 Elementary Spanish I, II

SPN 210 Intermediate Spanish I (Emphasis on Spain)

SPN 211 Intermediate Spanish I (Emphasis on Latin America)

SPN 212 Intermediate Spanish II

SPN 213 Intermediate Spanish for Speakers of Spanish

SPN 310 Spanish Grammar and Composition for Students of Hispanic-American Background

SPN 311 Spanish Conversation and Composition

SPN 312-G Introduction to Literary Studies

SPN 321 Advanced Spanish Grammar and Composition

SPN 322 Practical Spanish

SPN 323 Advanced Spanish Conversation

SPN 391-I The Culture and Civilization of Spain

SPN 392-G The Culture and Civilization of Spanish America

Sample Course Sequence for the Spanish Major (Advanced Language Preparation)

Sample Course Sequence for the Spanish Major (High School Preparation)

Freshman Fall	Credits
D.E.C. A	3
SPN 310	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
SPN 312	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Freshman Fall	Credits
D.E.C. A	3
SPN 210 or 211 (not accepted for major credit)	3
D.E.C.	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
D.E.C. A	3
SPN 212 (not accepted for major credit)	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Sophomore Fall	Credits
SPN 321	3
SPN 395 or 397	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
SPN 396 or 398	3
SPN 392	3
D.E.C.	3
Elective	3
Elective	3
Total	15

Sophomore Fall	Credits
SPN 310 or 311	3
D.E.C.	3
D.E.C.	3
Elective	3
Elective	3
Total	15

Spring	Credits
SPN 312	3
D.E.C.	3
D.E.C.	3
Elective	3
Elective	3
Total	15

Junior Fall	Credits
SPN 391 or Upper-Division elective	3
SPN 400-level elective	3
Elective	3
D.E.C.	3
D.E.C.	3
Total	15

Spring	Credits
SPN 462 or 463 or 465*	3
SPN Upper-Division elective	3
D.E.C.	3
D.E.C.	3
Elective	3
Elective	3
Total	18

Junior Fall	Credits
SPN 321	3
SPN 395 or 397	3
D.E.C.	3
D.E.C.	3
Elective	3
Elective	3
Total	18

Spring	Credits
SPN 396 or 398	3
SPN 392	3
SPN Upper-Division elective	3
D.E.C.	3
Elective	3
Total	15

Senior Fall	Credits
SPN 400-level elective	3
Upper-Division elective	3
Elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
SPN 400-level elective	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Elective	3
Total	15

Senior Fall	Credits
SPN 391 or Upper-Division elective	3
SPN 400-level elective	3
SPN 400-level elective	3
Upper-Division elective	3
Elective	3
Total	15

Spring	Credits
SPN 462* or 463* or 465	3
SPN 400-level elective	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

*Students preparing for secondary education certification in Spanish should choose SPN 462 or 463. See the section entitled "Education and Teacher Certification" in the alphabetical listing of Approved Programs.

- SPN 395-J, 396-J Introduction to Spanish-American Literature I, II
- SPN 397-I, 398-I Introduction to Spanish Literature I, II
- SPN 405 Issues in Hispanic Cultural Studies
- SPN 410 Theory in Contexts
- SPN 415 Hispanic Cultures in Contact
- SPN 420 Topics in Spanish and Latin American Cinema
- SPN 435 Topics in Latin American Literature from the Colonial Period to the Present

- SPN 445 Topics in Spanish Literature from the Middle Ages to the Present
- SPN 447 Directed Individual Studies
- SPN 462 Contrastive Spanish-English Phonology
- SPN 463 Contrastive Spanish-English Grammar
- SPN 465 Topics in Hispanic Linguistics
- SPN 475 Undergraduate Teaching Practicum in Spanish
- SPN 495 Spanish Senior Honors

Courses Offered in Spanish Literature and Culture Taught in English

- See the Course Descriptions listing in this *Bulletin* for complete information.
- HUS 254-J Latin America Today
 - HUS 255-I Modern Spain
 - HUS 361-G Latin American Literature
 - HUS 371-G United States Latino Literature
 - HUS 390-J Latin American Cinema

Requirements for the Major in Spanish Language and Literature (SPN)

The major in Spanish language and literature leads to the Bachelor of Arts degree. All courses offered for the major must be taken for a letter grade (except that S is acceptable for SPN 311 and 312 completed through Challenge examinations). All upper-division courses in Spanish must be passed with a letter grade of C or higher.

Completion of the major requires 36 credits.

A. Required Basic Courses

1. a. SPN 311 Spanish Conversation and Composition
or SPN 310 Spanish Grammar and Composition for Students of Hispanic-American Background
- b. SPN 312 Introduction to Literary Studies

(Note: Challenge examinations are only given for SPN 311. See notes 1 and 2, below.)

2. SPN 321 Advanced Spanish Grammar and Composition
3. SPN 391 The Culture and Civilization of Spain
or SPN 392 The Culture and Civilization of Spanish America
4. Three courses from:
 - SPN 395 Introduction to Spanish-American Literature I
 - SPN 396 Introduction to Spanish-American Literature II
 - SPN 397 Introduction to Spanish Literature I
 - SPN 398 Introduction to Spanish Literature II
5. One course from:
 - SPN 462 Contrastive Spanish-English Phonology
 - SPN 463 Contrastive Spanish-English Grammar
 - SPN 465 Topics in Hispanic Linguistics

B. Advanced Courses in Hispanic Linguistics, Literature, and Culture

Twelve additional credits in upper-division SPN courses chosen in consultation with the departmental advisor. (HUL 424 is also acceptable. A maximum of three credits of SPN 447 is

applicable toward this requirement.) At least three of the upper-division courses for the major must be 400-level.

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 director of undergraduate studies. The papers consist of translations of essays submitted as part of the work for upper-division courses. 300- or 400-level courses in the above list that are in excess of the required number may also count in this category. Papers are judged for clarity, accuracy, and appropriateness of style by a faculty committee. Students may resubmit in their senior year.

Notes:

1. Students of Spanish-speaking background may take the Challenge examination for SPN 311.
2. The department requires transfer students to take at least 18 credits of Spanish courses in residence at Stony Brook to complete a Spanish major.

The Honors Program in Spanish

To be awarded honors, a department major must: 1) maintain a cumulative 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) the 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.

Spanish Secondary Teacher Preparation Program

See the Education and Teacher Certification entry in the alphabetical listings of Approved Majors, Minors, and Programs.

Minor in Spanish Language, Culture, and Literature (SPN)

All upper-division courses in Spanish offered to fulfill minor requirements must be passed with a letter grade of C or higher. At least nine credits of upper-division Spanish courses must be earned at Stony Brook to complete the minor.

Completion of the minor requires 24 credits.

A. Basic Language

1. SPN 311 Spanish Conversation and Composition
or SPN 310 Spanish Grammar and Composition for Students of Hispanic-American Background
2. SPN 312 Introduction to Literary Studies

B. Advanced Courses

1. SPN 321 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 424

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 the Study Abroad entry in the chapter titled "Special Academic Opportunities."

EST

Minor in

Technology and Society

Department of Technology and Society, College of Engineering and Applied Sciences

CHAIRPERSON: Thomas T. Liao UNDERGRADUATE PROGRAM DIRECTOR: Joanne English Daly ADMINISTRATIVE ASSISTANT: Catherine Bardram
OFFICE: 347A Harriman Hall PHONE: (631) 632-8765 WEB ADDRESS: www.ceas.sunysb.edu/dts

Faculty

Joanne English Daly, *Lecturer, M.S., University at Stony Brook*: Internet technology; computers in learning environments.

David L. Ferguson, *Distinguished Service 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.

Michael Hacker, *Research Associate Professor, M.S., City University of New York*: Technology education; curriculum design and development; teacher enhancement programs.

Joseph S. Hogan, *Associate Professor, Ph.D., New York University*: Planetary atmospheres; climate change; environmental satellites.

Thomas T. Liao, *Distinguished Teaching 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.

Herb Schiller, *Lecturer, M.S.M.E., California Institute of Technology, M.S., Polytechnic University*: Operations management, manufacturing systems.

Glenn G. Smith, *Assistant Professor, Ph.D., Arizona State University*: Educational media and technology; impact of computer technology on human cognition; effects of computer games on spatial visualization.

John G. Truxal, *Distinguished Teaching Professor Emeritus, Sc.D., Massachusetts Institute of Technology*: Technology and society issues; automatic control systems.

Marian Visich, Jr., *Professor Emeritus, Ph.D., Polytechnic Institute of Brooklyn*: Aerospace engineering; technology-society issues.

Affiliated Faculty

Jacqueline G. Brooks, *Science, Mathematics, and Technology Education*

Adjunct Faculty

Estimated number: 10

Teaching Assistants

Estimated number: 10

The Department of Technology and Society 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 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.

Courses Offered in Technology and Society

EST 100 Computer Literacy in a Digital Era

EST 102-E Weather and Climate

EST 192 Introduction to Modern Engineering

EST 194-C Patterns of Problem Solving

EST 201-H Technological Trends in Society

EST 210 Learning to Learn New Technologies

EST 291-H Energy, Environment, and People

EST 300 Computer Modeling and Experiments in Mathematics and Science Education

EST 302 Assessment of Computer-Based Technologies

EST 305 Applications Software for Information Management

EST 307 Computer Modeling of Biological Systems

EST 320-H Communication Technology Systems

EST 325-H Technology in the Workplace

EST 330-H Natural Disasters: Societal Impacts and Technological Solutions

EST 391-H Technology Assessment

EST 392-F Engineering and Managerial Economics

EST 393 Production and Operations Analysis

EST 411-H Science, Technology, and Arms Control

EST 412 Intelligence Organizations, Technology, and Democracy

EST 420 Seminar on Information-Age Society

EST 421, 422 Starting the High-Technology Venture I, II

Undergraduate teaching practica and independent research

Requirements for the Minor in Technology and Society (EST)

Students should arrange for an interview with a program faculty member to discuss the requirements listed below.

All students must complete at least six EST courses (minimum 18 credits) with a minimum cumulative g.p.a. of 2.50. At least three of the six courses must be at the 300-level or above. No EST course that is counted towards the requirements for a student's major may be counted towards the EST minor requirements. EST 475 and 499 may each be used only once to satisfy requirements of the minor.

THR

Major and Minor in Theatre Arts

Department of Theatre Arts, College of Arts and Sciences

CHAIRPERSON: John Lutterbie ADMINISTRATIVE ASSISTANT: Ed Quinn

OFFICE: 3046 Staller Center for the Arts PHONE: (631) 632-7300 WEB ADDRESS: <http://ws.cc.sunysb.edu/theatrearts>

Minors of particular interest to students majoring in theatre arts: dance (DAN), English (EGL), interdisciplinary arts (LIA), media arts (MDA)

Faculty

Phillip Baldwin, Assistant Professor, M.F.A.,
Yale University School of Drama: Design.

Paul Kassel, Assistant Professor, M.F.A., Florida
State University/ Asolo Conservatory: Acting.

Theresa Kim, Associate Professor, Ph.D., New
York University: Acting; Asian drama.

John Lutterbie, Associate Professor and Chair,
Ph.D., University of Washington: Theory; histo-
ry; criticism.

Deborah Mayo, Assistant Professor, M.F.A., Yale
University: Acting; youth theatre.

Norman Prusslin, Adjunct Instructor, B.A.,
University at Stony Brook: Radio broadcasting;
media leadership.

Amy Sullivan, Associate Professor, M.F.A.,
University of North Carolina at Greensboro:
Modern dance with emphasis on performance
and choreography.

Michael X. Zelenak, Associate Professor and
Director of Graduate Studies, D.F.A., Yale
University: Dramaturgy; criticism; theatre his-
tory.

Adjunct Faculty

Estimated number: 6

Teaching Assistants

Estimated number: 6

Theatre arts is traditionally the study of the dramatic event typified by productions associated with the New York stage, whether it be Broadway or Off-Broadway. In recent years, however, the concept of theatre has expanded to include performances from around the world, extending from the most sacred rituals to the most profane performance art. What was once the study of the live actor before a live audience now requires an investigation into the impact of technology and media on the practice of theatre. This exciting and expanding discipline defines the department of theatre arts at Stony Brook, where students can study acting, design, and directing; immerse themselves in playwriting, dance, and media; and explore interactive computing technologies as a tool of study and a means of personal expression.

The objective of study in theatre arts is to provide students with the opportunity to explore a range of self-expressive forms. Students are introduced to the practical tools necessary to communicate effectively through the theatre, dance, the media, and technology. In addition, they investigate the historical and theoretical basis on which these art forms are based, giving them a strong foundation on which to pursue the many opportunities available to a student graduating as a theatre major.

Students graduate with a strong background in the liberal and theatre arts. After graduation they may pursue theatre-related careers, go on to further study, or enter other professions such as law, business, publishing, advertising, communications, computer graphics, and public relations.

Courses Offered in Theatre Arts

See the Course Descriptions listing in this *Bulletin* for complete information.

THR 101-D Understanding Theatre

THR 102-D Dance Appreciation

THR 104-B Play Analysis

THR 105-D Acting I

THR 110 Public Speaking

THR 115, 116 Stagecraft I, II

THR 117 Media: Analysis and Culture

THR 164-D Tap Technique and History

THR 165-D Modern Dance Technique I

THR 166-D Ballet Technique I

THR 167-D Jazz Dance Technique I

THR 168-D World Dance

THR 205 Acting II

THR 208 Technology in the Arts

THR 216-D Introduction to Visual Interpretation

THR 223-D Stage Costume

THR 230 Voice for the Actor

THR 232 Improvisation

THR 244 Summer Theatre Workshop I

THR 246 Stage Lighting

THR 256-D Stage Design

THR 264 Movement Awareness and Analysis

THR 277 The Media Industry

THR 295 Special Workshop

THR 296 Special Workshop in Design and Technical Theatre

THR 298 Student Media Leadership

THR 301 Stage Management Laboratory

THR 302 Theatre Management Laboratory

THR 303 Costume Crafts Laboratory

THR 304 Marketing Laboratory

THR 305 Lighting and Sound Laboratory

THR 306 Stagecraft Laboratory

THR 307 Performance Laboratory

THR 312-K American Theatre and Drama

THR 313-J Asian Theatre and Drama

THR 314-G Modern Drama on Stage

THR 315-I European History and Drama: The Classical Era

THR 316-I European History and Drama: The Modern Era

THR 317 Interactive Performance, Media, and MIDI

THR 320, 321 Production I, II

THR 322 Acting III

THR 323 Costume Design

THR 324 Stage Makeup

THR 325 Scriptwriting for Film and Television

THR 326 Playwrighting

THR 327 Advanced Playwrighting

THR 333 Directing I

THR 336 Stage Management

THR 337 Advanced Technical Theatre

THR 340 Summer Theatre Workshop II

THR 344-G The Shakespearean Tradition

THR 346 Lighting Design

- THR 351, 352 Special Topics in Performance
- THR 353 Special Topics in Dance Performance
- THR 354 Topics in Dramaturgy
- THR 356 Scene Design
- THR 365 Modern Dance Technique II
- THR 366 Ballet Technique II
- THR 367 Jazz Dance Technique II
- THR 368 Dance Improvisation
- THR 369-J World Dance Forms
- THR 372 Introduction to Television
- THR 375 Television Production
- THR 378 Introduction to Radio Broadcasting
- THR 379 Radio News
- THR 400 Performance Dance Ensemble
- THR 401 Senior Seminar
- THR 403 Media: Theory and Criticism
- THR 405 Western Styles in Acting
- THR 406 Eastern Styles in Acting
- THR 439 Directing II
- THR 447 Readings in Theatre Arts
- THR 451 Auditioning for Careers
- THR 462 Acting for the Camera
- THR 465 Modern Dance Technique and Performance
- THR 467 Jazz Dance Technique and Performance
- THR 468 Choreography
- THR 475, 476 Undergraduate Teaching Practicum I, II
- THR 480 Projects in Media
- THR 483 Projects in Theatrical Design
- THR 484 Project in Theatre
- THR 487 Independent Research
- THR 488 Internship

Sample Course Sequence for the Theatre Arts Major

Freshman Fall	Credits
D.E.C. A	3
THR course for req. A1*	3
THR 115	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
D.E.C. A	3
THR course for req. A1*	3
THR 116	3
D.E.C. B#	3
D.E.C.	3
Total	15

Sophomore Fall	Credits
THR 230	3
D.E.C. D#	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
THR 216	3
THR 264	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Junior Fall	Credits
THR 315	3
THR 320	3
D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Total	15

Spring	Credits
THR 312	3
THR 313	3
THR 321	3
D.E.C.	3
Elective	3
Total	15

Senior Fall	Credits
THR 354	3
THR elective	3
THR elective	3
Upper-Division elective	3
Upper-Division elective	3
Total	15

Spring	Credits
THR 401	3
THR elective	3
Upper-Division elective	3
Upper-Division elective	3
Elective	3
Total	15

*Theatre Arts majors need two courses from THR 105, 117, 164, 165, 166, and 167

Theatre Arts majors may not satisfy D.E.C. categories B and D with THR courses

Requirements for the Major in Theatre Arts (THR)

The major in theatre arts leads to the Bachelor of Arts degree. All courses offered for the major must be passed with a letter grade of C or higher.

Completion of the major requires 48 credits.

A. Theatre Arts Core Program

1. Two of the following courses:
 - THR 105 Acting I
 - THR 117 Media: Analysis and Culture
 - THR 164 Tap Technique and History

- THR 165 Modern Dance Technique I
- THR 166 Ballet Technique I
- THR 167 Jazz Dance Technique
2. THR 115 Stagecraft I
3. THR 116 Stagecraft II
4. THR 104 Play Analysis
5. THR 216 Introduction to Visual Interpretation
6. One of the following courses:
 - THR 315 European Theatre and Drama: The Classical Era
 - THR 316 European Theatre and Drama: The Modern Era

7. THR 312 American Theatre and Drama
8. THR 313 Asian Theatre and Drama
9. THR 320 Production I
10. THR 321 Production II
11. One of the following courses:
 - THR 401 Senior Seminar
 - THR 488 Internship

B. Electives

Twelve additional credits in one of the following areas: performance and playwriting; design and technical theatre; dance, media, and technology; or history, theatre, and criticism.

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.

Note: Students majoring in theatre arts may not satisfy D.E.C. categories B and D with THR courses.

Honors Program in Theatre Arts

The honors program is open to seniors majoring in theatre arts who have maintained a grade point average of 3.00 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, technology, 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 3.50 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.

The Minor in Theatre Arts (THR)

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.

Requirements for the Minor

All courses offered for the minor must be passed with a letter grade of C or higher. At least 12 of the 21 credits must be taken at Stony Brook.

Completion of the minor requires 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 312 American Theatre and Drama
 - THR 313 Asian Theatre and Drama
 - THR 315 European History and Drama: The Classical Era
 - THR 316 European History and Drama: The Modern Era

B. Electives

Nine credits to be chosen from courses in theatre arts, six of which must be upper-division.

Note: Students who choose upper-division theatre electives for the requisite nine credits (see B above) need only take an additional three credits of upper-division elective work to satisfy University requirements.

WST

Major and Minor in Women's Studies

Program in Women's Studies, College of Arts and Sciences

DIRECTOR: Mary C. Rawlinson, Women's Studies, Philosophy ASSOCIATE DIRECTOR: Sarah Hall Sternglanz

UNDERGRADUATE SECRETARY: Colleen Wallahora

OFFICE: 105 Old Chemistry PHONE: (631) 632-9176 E-MAIL: cwallahora@notes.cc.sunysb.edu WEB ADDRESS: www.sunysb.edu/wns

Majors and other minors of particular interest to students majoring or minoring in women's studies: English (EGL), health and wellness (LHW), gender and sexual development (LHD), history (HIS), psychology (PSY), social sciences interdisciplinary (SSI), sociology (SOC)

Faculty

Marcia Abrams, *Lecturer, Ph.D., Cornell University*: French and comparative literature; psychoanalysis.

Temma Kaplan, *Professor, Ph.D., Harvard University*: Comparative history; 20th-century social movements of women.

Connie Koppelman, *Lecturer, part-time, Ph.D., University at Stony Brook*: Women in Long Island history; Long Island women artists.

Adrienne Munich, *Professor, Ph.D., City University of New York*: Victorian studies; feminist theory.

Kelly Oliver, *Associate Professor, Ph.D., Northwestern University*: Joint appointment with philosophy. 20th-century French philosophy; continental feminist theory; Nietzsche.

Mary C. Rawlinson, *Associate Professor, Ph.D., Northwestern University*: Continental philosophy; Hegel; feminist theory.

Sarah Hall Sternglanz, *Lecturer, Ph.D., Stanford University*: Psychology of women; sex role development.

Affiliated Faculty

Frank Anshen, *Linguistics*

William Arens, *Anthropology*

Jean Bacon, *School of Social Welfare*

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*

Norman Goodman, *Sociology*

Young-Sun Hong, *History*

Laura Henigman, *English*

Leonie Huddy, *Political Science*

Heidi Hutner, *English*

Don Ihde, *Philosophy*

Nilufer Isvan, *Sociology*

E. Ann Kaplan, *English*

Aisha Khan, *Africana Studies, Anthropology*

Michael Kimmel, *Sociology*

Eva Feder Kittay, *Philosophy*

Joan Kuchner, *Social Sciences Interdisciplinary*

Cora Lagos, *Hispanic Languages and Literature*

Brooke Larson, *History*

Helen Lemay, *History*

Shirley Lim, *History*

Sara Lipton, *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*

Jane Sugarman, *Music*

Nancy Tomes, *History*

Benigno Trigo, *Hispanic Languages and Literature*

Kathleen Vernon, *Hispanic Languages and Literature*

Kathleen Wilson, *History*

Judith Wishnia, *(Emerita) Social Sciences Interdisciplinary*

Patricia Wright, *Anthropology*

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 10

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 major and minor in women's studies are designed for students interested in the interdisciplinary study of women's roles and achievements. The programs consist of courses offered by the women's studies program as well as courses in the social and behavioral sciences, the humanities, the life sciences, and the health sciences. Students wishing to complete the major or minor should consult the associate director of women's studies and establish an advising folder by the beginning of the junior year.

Many students have found study in women's studies to be an asset to their professional credentials, either when applying to graduate or professional school or for employment. Students who have completed coursework in women's studies have gone on to law school, especially with interests in civil rights; to medical school, especially with specializations in obstetrics and gynecology and psychiatry; to graduate programs in social welfare and psychology, especially with specializations in such areas as abuse and rape counseling; and to graduate work in the humanities and social sciences disciplines where gender issues are at the forefront. Double majors, combining women's studies with another field, are not uncommon.

Some of the courses accepted for the programs appear listed in the home departments of the affiliated faculty, with that department's designator rather than WST. The associate 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.

Courses Offered in Women's Studies

See the Course Descriptions listing in this *Bulletin* for complete information.

WST/SSI 102-F Introduction to Women's Studies in the Social Sciences

WST 103-G Introduction to Women's Studies in the Humanities

WST 121 Library/www Research Skills in Women's Studies

WST/SOC 204-F Intimate Relationships

WST/HUI 237-K Images of Italian-American Women

WST/SOC 247-K Sociology of Gender

WST 250-J Women in the Third World

WST/EGL 276-B Feminism: Literature and Cultural Contexts

WST/PHI 284-G Introduction to Feminist Theory

WST 287 Research in Women's Studies

WST/SOC 304-F Sociology of the Family

WST 305 Feminist Theories in Context

WST/SSI 310-F Contemporary Feminist Issues

WST/MUS 314-G Women Making Music

WST/HIS 316-F The Healer and the Witch in History

WST 320/JDS 327-F Women in Judaism

WST/POL 330-K Gender Issues in the Law

WST/HIS 333-K Women in U.S. History

WST 334/HIS 336-I Women, Work, and Family in Modern European History

WST/SOC 340-H Sociology of Human Reproduction

WST/HIS 345-J Women and Gender in Chinese History

WST/POL 347-K Women and Politics

WST/AFS 350-J Black Women and Social Change: A Cross-Cultural Perspective

WST/HIS 360-I Women in Pre-Modern Europe

WST/JDH 361-G Women in the Biblical World

WST/ARH 365-G Women in the Visual Arts

WST/SOC 371-K Gender and Work

WST/EGL 372-G Topics in Women and Literature

WST/HIS 374-F Historical Perspectives on Gender Orientation

WST 377/PSY 347-F Psychology of Women

WST/PHI 383-G Philosophical Issues of Race and Gender

WST/PHI 384-G Advanced Topics in Feminist Philosophy

WST/HIS 387-J Women, Development, and Revolution in Latin America

WST 390-G, 391-G Special Topics in Women's Studies and the Humanities

WST 392-H Special Topics in Women and Science

WST 393-I Special Topics in Women and the European Tradition

WST 394-H Special Topics in Medicine, Reproduction, and Gender

WST 395-J Special Topics in Women and the World Beyond European Traditions

WST 396-K Special Topics in the History of American Women

WST 397-F, 398-F Social Sciences Topics in Women's Studies

WST 401, 402 Seminar in Women's Studies

WST 407 Senior Research Seminar for Women's Studies Minors

WST 408 Senior Research Seminar for Women's Studies Majors

Independent reading, research, teaching practica, and internship courses

Requirements for the Major in Women's Studies (WST)

The major in women's studies leads to the Bachelor of Arts degree. No more than three credits offered for the major may be taken Pass/No Credit or Satisfactory/Unsatisfactory. All other courses for the major must be passed with a letter grade of C or higher. No transferred course with a grade lower than C may be applied toward major requirements. No more than three 100-level courses may be applied toward major requirements. At least 18 credits must be in courses numbered 300 or higher.

Completion of the major requires 36 credits.

1. WST/SSI 102 Introduction to Women's Studies in the Social Sciences
2. WST 103 Introduction to Women's Studies in the Humanities
3. WST 305 Feminist Theories in Context
4. WST 408 Senior Research Seminar for Women's Studies Majors

5. One course from the following:

AFS 345 Culture and Gender: Women in Africa and the Caribbean

AFS 370 The African-American Family

HWC 349 Overview of Gay and Lesbian Issues

WST/HUI 237 Images of Italian-American Women

WST 250 Women in the Third World

WST 320/JDS 327 Women in Judaism

WST 345 Women and Gender in Chinese History

WST/AFS 350 Black Women and Social Change: A Cross-Cultural Perspective

WST/HIS 387 Women, Development, and Revolution in Latin America

6. Concentration Requirement

Students must complete 12 credits in one of the following areas of concentration:

A. Women in Contemporary Society

AFS 345 Culture and Gender: Women in Africa and the Caribbean

AFS 370 The African-American Family

PSY 240 Social Psychology

SOC 380 Social Psychology

SSI 210 Human Development: The Family Context

SSI 308 Abuse of Women and Children

SSI 405 Seminar in Children, Law, and Social Policy

WST/SOC 204 Intimate Relationships

WST/SOC 247 Sociology of Gender

WST/SOC 304 Sociology of the Family

WST/SSI 310 Contemporary Feminist Issues

WST/POL 330 Gender Issues in the Law

WST/SOC 340 Sociology of Human Reproduction

WST/POL 347 Women and Politics

WST/AFS 350 Black Women and Social Change: A Cross-Cultural Perspective

WST/SOC 371 Gender and Work

WST 377/PSY 347 Psychology of Women

B. Women in History

- ANT 367 Male and Female
- HIS 369 American Social History to 1860
- HIS 370 U.S. Social History, 1860-1930
- WST/HIS 316 The Healer and the Witch
- WST/HIS 333 Women in U.S. History
- WST 334/HIS 336 Women, Work, and Family in Modern European History
- WST/HIS 360 Women in Premodern Europe
- WST/HIS 374 Historical Perspectives on Gender Orientation
- WST/HIS 387 Women, Development, and Revolution in Latin America

C. Women in Literature and the Arts

- EGL 371 Topics in Gender Studies
- HUM 122 Images of Women in Literature
- HUM 123 Sin and Sexuality in Literature
- WST/HUI 237 Images of Italian-American Women
- WST 250 Women in the Third World
- WST/EGL 276 Feminism: Literature and Cultural Contexts
- WST/MUS 314 Women Making Music
- WST/ARH 365 Women in the Visual Arts
- WST/EGL 372 Topics in Women and Literature

D. Women in Philosophy and Religion

- RLS 426 Feminine Spirituality
- WST/PHI 284 Introduction to Feminist Theory
- WST 320/JDS 327 Women in Judaism
- WST/HIS 360 Women in Premodern Europe
- WST/JDH 361 Women in the Biblical World
- WST/PHI 383 Philosophical Issues of Race and Gender
- WST/PHI 384 Advanced Topics in Feminist Philosophy

Sample Course Sequence for the Women's Studies Major

Freshman Fall	Credits
D.E.C. A	3
WST 102	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
D.E.C. A	3
WST 103	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Sophomore Fall	Credits
Prereq. for concentration	3
D.E.C.	3
D.E.C.	3
Concentration course	3
Elective	3
Total	15

Spring	Credits
Prereq. for concentration	3
D.E.C.	3
Concentration course	3
Elective	3
D.E.C.	3
Total	15

Junior Fall	Credits
WST 305	3
Women and Diversity course	3
Upper-Division D.E.C.	3
D.E.C.	3
Upper-Division elective	3
Total	15

Spring	Credits
Concentration course	3
Course outside concentration	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Senior Fall	Credits
Course outside concentration	3
Concentration course	3
D.E.C.	3
Upper-Division elective	3
Elective	3
Total	15

Spring	Credits
WST 408	3
Elective	3
Course outside concentration	3
Upper-Division D.E.C.	3
Upper-Division elective	3
Total	15

E. Human Reproduction, Gender, and Health

- ANT 367 Male and Female
- BIO 300 Biology of Human Reproduction
- HIS 394 Topics in Medicine and Reproduction
- HWC 349 Overview of Gay and Lesbian Issues
- WST/HIS 316 The Healer and the Witch in History
- WST/SOC 340 Sociology of Human Reproduction
- WST/HIS 374 Historical Perspectives on Gender Orientation
- WST 394 Special Topics in Medicine, Reproduction, and Gender

7. Electives

Nine credits outside the area of concentration chosen from the areas above.

8. Upper-Division Writing Requirement

Students must present to the associate director a minimum of ten typewritten pages of formal writing, prepared for an upper-division course listed above as acceptable for the major requirements to the associate director. This written work must have been judged by the course instructor to be satisfactory for the upper-division writing requirement in the field of Women's Studies.

Notes:

1. Topics courses offered in women's studies or other departments may be substituted for required courses with permission of the associate director.

2. At least 12 credits must be taken in women's studies courses at Stony Brook.
3. No more than six credits from WST 447 and 487 may be applied toward the major.

Related special topics courses given in various departments are acceptable for the women's studies minor with the approval of the associate director of women's studies.

Requirements for the Minor in Women's Studies (WST)

Only one course offered for the minor may be taken for Pass/No Credit.

Completion of the minor requires 21 credits.

1. WST/SSI 102 Introduction to Women's Studies in the Social Sciences
or WST 103 Introduction to Women's Studies in the Humanities
2. WST 407 Senior Research Seminar for Women's Studies Minors
3. Fifteen credits chosen from among WST courses (or their crosslisted equivalents) and the list below. At least six of these credits must be numbered 300 and above.

AFS 345 Culture and Gender: Women in Africa and the Caribbean

AFS 370 The African-American Family

ANT 367 Male and Female

BIO 300 Biology of Human Reproduction

EGL 371 Topics in Gender Studies

HIS 369 American Social History to 1860

HIS 370 U.S. Social History, 1860-1930

HIS 394 Topics in History of Medicine and Reproduction

HUM 122 Images of Women in Literature

HUM 123 Sin and Sexuality in Literature

HWC 349 Overview of Gay and Lesbian Issues

PSY 240 Survey in Social Psychology

RLS 426 Feminine Spirituality

SOC 380 Social Psychology

SSI 210 Human Development: The Family Context

SSI 308 Abuse of Women and Children

SSI 405 Seminar in Children, Law, and Social Policy

WRT

Courses in

Writing and Rhetoric

Program in Writing and Rhetoric, College of Arts and Sciences

DIRECTOR: Kay Losey, English, Writing ADMINISTRATIVE ASSISTANT: Norma Porras Reyes

OFFICE: 196 Humanities PHONE: (631) 632-7390 E-MAIL: writing@notes.cc.sunysb.edu WEB ADDRESS: www.sunysb.edu/writrhet/

Faculty

Jennifer Albanese, *Lecturer, A.B.D., University at Stony Brook*: Comparative studies.

Anne Beaufort, *Assistant Professor and Associate Director of the Program in Writing and Rhetoric, Ph.D., Stanford University*: Language; literacy; culture.

Justin Brent, *Lecturer and Director of the Electronic Writing Classrooms, Ph.D., University at Stony Brook*: Computer-assisted instruction; composition and rhetoric.

Gabriel Brownstein, *Lecturer, M.F.A., Columbia University Writing Program*: Fiction; criticism writing.

Richard Buch, *Lecturer, M.A., Humboldt State University*: Teaching writing.

Dennis Clarke, *Lecturer, M.A., Louisiana State University*: Composition and rhetoric; fiction writing; film.

Cynthia Davidson, *Lecturer, Ph.D., University of Illinois at Chicago*: Creative writing; 20th-century poetry and magic; women's poetry; science fiction.

Ronald DePeter, *Lecturer, Ph.D., Florida State University*: Rhetoric and composition.

Clare Frost, *Lecturer and Coordinator of WRT 101, M.A., University at Stony Brook*: Composition and rhetoric; writing in the health professions; interdisciplinary writing; English as a second language.

Kathleen Kern, *Lecturer, Ph.D., University at Stony Brook*: Contemporary American literature; women's fiction; composition and rhetoric.

Peter Khost, *Lecturer, M.A., Rutgers University*: Composition theory; critical literacy theory; creative writing.

Sally La Forte, *Interim Writing Center Director, Ph.D., University at Stony Brook*: Medieval studies; composition and rhetoric.

Murray Lamond, *Lecturer, M.A., University of Cape Town, S.A.*: Medieval studies.

Kay Losey, *Associate Professor and Director of the Program in Writing and Rhetoric, Ph.D., University of California, Berkeley*: Composition and rhetoric; adult literacy; bilingualism and writing.

William Marderness, *Lecturer, A.B.D., University at Stony Brook*: Comparative studies.

Sharon Marshall, *Lecturer, M.A., City College of the City University of New York*: Creative writing; composition and rhetoric; workshop for teachers of writing and writers.

Carolyn McGrath, *Lecturer, M.A., University at Stony Brook*: Creative writing; compositional theory and pedagogy; uses of instructional technology.

Jimmy D. McRoy, *Lecturer, Ph.D., University at Stony Brook*: 20th-century American literature; 20th-century British literature; cultural studies; postmodernism; film studies; composition and computer assisted instruction.

Ronald Overton, *Lecturer, M.A., University at Stony Brook*: Contemporary poetry; crime fiction; jazz criticism.

Jon Plaisted, *Lecturer, M.S., Southern Oregon University*: English and writing.

Susan Sermoneta, *Lecturer, M.A., University of Virginia*: English; composition.

Thomas Tousey, *Lecturer, M.A., University at Stony Brook*: Composition and rhetoric.

Erik Turkman, *Lecturer, M.F.A., University of Alabama*: Creative writing.

Leanne Warshauer, *Lecturer, A.B.D., University at Stony Brook*: Composition theory/pedagogy; 18th- and 19th-century British literature; women's studies.

Astrid Wimmer, *Lecturer, Ph.D., University at Stony Brook*: Composition and rhetoric; literary criticism.

Frances Zak, *Lecturer, Ph.D., University at Stony Brook*: Teaching of writing; response and grading; women's autobiography.

Adjunct Faculty

Estimated number: 10

Teaching Assistants

Estimated number: 33

The Program in Writing and Rhetoric offers courses that fulfill the University's D.E.C. category A English Composition requirement. The program also provides electives for students who want to explore writing in different contexts and enhance their proficiency in academic writing.

The philosophy of the University's Program in Writing and Rhetoric is that writing is an ongoing process as well as a finished product. Because writing requires re-thinking and re-writing, the program emphasizes revision. Courses require multiple drafts of all papers submitted for the final writing portfolio.

Writing courses stress collaborative learning in the classroom and are designed as workshops. Students work in small groups to learn aspects of writing analysis and criticism in order to better analyze their own writing as well as the writing of fellow students. By learning how to analyze their writing, students learn to improve their writing. All group work is supervised by writing instructors experienced in workshop teaching and in critical commentary on student writing. The primary goal of all writing courses is effective communication, orally and in writing.

Facilities

The Writing Center

The Writing Center provides free, individual tutoring to all members of the University community, including entering freshmen, upperclassmen, graduate students, post-doctoral fellows, and faculty in all of Stony Brook's many departments and disciplines. Tutors address all writing issues including, but not limited to, getting started, organization, grammar and graphics, revision, research, and reading the final product. Tutors are trained to help improve writing and communication. Tutors will not proofread or copyedit papers.

Electronic Writing Classrooms

The Program in Writing and Rhetoric has two computer labs that are used for instructional purposes. HUMSinc, located in Humanities 307, contains 26 personal computers and is open to the public when classes are not in session. HISSinc, located in SBS S316, has 22 PCs and offers no public hours. MS Office, Dreamweaver, and Photoshop, along with teaching and Internet tools, are installed on all machines, and both labs have overhead projection capability and access to laser-quality printing. Public hours and class times are posted at <http://www.sunysb.edu/writrhet/description/labhours.html>.

Placement

The Program in Writing and Rhetoric offers a placement examination, given at orientation and during Prime Time, to determine the first writing course a student must take. All incoming freshmen are required to take this placement examination. Transfer students must take the examination if they have not satisfied either Entry Skill 2, Basic Writing Competence, or D.E.C. category A, English Composition. Students may not re-take the examination. Transferred composition courses are automatically evaluated by the Transfer Office for applicability to Skill 2 and D.E.C. A. The placement examination result does not affect the number of credits transferred or the transfer evaluation.

Placement Level 1:

Required Course: ESL 192, for students who would benefit from intensive work on basic sentence structure and paragraph development.

Placement Level 2:

Required Course: ESL 193, for students who would benefit from work on sentence construction; students improve skills in descriptive and argumentative writing.

Placement Level 3:

Satisfies Skill 2 Basic Writing Competence.

Required Course: WRT 101, for students whose composition skills reveal appropriate preparation. Students develop fluency and correctness and are introduced to academic writing.

Placement Level 4:

Satisfies Skill 2 Basic Writing Competence.

Required Course: WRT 102, for students whose composition skills are strong. Students learn strategies for completing extended writing assignments at the University.

Placement Level 5:

Satisfies Skill 2 Basic Writing Competence.

Required Course: WRT 103, for students whose composition skills are exceptional. Students engage in in-depth practice with specific types of academic writing.

Courses Offered in Writing

See the Course Descriptions listing in this *Bulletin* for complete information.

WRT 101-A Introductory Writing Workshop

WRT 102-A Intermediate Writing Workshop A

WRT 103-A Intermediate Writing Workshop B

WRT 201 Writing in the Disciplines: Special Topics

WRT 215-B Argumentative Writing

WRT 381, 382 Advanced Analytic and Argumentative Writing



Health Sciences Center

*Frances L. Brisbane, Norman H. Edelman, Craig Lehmann,
Lenora J. McClean, Barry R. Rifkin, Deans*



This chapter provides an overview of Stony Brook's Health Sciences Center and describes the programs to which West Campus students may apply. In addition, some courses are open to West Campus students, and these are described in the alphabetical listing of Course Descriptions. 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—Dental Medicine, Health Technology and Management, Medicine, Nursing, and Social Welfare—which offer professional education to approximately 2,500 students annually and conduct programs in research, service, and continuing professional education. University Hospital and the Long Island State Veterans Home are major teaching facilities for the educational programs of the Center. Professional, technical, and laboratory resources support the academic and research activities of the students and faculty.

The Health Sciences Center schools have four primary objectives. They seek 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.

Program Offerings

Current offerings include both undergraduate and post-baccalaureate programs. The Health Sciences Center offers the following programs and degrees:

School of Health Technology

- B.S. Clinical Laboratory Sciences (formerly Medical Technology)
- B.S. Cytotechnology
- B.S. Health Science
- B.S. Occupational Therapy
- B.S. Physician Assistant Education

B.S. Respiratory Care

B.S. Health Science/M.S. Physical Therapy dual degree

M.S. Health Care Policy and Management

Advanced Certificates in Health Care Management, Community Health

School of Nursing

B.S., B.S./M.S., M.S. Nursing

Post Master's Nursing Certificates

School of Social Welfare

B.S., M.S.W., Ph.D. Social Work

M.S.W./J.D. (Touro Law Center)

School of Dental Medicine

D.D.S. Doctor of Dental Surgery

M.S., Ph.D. Oral Biology and Pathology

Post-Doctoral Certificates in Endodontics, Orthodontics, and Periodontics

School of Medicine

M.D. Doctor of Medicine

M.S., Ph.D. Basic Sciences

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 summer or fall, depending on the program. Each school of the Health Sciences Center is responsible for determining its admissions policy and for selecting its students. Admissions decisions are made by committees in each of the schools. Application processing and records are handled by the Office of Student Services in the Health Sciences Center, where applications for all 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 junior year except the BSHS/MSPT program, which requires 72 college credits prior to matriculation, and the B.S. Health Science major, a senior-year program. Admission to Health Sciences Center programs (excluding the Health Science major) is by formal application only and is selective.

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, except for the major in Health Science, admission to the undergraduate programs is not simply a change of major. Application forms and information about course and program content is available from each school and from the Office of Student Services, Health Sciences Center.

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. The BSHS/MSPT requires 72 prerequisite college credits. All programs require specific course prerequisites, which are given below under the appropriate school offering the program(s). Stony Brook freshmen can declare the four-year, lower-division major in either Clinical Laboratory Sciences or Respiratory Care. Any Stony Brook student may declare the Health Science (HAV) major. Automatic advancement to the upper-division major is contingent upon successful completion of program prerequisites and the preprofessional course.

Most undergraduate programs and the BSHS/MSPT program are full-time. Part-time studies are offered by the registered nurse program in the School of Nursing.

The 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.

Pre-Application Advising

Before they have applied for admission to the health professions programs, West Campus students can receive advising about course sequences and requirements in the Office of Undergraduate Academic Affairs. Several programs in the Health Sciences Center hold open meetings throughout the academic year at which advisors present overviews of the programs, explain admissions procedures, and advise students individually. The Office of Student Services at HSC

provides individual advising and general information regarding all Health Sciences Center Programs.

Through its credentials service, the University Career Center also assists Stony Brook students applying to undergraduate health professions schools. The office keeps letters of recommendation on file and will send copies to schools upon request.

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.

Semesters are used for all courses offered on the West Campus, the Health Science major, and in some graduate programs in the School of Health Technology and Management, as well as for most courses in the schools of Dental Medicine, Medicine, Nursing, and Social Welfare. Modules are used exclusively for courses in the undergraduate programs, the BSHS/MSPT program of the School of Health Technology and Management, and for some basic science courses and social welfare electives. 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 Health Technology and Management

The School of Health Technology and Management offers a general Bachelor of Science degree in Health Sciences with areas of concentration in public health, environmental health, community health education, health care informatics, and health care management. Students may declare an interest in the major at any time and, upon completion of certain requirements, may advance to the senior year courses in the major.

Undergraduate students enter other Health Sciences Center programs at the

junior level, although the School of Health Technology and Management also offers students interested in clinical laboratory sciences 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 to declare the four-year, lower-division major in Respiratory Care or Clinical Laboratory Sciences, after an interview with the program director.

Clinical Laboratory Sciences

Students who are strong in science, enjoy problem-solving, and have good manual dexterity can apply their talents to patient care as clinical laboratory scientists, who analyze specimens from the human body by applying biological and chemical principles to the diagnosis and treatment of disease. Clinical laboratory scientists work in various clinical settings including hospitals, private laboratories and medical practices, and government and industrial laboratories. A double major with biology is also available.

Pre-Application Requirements

- 3 credits of English composition
- 6 credits in the arts and/or humanities, excluding performance, studio, skills, techniques, and introductory foreign language courses
- 6 credits in the social and behavioral sciences
- 12 credits of chemistry with labs (to include inorganic and organic chemistry)
- 8 credits of biology with labs (See Note 1)
- 3 credits of college-level mathematics
- 2.50 g.p.a.

Notes:

1. Students completing the courses at Stony Brook should take BIO 202 and 203 Fundamentals of Biology.
2. Courses in anatomy, physiology, general microbiology, genetics, and computer literacy are recommended.
3. Stony Brook freshmen are eligible to declare clinical laboratory sciences as a major. In addition to the requirements listed above, students in this four-year program must successfully complete HAD 210 Introduction to Clinical Laboratory Sciences prior to advancing to upper-division status.

Cytotechnology

Cytotechnologists are specialized medical laboratory technologists who study the structure and function of cells. They work with pathologists to detect changes in cells that may be important in the early diagnosis of cancer. They use a microscope to screen slide preparations of cells for abnormalities in structure, indicating either benign or malignant conditions. Cytologic techniques can also be used to detect diseases involving hormonal abnormalities and other pathological disease processes.

Pre-Application Requirements

- 3 credits of English composition
- 6 credits in the arts and/or humanities, excluding performance, studio, skills, techniques, and introductory foreign language courses
- 6 credits in the social and behavioral sciences
- 12 credits of biology with labs (See Note 1)
- 8 credits of chemistry with labs
- 3 credits in college-level mathematics
- 2.50 g.p.a.

Notes:

1. Students completing the courses at Stony Brook should take BIO 202 and 203 Fundamentals of Biology and HBM 320, 321 Microbiology and Laboratory, though other biological science courses may be substituted for HBM 320, 321.
2. Courses in organic chemistry, botany, genetics, cell physiology, general microbiology, histology, anatomy, physiology, philosophy, psychology, and computer literacy are recommended.

Health Science

The School of Health Technology and Management offers a Bachelor of Science degree in Health Science with areas of concentration in environmental health, public health, community health education, health care management, and health care informatics. This major is designed to prepare students for entry into the non-clinical fields of health care. The curriculum requires that students receive a broad liberal arts education during their first three years. In the senior year, the curriculum focuses on health care-related topics.

See the Health Sciences major entry in the alphabetical listings of Approved Majors, Minors, and Programs in this *Bulletin* for more details and program requirements.

Occupational Therapy

Occupational therapists provide services to individuals whose ability to cope with the tasks of living is threatened or impaired by developmental deficits, the aging process, poverty, cultural differences, physical injury or illness, psychological, and/or social disability. Occupational therapists help patients attain the highest possible functional level, to become self-reliant, and to balance work and leisure in their lives through goal-oriented activities used for evaluation and treatment. Specific occupational therapy services include, but are not limited to, education and training in activities of daily living; the design, fabrication, and application of orthoses; guidance in the selection and use of adaptive equipment; therapeutic activities to enhance functional performance; pre-vocational evaluation and training; and consultation concerning the adaptation of physical environments for the handicapped. Occupational therapists work in hospitals, schools, mental health centers, nursing homes, and home-health agencies.

The occupational therapy program is considering a transition to a master's program. Please check with the department at (631) 444-3250 for the status and program prerequisites.

Pre-Application Requirements

3 credits of English composition
 6 credits in the arts and/or humanities, excluding performance, studio, skills, techniques, and introductory foreign language courses
 6 credits in the social and behavioral sciences including an introduction to psychology course and a course in abnormal psychology
 8 credits of biology with labs (See Note)
 8 credits of chemistry with labs
 8 credits of physics with labs
 Cardiopulmonary resuscitation and first-aid certification
 Minimum of 40 hours of varied experience in occupational therapy under the supervision of an occupational therapist and documented in writing

Preference is given to students who have completed science requirements within the last ten years

2.50 g.p.a. (Preference is given to 3.00 g.p.a.)

Note: Students completing the courses at Stony Brook should take BIO 202 and 203 Fundamentals of Biology.

Physical Therapy

The physical therapy program works with patients through a variety of therapeutic procedures such as exercise, stimulation of learning and motor activity, and application of physical agents. It includes instructing and motivating patients and their families toward a defined goal of self-sufficiency. Physical therapists use evaluation and testing to determine a diagnosis and the degree of physical impairment and/or disability and develop an intervention plan based on test results. Graduates of the program are prepared to practice direct patient care as well as pursue careers in research, administration, consultation, and supervision and community health affairs. The program is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association. The physical therapy program is an entry-level, dual-degree B.S. in Health Science/M.S. in Physical Therapy (BSHS/MSPT) program. Seventy-two college credits are required as prerequisite for admission.

Pre-Application Requirements

3 credits of English composition
 9 credits in the arts and/or humanities, excluding performance, studio, skills, techniques, and introductory foreign language courses
 9 credits in the social and behavioral sciences
 11 credits of biology with labs (See Note 1) including 3 credits of 300- or 400-level physiology.
 8 credits of chemistry with labs
 8 credits of physics with labs
 Cardiopulmonary resuscitation and first-aid certification
 Minimum of 100 hours of experience in physical therapy rehabilitation under the supervision of a physical therapist
 Allied Health Professions Admission Test

Preference is given to students who have earned a 3.00 minimum cumulative g.p.a. and 3.00 minimum science g.p.a.

Notes:

1. Students completing the courses at Stony Brook should take BIO 202 and 203 Fundamentals of Biology, and BIO 328 Mammalian Physiology.
2. At least a year of psychology is also recommended.
3. Preference is given to students who have completed science requirements within the last ten years and those who have completed 20 of the 27 required credits in science at the time of application.

Physician Assistant

Physician assistants (PAs) practice medicine with the supervision of a physician. PAs take medical histories, perform physical examinations, develop and implement patient management plans, order diagnostic studies such as laboratory tests, and perform therapeutic procedures such as suturing and casting. Patient education and counseling are also important aspects of the PA role, as is preventive health care. The quality and value of the services PAs provide are highly sought after by physicians and institutional employers in virtually all medical and surgical specialties and settings. Special emphasis is placed on graduate employment in medically underserved areas and primary care specialties.

Pre-Application Requirements

3 credits of English composition
 6 credits in the arts and/or humanities, excluding performance, studio, skills, techniques, and introductory foreign language courses
 6 credits in the social and behavioral sciences
 11 credits in biological sciences, including 3 credits in microbiology (See Note 1)
 8 credits of chemistry with labs
 3 credits of college-level mathematics
 Minimum of one year (or 2,000 hours) of documented direct patient care and/or health-related experience
 Cardiopulmonary resuscitation certification
 Allied Health Professions Admission Test
 Minimum g.p.a. of 2.5 in the natural sciences (including all courses in chemistry, biology, physics, and mathematics)

Sample Course Sequence: Requirements for Application to the School of Nursing

Sample Course Sequence: Requirements for Application to the School of Social Welfare

Freshman Fall	Credits
D.E.C. A English Composition	3
CHE 121	4
PSY 103	3
BIO 150	3
MAP 103	3
Total	16

Spring	Credits
D.E.C. A English Composition	3
BIO 202	4
CHE 112	3
HNI 290	3
SOC 105	3
Total	16

Freshman Fall	Credits
D.E.C. A English Composition	3
BIO 101	3
ANT 102 or SOC 105	3
MAP 103*	3
Total	12

Spring	Credits
D.E.C. A English Composition	3
D.E.C. E (Natural Science) or Math	3
POL 102	3
HIS 104	3
D.E.C. B or G (Humanities)	3
Total	15

Sophomore Fall	Credits
ANP 300	4
PSY 220	3
D.E.C. B (Humanities)	3
D.E.C. G (Humanities)	3
D.E.C. G (Humanities)	3
Total	16

Spring	Credits
AMS 102	3
BIO 210	5
PSY 240 or SOC 382	3
HBM 320, 321	4
SOC 392 or elective	3
Total	18

Sophomore Fall	Credits
D.E.C. B, D or G (Humanities)	3
PSY 103	3
**200- and 300-level D.E.C. categories courses	9
Total	12

Spring	Credits
**200- 300-level D.E.C. categories courses	15
Total	15

* Students must take a mathematics placement examination.

**The above program puts most of the required courses into the first year, but they could equally be spread over two years since the student cannot enter the social work major until the junior year. Application should be submitted in the sophomore year. Volunteer work is desirable.

Notes:

1. Students completing the courses at Stony Brook should take BIO 202 and 203 Fundamentals of Biology and HBM 320 or BIO 315 Microbiology.
2. Courses in psychology, sociology, and statistics are also recommended.
3. Preference is given to applicants who have completed science requirements within the last seven years, and to those who have completed 15 of the 19 required credits in chemistry and biological sciences at the time of application.

Respiratory Care

These practitioners diagnose and treat patients with a wide range of cardiopulmonary disorders, such as asthma, emphysema, cystic fibrosis, and pneumonia. The respiratory care practitioner (RCP) employs a variety of sophisticated medical equipment and therapies in the management of patients in hospitals, clinics, and home settings. This multifaceted profession involves evaluation of lung and cardiac function, administration of oxygen and therapeutic medications, remedial breathing exercises, cardiopulmonary respiratory therapy, mechanical ventilation, and other life support procedures. Respiratory care involves a high degree of patient interaction in both critical and long-term situations. The know-

ledge and skills of the RCP are necessary in many aspects of health care, including medical and surgical intensive care, neonatal intensive care, pediatrics, coronary care and hemodynamic monitoring, pulmonary function and exercise testing, emergency services and trauma care, rehabilitation and home care, land and air patient transport services, discharge planning and patient education, departmental management, clinical research, teaching, and administration.

Pre-Application Requirements

- 3 credits of English composition
- 6 credits in the arts and/or humanities, excluding performance, studio, skills, techniques, and introductory foreign language courses
- 6 credits in the social and behavioral sciences
- 11 credits in biological sciences, including 3 credits in microbiology (See Note 1)
- 8 credits of chemistry with labs
- 8 credits of physics with labs
- 3 credits of college-level mathematics
- Cardiopulmonary resuscitation and first-aid certification
- 2.50 g.p.a.

Notes:

1. Students completing the courses at Stony Brook should take BIO 202 and 203 Fundamentals of Biology and HBM 320 or BIO 315 Microbiology.
2. Stony Brook freshmen are eligible to declare respiratory care as a major. In addition to the requirements listed above, students in this four-year program must successfully complete HAT 210 Introduction to Respiratory Care by the end of their sophomore year.

School of Nursing

Nursing education is based on a commitment to meet the health care needs of a complex and culturally diverse society. Such education begins with a comprehensive understanding of human interaction with the environment through a synthesis of the arts, sciences, humanities, and life experience.

The goals of the program in nursing at the University at Stony Brook are to:

- Educate a diverse population of students for professional nursing practice in a variety of health care settings.
- Contribute to the scholarly development of the profession through integration of theory, research, and clinical practice.

- Provide an educational foundation to promote cultural competence, ethical sensitivity, leadership, and life-long learning.
- Prepare for global improvement of health care through individual, collaborative, and interdisciplinary efforts.

The curriculum of the School of Nursing emphasizes using the nursing process to provide health promotion, maintenance, and restoration among diverse populations of patients; using theory to conceptualize health responses to those populations; applying research findings to improve nursing practice; applying principles of leadership and management in nursing and health care delivery; and practicing interdisciplinary collaboration to improve health care and health outcomes through advocacy, activism, and courage.

Admission to the basic baccalaureate program leading to a B.S. with a major in nursing follows two or three years of study in the arts and sciences during which a student must earn a minimum of 57 credits and a minimum g.p.a. of 2.50. The nursing major also requires certification in cardiopulmonary resuscitation (CPR). West Campus students are strongly encouraged to identify themselves as potential nursing majors by officially declaring an area of interest in nursing (GNS).

Required Courses

AMS 102
ANP 300
CHE 121
CHE 112
BIO 150
BIO 202
BIO 210
HBM 320 with laboratory HBM 321
WRT 102 or 103
PSY 103
PSY 220
SOC 105
SOC 382 or PSY 240
Humanities (9 credits)

Recommended Courses

ANP 120
ANT 102
HNI 290
EST 100
PHY 117
SOC 392
WRT 103

School of Social Welfare

Graduates with a bachelor's degree in social welfare are prepared for professional, entry-level social work positions working with individuals, families, groups, communities, and organizations in a wide range of health and human service facilities including: nursing homes, hospitals, mental health services, substance abuse programs, community action agencies, child welfare programs, services for older people, homeless shelters, mental retardation services, youth services, legal service agencies, foster care programs, public health, and family services. Social workers seek to: affirm human dignity; strengthen and empower people; affirm their strengths as a means to create positive change in their lives. This commitment is carried out by providing services to people and helping communities to organize services that contribute to the welfare of all people.

Pre-Application Requirements

3 credits of English composition
6-8 credits in the fine arts and humanities, excluding elementary languages, design, or skills improvement courses.
3 credits of American political systems
3 credits of introductory anthropology or sociology
3 credits of introductory psychology
3 credits of American history (post-Reconstruction)
3-4 credits of introductory biology
3-4 credits in natural science or college-level mathematics
2.50 g.p.a.

Applicants should have demonstrated interest in the social welfare field through paid or volunteer experience in programs aimed at social improvement.

GRADUATE HEALTH PROFESSIONS PROGRAMS

Although Stony Brook students wishing to enter medical or dental school have the advantage of these professional schools at the University, applicants throughout the state and country apply for entry and students are well advised to prepare for application to several schools.

All graduate health professions schools require completion of the following courses prior to application:

One year of biology with laboratory
One year of general chemistry with laboratory
One year of organic chemistry with laboratory
One year of physics with laboratory
One year of English
One year of mathematics, including at least one semester of calculus (not required for the School of Medicine)
Note: Students interested in the new physical therapy entry-level master's degree program (BSHS/MSPT) should refer to the physical therapy section on page 285 for required courses.

School of Dental Medicine

Although its program is primarily for post-baccalaureate 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. Permission of the instructor is required.

School of Medicine

Although its program is primarily for post-baccalaureate students, the School of Medicine offers courses and research opportunities for elective credit to undergraduate students enrolled in the University.

Further information is available from the Office of Undergraduate Academic Affairs.

Scholars for Medicine

Scholars for Medicine earn a B.A./M.D. degree with four years of undergraduate coursework and four years of medical school. All Scholars for Medicine are individually counseled on their careers throughout their participation in the program. Benefits include full or partial scholarship funds, help in finding laboratory placements for undergraduate research, regular advising from both the Honors College Master and the premedical advisor, opportunities to meet faculty in the School of Medicine, seminar participation with invited guest speakers in the Scholars for Medicine Lecture Series, and support and encouragement in the exploration of undergraduate and career opportunities.

Scholars for Medicine positions are available to select entering freshmen who have been accepted to the Honors College Program. Eligibility criteria are: nomination of high school seniors by the Honors College; 1350 or above on the SATs; maturity; evidence of social commitment; evidence of interest in science; high moral character; breadth of interests; and strong communication skills.

All acceptances to the Scholars for Medicine Program are conditional. Of critical importance is an ongoing assessment of the candidate's maturity, academic ability, and motivation and readiness to pursue a medical education. Scholars must continue to present exemplary academic accomplishments and those personal characteristics that exemplify a Scholar for Medicine. Students must accrue a g.p.a. equal to or greater than 3.40 during the first three undergraduate years. All scholars are required to take the MCAT no later than spring of their junior year in college. Students must attain cumulative MCAT scores comparable to the national average of matriculants to medical school. All scholars must attend Scholars for Medicine lectures and seminars, and prepare assignments as required.

Scholars for Medicine accepted into the B.A./M.D. program before matriculating at Stony Brook will have a place reserved in the Stony Brook Medical School contingent upon the above criteria. Final acceptance is dependent upon the ongoing evaluations by program advisors, letters of evaluation, MCAT performance, and an interview with the Committee on Admissions of the School of Medicine. All students in the B.A./M.D. program must apply for Early Decision to the Stony Brook School of Medicine.

Health Professions Area of Interest

West Campus students interested in any of the undergraduate health professions are strongly encouraged to identify themselves by officially declaring an area of interest. Declaration of major/minor/area of interest forms are available in the Academic Advising Center.

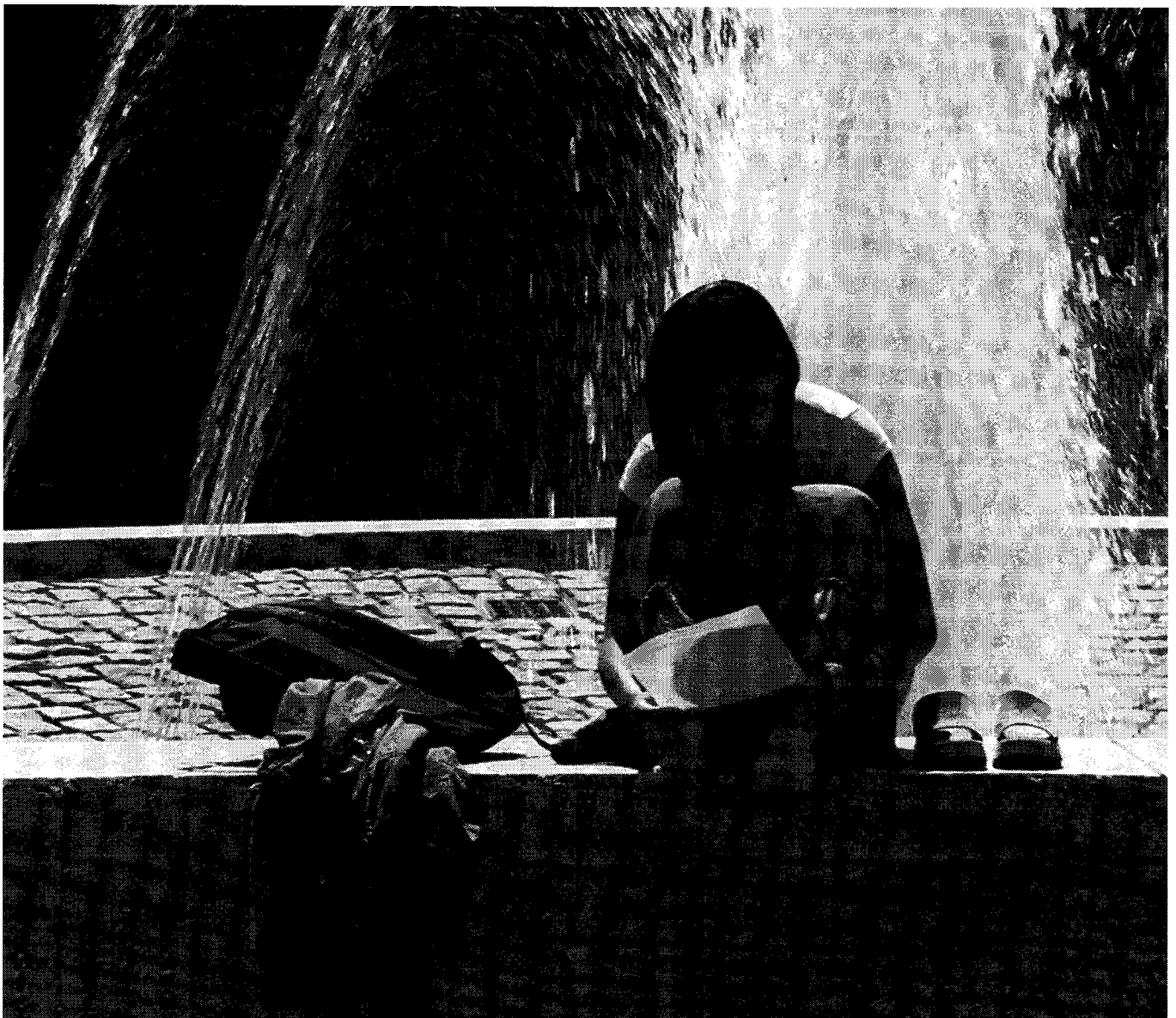
Note: Declaring an area of interest is not the same as declaring a major and does not assure acceptance into the Health Sciences Center programs. All students should declare a major by the beginning of their sophomore year. In addition, the

New York State Tuition Assistance Program requires declaration of a major by the first day of class in the junior year.

Students interested in any of the graduate health professions are strongly encouraged to identify themselves by officially declaring an area of interest code. Forms are available in the Academic Advising Center.



Course Descriptions for
College of Arts and Sciences
College of Engineering and Applied Sciences
Health Sciences Center
Marine Sciences Research Center



Note on Courses Satisfying D.E.C. Categories

A student's general education record may not be changed retroactively. The University may change the D.E.C. category of a course, but for a particular student, the course will count only toward the requirement it fulfilled at the time the student took the course.

College of Arts and Sciences Course Designators

AFH Africana Studies in Humanities
 AFL African Languages
 AFS Africana Studies in Social and Behavioral Sciences
 AMR American Studies
 ANP Physical Anthropology
 ANT Social and Cultural Anthropology
 ARB Arabic
 ARH Art History
 ARS Studio Art
 AST Astronomy
 BCP Pharmacology
 BIO Biology
 CCS Cinema and Cultural Studies
 CHE Chemistry
 CHI Chinese Language
 CLS Classics
 CLT Comparative Studies in Literature
 CNH Chinese Studies in Humanities
 CNS Chinese Studies in Social and Behavioral Sciences
 ECO Economics
 EEL Selected East European Languages
 EGL English
 ESL English as a Second Language
 FLA Foreign Language Secondary Education
 FLC Federated Learning Communities
 FRN French Language and Literature
 GEO Geology
 GER German Language and Literature
 GRK Greek Language and Literature
 HBW Hebrew Language and Literature
 HIN Hindi
 HIS History
 HON Honors College
 HUE European Literature and Culture Courses Taught in English
 HUF French Literature and Culture Courses Taught in English
 HUG German Literature and Culture Courses Taught in English
 HUI Italian Literature and Culture Courses Taught in English
 HUL Romance Language Courses Taught in English
 HUM Humanities
 HUR Russian Literature and Culture Courses Taught in English
 HUS Spanish Literature and Culture Courses Taught in English
 ITL Italian Language and Literature
 JDH Judaic Studies in Humanities
 JDS Judaic Studies in Social and Behavioral Sciences
 JNH Japanese Studies in Humanities
 JNS Japanese Studies in Social and Behavioral Sciences

JPN Japanese Language
 JRN Journalism
 KOR Korean Language
 KRH Korean Studies in Humanities
 KRS Korean Studies in Social and Behavioral Sciences
 LAC Latin American and Caribbean Studies
 LAN Uncommonly Taught Languages
 LAT Latin Language and Literature
 LBR Library
 LIN Linguistics
 LRN Learning Communities
 MAE Mathematics Secondary Education
 MAP Mathematics Proficiency Courses
 MAT Mathematics
 MUS Music
 MVL Medieval Studies
 PEC Physical Education
 PHI Philosophy
 PHY Physics
 POL Political Science
 POR Portuguese Language and Literature
 PSY Psychology
 RLS Religious Studies
 RUS Russian Language and Literature
 SAS South Asian Studies
 SCI Science Teaching Secondary Education
 SKT Sanskrit
 SLN Sign Language
 SOC Sociology
 SPN Spanish Language and Literature
 SSI Social Sciences Interdisciplinary
 THR Theatre Arts
 WRT Writing and Rhetoric
 WST Women's Studies

College of Engineering and Applied Sciences Course Designators

AMS Applied Mathematics and Statistics
 BNG Bioengineering
 BUS Business Management
 CSE Computer Science
 EAS Engineering and Applied Sciences
 ESE Electrical Engineering
 ESG Engineering Science
 ESM Materials Science
 EST Technology and Society
 ISE Information Systems
 MEC Mechanical Engineering

Health Sciences Center Course Designators

HAD Clinical Laboratory Sciences
 HAN Health Science
 HAS Health Science
 HAT Respiratory Care
 HBA Anatomical Sciences
 HBP Pathology
 HBY Physiology and Biophysics
 HDH Dental Health
 HDO Oral Biology and Pathology
 HDP Periodontics
 HBH Pharmacological Sciences
 HBM Microbiology
 HMC Health and Society
 HNI Nursing
 HWC Social Welfare

Marine Sciences Research Center Course Designators

ATM Atmospheric and Oceanic Sciences
 ENS Environmental Studies
 MAR Marine Sciences

University-Wide Program Course Designators

AIM Advancement on Individual Merit Program
 FLC Federated Learning Communities
 HON Honors College
 LCR Living/Learning Center in Service Learning for Community-Based Action Research
 LHD Living/Learning Center in Human Sexual and Gender Development
 LHW Living/Learning Center in Health and Wellness
 LIA Living/Learning Center in Interdisciplinary Arts
 LIS Living/Learning Center in International Studies
 LRN Learning Communities
 LSE Living/Learning Center in Science and Engineering
 USB University at Stony Brook
 WSE Women in Science and Engineering

AFH

Africana Studies in Humanities

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.
Advisory Prerequisite: U2 standing
3 credits

AFH 212-J French Caribbean Literature

A study of representative texts from the French Caribbean translated into English, focusing on literary manifestations of a search for a specific identity by writers from Martinique, Guadeloupe, French Guiana, and Haiti. Crosslisted with HUF 212.

Prerequisites: Completion of D.E.C. category A; one course in literature
3 credits

AFH 213-G Caribbean and American Connections in Literature

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. Crosslisted with HUF 213.
Advisory Prerequisite: Completion of D.E.C. category B
3 credits

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

A detailed look at African-American literature and music and their importance for American literature and music of the 19th and 20th centuries. An examination of the literature with attention to the special stylistic devices, tones of literary voice, and characterization that writers use in their efforts to match the music experience with the written word. Selections from the recordings of African-American and African-American inspired musicians—from Bessie Smith and Louis Armstrong to Jimi Hendrix and the Rolling Stones. Crosslisted with EGL 249.

Advisory Prerequisites: One D.E.C. category B or D course
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. AFH 329 is crosslisted with HUF 318.

Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in literature
3 credits per course

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 crafts. Cultural continuities, spiritual belief, and significant changes in context, meaning, style, and technology are examined. Crosslisted with ARH 329.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: ARH 201
3 credits

AFH 379-K Philosophy of Race

Examination of our assumptions about race and the impact of those assumptions on issues concerning gender, class, and sexuality throughout American history. Readings include critical race theory, feminist theory, and critical legal theory. Students examine racial issues from a philosophical perspective and consider the ways in which representations of race may reinforce patterns of power and privilege. Crosslisted with PHI 379.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One course in philosophy
3 credits

AFH 421, 422 Topics in Africana Studies

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: AFS 101 or 102 or two other courses in the social sciences
3 credits per course

AFH 447 Readings in Africana Studies

Individually supervised reading in selected topics in the Black Experience. May be repeated once.

Prerequisite: Permission of instructor and program director
1-3 credits

AFH 475, 476 Undergraduate Teaching Practicum I, II

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. In AFH 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. Not for major or minor credit.

Prerequisites to AFH 475: Africana studies major or minor; U4 standing; permission of instructor.
Prerequisites to AFH 476: AFS 475; permission of instructor
3 credits per course, S/U grading

AFH 487 Research in Africana Studies

Individual research projects in the Black Experience carried out under the direct supervision of a faculty member.

Prerequisite: Permission of instructor and program director
0-6 credits

AFL

African Languages

AFL 111, 112 Elementary Selected African Languages I, II

An introduction to spoken and written selected African languages (Kiswahili, Bantu) stressing pronunciation, speaking, comprehension, reading, and writing. Practice in the language laboratory supplements class work. AFL 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of the selected language in high school (or who has otherwise acquired an equivalent proficiency) may not take AFL 111 without written permission from the supervisor of the course. May be repeated for more than one language.

Prerequisite to AFL 112: AFL 111
3 credits per course

AFS

Africana Studies in Social and Behavioral Sciences

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

An historical survey of the experience of black people against the background of a thorough review of American history and the events which impacted upon the black experience in America. This course also examines the responses of African Americans to the changing historical circumstances that they encountered in the United States. Consideration is also given to the similarities and differences among the lifestyles of black people of African descent in America. The first semester treats themes to 1865. The second semester treats themes from 1865 to the present.

3 credits per course

AFS 221-J Introduction to Modern African History

Historical themes in 19th- and 20th-century Africa. Topics include social and political relations in African states; slavery and the slave trade in West Africa; the impact of Christianity and Islam on African colonialism; colonialism and its consequences; nationalist movements and de-colonization; pan-Africanism and the politics of African unity; the postcolonial state project; economic planning in postcolonial Africa; and African states and international politics in the Cold War era. Crosslisted with HIS 221.

Advisory Prerequisite: One D.E.C. category F course
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.

Advisory Prerequisite: One D.E.C. category F course
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.

Advisory Prerequisites: AFS 101, 102, and 239
3 credits

AFS 277-K The Modern Color Line

An exploration of the significance of race in 19th- and early 20th-century America. 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.

Advisory Prerequisites: AFS 101 and 102; completion of D.E.C. categories I and J
3 credits

AFS 283 Community Service

Through field experience, readings, research, and discussion, students focus on social and educational problems 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.

Prerequisite: Permission of instructor
3 credits, S/U grading

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 U.S. urban life and made important contributions to its sense of vitality and cultural diversity.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two D.E.C. category F courses; completion of D.E.C. categories I and J
3 credits

AFS 310-K American Attitudes Toward Race

An historical examination of the growth and development of racism in America from the arrival of the first Africans to the continent to the present day. 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 the examination of social conditions and attitudes shaping American society throughout.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: One D.E.C. category F course; completion of D.E.C. categories I and J
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. Forms in which racism manifests itself today are identified and discussed showing the similarities and differences where they exist.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. category F
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.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 104 or AFS 101 or 102
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

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.

Prerequisite: AFS 239 or 240

3 credits

AFS 346-J Political and Social History of Africa

An exploration of theoretical perspectives in the historical sociology and comparative politics of Africa. Topics include the crisis of state legitimacy; the patriarchal society; ethnicity, religion, and politics; the politics of modernization; development and the environment; population growth and underdevelopment; globalization, neo-liberal economic policy and the postcolonial state; and the history of state and society relations. Crosslisted with HIS 346.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two AFS or HIS courses
3 credits

AFS 350-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 WST 350.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: Completion of D.E.C. category F
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 since their arrival in America. Discussion of the solutions proposed by African-American spokespersons from the Civil War period to the present day.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. categories F, I and J
3 credits

AFS 370-K The African-American Family

The African-American family from the early 1800's to the present day. 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.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

AFS 372-K African-American Political Thought

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.).

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. categories F, I and J
3 credits

AFS 375-K Slavery

The historical experience of blacks in slavery from a social and historical perspective with emphasis on the American South and with comparative references to slave systems as they developed in the western hemisphere.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: Completion of D.E.C. category F
3 credits

AFS 380-J Race and Ethnicity in Latin America and the Caribbean

Concepts and theories of race and ethnicity in Latin American and Caribbean settings. The historical evolution and the contemporary social and cultural significance of racial and ethnic identities within the region are explored. Specific examples of social relations characterized by ethnic or racial conflict are presented. Crosslisted with ANT 380.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AFS 240 or ANT 219 or LAC 200
3 credits

AFS 388-J Slavery in Latin America and the Caribbean

The institution of slavery and its impact on plantation societies in the Americas, with particular attention to Brazil and the Caribbean. Topics include conquest and enslavement, the formation of slave communities, African culture in Latin America, resistance and oppression, the process of emancipation, and race relations. Crosslisted with HIS 388.

Prerequisite: One of the following: AFS 239, AFS 240, AFS 277, HIS 213, HIS 214 or LAC 200

3 credits

AFS 395-J Religions of the Caribbean

An ethnographic approach to the relationship among religion, social organization, and identity politics through studying cultural and historical bases of Christianity, Islam, Hinduism, and their related religious manifestations in the Caribbean. Class stratification, ethnic conflict, and fundamentalist movements are explored. Crosslisted with ANT 395.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: ANT 351

3 credits

AFS 400 Ancient Egypt (KMT): Historical and Contemporary Views

An exploration of the rise and development of ancient Egypt (KMT) through study of Egyptian peoples, religions, cultural transformations, and monument building. Examines the periods of the Old Kingdom, Middle Kingdom, and New Kingdom and introduces students to the museum culture that has fueled ongoing interest over time. Particular attention to scholarly debates about the nature and composition of Egyptian society, including interpretations of ethnicity and identity.

Prerequisites: U3 or U4 standing

3 credits

AFS 410 Computers and Third World Social Issues

A consideration of significant Third World issues using basic computing skills. The use of computer concepts and word processing skills to evaluate current social issues and their impact. The course encourages use of the computer in problem solving, research, and decision making.

Prerequisites: U3 or U4 standing; permission of instructor

Advisory Prerequisites: Two AFS courses

4 credits

AFS 418 Legal Processes and Social Structure

A critical and historical study of the role of the American legal order in constructing and deconstructing social dominion and subordination in the United States since the founding of the nation. Particular attention is paid to the legal and social construction of the "white" race juxtaposed with other races, specifically the "yellow," "brown," and "black" races. Contemporary legal debates regarding the concepts of the social contract, property, and objectivity are considered. Crosslisted with POL 418.

Prerequisites: U3 or U4 standing; POL/WST 330

Advisory Prerequisite: One of the following: AFS 277, AFS 310, POL 321, POL 325, POL 343, or PHI/POL 377

3 credits

AFS 421, 422 Topics in Africana Studies

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: AFS 101 or 102 or two other courses in the social sciences

3 credits per course

AFS 447 Readings in Africana Studies

Individually supervised readings in selected topics in the Black Experience. May be repeated once.

Prerequisite: Permission of instructor
1-3 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: U3 or U4 standing; permission of instructor
4 credits per course

AFS 475, 476 Undergraduate Teaching Practicum I, II

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. In AFS 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. Not for major or minor credit.

Prerequisites to AFS 475: Africana studies major or minor; U4 standing; permission of instructor
Prerequisites to AFS 476: AFS 475; permission of instructor
3 credits per course, S/U grading

AFS 487 Research in Africana Studies

Individual research projects in the Black Experience carried out under the direct supervision of a faculty member.

Prerequisite: Permission of instructor
0-3 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 experiences to the faculty sponsor. May be repeated up to a limit of 12 credits.

Prerequisites: Africana studies major or minor; 15 credits in AFS courses; permission of instructor and program director
0-6 credits, S/U grading

AFS 491 Interdisciplinary Seminar in Africana Studies

Exposes students to methods of research and writing within history, anthropology, literature, sociology, etc., important to understanding and producing scholarship related to the African heritage. Exploration of the ways in which past and present research and writing have portrayed Africans. The importance of interdisciplinary approaches and methodologies to understanding Africana Studies is emphasized. Students are required to select topics, conduct in-depth library research, and present their findings in written and oral formats.

Prerequisites: U4 standing; six courses in Africana Studies; permission of instructor and department
3 credits

AIM

Advancement on Individual Merit Program**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 re-writing. Does not count toward graduation. A through C/Unsatisfactory grading only. The Pass/No credit option may not be used. Open to EOP/AIM students only.

Prerequisite: Placement by writing placement examination

Corequisite: WRT 101 or ESL course
3 credits, A-C/U grading

AIM 104 Literary Analysis and Critical Reasoning

Introduction to literary analysis and critical reasoning through close examination of selected works. Open to EOP/AIM students only. A through C/Unsatisfactory grading only. The Pass/No credit option may not be used.

Prerequisite: Placement by writing placement examination

Corequisite: WRT 102
3 credits, A-C/U grading

AMR

American Studies**AMR 101-F Local and Global: National Boundaries and World-Systems**

Introduction to the contemporary capitalist world-system as a complex network of unequal power relationships and its inextricable role in our daily lives. Consideration of the ways the Americas have been incorporated into the world-system through colonialism and early capitalist ventures, with emphasis on the 20th century in terms of transnationalism, globalization, and the mobility of capital and labor, especially as this creates racial formations.

3 credits

AMR 102-G Making American Identities

A chronological representation of some of the ways that the peoples living in the current U.S. have identified themselves collectively as Americans and individually as belonging to distinct groups marked by racial, ethnic, gender, and class differences. Readings include texts of various kinds: historical, fictional, and theoretical. A computer (virtual) classroom is part of the coursework.

3 credits

AMR 301-K Ethnicity and Race in American History

Overview of the role and place of ethnicity and race in the history of North America through investigation of the ways that ethnic belonging and identity have evolved through the 19th and 20th centuries. Readings and discussion consider how ethnicity is forged through engagement with other "outside" as well as "inside" groups toward an understanding of how and why notions of "ethnicity" and "race" have changed over time. Groups that may be considered include African, Arab, Asian, German, Hispanic, Irish, Italian, Jewish, Native, and South Asian Americans.

Prerequisites: U3 or U4 standing; AMR 101 or 102
3 credits

AMR 390-G Humanities Topics in American Studies

Selected topics in American studies in the humanities. Topics may include philosophy and drama in the United States, North and South American films, literary trends in the Americas. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic
3 credits

AMR 392-F Social and Behavioral Sciences Topics in American Studies

Selected topics in American studies in the social and behavioral sciences. Topics may include political history of the United States and Latin America, North and South American economies. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic
3 credits

AMR 395-J Special Topics in American Studies

Selected topics in non-Western cultures, societies, traditions, literatures, etc. Topics may include contemporary Indian societies in Central and South America, sociology of Latin and South America. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic
3 credits

AMR 397-K Special Topics in American Studies

Selected topics in American studies. Topics may include, for instance, women and men in the contemporary United States and contemporary U.S. culture. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic
3 credits

AMR 401 Senior Seminar in American Studies

Students synthesize the theories, methods, and knowledge gained in previous coursework through in-depth study of a particular issue or question. Discussion is structured around topics that engage the central themes of the histories, cultures, and societies of the Americas from an interdisciplinary perspective.

Prerequisites: U4 standing; AMR major or minor

Advisory Prerequisite: AMR 301
3 credits

AMR 447 Directed Readings in American Studies

Independently supervised readings in selected topics in American Studies. May be repeated.

Prerequisites: Permission of instructor and department
1-6 credits

AMR 475, 476 Undergraduate Teaching Practicum I, II

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. In AMR 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded.

Students may not serve as teaching assistants in the same course twice.

Prerequisites: to AMR 475: Permission of instructor and department

Prerequisites: to AMR 476: AMR 475; permission of instructor and department

3 credits per course; S/U grading

AMR 487 Independent Research

Intensive readings and research on a special topic undertaken with close faculty supervision. May be repeated.

Prerequisite: Permission of instructor and department

0-6 credits

AMR 488 Internship

Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce skills and knowledge gained in the American studies major.

Prerequisites: Permission of instructor and department

0-6 credits

AMR 495 Senior Honors Project in American Studies

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

3 credits

AMS

Applied Mathematics and Statistics

AMS 101-C Applied Precalculus

Presents applied topics in functions, discrete dynamical systems, trigonometry and linear algebra designed to improve students' skills for analyzing problems in the social and natural sciences.

Prerequisite: Satisfaction of basic mathematics competence

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 310, 311, 312; ECO 320; POL 201; PSY 201; or SOC 202.

Prerequisite: Satisfaction of basic mathematics competence

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.

Prerequisite: AMS 151 or MAT 125 or 131 or 141

3 credits

AMS 151-C Applied Calculus I

A review of functions and their applications; analytic methods of differentiation; interpretations and applications of differentiation; introduction to integration. Intended for CEAS majors. Not for credit in addition to MAT 125 or 126 or 131 or 141.

Prerequisite: B or higher in MAT 123, or level 5 on the mathematics placement examination, or B or higher in MAT 122 and coregistration in MAT 130

3 credits

AMS 161 Applied Calculus II

Analytic and numerical methods of integration; interpretations and applications of integration; differential equations models and elementary solution techniques; phase planes; Taylor series and Fourier series. Intended for CEAS majors. Not for credit in addition to MAT 127 or 132 or 142.

Prerequisite: C or higher in AMS 151 or MAT 131 or 141, or level 7 on the mathematics placement examination

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 basic mathematics competence

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: AMS 151 or MAT 122, 123, 125, 131 or 141

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: AMS 151 or MAT 131 or 141 or corequisite MAT 126

3 credits

AMS 236 Statistics in Engineering Quality Control

Understanding of, and facility 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 control, and regression.

Prerequisite: AMS 161 or MAT 127 or 132 or 142

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 or AMS 161

4 credits

AMS 300 Writing in Applied Mathematics

See Requirements for the Major in Applied Mathematics and Statistics, Upper-Division Writing Requirement.

Prerequisites: AMS major; U3 or U4 standing

1 credit, S/U grading

AMS 301 Finite Mathematical Structures

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 or AMS 361 or MAT 303

3 credits

AMS 303 Graph Theory

Paths and circuits, trees and tree-based algorithms, graph coloring, digraphs, network flows, matching theory, matroids, and games with graphs.

Prerequisite: AMS 301

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

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

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

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

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

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.

Prerequisites: AMS 210 or 261 or MAT 203; prior programming experience in C, FORTRAN, or Java

3 credits

AMS 322 Groundwater Modeling

Basic numerical models and solution methods for modeling groundwater flow. Finite difference methods for steady state and transient single-phase, solute transport, and multi-phase flow in confined and uncon-

fined aquifer systems.

Prerequisites: AMS 161 or MAT 132; AMS 210 or MAT 211; programming experience in FORTRAN, Pascal, C, or Modula 3
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
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
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: AMS 151 or MAT 126 or 131 or 141
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
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
3 credits

AMS 345 Computational Geometry

The design and analysis of efficient algorithms to solve geometric problems that arise in computer graphics, robotics, geographical information systems, manufacturing, and optimization. Topics include convex hulls, triangulation, Voronoi diagrams, visibility, intersection, robot motion planning, and arrangements. Crosslisted with CSE 355.

Prerequisites: AMS 301; programming knowledge of C or C++ or Java
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.

Prerequisite: AMS 210 or MAT 211
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: AMS 161 or MAT 127, 132 or 142
4 credits

AMS 373 Analysis of Algorithms

Mathematical analysis of a variety of computer algorithms including searching, sorting, matrix multiplication, fast Fourier transform, and graph algorithms. Time and space complexity. Upper-bound, lower bound, and average-case analysis. Introduction to NP completeness. Some machine computation is required for the implementation and comparison of algorithms. Crosslisted with CSE 373 and MAT 373.

Prerequisites: MAT 211 or AMS 210; CSE 214
3 credits

AMS 394 Statistical Laboratory

Designed for students interested in statistics and their applications. Basic statistical techniques including sampling, design, regression, and analysis of variance are introduced. Includes the use of statistical packages, such as SSPS and SAS. Students translate realistic research problems into a statistical context and perform the analysis.

Prerequisite: One AMS course (AMS 102 or 110 or 310 or 315 recommended)
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 Actuarial Examination 100.

Prerequisites: AMS 261 or MAT 203 or 205; AMS 210 or MAT 211
2 credits

AMS 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 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 lobby-lot inspection.

Prerequisite: MEC 317
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: U4 standing as an undergraduate major within the college; a minimum g.p.a. of 3.00 in all Stony Brook courses and the grade of B in the course in which the student is to assist; permission of department
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, MEC 499, ESE

499, ESM 499, EST 499, ISE 487) may be counted toward engineering technical elective requirements.

Prerequisite: Permission of instructor and department
0-3 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
3 credits

ANP

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.

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.

Advisory Prerequisite: ANP 120
3 credits

ANP 300-E Human Anatomy

An introduction to the structure of the human body considered from both systems and regional approaches. Subject matter includes the musculoskeletal, respiratory, nervous, cardiovascular, digestive, and urogenital systems, together with an appreciation of these systems in a regional anatomical context. Laboratory sessions entail examination of plastic models, exercises in living anatomy and computer "dissection."

Prerequisite: ANP 120 or BIO 201
4 credits

ANP 320 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 120 and 210
3 credits

ANP 321 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.

Prerequisites: ANP 120 and 210
3 credits

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
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
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 201; permission of instructor
3-6 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 201
Advisory Prerequisite: One other ANP course
3 credits

ANP 391 Topics in Physical Anthropology

Discussion of a topic of current interest in physical anthropology. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.

Prerequisite: ANP 120
Advisory Prerequisite: One other ANP course
3 credits

ANP 403 Problems in Physical Anthropology

Research and discussion of selected topics in physical anthropology. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.

Prerequisite: ANP 120 or BIO 201
3 credits

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 300; permission of instructor
3 credits

ANP 447 Readings in Physical Anthropology

Individual advanced readings on selected topics in physical anthropology. May be repeated up to a limit of 6 credits.

Prerequisites: ANP 321 and 330; permission of instructor
3 credits

ANP 475, 476 Undergraduate Teaching Practicum I, II

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. In ANP 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites: U3 or U4 standing; anthropology major; 3.0 g.p.a.; permission of instructor; permission of director of undergraduate studies.
3 credits; S/U grading

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. May be repeated up to a limit of six credits.

Prerequisites: Two 200- or 300-level ANP courses; permission of instructor and department
0-6 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. Students receive only one grade upon completion of the sequence.

Prerequisite: Admission to the anthropology honors program
3 credits per course

ANT

Social and Cultural Anthropology

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.

3 credits

ANT 104-F Introduction to Archaeology

An introduction to the study of human behavior through the analysis of material residues. Case studies illustrate how archaeologists answer research questions originating in other social sciences, natural history, or humanities disciplines, thereby creating a unique interdisciplinary and long-term perspective on human behavior. The course provides a critical perspective on recent ethical and interpretive controversies about the human past.

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.

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
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
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
3 credits

ANT 230-J Peoples of the World

A comparative study of the lifeways of selected types of peoples defined by adaptation, focusing on their ecology, economy, and political and social organization. Recent changes brought about by technological developments and intercultural contact are discussed. Readings consist of coordinating ethnographies.

Prerequisite: ANT 102
3 credits

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, and relates these innovations to changes in sociopolitical organization.

Prerequisite: One D.E.C. category E course
3 credits

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.

Prerequisite: ANT 102
Advisory Prerequisite: One other ANT course
3 credits

ANT 311-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, are considered in detail. Lectures, texts, and films consider ecology, history, social change, language, cultural systems, and social arrangements toward providing students with a comprehensive understanding of another cultural system. May be repeated as the topic changes.

Prerequisite: ANT 102
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; permission of instructor
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.

Prerequisite: ANT 102
Advisory Prerequisite: One other ANT course
3 credits

ANT 350-F Medical Anthropology

An introduction to the cross-cultural study of health, illness, and curing. Topics covered include the human body as cultural construct, theories of illness causation, alternative medical systems, epidemiology, ethnopharmacology, cross-cultural psychiatry, sex and reproduction, nutrition, and the implications of culture for pain perception, stress, and health risk management.

Prerequisite: ANT 102
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.

Prerequisite: U3 or U4 standing
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.

Prerequisite: U3 or U4 standing
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; permission of instructor
Advisory Prerequisite: ANT 363
3 credits

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.

Prerequisite: ANT 102
3 credits

ANT 356-F 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 mobil-

ity, assimilation and acculturation, and political relations.

Prerequisite: ANT 102
3 credits

ANT 357-F The Agricultural Revolution

The origins and consequences of agrarian (food-producing) adaptations. Examination of the social, technological, and ecological changes that occurred when humans shifted from hunting and gathering to agriculture and pastoralism around 8000 years ago. Current theories about the origins and consequences of agro-pastoralism are evaluated in light of recent evidence from both Old and New Worlds.

Prerequisite: ANT 104
3 credits

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, Meso-america, and Peru.

Prerequisite: ANT 104
3 credits

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.

Prerequisite: U3 or U4 standing
3 credits

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.

Prerequisite: ANT 102
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
3 credits

ANT 363-F Archaeological Method and Theory

A survey of archaeological thought from early antiquarianism through the culture history, processual, and post-processual approaches to the investigation and analysis of past societies. Emphasis is placed on the ways in which changes in archaeological theory reflected changes in ideas within the sister fields of sociology, cultural anthropology, and geography. Other topics discussed include ethnographic analogy, systems theory, site formation processes, and spatial analysis.

Prerequisite: ANT 104
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.

Prerequisite: ANT 104
3 credits

ANT 366-J Prehistoric and Historic Hunter-Gatherers

An examination of the theory for hunter-gatherer societies. The course emphasizes ecological theory and examines that theory through application to both the archaeological and ethnographic record. The focus is on particular problems such as different adaptive strategies in differing environments, the emergence of complex hunter-gatherer societies, and the relationship between biological and behavioral change.

Prerequisite: ANT 104
3 credits

ANT 367-F Male and Female

A study of the manifestation of sex roles in different cultures. Discussion topics include the impact of social, economic and political organization on gender roles and relationships, sexual orientation in cross-cultural perspective, and contemporary theories of gender inequality. Readings present both the male and female viewpoints.

Prerequisite: ANT 102
3 credits

ANT 368-F Ice Age Europe

Current theories about early human adaptations to Ice Age environments in western Eurasia. Major topics include the initial colonization by hominids, the origin and extinction of the Neanderthals, and the dispersal of modern Hominids. This course stresses the reconstruction of early human adaptive strategies (technology, sociality, and settlement patterns) in their paleoecological and biogeographic contexts.

Prerequisite: ANT 104
3 credits

ANT 370-F Great Archaeological Discoveries

Recent controversies surrounding the most important social transitions in human prehistory. These include the origin of modern human societies, the rise of agrarian communities, and the formation of early states, all examined in cross-cultural perspective. Major theories and models of human sociocultural evolution are tested with evidence from the best-documented archaeological sites in Africa, Eurasia, and the Americas.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: ANT 104
3 credits

ANT 379-J Ethnicity and Nation in China

Focusing on the material and social contexts that have shaped perceptions of cultural groups in China, both past and present, the course explores issues of ethnic identification and minority status, civilizing projects and autonomous movements, and notions of race, ethnicity, and nation. Drawing on case studies from the Himalayan plateau, the Central Asian steppes, Taiwan, and diaspora communities, students examine how ecology and livelihood, social organization and exchange, politics, and religion influence constructions of identity. Crosslisted with CNS 379.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: CNS 249 or 250 or HIS 219
3 credits

ANT 380-J Race and Ethnicity in Latin America and the Caribbean

Concepts and theories of race and ethnicity in Latin American and Caribbean settings. The historical evolution and the contemporary social and cultural significance of racial and ethnic identities within the region are explored. Specific examples of social relations characterized by ethnic or racial conflict are presented. Crosslisted with AFS 380.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: AFS 240 or ANT 219 or LAC 200
3 credits

ANT 381-F Applied Anthropology

A practical, career-oriented examination of how anthropological theory and method can be put to use in non-academic areas such as economic development, public health, environmental conservation, education, technology development, cultural advocacy, business, and law. Coordinated readings provide case illustrations.

Prerequisite: U3 or U4 standing
3 credits

ANT 385-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
3 credits

ANT 390-F, 391-F Topics in Social and Cultural Anthropology

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: ANT 102
3 credits per course

ANT 392-F Topics in American Cultural Alternatives

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: ANT 102

Advisory Prerequisite: One other anthropology course
3 credits

ANT 393-F, 394-F Topics in Archaeology

Topics in archaeology are taught from a social sciences perspectives. Recent topics have included: Origin of Modern Humans, Advent of the Iron Age, Old World Archaeology, and Ancient Egypt. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: ANT 104; one other anthropology course to be specified when the topic is announced
3 credits

ANT 395-J Religions of the Caribbean

An ethnographic approach to the relationship among religion, social organization, and identity politics through studying cultural and historical bases of Christianity, Islam, Hinduism, and their related religious manifestations in the Caribbean. Class stratification, ethnic conflict, and fundamentalist movements will be explored. Crosslisted with AFS 395.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: ANT 351
3 credits

ANT 401 Problems in Social and Cultural Anthropology

Research and discussion of a selected topic in social and cultural anthropology. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: ANT 102

Advisory Prerequisites: Two other ANT courses at the 200 level or higher
3 credits

ANT 402 Problems in Archaeology

Research and discussion of a selected topic in the prehistory of the Old and New Worlds. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic

changes.

Prerequisite: ANT 104

Advisory Prerequisites: Two other archaeology courses to be specified when the topic is announced

3 credits

ANT 417 Primitive Technology

An introduction to the technology of hunter-gatherers. The course examines how archaeologists use both ethnography and experimentation to shed light on prehistoric human technological adaptations. Techniques for making and using primitive tools are practiced in weekly laboratory sessions.

Prerequisites: ANT 104; one 300-level archaeology course
4 credits

ANT 418 Lithic Analysis

A detailed overview of the methods archaeologists use to extract behavioral information from prehistoric stone tools. The course examines raw material economy, technological strategies, tool use, and discard behavior. Analytical methods are practiced through the computer-assisted analysis of tools from simulated archaeological sites.

Prerequisites: ANT 104; one 300-level archaeology course

Advisory Prerequisites: ANT 417

4 credits

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 of mammal bone. Computer analysis is stressed, and the class seeks a fusion of traditional zooarchaeology and actualistic studies. Three to four hours of computer laboratory work required per week.

Prerequisites: ANT 104 or ANP 120; permission of instructor

Advisory Prerequisite: One other archaeology course

3 credits

ANT 420 Environmental Analysis Using Remote Sensing and Geographic Information Systems

The use of aerial and satellite imagery in environmental analysis and the manipulation of geographic data sets of all types using Geographic Information Systems. Concentrating on Long Island as a research area, each student designs and completes a research project on a particular section of the area, focusing on the habitats of local wildlife, the locations of archaeological sites, coastal regimes, etc. Students should expect to spend approximately 10 hours per week beyond regularly scheduled classtime in a University computer laboratory. Crosslisted with GEO 420.

Prerequisite: Upper-division course in ANT or BIO or GEO or MAR

4 credits

ANT 447 Readings in Anthropology

Individual advanced readings on selected topics in anthropology. May be repeated up to a limit of 6 credits.

Prerequisites: ANT 102; two other ANT courses at the 200 level or higher; permission of instructor and department

3 credits

ANT 475, 476 Undergraduate Teaching Practicum I, II

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. In ANT 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded.

Students may not serve as teaching assistants in the same course twice.

Prerequisites: U3 or U4 standing; anthropology major; 3.0 g.p.a.; permission of instructor; permission of director of undergraduate studies.

3 credits per course; S/U grading

ANT 487 Independent Research in Anthropology

Independent research projects carried out by upper-division students. May be repeated up to a limit of six credits.

Prerequisites: 15 credits in anthropology; permission of instructor and department

0-6 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 experiences to the faculty sponsor and the department. May be repeated up to a limit of 12 credits.

Prerequisites: 15 credits of anthropology; permission of instructor and department

0-6 credits, S/U grading

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. Students receive only one grade upon completion of the sequence.

Prerequisite: Admission to the anthropology honors program

3 credits per course

ARB

Arabic

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. ARB 111 is designed for students who have no prior knowledge of Arabic. A student who has had two or more years of Arabic in high school (or who has otherwise acquired an equivalent proficiency) may not take ARB 111 without written permission from the supervisor of the course.

Prerequisite to ARB 112: ARB 111

3 credits per course

ARB 211, 212 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. A student who has had four or more years of Arabic in high school (or who has otherwise acquired an equivalent proficiency) may not take ARB 211 without written permission from the supervisor of the course.

Prerequisite to ARB 212: ARB 112

Prerequisite to ARB 211: ARB 211

3 credits per course

ARH

Art History

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.

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.

3 credits

ARH 201-D Arts of Africa, Oceania, and the Americas

An introduction to the 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.

Advisory Prerequisite: U2 standing
3 credits

ARH 203-J History of Asian 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
3 credits

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.

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 twice.

Prerequisite: ARH 101 or 102
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.

Prerequisite: ARH 101
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.

Prerequisite: ARH 101
3 credits

ARH 302-J Ancient Egyptian Art

Survey of art and architecture of ancient Egypt from the development of the first monumental art and architecture (c. 3000 B.C.) through the Early Christian era

(c. 300 A.D.) focusing on culturally specific concepts of representation and aesthetics and the status and purposes of ancient Egyptian arts. The role of patronage, the uses of art and architecture in cult, in temples, and in tombs, and the relationship of art and politics are considered, along with the question of the place of Egyptian art within the development of world art and the concept of Egypt as the African origin of Western civilization.

Prerequisite: ARH 101
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 traditions of northern Spain, Anglo-Saxon England, Ottonian Germany, and Viking Scandinavia.

Prerequisite: ARH 101
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.

Prerequisite: ARH 101
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 Da Vinci.

Prerequisites: ARH 101 and 102
3 credits

ARH 307-I The Age of Michelangelo in Central Italy

An exploration of the works of Michelangelo, Da Vinci and other major masters, including Raphael, Bramante, and Pontormo, who inspired, were influenced by, or rejected the work and ideals of Michelangelo.

Prerequisites: ARH 101 and 102
Advisory Prerequisite: ARH 306
3 credits

ARH 310-I Splendors of Renaissance Art in Venice

The special qualities of Venetian art, which blends Byzantine, Islamic, and Western traditions, are explored through the works of such major figures as Giovanni Bellini, Giorgione, Titian, Veronese, and Palladio.

Prerequisites: ARH 101 and 102
Advisory Prerequisite: ARH 307
3 credits

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.

Prerequisite: ARH 102
3 credits

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.

Prerequisite: ARH 102
3 credits

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 Lorraine, and on the sculptors of Versailles.

Prerequisite: ARH 102
3 credits

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.

Prerequisite: ARH 101 or 102
Advisory Prerequisite: CNS 249 or 250 or courses in Chinese philosophy or history
3 credits

ARH 320-I Art of the 18th Century

A study of the development of 18th-century European art from rococo to neoclassicism.

Prerequisite: ARH 102
Advisory Prerequisites: Two other courses from among D.E.C. categories B, G, and I
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.

Prerequisite: ARH 102
Advisory Prerequisite: ARH 342
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 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 and 102
Advisory Prerequisite: ARH 205
3 credits

ARH 325-J Ancient Mesopotamian Art

Survey of the art and architecture of ancient Mesopotamia from the establishment of the first cities and the development of the first monumental art and architecture (c. 3300 B.C.) through the Hellenistic conquest. Focus on concepts of representation and aesthetics and their uses in politics, private rituals, and state cults.

Prerequisite: ARH 101
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.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: ARH 201
3 credits

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: U3 or U4 standing
Advisory Prerequisite: ARH 201
3 credits

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: U3 or U4 standing
Advisory Prerequisite: ARH 201
3 credits

ARH 331-K American Art to 1890

Issues of the history of American painting, sculpture, and architecture from the early colonial period to the post-Reconstruction era. The course examines the creative accomplishments of both prominent and lesser-known American artists; and promotes a broader perspective of United States art history by highlighting art's relationship to developments in American history.

Prerequisite: ARH 101 or 102
3 credits

ARH 332-K Art of the United States, 1890-1930

The histories of American painting, sculpture, architecture, and photography from the period spanning Progressivism and the rise of modern urban commercial culture to the end of World War II. The course examines the creative accomplishments of various prominent American artists and promotes a broader perspective of United States art history by highlighting art's relationship to developments in American history.

Prerequisite: ARH 101 or 102
Advisory Prerequisite: ARH 331
3 credits

ARH 333-K Arts for the Public

The history of efforts to develop forms of artistic work that engage broad audiences of citizens and consumers. Examination of a range of enterprises spanning the century, including monuments, murals, animated cartoons, propaganda, and the Web. Drawing on perspectives from art history, social history, and cultural studies, the course considers developments throughout the 20th century in the United States such as urbanization, political and business expansion, class and racial conflict, war, and technological innovation, in relation to art work.

Prerequisite: ARH 102 or CCS 101
Advisory Prerequisite: ARH 332 or 342
3 credits

ARH 335-G History of Photography

An 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. Not for credit in addition to the discontinued ARH 204.

Prerequisite: ARH 102 or CCS 101
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
3 credits

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 neo-classicism, romanticism, realism, and impressionism.

Prerequisite: ARH 102
Advisory Prerequisites: Two other courses from among D.E.C. categories B, D, and G
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.

Prerequisite: ARH 102
3 credits

ARH 365-G Women in the Visual Arts

Survey of biographical information and artistic accomplishments of selected women artists from c. 1200 to the present. In addition to art historical analysis of media, form, color, and style, images of women created by women and men are compared and contrasted within specific time periods. The implications and influences of subjects that artists choose are considered for how, when, why, and if they reflect ideologies of sexuality, gender, or race. Crosslisted with WST 365.

Prerequisite: ARH 101 or 102 or SSL/WST 102 or WST 103 or 6 credits toward the women's studies major or minor
3 credits

ARH 370-I Masterpieces of Western Art

In-depth exploration of a select number of major art works central to the Western tradition, e.g., the Parthenon, Chartres Cathedral, the Sistine Chapel. Monuments are analyzed visually, historically, technically, and in terms of their meaning and function for those who commissioned and those who created them. The student develops a critical vocabulary for the analysis, interpretation, and experience of the work of art. Among the issues discussed is the continuing aesthetic and expressive validity or significance of a monument despite changes of context and culture.

Prerequisites: U3 or U4 standing; Completion of D.E.C. categories B and D
3 credits

ARH 400-403 Topics in Art History and Criticism

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: ARH 101 or 102; one other ARH course, varying with topic
3 credits per course

ARH 404 Topics in Film Studies and Criticism

Semester Supplements to this *Bulletin* contain descriptions when course is offered. May be repeated as the topic changes.

Prerequisites: Two of the following: CCS 101, CCS 201, CCS 301, CLT 335, HIS 361, THR 117
3 credits

ARH 475, 476 Undergraduate Teaching Practicum I, II

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. In ARH 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites: to ARH 475: Art history/criticism major; preferably U4 standing; sponsorship of an instructor; permission of department

Prerequisites: to ARH 476: ARH 475; permission of instructor and director of undergraduate studies
3 credits per course; S/U grading

ARH 485 Projects in Art History and Criticism in New York City

Independent work, under the supervision of a faculty member, investigating work or works from a particu-

lar style or period in New York City.

Prerequisites: ARH 101, 102; two other ARH courses; permission of sponsor and department
3 credits

ARH 487 Independent Reading and Research in Art

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
0-6 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 experiences 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 and criticism and no more than three credits may count toward the major in studio art.

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 U4 students; permission of instructor and department
0-6 credits, S/U grading

ARH 495 Senior Honors Project in Art History and Criticism

A one-semester project for art history and criticism majors who are candidates for the degree with departmental honors.

Prerequisites: Permission of instructor and department
3 credits

ARS

Studio Art**ARS 154-D Foundations of Drawing**

Fundamentals of drawing using various drawing media and types of paper. Perspective, foreshortening, proportion, anatomy, and basic concepts of drawing are studied. The figure, still life, and landscape are explored as subject matter, and color theory is introduced.

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. Additional hours in Laboratory for Technology in the Arts or Fine Arts SINC site required.

Prerequisite: One 200-level ARS, MUS or THR course
3 credits

ARS 225 Introductory Electronic Media

A survey and hands-on introduction to electronic media. Students are introduced to the practical, conceptual, and historical use of computers and related imaging tools in the visual arts through lecture, labs, readings, and project critiques. This course serves as preparation for further study in electronic media and as an opportunity for students in the arts to gain basic computer literacy. Students will develop strategies for combining images and text. Students will then distribute these works on the web. Emphasis is on the conceptual and artistic potential of the technology. No prior computer experience is required.

Pre- or Corequisite: ARS 154
3 credits

ARS 230 Foundations of Two-Dimensional Design

Introduction to basic design principles and their application on the two-dimensional surface, with investigation into different functions and properties of the formal elements of line, value, texture, shape, space, and their organizational use of basic relational elements (repetition, scale, rhythm). Abstract problems stress graphic and systematic approaches to visual problem solving. Primary media are pencil, charcoal, ink, tempera, and cut paper in black and white.

Prerequisite: ARS 154
3 credits

ARS 255 Introductory Painting

Introductory painting in oils or acrylics. The various media, tools, and techniques of painting and of preparing surfaces for painting are explored. Continues the work of ARS 154 in the traditional areas of landscape, still life, and figure, as well as in perspective, foreshortening, proportion, anatomy, and color theory. One or two field trips to New York City museums and galleries may be required.

Prerequisite: ARS 154
3 credits

ARS 256 Fundamentals of Sculpture

An introduction to sculpture, using a variety of materials and techniques. Specific, sequentially organized projects in carving, construction, modeling, and casting are designed to develop technical skills in conjunction with conceptual information.

Prerequisite: ARS 154
3 credits

ARS 264 Ceramics

Investigation of ceramic ware and ceramic sculpture utilizing a wide variety of 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 154
3 credits

ARS 274 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.

Prerequisite: ARS 154
3 credits

ARS 281 Photography I

An intensive course with extensive practice and experimentation in the aesthetics, techniques, and materials of black-and-white photography. It 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.

Prerequisite: ARS 154
3 credits

ARS 299 Studio Management Workshop

Development of practical skills needed to manage and maintain a studio lab or shop in the art department. Students work under the supervision of a faculty member in an area of interest, such as photography, printmaking, electronic media, or sculpture. May be repeated twice.

Prerequisite: Permission of instructor
1 credit

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. Additional hours in Laboratory for Technology in the Arts or Fine Arts SINC site required. Crosslisted with MUS 317 and THR 317.

Prerequisite: At least one 200- or 300-level ARS, MUS, or THR studio or performance course
3 credits

ARS 325 Theory and Practice of Electronic Media: Print

An examination of the theories and techniques of computer and electronic media through lecture, labs, readings, and project critiques. Digital imaging techniques are combined with layout programs to create image centered works, such as artists' books, individual prints, multiples and installations. Hybrid combinations of digital and traditional photography and printmaking techniques are explored.

Prerequisite: ARS/MUS/THR 208
3 credits

ARS 330 Foundations of Three-Dimensional Design

An introduction to the basics of three-dimensional design concepts and processes. Through studio problems students become familiar with fundamental three-dimensional design concepts, vocabulary, materials, and skills applicable to continued study in a variety of visual and applied disciplines.

Prerequisite: ARS 230
3 credits

ARS 350 Life Drawing and Painting

Drawing and painting of the human figure. May be repeated once.

Prerequisite: ARS 255
3 credits

ARS 351 Painting II: Theory and Practice

Painting and drawing studio: practice and theory stressing exploration of media and crafts, historical styles, and individual development.

Prerequisites: ARH 102 and ARS 255
3 credits

ARS 352 Painting III: Theory and Practice

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
3 credits

ARS 359 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 255 and ARH 102
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.

Prerequisites: ARS 264 and ARH 102
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.

Prerequisites: ARS 256 and ARH 102
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.

Prerequisites: ARS 256 and ARH 102
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.

Prerequisite: ARS 274
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.

Prerequisite: ARS 154
Advisory Prerequisite: ARS 274
3 credits

ARS 381 Photography II

An advanced course in the theory and practice of black-and-white photography using 35mm 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.

Prerequisite: ARS 281
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: U3 or U4 standing; ARS/MUS/THR 208; permission of instructor after interview and review of portfolio
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 and 352; ARH 342
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 and ARH 342
3 credits

ARS 466 Advanced Theory and Practice of Sculpture: Modeling, Carving, and Casting

A course in advanced sculpture using 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 and ARH 342
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. May be repeated once.

Prerequisite: ARS 374
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. May be repeated once.

Prerequisite: ARS 375
3 credits

ARS 475, 476 Undergraduate Teaching Practicum I, II

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. In ARS 476, students assume greater responsibility in such areas as assisting in demonstrations and critiques, only under direct supervision of the instructor.

Prerequisites: to ARS 475: Studio art major; preferably U4 standing; sponsorship of an instructor; permission of department

Prerequisites: to ARS 476: ARS 475; permission of department
3 credits per course; S/U grading

ARS 481 Photography III

Black-and-white photography stressing the theory and practice of 35 mm and medium-format equipment as an artistic tool for individual expression and communication. Emphasis is on the production of prints of outstanding quality and presentation through varied assignments (landscapes, abstracts, portraits, etc.) and equipment. Students must supply their own 35 mm camera equipment. Estimated cost of supplies is \$300.

Prerequisites: ARS 381; permission of instructor after interview and review of portfolio
3 credits

ARS 482 Photography IV

Black-and-white photography stressing the theory and practice of communicative skills and presentation aimed at enabling serious photographic students to follow and develop their personal photographic and subject interests. Students work on several photographic essays throughout the semester. Students must provide their own 35mm equipment. Estimated cost of supplies is \$300.

Prerequisites: ARS 381; permission of instructor after interview and review of portfolio
3 credits

ARS 487 Advanced Directed Projects in Studio Theory and Practice

Advanced independent projects for outstanding stu-

dents under the supervision of a faculty member. May be repeated once.

Prerequisites: Advanced status in one of the studio areas; sponsorship of a faculty member; permission of department
0-6 credits

ARS 488 Internship

Prerequisites: U3 or U4 standing; 15 credits in art department courses; permission of department
0-6 credits, S/U grading

ARS 491, 492 Special Topics in Studio/ Theory and Practice

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of department
3 credits per course

ARS 495 Senior Honors Project in Studio Art

A one-semester project for studio art majors who are candidates for the degree with departmental honors.

Prerequisites: Permission of instructor and department
3 credits

AST

Astronomy

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.

3 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. Not for credit in addition to GEO 106.

3 credits

AST 112 Astronomy Laboratory

An introduction to observational activities in astronomy. Students make astronomical measurements using simple instruments such as a quadrant, cross-staff, spectrometer, and telescope; analyze measurements; examine how quantities of interest and their errors are derived from the measurements and how they are properly reported. Not for credit in addition to AST 111.

Pre- or Corequisite: AST 101 or 105 or 248
1 credit

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
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
3 credits

AST 287 Introductory Research in Astronomy

Independent research under the supervision of a faculty member, at a level appropriate for lower-division students.

Prerequisites: Permission of instructor and departmental research coordinator.

Advisory Prerequisites: U1 or U2 standing; one AST course
0-3 credits

AST 301-H Collisions in the Solar System

A discussion of the evidence that comet and asteroid impacts have played a significant part in the evolution of the Earth, and other planets of the solar system, as well as an assessment of the actual and perceived hazard posed by terrestrial impacts and discussion of what can be done about it. The course follows an interdisciplinary approach and is not for major credit.

Prerequisites: Any two of the following: AST 101 or 105 or 248; MAT 125 or 131 or 141 or AMS 151; PHY 121/123 or 125 or 131 or 141
3 credits

AST 341 Stars and Radiation

An introduction to, and development of, a firm physical understanding of the observed properties of stars. Topics include the structure of the interior and atmosphere of stars, the transfer of energy by radiation in plasmas, the evolution of stars, and the end stages of stellar evolution, including white dwarfs, neutron stars, black holes and supernovae, with careful attention to the comparison of the predictions with observations.

Prerequisites: AST 203; PHY 251/252; MAT 203 or 205 or 211 or AMS 261

Corequisite: PHY 306
3 credits

AST 342 The Interstellar Medium

Examination of the processes that govern the gas and dust in our galaxy and how we study it; gas dynamics and radiative processes, phases of the interstellar medium, star and planet formation, explosive phenomena.

Prerequisites: AST 203; PHY 251/252; MAT 203 or 205 or 211 or AMS 261

Corequisite: PHY 306
3 credits

AST 343 Galaxies

An introduction to the properties of galaxies, including the Milky Way and others. Observational information is presented from a physical point of view. Theoretical discussion emphasizes well-established concepts. Consideration of active galactic nuclei and quasars, the probable sites of massive black holes.

Prerequisites: AST 203; PHY 251/252; MAT 203 or 205 or 211 or AMS 261

Corequisite: PHY 306
3 credits

AST 344 Cosmology

An introduction to physical cosmology: observations bearing on the Big Bang, Hubble expansion, extragalactical distance scale, light element abundances, and quasar absorption lines. Interpretation using various theoretical results from general relativity, gravitational instability, and nucleosynthesis.

Prerequisites: AST 203; PHY 251/252; MAT 203 or 205 or 211 or AMS 261

Corequisite: PHY 306
3 credits

AST 345 Undergraduate Research in Astronomy

Student participation in faculty-directed research projects.

Prerequisite: Permission of instructor
0-1 credit

AST 443 Observational Techniques in Optical Astronomy

An introduction to modern astronomical instrumentation and data handling and to the use of telescopes. Emphasis on techniques and equipment appropriate for wavelengths shorter than one micron. Extensive laboratory and observing exercises are required.

Prerequisite: AST 341 or PHY 301
4 credits

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; U4 standing
1-3 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.

Prerequisite: U4 standing; permission of instructor
3 credits, S/U grading

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.

Prerequisite: Permission of instructor
0-6 credits

ATM

Atmospheric and Oceanic Sciences

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.

3 credits

ATM 205-E Introduction to Atmospheric Sciences

A study of the nature and causes of atmospheric phenomena, along with basic physical and chemical processes and energetics. Topics include composition and structure of the atmosphere, atmospheric thermodynamics, hydrostatics, solar and terrestrial radiation, cloud and precipitation processes, elementary dynamics, atmospheric wind and pressure patterns, and severe storms.

Prerequisite: PHY 119 or 121/123 or 126 or 131 or 141; MAT 125 or 131 or 141 or AMS 151
3 credits

ATM 237-H Current Topics in World Climate and Atmosphere

An exploration of current concerns about the green-

house 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
3 credits

ATM 247 Atmospheric Structure and Analysis

Real-world applications of basic dynamical principles to develop a physical understanding of various weather phenomena. Topics include the hypsometric equation, structure and evolution of extratropical cyclones, fronts, hurricanes, and convective systems, surface and upper air analysis techniques, radar and satellite interpretation, and introduction to operational products and forecasting. Two hours of lecture and one two-and-one-half hour laboratory per week. Laboratories include weather discussions and case study analysis.

Prerequisite: ATM 205
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.

Prerequisite: MAT 125 or 131 or 141 or AMS 151; CHE 131 or 141

Advisory Prerequisite: One of the following: PHY 119, 132, 142, or 127
3 credits

ATM 345 Atmospheric Thermodynamics and Dynamics

A quantitative introduction to the thermodynamical and dynamical processes of Earth's atmosphere. Topics include moist and dry thermodynamical processes, hydrostatic stability, external forces of atmospheric motion, equations of atmospheric motions on a rotating planet, coordinate transformations, and horizontal motions under balanced forces.

Prerequisite: MAT 203 or 205 or AMS 261; MEC 111; PHY 126/127 or 132 or 142
3 credits

ATM 346 Advanced Atmospheric Dynamics

Advanced concepts of mid-latitude and tropical atmospheric motions, wave dynamics, and numerical methods. Topics include circulation and vorticity, turbulence and boundary-layer structure, quasi-geostrophic theory, large-scale and buoyancy-driven waves, baroclinic instability and energetics, equatorial wave theory, and barotropic and primitive equation models.

Prerequisite: ATM 345; MAT 303 or AMS 361
3 credits

ATM 347 Advanced Synoptic Meteorology and Weather Forecasting

The application of dynamical and physical meteorology to the analysis and prediction of the atmosphere. Topics include application of numerical and statistical models, diagnosis of vertical motion, development of midlatitude synoptic systems, mesoscale phenomena associated with cyclones, convective systems, and radar applications. Laboratories include extensive practice in forecasting and diagnosis of synoptic and convective systems.

Prerequisite: ATM 346 and 348
3 credits

ATM 348 Atmospheric Physics

The application of the laws of physics to a variety of atmospheric phenomena and processes. Topics include cloud and precipitation processes with emphasis on the microphysics, atmospheric electricity, solar

and terrestrial radiation, photochemical processes, and boundary layer heat and mass transfer.

Prerequisite: ATM 345 and PHY 251
3 credits

ATM 397 Air Pollution and Its Control

A detailed introduction to the causes, effects, and control of air pollution. The pollutants discussed include carbon monoxide, sulfur oxides, nitrogen oxides, ozone, hydrocarbons, and particulate matter. The emissions of these gases from natural and industrial sources and the principles used for controlling the latter are described. The chemical and physical transformations of the pollutants in the atmosphere are investigated and the phenomena of urban smog and acid rain are discussed.

Prerequisite: PHY 119 or 132 or 142 or PHY 126, 127; CHE 131 or 141 or 198; MAT 125 or 131 or 141 or AMS 151; U3 or U4 standing

3 credits

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
1-3 credits

ATM 487 Senior Research in Atmospheric Sciences

Under the supervision of a faculty member, a student majoring in atmospheric and oceanic sciences 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
0-6 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.

Prerequisite: ATM 347; permission of instructor and department
0-6 credits, S/U grading

BCP

Pharmacology

BCP 394-H Environmental Toxicology and Public Health

Principles of toxicology are presented and problems associated with major classes of toxic chemicals to human and environmental health are examined. Case studies dealing with current waste management issues are also discussed. May not be taken for credit in addition to MAR 336. Crosslisted with MAR 394.

Prerequisite: BIO 201; CHE 131
3 credits

BCP 400 Writing in Pharmacology

See requirements for the major in pharmacology, upper-division writing requirement.

Prerequisite: Pharmacology major; U3 or U4 standing; permission of instructor
0 credits, S/U grading

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 3.00 or higher in these courses and their prerequisites.

Corequisite for pharmacology majors: BCP 403
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; minimum of B- in BCP 401

Corequisite: BCP 404
3 credits

BCP 403 Principles of Pharmacology Laboratory

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. The use of computer software for data collection and analysis.

Prerequisite: Permission of instructor
Corequisite: BCP 401

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; permission of instructor

Corequisite: BCP 402
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. One hour Journal Club/Discussion followed by one hour seminar. May be repeated.

Prerequisites: BIO 202 and 203; CHE 322; a g.p.a. of 3.00 in these courses and their prerequisites

2 credits

BCP 475 Undergraduate Teaching Practicum in Pharmacology

Prerequisites: Pharmacology major; U4 standing; permission of department

3 credits, S/U grading

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 BH 396, 398, and 399. May be repeated.

Prerequisites: BIO 202 and 203; CHE 322 and 327; a g.p.a. of 3.00 in these courses and their prerequisites; permission of instructor and department.

0-6 credits

BCP 488 Internship

Research participation in off-campus laboratories, the pharmaceutical industry, and other academic and public agencies. Repeatable up to 12 credits.

Prerequisites: BIO 361; CHE 322; g.p.a. of 3.00 or higher in these courses and their prerequisites; permission of department

0-6 credits, S/U grading

BIO

Biology

BIO 101-E, 102-E Biology: A Humanistic Approach I, II

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

3 credits per course

BIO 111-E The Aquatic World

An introduction to the natural history of the animals and plants of the sea, rivers, and lakes, along with a consideration of water-land transitions. Weekly on-campus exhibits which students attend in addition to the regularly scheduled classtime. Not for major credit.

Prerequisite: High school biology

3 credits

BIO 113-E General Ecology

A survey of the principles of ecology in the context of finding solutions to local, national, and global environmental problems. Not for major credit.

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 introduced 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.

Advisory Prerequisite: One biology course

3 credits

BIO 150-E The Living World

An exploration of life from organisms to molecules. The connections between biodiversity, molecules, and evolution are examined. Recitations/laboratories familiarize students with the tools, models, and concepts of modern biology. Two hours of lecture and one one-and-a-half hour recitation/laboratory per week.

Prerequisites: High school biology and chemistry; satisfaction of entry skill in mathematics requirement.

3 credits

BIO 201-E Fundamentals of Biology: Organisms to Ecosystems

An introduction to the major groups of living organisms. Structure, functions, the ecological roles of organisms in communities and ecosystems, and their

evolutionary history are covered. Genetics and demography are discussed in the context of evolution by natural selection. Three hours of lecture and one three-hour laboratory per week.

Prerequisite: BIO 150

4 credits

BIO 202-E Fundamentals of Biology: Molecular and Cellular Biology

The fundamentals of cell biology, biochemistry, and genetics. The biochemical and molecular bases of cell structure, energy metabolism, gene regulation, heredity, and development in living organisms from bacteria to man are discussed. Three hours of lecture and one three-hour laboratory per week.

Prerequisite: BIO 150

Pre- or Corequisites: CHE 121 or 131 or 141; MAT 125 or higher; or AMS 151

4 credits

BIO 203-E Fundamentals of Biology: Cellular and Organ Physiology

The fundamentals of cell and organ physiology in mammalian and non-mammalian organisms. The structure and function of cell membranes and the physiology of cell to cell signaling, cellular respiration, and homeostasis of organs and organisms are examined with an emphasis on the comparative physiology of vertebrates and invertebrates. Three hours of lecture and one three-hour laboratory per week.

Prerequisite: BIO 150

Pre- or Corequisite: CHE 121 or 131 or 141; MAT 125 or higher; or AMS 151

4 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.

Prerequisite: High school chemistry or CHE 121; BIO 101 or 150

3 credits

BIO 210-E Human Physiology

The basic principles of human physiology. The subject matter covered includes presentations on the anatomical organization and physiological functions of central and peripheral nervous systems; skeletal and smooth muscle; cardiovascular, respiratory, and renal systems; and endocrine and reproductive systems. The course is designed for pre-nursing students. May not be taken for credit by biology majors. Three hours of lecture, one hour recitation, and one three-hour laboratory per week. Not for credit in addition to BIO 203.

Prerequisite: BIO 150

Advisory Prerequisite: ANP 300

5 credits

BIO 300-H Biology of Human Reproduction

The chromosomal, genetic, hormonal, and molecular basis of human sex determination; the embryology of gonadal and genital formation; the formation of chimeras, hermaphrodites, and pseudohermaphrodites; controversies on the biological role in gender differences, homosexuality, and transsexualism; sexually transmitted diseases; history of sex perception by society. Not for major credit.

Prerequisites: BIO 101, 102 or BIO 202, 203

3 credits

BIO 302 Human Genetics

An introduction to human genetics. Topics include the principles of inheritance, physical properties of DNA and proteins, molecular techniques for studying DNA, the genetic basis of mutations, using DNA to study ancient human history and human evolution, forensic applications of DNA fingerprinting, and the genetic basis of immunity and cancer. Human genetic diseases are discussed and an introduction is given to human chromosome maps, the Human Genome

Project, and methods for mapping disease mutations.

Prerequisites: BIO 201 and 202

3 credits

BIO 307 Computer Modeling of Biological Systems

Tools for visualizing and modeling biological systems. Tools include graphics programs, spreadsheets, software for modeling dynamical systems, and instruments for real-time data collection and data analysis including image acquisition and analysis. Study of models of population growth, ecology, the neuron, and other biological systems.

Prerequisites: BIO 201 or 202 or 203; CHE 132; MAT 125 or higher; or AMS 151

3 credits

BIO 310 Cell Biology

The cell is studied as the unit of structure, biochemical activity, genetic control, and differentiation. The principles of biochemistry and genetics are applied to an understanding of nutrition, growth, and development.

Prerequisites: C or higher in BIO 202 and 203; CHE 321 or 331

3 credits

BIO 311 Techniques in Molecular and Cellular Biology

Techniques used in recombinant DNA and cell biology research. Topics include DNA manipulation and analysis, protein expression and analysis, and advance microscopy.

Prerequisites: CHE 132 or 142; BIO 202 and 203; MAT 125 or higher; or AMS 151; permission of instructor

3 credits

BIO 314 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 chrono-pharmacology and chronotherapy; and cellular clocks in development and aging.

Prerequisite: BIO 310 or 325 or 361 or 374

3 credits

BIO 315 Microbiology

The organization, structure, energetics, and reproduction of microorganisms. Interactions of bacteria and viruses are discussed.

Prerequisites: BIO 201 and 202; CHE 322

3 credits

BIO 317 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 202 and 203

3 credits

BIO 320 General Genetics

An advanced 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 202 and 203

Pre- or Corequisite: CHE 131 or 141

3 credits

BIO 325 Animal Development

An overview of animal embryonic development, emphasizing molecular mechanisms regulating

embryonic growth and differentiation. General areas to be discussed include: molecular basis of human birth defects, cloning, identification of developmental genes, establishing polarity in *Drosophila* and vertebrates, regulation of cell differentiation, morphogenesis and organ development, development of cancer. Not for credit after discontinued BIO 321.

Prerequisite: C or higher in BIO 202

3 credits

BIO 327 Developmental Genetics Laboratory

Exploration of the fundamental concepts in developmental biology and genetics through a combination of classical and modern molecular genetic approaches. Experiments are conducted using *Xenopus* and *Drosophila*, two important animal models for research in developmental biology and genetics. Students gain hands-on experience with the approaches used to investigate processes that control embryonic development on these two model systems, including the use of modern molecular methods for examining the regulation of gene expression during development. Exposure to the genetic approaches that are available in the *Drosophila* system will include participation in a genetic screen for new mutations.

Prerequisite: BIO 325

Pre- or corequisite: BIO 320

3 credits

BIO 328 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.

Prerequisite: BIO 203

Advisory Prerequisite: CHE 131 or 141

3 credits

BIO 334 Principles of Neurobiology

The ionic basis of nerve potentials, the physiology of synapses, sense organs and effectors, and the integrative action of the nervous system are discussed.

Prerequisites: BIO 203; CHE 131 or 141

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

3 credits

BIO 340 Zoology

Aspects of the natural history, morphology, and evolution of protozoans, multicellular invertebrates, and vertebrates. Three hours of lecture and one three-hour laboratory per week. Not for credit after BIO 343 or 344 or 346 if passed with C or higher.

Prerequisite: BIO 111 or MAR 104 or BIO 201

4 credits

BIO 341 Plant Diversity

An introduction to the study of plants, especially green plants, including the origin and evolution of land plants. Topics include cellular structure and function, photosynthesis and respiration, gross anatomy, taxonomy and the diversity of organisms, plant ecology, agriculture. Three hours of lecture and one three-hour laboratory per week.

Prerequisites: BIO 201 and 203

4 credits

BIO 343 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. Not for credit after BIO 340 or 344 or 346 if passed with C or higher.

Prerequisite: BIO 201 or MAR 104

4 credits

BIO 344 Chordate Zoology

An introduction to the diversity, comparative and functional morphology, natural history, and evolution of chordates, with interest centered on the modern fauna. Three hours of lecture or discussion and one three-hour laboratory per week. Not for credit after BIO 340 or 343 or 346 if passed with C or higher.

Prerequisite: BIO 201

4 credits

BIO 346 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 after BIO 340 or 343 or 344 if passed with C or higher.

Prerequisite: BIO 201 or MAR 104

4 credits

BIO 349 Biodiversity and Evolution in the Fossil Record

An examination of biodiversity as preserved in the fossil record and how it contributes to the understanding of evolution. Species examined include invertebrates, plants, dinosaurs, and mammals and the ultimate origin and evolution of humans. Principles of evolution, paleontology, phylogeny reconstruction, and conservation are discussed. Crosslisted with HBA 349.

Prerequisite: BIO 201

Advisory Prerequisite: BIO 202 or 203

3 credits

BIO 350-H Darwinian Medicine

Evolutionary mechanisms are presented as background to interpret the ultimate causes of degenerative and infectious diseases and their symptoms. The evolution of human resistance to infection by pathogens, evolution of pathogens in response to natural and technological defenses, and the ecological context of several medically important phenomena are discussed. Evolutionary phenomena are treated from molecular, organismal, populational, and ecological levels.

Prerequisites: BIO 201 and 202

3 credits

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 201; completion of biology major's mathematics requirement or permission of instructor

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 Corequisites: BIO 351; permission of instructor

3 credits

BIO 353 Marine Ecology

A survey of biotic responses to ecological challenges in different marine realms. Controls of diversity and trophic structure in the marine ecosystem, historical aspects of marine realms, productivity in the oceans, plankton, soft-bottom communities, intertidal habitats, coral reefs, deep-sea environments, and effects of pollution in the ocean are discussed. Crosslisted with GEO 353.

Prerequisite: BIO 201 or MAR 104
Advisory Prerequisite: BIO 343
3 credits

BIO 354 Evolution

A detailed discussion of the mechanisms of evolution, focusing on the ways in which genetic changes in populations lead to adaptation, speciation, and historical patterns of evolutionary change.

Prerequisite: BIO 201, 202 or BIO 320
3 credits

BIO 356 Applied Ecology and Conservation Biology Laboratory

A computer laboratory course introducing students to ecological risk analysis and conservation biology. Laboratories are based on interactive software. Computer simulation techniques for addressing problems in applied ecology are emphasized.

Prerequisites: MAT 126 or higher; BIO 201 or 202 or 203
2 credits

BIO 358-H Biology and Human Social and Sexual Behavior

Major features of human social and sexual behavior are examined from a biological perspective. Insights from ethology, evolutionary biology, and neurobiology are synthesized into a picture of human nature and behavior. Implications of this picture for human sexual and social behavior are considered.

Prerequisites: U3 or U4 standing; one of the following: BIO 101, 201, 202, or 203
3 credits

BIO 359 Behavioral Ecology

A consideration of the patterns of animal behavior in relation to ecological circumstances and evolutionary history. Vertebrate examples are emphasized.

Prerequisites: BIO 201 and 203
3 credits

BIO 361, 362 Biochemistry I, II

Biochemistry I surveys the major chemical constituents of the cell, including carbohydrates, lipids, and proteins. Emphasis is on enzyme structure, enzyme kinetics, reaction mechanisms, and metabolic pathways. Biochemistry II treats nucleic acid structure, replication, and transcription, both *in vivo* and *in vitro*. The machinery of protein synthesis is also covered, including amino acid activation; transfer RNA; ribosomes; the genetic code; and peptide chain initiation, elongation, and termination.

Prerequisites: to BIO 361: C or higher in BIO 202; CHE 322 or 332
Prerequisite: to BIO 362: C or higher in BIO 361
3 credits per course

BIO 365 Biochemistry Laboratory

A series of laboratory experiments and discussions designed particularly to complement BIO 361 and 362. This laboratory covers such topics as enzyme kinetics, spectrophotometry, recombinant DNA technology, the polymerase chain reaction and genotyping, cellular extraction of DNA, RNA, and proteins, and analytical biochemistry. Four hours of laboratory and discussion per week.

Pre- or Corequisite: BIO 310 or 361
2 credits

BIO 374 Molecular Neurobiology

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.

Prerequisites: BIO 202 and 203
Advisory Prerequisite: BIO 310 or 328 or 334 or 361
3 credits

BIO 379 Developmental Neurobiology

An introduction to the development of the nervous system. General areas to be discussed include neuroembryology, neuronal differentiation, synapse formation, neurotrophic interactions, and specificity and plasticity of neuronal connections.

Prerequisites: BIO 202 and 203
Advisory Prerequisite: BIO 310 or 334 or 361
3 credits

BIO 380 Entomology

A survey of the anatomy, development, classification, biogeography, physiology, ecology, and evolution of the insects. The laboratory stresses a knowledge of insect diversity and morphology. Three hours of lecture and three hours of laboratory per week.

Prerequisites: BIO 201 and 202
4 credits

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.

Prerequisite: BIO 201
Advisory Prerequisite: BIO 351
3 credits

BIO 386-H Ecosystem Ecology in a Changing World

Ecosystem ecology with an emphasis on biogeochemical cycling and biosphere-atmosphere interactions. The course focuses on terrestrial ecosystems and their roles in earth system processes such as climate and atmospheric composition.

Prerequisite: BIO 201
Pre- or Corequisite: MAT 125 or AMS 151
Advisory Prerequisite: MAR 104
3 credits

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. Semester supplements to this *Bulletin* contain topic descriptions when course the is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
2-3 credits per course

BIO 407 Colloquium in Ecology and Evolution for Biology Majors

Students attend the weekly departmental colloquia in ecology and evolution. The content of each session is discussed during a separate class meeting. Conducted as a seminar.

Prerequisites: BIO 201, 202 and 203; at least one course from biology major areas 4 or 5 with grades of B or higher; CHE 132; U3 standing as a biology major
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. Semester supplements to this *Bulletin* contain topic descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Changes with topic
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.

Prerequisites: to BIO 444, 446, and 449: Written permission of instructor and undergraduate studies committee
Prerequisites: to BIO 447: Permission of instructor and Department of Biochemistry and Cell Biology
1-2 credits per course; S/U grading

BIO 475, 476 Undergraduate Teaching Practicum in College Biology I, II

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. Students may not serve as teaching assistants in the same course twice.

Prerequisites: to BIO 475: Permission of instructor and undergraduate studies committee
Prerequisites: to BIO 476: BIO 475; permission of instructor and undergraduate studies committee
2-3 credits per course; S/U grading

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 four credits of research may be used for biology major requirements. Limit of one topic per semester.

Prerequisites: to BIO 484, 486, and 489: Written permission of instructor and undergraduate studies committee. Request for approval of the undergraduate studies committee must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar.

Prerequisites: to BIO 487: Permission of instructor and Department of Biochemistry and Cell Biology
0-6 credits per course; S/U grading

BIO 488 Internship in Biological Sciences

May be repeated. Not for biology major credit.

Prerequisites: BIO 201, 202, 203; CHE 132; permission of faculty sponsor and biology internship committee
0-6 credits per course; S/U grading

BNG

Bioengineering

BNG 201-H Bioengineering and Society

How engineers interact with others in the development of solutions to societal problems, with emphasis on engineering problems arising in the biological realm. In-depth evaluations of both successful and unsuccessful technologies illuminate the role of bioengineers in supporting the well-being of urban and rural populations throughout the world, through developments in medical engineering, biotechnology, environmental engineering, and ergonomic design.

Prerequisite: One D.E.C. category E course
3 credits

BNG 301 Problem-Solving in Bioelectricity

Introduces the importance of electricity and magnetism in biological systems from the atomic level to the global level. The intermediate levels of cell, tissue, and organism are explored in depth to provide both an overview of accepted scientific understanding of the influence of electric and magnetic fields on biology, as well as controversial topics and theories. Emphasis on the bioengineering of physiological electromagnetic detectors (both plant and animal) and the consequences (both beneficial and harmful) of natural and man-made electromagnetic fields on biological tissues.

Prerequisites: MAT 125; BIO 201 or 202 or 203; BNG 201

3 credits

BNG 303 Engineering Methods in Biomechanics

Illuminates the principles of mechanics and dynamics that apply to living organisms, from cells to humans to Sequoia trees. The behavior of organisms is examined to observe how they are constrained by the physical properties of biological materials. Locomotion strategies (or the lack thereof) are investigated for the forces and range of motions required and energy expenditures. Includes the relationship between form and function to illustrate how form dominates behavior. Presents the physiological effects of mechanical stresses on organs, pathologies that develop from abnormal stress, and how biological growth and adaptation arise as a natural response to the mechanics of living.

Prerequisites: MAT 125; BIO 201 or 202 or 203; BNG 201

3 credits

BNG 304 Genetic Engineering

Introduction to production engineering with specific focus on the production of genetically engineered products. How cost, time, efficiency, and quality influence the selection of production techniques. Structure and function of DNA and the flow of genetic information. The methodology involved in recombinant DNA technology and the application of these technologies to cloning and genetic modification of plants and animals, production of pharmaceuticals, and gene therapy.

Prerequisite: BNG 201

3 credits

BNG 309 Laboratory Methods in Bioengineering

Introduction to data collection and analysis in the context of biophysical measurements commonly used by bioengineers. Statistical measures, hypothesis testing, linear regression, and analysis of variance are introduced in an application-oriented manner. Data collection methods using various instruments, A/D boards, and PCs as well as LabView™, a powerful data collection computer package.

Prerequisites: MAT 125; BIO 201 or 202 or 203; BNG 201

Corequisite: BNG 301 or 303 or permission of instructor

3 credits

BNG 401 Design in Bioengineering

Through review of innovative solutions to a variety of engineering problems solved by nature, the importance of identifying assumptions and constructing design solutions from experience obtained in disparate fields is emphasized. Includes current problems in biotechnology, environmental studies, and medicine. Design solutions are undertaken by students in group projects using engineering techniques.

Prerequisites: Two from BNG 301, 302, 303

3 credits

BNG 499 Research in Bioengineering

Independent research project with faculty supervision.

Prerequisites: B average in all science courses; permission of instructor and department.

0-3 credits

BUS

Business Management

BUS 110 Business in the 21st Century

Introduces students to major business thinkers and actors who have influenced today's business practices. Explores contributions over the last century from Henry Ford to Bill Gates, showing how the Industrial Revolution became the information revolution. Provides knowledge of how business works and a perspective on its evolution into the next millennium while preparing the student for advanced business courses.

3 credits

BUS 210 Financial Accounting (formerly BUS 114)

Introduction to basic accounting fundamentals. Includes the recording, summarization, and adjusting of financial transactions and the basic accounting cycle. Explores the preparation and presentation of the basic financial statements; income statement, retained earnings statement, balance sheet and the statement of cash flows. Includes accounting principles and concepts, asset, and liability valuation.

Prerequisite: BUS 110

3 credits

BUS 214 Managerial Accounting

A study of cost concepts, theories, and the implementation and evaluation of an accounting system as a source of information for decision making, planning, control, and evaluation of the organization by management. Includes cost-volume-profit analysis, overhead rates, budgeting and variance analysis, statement of cash flows, and financial statement ratio analysis.

Prerequisites: BUS 110; BUS 210

3 credits

BUS 249 Management Science (formerly BUS 349)

Emphasizes the development of mathematical models for solving management problems in business and the interpretation of computer-generated solutions. Topics include linear and integer programming, networks, forecasting, decision analysis, and multi-criteria decision making. Not for credit in addition to ECO 348.

Prerequisites: BUS 110; AMS 102; MAT 122 or 123 or a score of level 4 or higher on the mathematics placement examination

3 credits

BUS 310 Intermediate Accounting

Expands upon the basic financial accounting framework and explores the theoretical and analytical applications of Generally Accepted Accounting Principles (GAAP) in a business environment. Emphasis on asset and liability valuation, external reporting issues dealing with the presentation and interpretation of financial data, and the measurement of operational performance. The student will gain an understanding of financial reporting criteria and the reliance placed upon financial information by management and external users.

Prerequisites: BUS 110; BUS 214; BUS major

3 credits

BUS 311 Federal Income Taxation

Introduces and explores fundamental income taxation concepts for corporations and partnerships. Basic federal tax rules of the Internal Revenue Code are examined and their interpretation and application in relation to tax reporting entities are discussed. Various tax forms will be prepared and/or analyzed along with tax planning and reporting considerations.

Prerequisites: BUS 110; BUS 310; BUS major.

3 credits

BUS 312 Financial Statement Reporting and Analysis

A review of corporate annual reports and related footnote disclosures from the perspective of the various users of financial statements including management, investors, and creditors. The analysis and assessment of operational business performance, trends, and decision making through the use of financial statements are discussed. Specific review of the income statement, balance sheet, and statement of cash flows, financial ratios, budgeting forecasts, and analysis.

Prerequisites: BUS 110; BUS 310; BUS major

3 credits

BUS 339 The Nonprofit Sector: Institutions, Policy, and Practice

An examination of the legal regulations that define the nonprofit sector, its magnitude, its scope, and policy issues. Explores the effect of government actions on charitable giving, and revenue accumulation in the form of sales, business activity, and fund-raising. Compares labor markets and firms in the nonprofit and for-profit sectors.

Prerequisites: BUS 110; ECO 109; BUS or ECO major

3 credits

BUS 340 Management Information Systems

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: BUS 110; AMS 102; MAT 122 or MAT 123; BUS major or minor or ISE major

3 credits

BUS 341, 342 Special Topics in Management

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits per course

BUS 343 Expert Systems in Business

Examines the technology of expert systems, with special attention to business applications, including manufacturing and service facilities. Included are the history of expert systems; issues in knowledge acquisition, implementation and validation; actual applications in the world of business; hands-on development of a simple expert system.

Prerequisites: BUS 110; BUS 340; BUS or ISE major

3 credits

BUS 344 Decision Support Systems

Focuses on the interrelationship between management information systems and management science. Students apply knowledge from these fields to develop a decision support system. They identify an appropriate business application, build the required information system, and implement the suitable management science methodology. At the end of the course, students demonstrate how their decision support system addresses the stated management problem and describe how their system works.

Prerequisites: BUS 110; BUS 249; BUS 340; BUS major

3 credits

BUS 346 Operations Management

Analysis and design of manufacturing and service systems. Topics include quality management, product and service design, process selection and capacity planning, design of work systems, inventory management, aggregate planning, material requirements planning, and just-in-time systems.

Prerequisites: BUS 110; BUS 249; BUS major or minor or ISE major

3 credits

BUS 347 Business Ethics

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: BUS 110; U3 or U4 standing
3 credits

BUS 348 Principles of Marketing

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.

Prerequisites: BUS 110; AMS 102; MAT 122 or 123; ECO 109; BUS major or minor or ISE major
3 credits

BUS 350 Internet Marketing

Examines two intimately related issues: the impact of E-Commerce on businesses and the use of computer-mediated (Internet) marketing. Students develop an awareness and understanding of relevant issues, advantages and disadvantages, and specific techniques involved in using the Internet as a marketing vehicle. Emphasis on using the Internet as a tool for marketers to increase effectiveness, efficiency and competitiveness of distribution, advertising, brand building, pricing, promotions, new product development, customer service, and market research.

Prerequisites: BUS 110; BUS 340; BUS 348; BUS major
3 credits

BUS 351 Human Resource Management

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.

Prerequisites: BUS 110; U3 or U4 standing
3 credits

BUS 352 Electronic Commerce

Introduction to Internet backbone and security. Business-to-Business (B2B) development and Business-to-Consumer (B2C) marketing.

Prerequisites: BUS 110; BUS 340; BUS 346; BUS 348, BUS major
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 110; BUS 210; BUS 348; BUS major
3 credits

BUS 355 Investment Analysis

The theoretical and empirical study of financial markets. Topics include portfolio selection, asset pricing, market efficiency, evaluation of fixed income securities, options, and futures pricing.

Prerequisites: BUS 110; BUS or ECO or ISE major
3 credits

BUS 356 Financial Engineering

Financial engineering applied to corporations and investments. The financial mathematics of leveraged buyouts, refinancings, and mergers and acquisitions. Modeling and investment analysis of stocks, bonds, commodities, foreign futures, options, and other derivatives. Stochastic differential equations for options pricing. Quadratic optimization and portfolio performance attribution.

Prerequisite: BUS 110
3 credits

BUS 440 International Management

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 110; BUS 249 or ECO 348; BUS 355 or ECO 389; BUS 347 or SOC 381; BUS major or minor or ECO major
3 credits

BUS 441 Business Strategy

Capstone course that builds on tools and concepts introduced in more specialized business courses and on students' general business knowledge. Includes: methods for analysis of forces driving competition; identification of strengths, weaknesses, opportunities, and threats faced by individual corporations; and practical strategies for enabling new or existing firms to compete successfully within an industry. Case studies and in-class situations challenge students to develop skills in handling multidimensional business problems.

Prerequisites: BUS 110, 210, 340, 347, and 351; U3 or U4 standing; BUS major or minor or ECO major or minor
3 credits

BUS 475 Undergraduate Teaching Practicum I

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.

Prerequisites: Grade of A or A- in the course in which the student is to assist and permission of undergraduate program director
3 credits; S/U grading

BUS 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 business management courses. Students are expected to assume greater responsibility 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.

Prerequisites: BUS 475 and permission of undergraduate program director
3 credits; S/U grading

BUS 487 Independent Research

Provides the opportunity for students to undertake a special independent project entailing advanced readings, reports, and discussion, or research on a topic of their own choosing with the guidance of a faculty member. May be repeated.

Prerequisites: Permission of instructor and undergraduate program director
0-3 credits

BUS 488 Internship

Participation in local, state, national, or international

private enterprises, public agencies, or nonprofit institutions.

Prerequisites: BUS major, U4 standing; permission of undergraduate program director
3 credits; S/U grading

CCS

Cinema and Cultural Studies**CCS 101-B Images and Texts: Understanding Culture**

The images and texts of advertising, television, art, writing, film, and performance and how they come to characterize and shape our everyday lives. Using case studies, students learn how to recognize, read, and analyze culture within a particular social, cultural, or political context, touching upon such important issues as race, gender, class, ideology, and censorship.

3 credits

CCS 201 Writing About Culture

The course teaches research methodology, develops critical thinking, and hones argumentative writing skills. A range of cultural artifacts, issues, and approaches are considered along with the ways that various discourses appropriate or critique them. Students gain extensive training in the methods essential to the use of resources and to critical writing.

Prerequisite: Completion of D.E.C. category A
3 credits

CCS 301-G Theorizing Cinema and Culture

Recent trends in critical theory applied to the study of film, television, literature, popular music, and other types of "cultural production." In-depth analyses of specific literary, visual, and musical texts are situated within structures of power among communities, nations, and individuals. Exploration of how identities of locality, gender, ethnicity, race, and class are negotiated through cultural forms.

Prerequisites: Two courses toward the major in cinema and cultural studies
3 credits

CCS 311-G Gender and Genre in Film

Examination of the notion of genre as a category of analysis and its often conflictive relationship to gender in the context of specific genres (the western, film noir, the horror film) and film story. Attention is paid to a particular genre's appeal to men and/or women as well as its relationship to larger social, cultural, and political issues.

Prerequisite: CCS 201 or HUM 201 or 202 or THR 117
3 credits

CCS 401 Senior Seminar in Cinema and Cultural Studies

Intensive study in a specific area of cinema and cultural studies. Possible topics include a film genre, a focused theoretical perspective, and the life and work of an important director or artist. May be repeated as the topic changes.

Prerequisites: U4 standing; CCS major
3 credits

CCS 487 Independent Research

Intensive readings and research on a special topic undertaken with close faculty supervision. May be repeated.

Prerequisites: Permission of instructor and department
0-6 credits

CCS 488 Internship

May be repeated up to a maximum of 6 credits, but only 3 credits may be applied toward the cinema and cultural studies major.

Prerequisite: Permission of program advisor
0-6 credits, S/U grading

CCS 495 Senior Honors Project in Cinema and Cultural Studies

A one-semester project for cinema and cultural studies majors who are candidates for the degree with departmental honors. The project involves completion of an honors thesis or project under the close supervision of an appropriate faculty member and the written and oral presentation of the thesis or presentation of the project to the program faculty colloquium.

Prerequisites: Permission of instructor and undergraduate program director
3 credits

CHE

Chemistry

CHE 108-E The Extraordinary Chemistry of Ordinary Things

An introductory chemistry course for non-science majors. Basic concepts of structure, equilibrium, and reactivity are interspersed with applications to environmental, technological, and biological topics. Lecture demonstrations, lectures, and class discussions. Not for major credit. May not be taken for credit after any other CHE course.

Prerequisite: Level 3 or higher on the mathematics placement examination

Advisory Prerequisite: High school chemistry
3 credits

CHE 112-E Highlights of Organic and Biological Chemistry

A terminal course in fundamental organic and biological chemistry, appropriate for students preparing for admission to nursing and some other undergraduate health professions programs. Not for credit after CHE 321 or 331.

Prerequisite: CHE 121 or 131 or the discontinued CHE 111
3 credits

CHE 121-E Concepts and Methodologies of General Chemistry

Topics selected from both semesters of general chemistry are examined to develop the broad range of skills in information processing, critical thinking, and problem-solving required for successful completion of subsequent courses. Two hours of lecture and two hours of recitation per week.

Prerequisite: Level 2 on the mathematics placement examination and high school chemistry or level 3 on the mathematics placement examination

Corequisite: MAP 103 (for students who score level 2 on the mathematics placement examination) or appropriate MAT course
Advisory Corequisite: CHE 133
4 credits

CHE 131-E, 132-E General Chemistry I, II

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. Three lecture hours and one 80-minute workshop 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.

Prerequisites to CHE 131: High school chemistry or CHE 111 or 121; level 4 on the mathematics placement examination or level 3 and co-registration in MAT 123 or AMS 151

Prerequisite to CHE 132: C or higher in CHE 131; MAT 123 or AMS 151

Pre- or Corequisite to CHE 132: MAT 125 or higher calculus course

4 credits per course

CHE 133, 134 General Chemistry Laboratory I, II

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 121 or 131 or 198

Prerequisites to CHE 134: CHE 133

Pre- or Corequisite to CHE 134: CHE 131 or 132 or 198

1 credit per course

CHE 141-E, 142-E Honors Chemistry I, II

The topics covered in this sequence are similar to those in CHE 131, 132, but draw more on students' previous background in science and mathematics in order to present the material in a more quantitative manner. Recommended for students with strong backgrounds in mathematics and science, especially chemistry and physics. Three lecture hours and one 80-minute workshop 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. Priority given to students in the University's honors programs.

Prerequisite to CHE 141: High school chemistry; level 5 on the mathematics placement examination or co-registration in MAT 125 or higher calculus course; or AMS 151

Prerequisite to CHE 142: C or higher in CHE 141

Pre- or Corequisite to CHE 142: MAT 126 or higher or AMS 161

4 credits per course

CHE 143, 144 Honors Chemistry Laboratory I, II

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. Priority given to students in the University's honors programs.

Corequisite to CHE 143: CHE 141

Prerequisite to CHE 144: CHE 143

Corequisite to CHE 144: CHE 142

1 credit per course

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 PHY 126 and 127; MAT 127 or 132 or 142 or AMS 161

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

1 credit

CHE 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 ESM 221.

Prerequisites: CHE 132 or 142 or 198 and CHE 134 or 144 or 199; ESG 111 or CSE 114 or MEC 111 or MEC 112; MAT 132 or 127 or AMS 161; PHY 126 or 131 or 141

3 credits

CHE 301 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 or AMS 161

Pre- or Corequisite: PHY 121/123 or 125 or 131 or 141

4 credits

CHE 302 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 161

Pre- or Corequisite: PHY 122/124 or 132 or 142 or PHY 126/127

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 or 199

Corequisite: CHE 301

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.

Prerequisite: CHE 303

Corequisite: CHE 302 and 385

Advisory Prerequisite: Knowledge of computer programming

2 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

3 credits

CHE 312 Physical Chemistry (Short Course)

A one-semester treatment of fundamental concepts of physical chemistry, intended primarily for students of the biological sciences desiring an introduction to physical chemistry. Topics include equations of state; classical thermodynamics and its application to chemical equilibrium in reaction systems, multiphase systems, and electrochemical cells; kinetic theory of gases; transport properties; chemical kinetics. May not 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 142 or AMS 161

Pre- or Corequisite: PHY 121/123 or 125 or 131 or 141

3 credits

CHE 321, 322 Organic Chemistry I, II

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
3 credits per course

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. Four laboratory hours and one lecture hour per week. Not for credit in addition to CHE 383.

Prerequisite: CHE 134 or 144

Pre- or Corequisite: CHE 321 or 331

2 credits

CHE 331, 332 Honors Organic Chemistry I, II

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
3 credits per course

CHE 344 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

3 credits

CHE 345 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

Pre- or Corequisite: CHE 301 or 312

3 credits

CHE 346 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 Corequisites: CHE 322 or 332; CHE 301 or 312

3 credits

CHE 351 Quantum Chemistry

Concepts of quantum theory, Schrödinger wave mechanics, and related mathematical techniques illus-

trated by application to systems of chemical bonding, spectroscopy, molecular structure, and molecular collision phenomena.

Prerequisites: CHE 302; MAT 203 or 205

3 credits

CHE 353 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 203 or 205

3 credits

CHE 357 Molecular Structure and Spectroscopy Laboratory

Optical and magnetic resonance spectroscopy are used to investigate the structural, dynamic, and quantum mechanical properties of some basic chemical systems. Emphasis is on the quantitative measurement of molecular parameters and transformations.

Prerequisites: CHE 304 and 383

2 credits

CHE 361 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. Offered in summer only.

Prerequisites: Four semesters of chemistry; PHY 132 or 142 or PHY 126 and 127; MAT 127 or 132 or 142; permission of department through application by January 30

Corequisite: CHE 362

3 credits

CHE 362 Nuclear Chemistry Laboratory

Detection and measurement of radiation, electronic instrumentation, radiation safety, and application of radioactivity to chemical problems. Offered in summer only.

Corequisite: CHE 361

3 credits

CHE 375 Inorganic Chemistry I

A survey of inorganic chemistry covering various classes of inorganic compounds and reactions with emphasis on the structural aspects. Wherever possible, the subject is treated on the basis of modern concepts of chemical bonding. Thermodynamic and kinetic aspects of inorganic reactions are included.

Prerequisites: CHE 302; CHE 321 or 331

3 credits

CHE 376 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

3 credits

CHE 383 Introductory Synthetic and Spectroscopic Laboratory Techniques

Fundamental laboratory techniques including methods of separation, purification, synthesis, and analysis. Emphasis is on organic with an introduction to inorganic problems. For students who require substantial laboratory skills, such as those planning careers in research. Not for credit in addition to CHE 327 or the discontinued CHE 333.

Prerequisite: CHE 134 or 144

Corequisite: CHE 321 or 331

2 credits

CHE 384 Intermediate Synthetic and Spectroscopic Laboratory Techniques

Application of fundamental laboratory techniques to organic and inorganic problems including multistep syntheses and structural and mechanistic determinations. Lectures cover material pertaining to the experimental work, with an emphasis on spectroscopy. Not for credit in addition to the discontinued CHE 334.

Prerequisite: CHE 383

Corequisites: CHE 322 or 332; CHE 385

3 credits

CHE 385 Tools of Chemistry

A seminar course covering topics common to all areas of chemistry: scientific ethics, chemical literature and information retrieval, scientific writing, and oral presentation. Should be taken concurrently with the student's second 300-level chemistry laboratory course. Satisfactory completion of the course fulfills the Department of Chemistry's upper-division writing requirement. A through C/Unsatisfactory grading only.

Corequisite: CHE 304 or 384

1 credit; A-C/U grading

CHE 461 Selected Topics in Chemistry

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.

Prerequisite: Varying with topic

1-3 credits

CHE 475, 476 Undergraduate Teaching Practicum I, II

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. In CHE 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may participate only in courses in which they have excelled.

Prerequisite to CHE 475: Permission of department

Prerequisites to CHE 476: CHE 475; permission of department

3 credits per course; S/U grading

CHE 482 Senior Laboratory Projects in Chemistry

Laboratory projects, some to be chosen by the student, primarily in the areas of organic, inorganic, and biological chemistry. There are opportunities to learn specialized skills useful for professional employment in quality control, research, or development.

Prerequisites: CHE 375, 384, and 385

2 credits

CHE 487 Research in Chemistry

Students pursue research or tutorial study in specialized areas of chemistry. May be repeated.

Prerequisites: Permission of instructor and department

0-6 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.

Prerequisites: CHE 384; permission of instructor and department

0-6 credits, S/U grading

CHE 490 Current Trends in Biological Chemistry

A discussion of current topics of research and methodology in modern biological chemistry. The course includes directed readings, attendance, and

discussion at seminars presented by speakers from various academic and industrial institutions. May be repeated.

Prerequisite: CHE 322 or 332

Pre- or Corequisite: CHE 301 or 312

1 credit

CHE 495-496 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. Students receive only one grade upon completion of the sequence.

Prerequisites: U4 standing; permission of instructor and department

3 credits per course

CHI

Chinese Language

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. CHI 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Chinese in high school (or who has otherwise acquired an equivalent proficiency) may not take CHI 111 without written permission from the supervisor of the course.

Prerequisite to CHI 112: CHI 111

4 credits per course

CHI 211, 212 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 are required to develop writing technique.

Prerequisite to CHI 211: CHI 112

Prerequisite to CHI 212: CHI 211

3 credits per course

CHI 311, 312 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 311: CHI 212

Prerequisite to CHI 312: CHI 311

3 credits per course

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.

Prerequisites: Interview; permission of instructor

3 credits, S/U grading

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: Interview; permission of instructor

0-3 credits

CLS

Classics

CLS 113-B Greek and Latin Literature

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.

3 credits

CLS 215-I Classical Mythology

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.

Advisory Prerequisite: One course in literature

3 credits

CLS 320 Topics in Classical Civilization

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: Two courses in ancient Greek or Latin language, literature, mythology, religion, art, or history

3 credits

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 instructor

1-6 credits

CLT

Comparative Literature

CLT 211-I Literary Survey: Medieval through Late Renaissance

Historical and analytical study of representative works illustrating medieval epic, romance, and lyric. The course also examines the beginnings of humanism through the late Renaissance.

Advisory Prerequisite: One course in literature

3 credits

CLT 212-I Literary Survey: Enlightenment through Modern

Historical and analytical study of literature from the late 17th century, the neoclassical era, the romantic revolution through the 19th century (realism, naturalism, symbolism), leading to the culmination of modernism.

Advisory Prerequisite: One course in literature

3 credits

CLT 220-J Non-Western Literature

A survey of the major themes and forms of non-Western literature, such as Asian, Indian, and African. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.

Advisory Prerequisite: Completion of D.E.C. category A

3 credits

CLT 235-K American Pluralism in Film and Literature

An exploration of the diversity of American history and culture as expressed in literary and cinematic texts from a variety of traditions. Topics may include representations of the immigrant experience in the 19th and 20th centuries, historical accounts of African-American experiences from the post-civil war period to the present, and American history as studied through film genres.

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

CLT 266-G The 20th-Century Novel

A study of major works and developments in the modern and contemporary novel. Crosslisted with EGL 266.

Prerequisite: Completion of D.E.C. category A

3 credits

CLT 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.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in comparative literature

3 credits

CLT 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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 333-G Literary Genres: Novel

Historical and analytical study of the novel form. Works selected from different national literatures and literary movements. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 334-G Other Literary Genres

Historical and analytical study of such literary genres as satire, fable, romance, epistle, saga, allegory, etc. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 335-G The Interdisciplinary Study of Film

An inquiry into the aesthetics, history, and theory of film as it relates to literature but also to disciplines such as art, music, psychology, and cultural history.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: One course in literature; HUM 201 or 202 or THR 117

3 credits

CLT 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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature
3 credits

CLT 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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature
3 credits

CLT 475, 476 Undergraduate Teaching Practicum I, II

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. In CLT 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites to CLT 475: U4 standing; permission of instructor and chairperson

Prerequisites to CLT 476: CLT 475; permission of instructor and chairperson
3 credits per course; S/U grading

CLT 487 Independent Reading and Research

Intensive reading and research on a special topic undertaken with close faculty supervision. May be repeated.

Prerequisites: Permission of instructor and department
0-6 credits

CLT 495 Comparative Literature Honors Project

A one-semester project for comparative literature majors who are candidates for the degree with departmental honors. The project involves independent study under close supervision of an appropriate faculty member, and the written and oral presentation to the department faculty colloquium of an honors thesis.

Prerequisites: Permission of instructor and department
3 credits

CNH**Chinese Studies in Humanities****CNH 461 Senior Seminar in Chinese Studies**

A seminar exploring in depth a single theme in Chinese studies in the humanities, such as Chinese art, literature, etc. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated once as the topic changes.

Prerequisites: U3 or U4 standing; Chinese or Korean or Japanese studies minor; permission of instructor
3 credits

CNH 487 Research in Chinese Studies

Individual research projects in Chinese studies in the humanities, carried out under the direct supervision of a faculty member. May be repeated once.

Prerequisites: Interview; permission of instructor
0-6 credits

CNS**Chinese Studies in Social Sciences****CNS 249-J Chinese Culture and Society: Traditional China**

An introduction to "traditional" China, focusing on various aspects of culture and society prior to the Communist revolution. Concerned with the ethnographic details of everyday life, the course covers issues of space and time, gender and social organization, religion and ritual, philosophy and cosmology, political administration, and economic exchange. By considering how traditions are constructed, altered and popularized, the course offers an alternative to the interpretive approaches based on the imperial state system, Confucian elites, orthodoxy, national culture, and conventional history. Crosslisted with SSI 249.

3 credits

CNS 250-J Chinese Culture and Society: Modern China

Exploration of the changes and continuities in Chinese culture and society across a century of economic upheaval and political turmoil. Drawing on interdisciplinary scholarly studies, autobiographical accounts, government documents, journalist reports, popular fiction, documentary film, and photographs, it surveys major historical developments in 20th-century China, and introduces key concepts and terms employed in the process of creating a modern China. Crosslisted with SSI 250.

3 credits

CNS 379-J Ethnicity and Nation in China

Focusing on the material and social contexts that have shaped perceptions of cultural groups in China, both past and present, the course explores issues of ethnic identification and minority status, civilizing projects and autonomous movements, and notions of race, ethnicity, and nation. Drawing on case studies from the Himalayan plateau, the Central Asian steppes, Taiwan, and diaspora communities, students examine how ecology and livelihood, social organization and exchange, politics and religion influence constructions of identity. Crosslisted with ANT 379.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: CSN 249 or 250 or HIS 219
3 credits

CNS 447 Readings in Chinese Studies

Individually supervised reading in selected topics in Chinese studies in the social and behavioral sciences. May be repeated for different topics.

Prerequisite: Permission of instructor

1-6 credits

CNS 461 Senior Seminar in Chinese Studies

A seminar exploring in depth a single theme in Chinese studies, e.g., ideological and political campaigns, educational policies and practices, foreign trade and tourism, etc. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated once as the topic changes.

Prerequisites: U3 or U4 standing; Chinese or Korean or Japanese studies minor; permission of instructor
3 credits

CNS 487 Research in Chinese Studies

Individual research projects in Chinese studies in social and behavioral sciences, carried out under the direct supervision of a faculty member. May be repeated once.

Prerequisites: Interview; permission of instructor

0-3 credits

CSE**Computer Science****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 (multi-user) 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 EST 100 or after any CSE or ISE course.

Prerequisite: Satisfaction of entry skill in mathematics requirement
3 credits

CSE 103 Introduction to the Internet

The basics of searching the Internet in a laboratory setting, providing students with experience in navigating the World Wide Web for information retrieval. Skills covered include using MOSAIC or NETSCAPE; remote logic with TELNET; accessing databases and international library resources; downloading information from FTP sites; subscribing to LISTSERVS and participating in Usenet Newsgroups. Not for computer science or information systems major credit or for credit in addition to any CSE or ISE course.

1 credit

CSE 110 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 to solve a variety of numeric and nonnumeric problems. May not be taken simultaneously with CSE 114 or MEC 111. Students who have a C or higher in CSE 114 or MEC 111 may not take CSE 110.

Prerequisite: MAT 122 or 123 or level 4 on the mathematics placement examination
3 credits

CSE 113-C Foundations of Computer Science I

A rigorous introduction to the conceptual and mathematical foundations of computer science with special emphasis on recursion and its applications in functional programming as well as reasoning techniques based on propositional logic and mathematical inductions.

Prerequisite: One MAT course that satisfies D.E.C. category C or score of level 4 on the mathematics placement examination

Pre- or Corequisite: AMS 151 or MAT 125 or 131 or 141
3 credits

CSE 114 Computer Science I

An introduction to procedural and object-oriented programming methodology. Topics include program structure, conditional and iterative programming, procedures, arrays and records, object classes, encapsulation, information hiding, inheritance, polymorphism, file I/O, and exceptions. Software debugging and testing techniques are emphasized including an introduction to formal verification methods. Includes required laboratory.

Prerequisite: CSE 113

4 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; U3 or U4 standing
1 credit

CSE 213 Foundations of Computer Science II

A continuation of CSE 113 focusing on the descriptive formalisms relevant to computing, including set theory and its application to quantifiers, relations and graphs, combinatorics, and finite state machines.

Prerequisite: CSE 113
3 credits

CSE 214 Computer Science II

An extension of programming methodology to data storage and manipulation on complex data sets. Topics include: programming and applications of major data structures; stacks, queues, lists, binary trees, heaps, priority queues, balanced trees, and graphs. Recursive programming is heavily utilized. Fundamental sorting and searching algorithms are examined along with informal efficiency comparisons.

Prerequisite: CSE 114
4 credits

CSE 219 Computer Science III

Development of the basic concepts and techniques learned in CSE 114 Computer Science I and CSE 214 Computer Science II into practical programming skills that include a systematic approach to program design, coding, testing, and debugging. Application of these skills to the construction of robust programs of 1000 to 2000 lines of source code. Use of programming environments and tools to aid in the software development process.

Prerequisite: CSE 214
3 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: CSE 114
4 credits

CSE 230 Introduction to C and UNIX

A systematic introduction to the principles and practice of programming in the C language. 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
3 credits

CSE 300 Writing in Computer Science

See Requirements for the Major in Computer Science, Upper-Division Writing Requirement.

Prerequisites: CSE major; U3 or U4 standing
1 credit, S/U grading

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
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
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
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 and AMS 310 (or, for electrical engineering majors, CSE 214 and ESE 306 and 380)

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
3 credits

CSE 308 Software Engineering

Introduces the basic concepts and modern tools and techniques of software engineering. Emphasizes the development of reliable and maintainable software via system 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 factor issues.

Prerequisite: CSE 214
3 credits

CSE 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. Crosslisted with ISE 310.

Prerequisites: CSE 214 and 220
3 credits

CSE 315 Database Transaction Processing Systems

Theory and practice of design for applications involving transactional access to a database. Transaction design, schema design, restart and recovery, journaling, concurrency control, distributed databases.

Student groups perform design and implementation of significant database application. Crosslisted with ISE 315.

Prerequisite: CSE/ISE 305
3 credits

CSE 320 Computer Architecture

Covers the detailed physical implementation techniques for floating-point data path, advanced pipeline control, multi-level memory hierarchy, I/O and disk subsystem, architectural support for operating systems and programming language, and multiprocessor/multicomputer architectures.

Prerequisite: CSE 220
3 credits

CSE 326 Digital Image Processing

Covers digital fundamentals, image transforms, image enhancement, image restoration, image compression, segmentation, representation and description, recognition and interpretation. Crosslisted with ESE 357.

Prerequisites for computer science majors: CSE 214 and 220

Prerequisites for electrical engineering majors: ESE 124 and 305

3 credits

CSE 327 Computer Vision

Introduces fundamental concepts, algorithms, and computational techniques in visual information processing. 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 human visual system from an information processing point of view. Crosslisted with ESE 358.

Prerequisites for computer science majors: CSE 114 and ESE 318

Prerequisites for computer and electrical engineering majors: ESE 271 and 318

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
3 credits

CSE 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 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 ISE 332.

Prerequisites: CSE 114; MAT 211 or AMS 210
3 credits

CSE 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 ISE 333.

Prerequisites: CSE 214; PSY 103 recommended
3 credits

CSE 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 ISE 334.

Prerequisites: CSE or ISE major; U3 or U4 standing
3 credits

CSE 336 Internet Programming

Introduces the design and development of software for Internet commerce. Topics include Extended Markup Language, servlets, cookies, sessions, Internet media types, Web protocols, digital signatures, certificates, encryption, and the wireless Internet. Crosslisted with ISE 336.

Prerequisite: CSE 219
3 credits

CSE 346 Computer Communications

Basic principles of computer communications; performance evaluation of protocols. Protocols covered include those for local, metropolitan, and wide area networks; routing, high speed packet switching, circuit switching, and optical data transport. Crosslisted with ESE 346.

Prerequisite for electrical and computer engineering majors: ESE 306

Prerequisites for computer science majors: CSE 220; AMS 310 or 311
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
3 credits

CSE 355 Computational Geometry

The design and analysis of efficient algorithms to solve geometric problems that arise in computer graphics, robotics, geographical information systems, manufacturing, and optimization. Topics include convex hulls, triangulation, Voronoi diagrams, visibility, intersection, robot motion planning, and arrangements. Crosslisted with AMS 345.

Prerequisites: AMS 301; programming knowledge of C or C++ or Java
3 credits

CSE 364 Advanced Multimedia Techniques

Digital media production techniques for high-bandwidth applications such as electronic magazine illustration, broadcast television, and motion picture special effects. Students explore techniques such as 3D modeling and character animation, video compositing, and high-resolution image processing in a state-of-the-art multimedia computing laboratory. High-capacity multimedia storage, high-speed networks, and new technologies such as DVD, HDTV, and broadband will be reviewed. Crosslisted with ISE 364.

Prerequisites: CSE/ISE 334 and permission of the instructor
3 credits

CSE 366 Introduction to Virtual Reality

An introduction to the practical issues in the design and implementation of virtual environments. Topics covered include the fundamentals of systems requirements, transformations, user-interaction models, human vision models, tracking systems, input/output devices and techniques, and augmented reality. The topics covered are explained through the use of real-

life applications of virtual-reality systems in engineering, science, and medicine.

Prerequisites: CSE 328, CSE/ISE 332, 333
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
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
3 credits

CSE 390 Special Topics in Computer Science

A lecture or seminar course on a current topic in computer science. May be repeated as the topic changes but cannot be used more than twice to satisfy CSE major requirements.

Prerequisites: CSE or ISE major; upper-division standing
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: U4 standing as an undergraduate major within the college; a minimum g.p.a. of 3.00 in all Stony Brook courses and the grade of B in the course in which the student is to assist; or permission of department

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, ESE 499, ESM 499, ISE 487, and MEC 499) may be counted toward engineering technical elective requirements. May not be taken for more than six credits.

Prerequisites: Permission of instructor and department
0-6 credits

CSE 488 Internship in Computer Science

Participation in local, state, national, or international private enterprise, public agencies, or nonprofit institutions. May be repeated up to a limit of 12 credits, but only 3 credits of CSE or ISE 488 may be used as an elective to satisfy CSE or ISE major requirements.

Prerequisites: CSE major, U3 or U4 standing; permission of department
3 credits, S/U grading

CSE 491 Honors Seminar

Designed for upper-division computer science majors who have demonstrated excellence in computer science courses or a special interest in the topic being offered. Each time the course is taught, a topic is selected comprising material not otherwise presented in undergraduate courses. May be repeated as the topic changes.

Prerequisites: Computer science major; U3 or U4 standing; permission of department
3 credits

CSE 495, 496 Senior Honors Research Project I, II

A two-semester research project carried out under the supervision of a computer science faculty member. Students must submit a written project report and make a presentation to the department at the year-end Honors Project Colloquium. Students who enroll in CSE 495 must complete CSE 496 in the subsequent semester and receive only one grade upon completion of the sequence.

Prerequisite for CSE 495: Admission to the Computer Science Honors Program

Prerequisite for CSE 496: CSE 495
3 credits

EAS

Engineering and Applied Sciences

EAS 101 Engineering and Applied Sciences

A course intended to integrate first-semester Stony Brook freshmen into the University community and particularly into the College of Engineering and Applied Sciences. Special emphasis is placed on basic computing skills, internet access, and the programs, laboratories, and library of the college.

1 credit, S/U grading

EAS 201 Oral Communication for Engineers

An examination and application of oral communication in a variety of contexts, including interpersonal, small group, and public speaking. Focuses on the importance of communication in professional life as related to the technical field of engineering. The various roles and functions of speaking in such contexts are the primary aim with emphasis on: communicating with co-workers and supervisors; leadership in task groups problem-solving; writing and presentation of diverse and relevant speeches including informative oral reports and persuasive speeches.

Prerequisite: U3 or U4 CEAS major
3 credits

ECO

Economics

ECO 107-F Introduction to Economic Reasoning

An introduction to basic concepts used in microeconomics (the study of markets) and macroeconomics (the study of national production, employment, and inflation), and international trade. Historical and institutional elements of the U.S. economy are presented.

Prerequisites: WRT 101; MAP 103 or level 3 on the mathematics placement examination
4 credits

ECO 109-F Introduction to Analytical Economics

An exploration of the fundamental concepts of micro and macroeconomics in the context of various economic models. The course stresses the development of problem-solving skills and the use of the personal computer as an analytical tool. No previous knowledge of computers is assumed. Students are expected to have access to the Internet outside of class meeting hours.

Prerequisites: WRT 101; C or higher in MAT 122 or MAT 123 or AMS 151 or level 4 on the mathematics placement examination
4 credits

ECO 303 Intermediate Microeconomic Theory

Analytical study of the behavior of fundamental eco-

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: ECO 107 and 109
4 credits

ECO 305 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: ECO 107 and 109
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
4 credits

ECO 317 Marxist Political Economy

An analysis of capitalism as a social system of production and exchange, based on the economic writings of Karl Marx and others working in that broad tradition. The course begins with study of Marx's philosophical method, dialectical materialism, and applies this method to the historical development of capitalism and the operation of the modern capitalist economy. The course explores connections between economic power and political, cultural, and ethical issues.

Prerequisite: ECO 107 or 109
3 credits

ECO 318 Labor Economics

Analysis of labor demand and supply, wage determination, and collective bargaining. Evaluation of labor legislation and of institutional responses to employment problems are discussed.

Prerequisite: ECO 107 or 109
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. Not for credit in addition to AMS 310.

Prerequisites: ECO 107 and 109
4 credits

ECO 321 Econometrics

The application of mathematical and statistical methods to economic theory. Topics include the concept of an explanatory economic model, multiple regression, hypothesis testing, simultaneous equation models, and estimating techniques. Emphasis is placed on the application of econometric studies.

Prerequisites: ECO 320 or AMS 310 and ECO 107 and 109
4 credits

ECO 326 Industrial Organization

A study of the structure of firms and markets and interactions between them. Price theory, strategic theory and transaction costs analysis are used to illuminate the sources of and limitations on market power of firms. Some empirical evidence, drawn primarily from the U.S. economy, is explored. A brief introduction to antitrust policy and regulatory policy is included.

Prerequisite: ECO 303
3 credits

ECO 334-J Demographic Economics of Developing Countries

Problems related to both economics and demography. In scope, the material deals with both contemporary and historical situations in developing 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
3 credits

ECO 335 Economic Development

An examination of problems and aspects facing developing countries in the transition from traditional, predominantly rural economic systems to modern, largely urban-oriented economies. Theories of economic growth and development are presented in the light of the actual experience of developing countries.

Prerequisite: ECO 305
3 credits

ECO 337 Advanced Labor Theory

Microeconomic theory is used to investigate specific topics in the field of labor economics. Areas to be covered include the household's decision-making process and the supply of labor, investments in human capital and discrimination in the marketplace, the effect of market structure on the demand for labor, and the distribution of income.

Prerequisite: ECO 303
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 107 or 109
Advisory Prerequisite: ECO 305
3 credits

ECO 340-J Japanese Economy

An overview of the Japanese economy from the post World War II period to the present. Topics may include particular industries (e.g., computer and automobile) as well as trade, industrial, and technological policies.

Prerequisite: ECO 107 or 109
3 credits

ECO 341-I European Economic Integration

Analysis of European economic integration since 1945 and its historical antecedents, using the principles of macroeconomics and international trade; analysis of the political reasons for integration and of the institutional infrastructure and major policies of the European Union.

Prerequisite: ECO 107 or 109
3 credits

ECO 343 Transformation in Economic Systems

Analysis of change in economic systems, stressing decision-making, information, and incentive structures, and their roles in the allocation of economic resources with the distribution of income. The course involves case studies of both advanced and less advanced economic systems.

Prerequisite: ECO 107 or 109
3 credits

ECO 345 Law and Economic Issues

An application of economic issues to major fields of law to study their effects on market and non-market behavior. The consequences that laws may have on the realization of efficient outcomes, as well as an

exploration of the legal process from an economic perspective, are emphasized.

Prerequisite: ECO 303
3 credits

ECO 348 Analysis for Managerial Decision Making

Development of analytical techniques (such as linear programming and statistical decision theory) for making economic decisions, both in public and private enterprises. The student makes decisions on large-scale and detailed cases in realistic managerial situations and is introduced to the use of the computer. May not be taken for credit after BUS 249. Not for credit in addition to the discontinued BUS 349.

Prerequisite: ECO 303
4 credits

ECO 351, 352, 353, 354 Special Topics in Economics

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: ECO 107 or 109; at least one other course to be specified when the topic is announced.
3 credits per course

ECO 355 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 AMS 335.

Prerequisite: MAT 126 or 131 or 141 or AMS 151
3 credits

ECO 356, 357 Special Topics in Economics

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: ECO 107 or 109; at least one other course to be specified when the topic is announced.
3 credits per course

ECO 358-J Topics in Developing Economies

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: ECO 303
3 credits

ECO 360 Money and Banking

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

Prerequisite: ECO 107 or 109
3 credits

ECO 373-H Economics of Environment and Natural Resources

Analysis of economic policies designed to deal with environmental problems. Issues involving the management of renewable and exhaustible resources such as timber and oil as well as the advantage of market-based solutions over the conventional demand approach are discussed.

Prerequisite: ECO 303
3 credits

ECO 383 Public Finance

Theories of taxation and the satisfaction of public wants; the nature of public goods; theory of public expenditure; effects of taxes on resource allocation and welfare; theories of tax incidence; fiscal and equity implications of alternative tax schemes; fiscal dynamics and growth; intergovernmental fiscal relations.

Prerequisites: ECO 303 and 305
3 credits

ECO 389 Corporate Finance

Introduction to the main concepts and problems confronted by financial managers in the corporate world. Development and application of tools and methods for financial decision-making and analysis, including: discounting and present value; asset valuation; investment criteria; risk and return; risk management; cost of capital; debt and dividend policies; international financial management.

Prerequisite: ECO 303

Advisory Prerequisite: ECO 305
3 credits

ECO 475, 476 Undergraduate Teaching Practicum I, II

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. In ECO 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites to ECO 475: Permission of instructor and department

Prerequisites to ECO 476: ECO 475; permission of instructor and department
3 credits per course, S/U grading

ECO 487 Independent Research in Economics

An independent project, developed out of advanced coursework in economics, designed in consultation with and supervised by a faculty member. The project should be formulated before the start of the semester in which the research will be done and should culminate in a substantial written paper. May be repeated.

Prerequisites: At least one upper-division ECO course that forms the basis of research; permission of a supervising faculty member
0-6 credits

ECO 488 Internship in Economics

An independent research project undertaken in the context of a work environment that provides students with access to data, people, and experience that make possible the study of a particular economic issue. Related readings, a daily journal, and an analytical paper under the supervision of a faculty member are required. Permission must be obtained before the start of the semester in which the student enrolls in ECO 488. May be repeated up to a limit of 12 credits, but only counts as one course toward major requirements.

Prerequisites: ECO 303 and 305; permission of supervising faculty member, Career Center Internship Manager, and sponsoring employing agency
0-6 credits, S/U grading

EEL

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. EEL 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of the selected language in high school (or who has otherwise acquired an equivalent proficiency) may not take 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

3 credits per course

EGL

English

EGL 191-B Introduction to Poetry

Intensive analysis of poems in English of various periods and types and varying complexity. Descriptions available from Program in Writing and Rhetoric. (Not for English major credit.)

Prerequisite: Completion of D.E.C. category A

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. Descriptions available from Program in Writing and Rhetoric. (Not for English major credit.)

Prerequisite: Completion of D.E.C. category A

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. Descriptions available from Program in Writing and Rhetoric. (Not for English major credit.)

Prerequisite: Completion of D.E.C. category A

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.

Prerequisite: Completion of D.E.C. category A

3 credits

EGL 205-I Survey of British Literature I

The study of British literature from the Old English period to Milton.

Prerequisite: Completion of D.E.C. category A

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: Completion of D.E.C. category A

3 credits

EGL 207-G The English Language

A survey of the history of the English language from its Indo-European roots to the present, with particular emphasis on Old and Middle English, as well as Modern English grammar and usage.

Prerequisite: Completion of D.E.C. category A

3 credits

EGL 217-K American Literature I

The study of American literature from 1607 to 1865 in historical perspective.

Prerequisite: Completion of D.E.C. category A

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

EGL 218-K American Literature II

The study of American literature from 1865 to 1945, with attention to the antebellum historical and cultural contexts.

Prerequisite: Completion of D.E.C. category A

Advisory Prerequisites: Completion of D.E.C. categories I and J

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: Completion of D.E.C. category A

3 credits

EGL 226-K 20th-Century American Literature

A survey of major works reflecting the regional, ethnic, and traditional interests of American writers, with emphasis on the post-1945 period.

Prerequisite: Completion of D.E.C. category A

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

EGL 231-I Saints and Fools

An introduction to literature about the lives of saints and the holy fool tradition in major texts of Russian and English literature. Emphasis is placed on the ways authors have used fundamental religious values of humility, the transcendent irrational, and kenosis to confront their own times. Authors considered include Dickens, Chaucer, Gogol, and Pushkin; films include *Murder in the Cathedral* and *Forrest Gump*. Crosslisted with HUR 231.

Advisory Prerequisite: One D.E.C. category B course

3 credits

EGL 232-I Rebels and Tyrants

An exploration of literary rebels and tyrants central to Russian and Anglo-American traditions. The subversive tactics of such writers as Shakespeare, Dostoevsky, Sir Walter Scott, Solzhenitsyn, and Salinger are appraised in the light of the dominant social, political, and aesthetic systems they confront. Crosslisted with HUR 232.

Advisory Prerequisite: One D.E.C. category B course

3 credits

EGL 243-I Shakespeare: The Major Works

A study of major works in several genres and consideration of Shakespeare's precursors and his influence on the development of drama to the present. Designed for students who want a one-semester survey of Shakespeare.

Prerequisite: Completion of D.E.C. category A

3 credits

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

A detailed look at African-American literature and music and their importance for American literature

and music of the 19th and 20th centuries. An examination of the literature with attention to the special stylistic devices, tones of literary voice, and characterization that writers use in their efforts to match the music experience with the written word. Selections from the recordings of African-American and African-American inspired musicians—from Bessie Smith and Louis Armstrong to Jimi Hendrix and the Rolling Stones. Crosslisted with AFH 249.

Advisory Prerequisites: One D.E.C. category B or D course
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 myths that persist in Western literature.

Prerequisite: Completion of D.E.C. category A
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: Completion of D.E.C. category A
3 credits

EGL 266-G The 20th-Century Novel

Major works and developments in the modern and contemporary novel. Crosslisted with CLT 266.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 274-K Black American Literature

A survey of 19th- and 20th-century Black American literature. Particular attention is paid to the way in which themes of black literature reflect the historical developments of the time, especially the conditions before, during, and after the Civil War and the Civil Rights Movement.

Prerequisite: Completion of D.E.C. category A
Advisory Prerequisites: Completion of D.E.C. categories I and J
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. Crosslisted with WST 276.

Prerequisite: Completion of D.E.C. category A
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; completion of D.E.C. category A
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; completion of D.E.C. category A
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.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 205
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.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 304-G Renaissance Literature in English

The study of English literature of the 16th century.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 205
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.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 308-G The Age of Dryden

The study of English literature of the Restoration period.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 310-G Neoclassical Literature in English

The study of English literature from about 1700 to 1790.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 312-G Romantic Literature in English

The study of English literature from the end of the neoclassical period to the beginning of the Victorian Age, 1798-1832.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 314-G Victorian Literature

Prerequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 316-G Early American Literature

Prerequisite: EGL 204
Advisory Prerequisite: EGL 217
3 credits

EGL 318-G 19th-Century American Literature

Prerequisite: EGL 204
Advisory Prerequisite: EGL 217
3 credits

EGL 320-G Literature of the 20th Century

Prerequisite: EGL 204
Advisory Prerequisite: EGL 218
3 credits

EGL 340-G Chaucer

Prerequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 342-G Milton

Prerequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 344-G Major Writers of the Renaissance Period in England

May be repeated for credit as the topic changes.
Prerequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 345-G Shakespeare I

A study of the comedies and the history plays.

Designed to complement EGL 346.
Prerequisite: EGL 204
Advisory Prerequisites: EGL 205 and 243
3 credits

EGL 346-G Shakespeare II

A study of the tragedies and the romances. Designed to complement EGL 345.

Prerequisite: EGL 204
Advisory Prerequisites: EGL 205 and 243
3 credits

EGL 347-G Major Writers of the Neoclassical Period in England

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 348-G Major Writers of the Romantic Period in England

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 349-G Major Writers of the Victorian Period in England

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 350-G Major Writers of American Literature, Colonial Period to 1900

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 217
3 credits

EGL 352-G Major Writers of 20th-Century Literature in English

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 218 or 224
3 credits

EGL 354-G Major Writers of Contemporary British and American Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: EGL 204
Advisory Prerequisite: EGL 226
3 credits

EGL 361-G Poetry in English

The study of the development of form, theme, and language of poetry in English. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

EGL 362-G Drama in English

The study of the development of plot, structure, character, theme, and language of drama in English. Semester supplements to this *Bulletin* contain descrip-

tions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

EGL 363-G Fiction in English

The study of the development of plot, structure, character, theme, and language of fiction in English. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

EGL 365-G Literary Criticism and Theory

A survey of major texts and perspectives in literary criticism and theory.

Prerequisite: EGL 204

3 credits

EGL 366-G Topics in Literary Criticism and Theory

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: EGL 204

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: U3 or U4 standing

Advisory Prerequisite: EGL 274 or AFH 206

3 credits

EGL 369-K Topics in Ethnic American Studies in Literature

The study of ethnic American literature and cultures in historical perspective. Topics may include history of the American city in literature, ethnicity in 19th- and 20th-century American literature. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: A literature course at the 200 level or higher; completion of D.E.C. categories I and J
3 credits

EGL 371-G Topics in Gender Studies in Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

EGL 372-G Topics in Women and Literature

The study of texts written by and about women and of issues they raise relating to gender and literature.

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes. Crosslisted with WST 372.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

EGL 373-J Literature in English from Non-Western Cultures

The study of literature in English from a nation or a region of the world that is significantly different from the United States and Europe. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

EGL 375-G, 377-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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

EGL 378-J Contemporary Native American Fiction

The study of novels by contemporary Native American writers with particular attention to the way these novels develop imaginative perspectives on contemporary culture and values.

Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 379-J Native American Texts and Contexts

The study of Native American writings in a variety of genres, including autobiography, short stories, novels, poetry, the oral tradition, and history.

Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 385 Advanced Fiction Workshop

A fiction writing workshop. Students receive detailed criticism of their work. May be repeated with permission of the director of undergraduate studies.

Prerequisites: EGL 285; permission of instructor
3 credits

EGL 386 Advanced Poetry Workshop

A poetry writing workshop. Students receive detailed criticism of their work. May be repeated with permission of the director of undergraduate studies.

Prerequisites: EGL 286; permission of instructor
3 credits

EGL 393 Performance and Technology in Teaching Literature and Composition

Introduction to the teaching of literature and composition through the use of classroom performance and technology, including film, video, and other media as well as computers and the Internet.

Prerequisite: Acceptance into the English secondary teacher preparation program

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

3 credits

EGL 451, 452 Supervised Teaching—English; Middle Level Grades 7-9, High School Grades 10-12

Prerequisites: Enrollment in English Teacher Preparation Program; permission of instructor

Corequisite: EGL 454

6 credits per course, *SIU grading*

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.

Corequisites: EGL 451 and 452

3 credits

EGL 475, 476 Undergraduate Teaching Practicum I, II

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. In EGL 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites to EGL 475: Upper-division standing; 12 credits in English; permission of instructor and director of undergraduate studies.

Prerequisites to EGL 476: EGL 475; permission of instructor and director of undergraduate studies
3 credits per course, *SIU grading*

EGL 487 Independent Project

Intensive study of a special topic undertaken with close faculty supervision. Request for project approval of undergraduate studies committee must be submitted no later than the last week of classes of the prior semester. May be repeated.

Prerequisites: Permission of instructor and director of undergraduate studies.

0-6 credits

EGL 488 Internship

Participation in local, state, and national public and private organization. The work must involve skills related to the educational goals of the department. Request for approval of the undergraduate studies committee for internships must be submitted no later than the last week of classes of the prior semester.

Prerequisites: 12 credits of English; 2.5 g.p.a.; permission of instructor and department

0-6 credits S/U grading only

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. May be repeated for credit with the permission of the director of undergraduate studies as the topic changes.

Prerequisite: Permission of instructor

3 credits

EGL 496 Senior Honors Project

Prerequisites: EGL 490; permission of department

3 credits

ENS**Environmental Studies****ENS 101-E Prospects for Planet Earth**

An introduction for non-science majors to global environmental change. Exploration of the natural science of Earth's environment; the scientific, socioeconomic, and political issues that influence human impact on the global environment and responses to environmental changes; the strategies for humans to live in greater harmony with planet Earth. Global issues are related to the particular issues of the United States, the Northeast, and the greater metropolitan New York City-Long Island area. Priority given to residents of Dreiser College.

Prerequisite: Permission of faculty director required for students who do not reside in Dreiser College

3 credits

ENS 102 Opportunities in Environmental Studies

An introduction to the nature of environmental studies in college and careers. Topics 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, LSE 101, or EAS 101. Priority given to residents of Dreiser College.

Prerequisites: U1 standing; permission of faculty director required for students who do not reside in Dreiser College or more advanced students

1 credit, S/U grading

ENS 119-E Physics for Environmental Studies

The principles of physics as they apply to environmental issues. A review of mathematics, followed by a discussion of Newton's laws, conservation principles, topics in fluids and wave motion, optical instruments, and radioactivity. Crosslisted with PHY 119.

Prerequisite: MAT 125 or 131 or 141 or AMS 151

4 credits

ENS 190 Forum in Environmental Issues

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. Priority given to residents of Dreiser College

Prerequisite: Permission of faculty director required for students who do not reside in Dreiser College

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, socioeconomic of emerging technologies, environmental racism, conflicting uses of the coastal ocean, and uncertainties in global climate forecasting. Priority given to residents of Dreiser College.

Prerequisites: ENS 101; permission of faculty director required for students who do not reside in Dreiser College

3 credits

ENS 311-H The Global Environment

The principal constituents of rocks, water, and life as they circulate through the land, sea, and air. Topics include the hydrological cycle, cycling of chemicals such as nutrients and metals in the oceans, the soil cycle, and the fate and transport of materials in the atmosphere. Natural and perturbed systems are discussed. May not be taken for credit in addition to BIO 386.

Prerequisites: BIO 113 and 201; CHE 131; MAR 340

3 credits

ENS 312-H Population, Technology, and the Environment

A study of the biological, social, and economic factors that influence population growth. The development of new technologies and their influence on resource use and the effects that increasing population and changing technologies have on the environment are explored.

Prerequisites: BIO 113; MAR 340

3 credits

ENS 443 Environmental Problem-Solving

The integration of information and skills from the natural sciences, social sciences, engineering and the humanities to address important environmental problems. An environmental problem of current interest is presented. Working in small groups, students develop a proposal to solve the problem, collect and analyze data, and present results. Data collection may include field and laboratory work outside of scheduled class meetings.

Prerequisites: U3 or U4 standing; ENS minor

2 credits

ENS 487 Independent Research in Environmental Studies

An independent project, developed out of advanced coursework in environmental studies, designed in consultation with and supervised by a faculty member. The project should be formulated before the start of the semester in which the research will be done and should culminate in a substantial written paper. May be repeated.

Prerequisites: Permission of a supervising faculty member and director of undergraduate studies

0-6 credits

ENS 488 Internship in Environmental Studies

An experience in developing curricular materials for children and young adults interested in environmental

studies. Through the internship, students work with the camp director of Camp Seewolf, Stony Brook's summer environmental camp for eleven- to fourteen-year-old boys and girls. Summer internships may include room and board at the camp, located in Southold, on Long Island's north shore. Other internship activities may also be considered for credit. A maximum of 3 credits may be used toward the minor in environmental studies. May be repeated to a maximum of 6 credits. Priority given to residents of Dreiser College

Prerequisites: ENS 101; permission of faculty director

0-6 credits, S/U grading

ESE**Electrical and Computer Engineering****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: AMS 151 or MAT 125 or 131 or 141; PHY 125 or 131 or 141

4 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.

Pre- or Corequisite: AMS 151 or MAT 125 or 131 or 141; ESE 123 or equivalent

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.

Prerequisites: AMS 161 or MAT 127 or 132 or 142; PHY 127 or 132 or 142; ESE 271

Corequisite: ESE 372

2 credits

ESE 271 Electrical Circuit Analysis I

Kirchoff's Laws, Ohm's Law, nodal and mesh analysis for electric circuits, capacitors, inductors, and steady-state AC; transient analysis using Laplace Transform. Fundamentals of AC power, coupled inductors, and two-ports.

Prerequisites: AMS 161 or MAT 127 or 132 or 142; PHY 127 or 132 or 142

4 credits

ESE 275 Fundamentals of Electrical Engineering

Introduces fundamental concepts and techniques of electrical engineering. Topics covered include DC and sinusoidal steady-state linear circuit analysis; diode, transistor and electronic circuits; gates, flip-flops, and simple combinational and synchronous sequential circuits; and an introduction to rotating electrical machinery. For mechanical engineering majors only.

Prerequisites: AMS 161 or MAT 127 or 132 or 142; PHY 126 and 127, or 132 or 142
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
1-3 credits

ESE 300 Writing in Electrical/Computer Engineering

See "Requirements for the Majors in Electrical Engineering and Computer Engineering, Upper-Division Writing Requirement."

Prerequisites: ESE or ECE major; U3 standing
Corequisite: ESE 324
1 credit, S/U grading

ESE 304 Electronic Instrumentation and Operational Amplifiers

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
3 credits

ESE 305 Deterministic Signals and Systems

Introduction to signals and systems. Manipulation of simple analog and digital signals. Relationship between frequencies of analog signals and their sampled sequences. Sampling theorem. Concepts of linearity, time-invariance, causality in systems. Convolution integral and summation; FIR and IIR digital filters. Differential and difference equations. Laplace transform, Z-transform, Fourier series and Fourier transform. Stability, frequency response and filtering. Provides general background for subsequent courses in control, communication, electronics, and digital signal processing.

Pre- or Corequisite: ESE 271
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 queuing 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
3 credits

ESE 307 Analog Filter Design

Introduces basic concepts of analog filter theory and implementation. Topics include: filter types; transfer functions; Bode plots; implementation of first- and second-order filters using op amps, maximally flat, and equal-ripple filters; frequency transformations; LC ladders; transconductance-C realizations; switched capacitor circuits; and filter sensitivity.

Prerequisites: ESE 305 and 372
3 credits

ESE 310 Electrical Circuit Analysis II

Network elements, graph theory, linear network analysis; fundamental loops and cutsets, matrix solutions, nonlinear network analysis; state variables,

small and large signal analysis, numerical methods.

Prerequisite: ESE 271
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
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
3 credits

ESE 314 Electronics Laboratory B

Coordinated with, and illustrates and expands upon, concepts presented in ESE 372. Experiments include diode circuits, class A BJT, FET and differential amplifiers as well as analog signal processing. Laboratory fee required.

Prerequisite: ESE 211 and 372
3 credits

ESE 315 Control System Design

Analysis and design of linear control systems. Control components, development of block diagrams. Computer simulation of control systems and op-amp circuit implementation of compensators. Physical constraints in the design. Pole-placement and model matching design using linear algebraic method. Selection of models using computer simulation and quadratic optimal method. Root-locus method and Bode plot method. Use of PID controllers in practice.

Prerequisite: ESE 271
3 credits

ESE 316 Digital Devices and Circuits

Switching characteristics of devices: bipolar transistors, MOSFETs, 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. The use of computer-aided circuit analysis is included.

Prerequisite: ESE 372
3 credits

ESE 318 Digital Systems Design

Develops methods of analysis and design of both combinational and sequential systems regarding digital circuits as functional blocks. Utilizes demonstrations and laboratory projects consisting of building hardware on breadboards and simulation of design using CAD tools. Topics include: number systems and codes; switching algebra and switching functions; standard combinational modules and arithmetic circuits; realization of switching functions; latches and flip-flops; standard sequential modules; memory, combinational, and sequential PLDs and their applications; design of system controllers.

Prerequisite for engineering majors: PHY 127 or 132 or 142 or ~~ESE 124~~
Prerequisite for computer science majors: CSE 220
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; engineer-

ing applications; electromagnetic energy and power; generation of electromagnetic fields and waves in unbounded media by known sources; transmission line theory.

Prerequisite: ESE 271
3 credits

ESE 320 Microwave Electronics Laboratory

Introduces microwave measurement techniques as well as the design, fabrication and experimental characterization of various microwave components. Utilizes microwave CAD techniques for the design of microwave components and for experimental characterization, including the measurement of scattering parameters over a band of frequencies, employing a network analyzer. The first half of the course is in the format of lectures that introduce the concepts and theory behind the experiments. The second half is dedicated to performing the experiments on a rotation basis between various student groups of two or three students per group.

Prerequisite: ESE 319
2 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
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 211, 372; ESE or ECE major; U3 standing
Corequisite: ESE 300
2 credits

ESE 330 Integrated Electronics

An 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 industrial IC design and provides a strong background for more advanced courses.

Prerequisite: ESE 372
3 credits

ESE 331 Introduction to Semiconductor Devices

Basic principles of semiconductor band theory, transport properties, and generation recombination phenomena in bulk semiconductors. Includes the actions of semiconductor junctions and metal-semiconductor junctions. The character of physical phenomena in semiconductors and the principles of operation of diodes, transistors, light detector, and light emitting devices. A background for subsequent courses in solid state electronics.

Prerequisites: ESE 211
3 credits

ESE 332 Semiconductor Device Characterization

Basic experimental experience in characterization of microelectronic and optoelectronic semiconductor devices including diodes, transistors, light emitting diodes, lasers, and photodetectors. Measurement of I-V and I-I (light-current) device characteristics; practice in the techniques of determining various device parameters; analysis of aggregate experimental data to determine the relationships between device and output char-

acteristics, device band diagrams, and device designs. Includes study of modern methods of silicon and compound semiconductor devices and systems technologies.
Prerequisites: ESE 372
 3 credits

ESE 333 Real-Time Operating Systems

Introduces basic concepts and principles of real-time operating systems. Topics include structure, multiple processes, interprocess communication, real-time process scheduling, memory management, virtual memory, file system design, security, protection, and programming environments for real-time systems.
Prerequisites: ESE 124; CSE 214; ESE 380 or CSE 220
 3 credits

ESE 337 Digital Signal Processing: Theory

Introduces digital signal processing theory sequences, discrete-time convolution, difference equations, sampling and reconstruction of signals, one- and two-sided Z-transforms, transfer functions, and frequency response. Design of FIR and IIR filters. Discrete and fast Fourier transforms and applications.
Prerequisite: ESE 305
 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; pulse modulation schemes.
Prerequisites: ESE 305 and 306
 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
 3 credits

ESE 342 Digital Communications Systems

Pulse modulation and sampling. All-digital networks. Pulse code modulation. Digital modulation techniques. Time-division multiplexing. Baseband signaling. Intersymbol interference. Equalization. Basic error control coding. Exchange of reliability for rate. ARQ schemes. Message and circuit switching.
Prerequisite: ESE 340
 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 communication and radar systems.
Prerequisite: ESE 340
Pre- or Corequisite: ESE 342
 2 credits

ESE 344 Software Tools for Engineers

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 318
 3 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 included are microprogrammed control, user-level instruction sets, I/O systems and device interfaces, control of memory hierarchies, and parallel processing organizations.

Prerequisite: for electrical and computer engineering majors: ESE 380
Prerequisites: for computer science majors: CSE 220; ESE 318
 3 credits

ESE 346 Computer Communications

Basic principles of computer communications; performance evaluation of protocols. Protocols covered include those for local, metropolitan, and wide area networks; routing, high speed packet switching, circuit switching, and optical data transport. Crosslisted with CSE 346.

Pre- or Corequisite: for electrical and computer engineering majors: ESE 306
Prerequisite: for computer science majors: CSE 220
Pre- or Corequisite: for computer science majors: AMS 310 or 311
 3 credits

ESE 347 Digital Signal Processing: Implementation

Fundamental techniques for implementing standard signal-processing algorithms on dedicated digital signal processing chips. Includes 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
 4 credits

ESE 349 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 discussion 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
 3 credits

ESE 350 Electrical Power Systems

Fundamental engineering theory for the design and operation of an 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 our environment is reviewed. Topics include 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 AC and DC transmission.
Prerequisite: ESE 271
 3 credits

ESE 351 Energy Conversion

Natural and secondary energy sources; methods of energy conversion including thermionic, thermoelectric, and magneto-hydrodynamic converters, fuel cells, and solar cells.
Prerequisites: ESE 271; MEC 301 or ESG 302
 3 credits

ESE 352 Electromechanical Energy Converters

Basic principles of energy conversion; DC, 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
 3 credits

ESE 357 Digital Image Processing

Covers digital fundamentals, image transforms, image enhancement, image restoration, image compression, segmentation, representation and description, recognition and interpretation. Crosslisted with CSE 326.
Prerequisites: for electrical and computer engineering majors: ESE 124 and 305
Prerequisites: for computer science majors: CSE 214 and 220
 3 credits

ESE 358 Computer Vision

Introduces fundamental concepts, algorithms, and computational techniques in visual information processing. 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.
Prerequisites: for electrical and computer engineering majors: ESE 271 and 318
Prerequisites: for computer sciences majors: CSE 114 and ESE 318
 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, 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 on the behavior of light in crystals.
Prerequisite: ESE 372
 3 credits

ESE 363 Fiber Optic Communications

Design of single and multi-wavelength fiber optic communications systems. Topics include analysis of optical fibers, optical transmitters and receiver design, optical link design, single-wavelength fiber optic networks with analysis of FDDI and SONET/SDH, and wavelength division multiplexing.
Prerequisite: ESE 319 and 340
 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: ESE 344 or CSE 214
 4 credits

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- and small-signal analysis of amplifiers; amplifier frequency response; and rectifiers and wave-shaping circuits.
Prerequisite: ESE 271
Corequisite: ESE 211
 4 credits

ESE 380 Embedded Microprocessor Systems Design I

Fundamental concepts and techniques for designing electronic systems that contain a microprocessor or microcontroller as a key component. Topics include system level architecture, microprocessors, ROM, RAM, I/O subsystems, address decoding, PLDs and

programmable peripheral ICs, assembly language programming and debugging. Hardware-software trade-offs in implementation of functions are considered. Hardware and software design are emphasized equally. Laboratory work involves design, implementation, and testing of microprocessor controlled circuits.

Prerequisite: ESE 318

4 credits

ESE 381 Embedded Microprocessor Systems Design II

A continuation of ESE 380. The entire system design cycle, including requirements definition and system specifications, is covered. Topics include real-time requirements, timing, interrupt driven systems, analog data conversion, multi-module and multi-language systems. The interface between high-level language and assembly language is covered. A complete system is designed and prototyped in the laboratory.

Prerequisites: ESE 271 and 380

4 credits

ESE 382 Digital Design Using VHDL and PLDs

Digital system design using the hardware description language VHDL and system implementation using complex programmable logic devices (CPLDs) and field programmable gate arrays (FPGAs). Topics include design methodology, VHDL syntax, entities, architectures, testbenches, subprograms, packages, and libraries. Architecture and characteristics of PLDs and FPGAs are studied. Laboratory work involves writing the VHDL descriptions and testbenches for designs, compiling, and functionally stimulating the designs, fitting and timing simulation of the fitted designs, and programming the designs into a CPLD or FPGA and benchtesting.

Prerequisite: ESE 318

4 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 department

1-6 credits

ESE 440 Engineering Design I

Lectures by faculty and visitors on typical design problems encountered in engineering practice. During this semester each student will choose a senior design project for Engineering Design II. A preliminary design report is required. Not counted as a technical elective. Laboratory fee required.

Prerequisites: ESE or ECE major, U4 standing; two ESE technical electives (excluding ESE 390 and 499). Students may need additional prerequisites depending on the design project undertaken.

3 credits

ESE 441 Engineering Design II

Student groups carry out the detailed design of the senior projects chosen during the first semester. A comprehensive technical report of the project and an oral presentation are required. Not counted as a technical elective. Laboratory fee required.

Prerequisite: ESE 440

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: U4 standing, a minimum g.p.a. of 3.00 in all Stony Brook courses, and a grade of B in the course in which the student is to assist; permission of department.

3 credits

ESE 488 Internship in Electrical/Computer Engineering

An independent off-campus engineering project with faculty supervision. May be repeated but only three credits of internship electives may be counted toward the non-ESE technical elective requirement.

Prerequisites: ESE major; U3 standing; 3.00 g.p.a. in all engineering courses; permission of department

3 credits

ESE 499 Research in Electrical Sciences

An independent research project with faculty supervision. Permission to register requires a 3.00 g.p.a. 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, MEC 499, ESM 499, EST 499, ISE 487) may be counted toward non-ESE technical elective requirements.

0-3 credits

ESG

Engineering Science

ESG 100 Introduction to Engineering Science

An overview of the development and application of engineering principles in response to social, industrial, and environmental problems from ancient times to the present. Engineering methods and theory through case studies and real-world applications. Creativity and problem solving techniques of modern engineering through participation in a design project as well as learning through analyses of engineering disasters.

3 credits

ESG 111 C Programming for Engineers

Introduces computer programming techniques for engineering students who are not planning to take advanced computer science courses. Students learn C programming language as applied to various scientific and engineering problems. Includes advanced simulation packages such as Labview™ to introduce computer control of experimental systems. Not intended for students who have completed a C programming course.

Pre- or Corequisites: AMS 151 or MAT 125 or 131 or 141; PHY 125 or 131 or 141

3 credits

ESG 199 Introduction to Undergraduate Research

An introduction to independent research and basic research skills. Students perform an independent research project in engineering science under the supervision of a faculty member. May be repeated.

Prerequisite: Permission of instructor

0-3 credits

ESG 201-H Engineering Responses to Society

The roles that engineers and engineering scientists play in supporting the societal infrastructure of urban and rural populations throughout the world. Focuses on relating examples of engineering achievement so that students may expand their perspective with regard to the increasingly scientific and technological mode of current culture. Includes the relationship between engineering and aesthetics, the engineering design process, forensic engineering, and biology-related engineering.

Prerequisite: One D.E.C. category E course

3 credits

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 with an emphasis on design for manufacturing and reliability.

Prerequisite: U2 standing

3 credits

ESG 281 An Engineering Introduction to the Solid State

A discussion of relativity followed by review of the atom and its constituents. Lectures treat the quantization of light and of atomic energy levels, matter waves, and introduce the Schrodinger equation, first in one dimension, then in three dimensions. Electron spin and magnetic effects are discussed, followed by multi-electron atoms and the periodic table. Radiation and lasers, molecules and solids, including conductors, semiconductors, and insulators.

Prerequisites: PHY 132 or 142 or 126, 127

4 credits

ESG 300 Writing in Engineering Science

See Requirements for the Major in Engineering Science, Upper-Division Writing Requirement.

Prerequisites: ESG major; U3 or U4 standing

Corequisite: ESG 316

0 credits, S/U grading

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: ESG 111 or CSE 114 or MEC 111 or MEC 112; CHE 198

Pre- or Corequisite: AMS 361 or MAT 303

4 credits

ESG 310 Research Methods for Engineers and Scientists

Introduction to the scientific method and research methods within the context of engineering and the sciences. Topics include: interpretation of research, design of experiments, ethics, writing an abstract, use and abuse of statistics in reporting data, presentation and publication.

Pre- or Corequisite: A research, independent study, or internship course

2 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: PHY 126 and 127 or PHY 132; U3 standing

Pre- or Corequisite: ESG 332

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; ESG major; U3 standing

Corequisite: ESG 300

4 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.

Prerequisite: CHE 131 or 141 or 198
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.)

Prerequisite: PHY 251 or ESG 281
3 credits

ESG 339 Thin Film Processing of Advanced Materials

Fundamental aspects of thin film materials design, fabrication, and characterization. Overviews of semiconductor fabrication, surface analysis, and vacuum system design. 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
4 credits

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 316; ESG major; U4 standing
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 is prepared. Not counted as a technical elective. Laboratory fee required.

Prerequisites: ESG 440
3 credits

ESG 487 Cooperative Research in Technological Solutions

An independent research course in which students apply principles of engineering design, technological problem solving, mathematical analysis, computer-assisted engineering, and effective teamwork and communication to develop solutions for a need in a governmental, educational, non-profit, or community organization in a multidisciplinary setting.

Prerequisites: U3 or U4 standing; an abstract of the project; permission of instructor
0-3 credits

ESL

English as a Second Language

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. Diagnostic test during first week of classes determines placement in the course.

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. Diagnostic test during first week of classes determines placement in the course. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used.

3 credits, A-CIU grading

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. Diagnostic test during first week of classes determines placement in the course. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used.

3 credits, A-CIU grading

ESL 194 Academic English Skills for U.S. Residents

The study of spoken and written English for students who are graduates of American high schools but are non-native speakers of English. The focus of the course is on helping students to speak, write, and understand English in academic contexts. Particular attention is paid to understanding lectures, increasing vocabulary, and improving knowledge of English sentence structure. Open to first semester English enrichment program students only. The Pass/No Credit option may not be used. Only for students in the English Enrichment Program.

3 credits

ESL 198 Advanced Oral/Aural Skills and Accent Improvement

An advanced course in speaking and listening skills for non-native speakers of English. Work is done with individual problem sounds, stress, and intonation in order to help students modify their accents and make their speech more intelligible. Techniques of speaking before a group are taught to enable non-native speakers to feel more confident in participating in their other classes. Advanced work in American idioms and grammar is usually included. Language laboratory work may be required by individual instructors. Especially useful for undergraduate and graduate students who need to make seminar presentations and for graduate students with teaching assistantships.

Prerequisite: Completion of ESL 191 with a grade of B or TSE or SPEAK score of 50 or higher.
3 credits

ESL 475 Undergraduate Teaching Practicum I

Students have the opportunity to apply the methodol-

ogy 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.

Prerequisites: LIN 375; permission of instructor.
3 credits, S/U grading

ESL 476 Undergraduate Teaching Practicum II

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.

Prerequisites: ESL 475; permission of instructor.
3 credits, S/U grading

ESM

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. 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.

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 and CHE 134 or 144 or 199; ESG 111 or CSE 114 or MEC 111 or 112; MAT 132 or 127 or AMS 161; PHY 126 or 131 or 141
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. Includes structures and lattices, planes and directions, crystal geometry, atomic coordinates, stereographic projections, X-ray Laue photographs, the reciprocal lattice, and electron diffraction.

Prerequisites: CHE/ESM 221; ESG 332
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: MEC 301 or ESG 302
3 credits

ESM 325 Diffraction Techniques and Structure of Solids

X-ray diffraction techniques are emphasized. Topics 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
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
3 credits

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
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 microstructure. 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: ESM 334; AMS 261 or MAT 203; ESM 302
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 nonequilibrium 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
3 credits

ESM 339 Thin Film Processing of Advanced Materials

Fundamental aspects of thin film materials design, fabrication, and characterization. Overviews of semiconductor fabrication, surface analysis, and vacuum system design. This course includes a design content of one credit, achieved through a design exercise related to thin film fabrication. Crosslisted with ESG 339.

Prerequisites: ESG 332, or ESE 331 for ESE majors
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 312 and 332
Corequisite: ESG 333
3 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
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
3 credits

ESM 369 Polymers

An introductory survey of the physics, chemistry, and technology of polymers. 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
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
3 credits

ESM 475 Undergraduate Teaching Practicum

May be used as an open elective only and repeated once. *Prerequisites:* U4 standing as an undergraduate major within the college; a minimum g.p.a. of 3.00 in all Stony Brook courses and the grade of B in the course in which the student is to assist; permission of department

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
0-3 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, EST 499, ISE 487, MEC 499) may be counted toward technical elective requirements.

0-4 credits

EST

Technology and Society

EST 100 Computer Literacy in a Digital Era

Introduces computer applications and selection of computer-based tools and the skills necessary to be successful in an era of digital revolution including: electronic communication; application-based projects; information management and assessment; and the societal impacts of digital literacy. Emphasizes computer literacy skills used in education, industry, and other professional environments. Participation in weekly computer labs is required.

3 credits

EST 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; actual and potential effect of human activities on weather and climate, and of weather and climate on humans. Crosslisted with ATM 102.

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.

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.
3 credits

EST 201-H Technological Trends in Society

Explores the impact of technology and engineering design on society past, present, and future. The main themes as they relate to changing technology are: industry and the economy; the environment; social, educational, and psychological implications of computers; energy and society; warfare; and 21st-century emerging technologies.

Prerequisite: One D.E.C. category E course
3 credits

EST 210 Learning to Learn New Technologies

Developing processes for learning new technology that continues to change at an increasing rate. The key issues covered are: learning new software tools, the problem solving process, applying tools, debugging, choosing a tool, helping others to learn new software packages, how networks change the use of tools, ethical issues, Internet and the information explosion. Classes are held in computer laboratories. Students are required to work in campus computer consulting situations.

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
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 100 or CSE 101
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 100 or any CSE course
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 audit ability, 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 100 or CSE 101
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
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.

Prerequisites: Two D.E.C. category E courses
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 trans-

fer and post-disaster assistance. Case studies of disasters in a number of countries are included.

Prerequisites: U3 or U4 standing; one D.E.C. category E course
3 credits

EST 391-H Technology Assessment

A multidisciplinary analysis of the environmental, economic, scientific, engineering, social, and ethical impacts of a technology and of policies for controlling them. Each class, often working with research teams and visiting area facilities, concentrates on topics such as plastics recycling, the future of the automobile, nuclear power, nanotechnology, space stations, virtual reality, biotechnology, smart weapons, and the Internet.

Prerequisites: PHY 132 or CHE 132 or BIO 201 or 202 or 203; MAT 127 or 132, or 142
3 credits

EST 392-F 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: U3 or U4 standing in a CEAS major or economics major
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: U3 or U4 standing; ECE, ESE, ESG, or MEC major
3 credits

EST 411-H Science, Technology, and Arms Control

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: U3 or U4 standing; one D.E.C. category E course
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 of intelligence agencies and practices in democratic societies. Crosslisted with POL 412.

Prerequisites: U3 or U4 standing; POL 101 and 102; one D.E.C. category E course
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
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; U4 standing
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
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: U4 standing in the college; a minimum g.p.a. of 3.00 in all Stony Brook courses and a grade of B in the course in which the student is to assist; permission of department
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, ESE 499, EMS 499, EST 499, ISE 487, MEC 499) may be counted toward engineering technical elective requirements.

0-3 credits

EXT

Internship

EXT 488 Internship

Participation in an off-campus or on-campus agency or organization that provides students the opportunity to learn to apply their university studies to areas of work experiences. Internships must be sponsored by a faculty member. Request for approval of the internship manager in the Career Center must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. Students may register for only one 488 course per semester. May be repeated up to a limit of 12 credits.

Prerequisites: Minimum g.p.a. of 2.50; U3 standing; one prior semester of attendance at Stony Brook; acceptance by faculty sponsor; permission of appropriate department and internship manager.
0-6 credits; S/U grading

FLA

Foreign Language Secondary Education

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. 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

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. Students have the opportunity to enjoy clinical experiences in school settings. Special attention is given to lesson planning, classroom management, and portfolio development.

Prerequisite: C or higher in FLA 339

3 credits

FLA 439 Introduction to Technology for Language Teaching

An introduction for potential teachers to how technologies are used for language learning and teaching. Technologies include audio, video, satellite, computer and internet. Students explore the interaction between second language acquisition, language pedagogical theory, and technology.

Prerequisite: FLA 339

3 credits

FLA 440 Foreign Language Acquisition Research

A study of recent trends in foreign language acquisition research. The focus is on classroom-based research: qualitative and quantitative research methodologies, variables in classroom-based learning research, analysis of research results. Students conduct classroom research studies, present their findings, and address applications of their findings to classroom teachers and learners of foreign languages.

Prerequisite: Acceptance into a foreign language secondary teacher preparation program

Pre- or Corequisite: FLA 339

3 credits

FLA 451, 452 Supervised Student Teaching—Foreign Language; Middle Level Grades 7-9, High School Grades 10-12

Prerequisites: Enrollment in the Foreign Language Teacher Preparation Program; permission of instructor

Corequisite: FLA 454

6 credits each, S/U grading

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, 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

Corequisites: FLA 451 and 452

3 credits

FLC

Federated Learning Communities

FLC 301, 302 Program Seminar I, II

Seminar integrating the material of its corequisite courses, topics determined by the problems, difficulties, and interests of the students. Discussions and frequent written and oral reports focus on assisting students in learning how to learn and comparing, contrasting, and synthesizing the material of the corequisite courses. May be repeated for different FLC minors.

Corequisites: Varying according to FLC theme

3-4 credits per course, varying with FLC program

FLC 475 Teaching Practicum

Supervised participation with the master learner in teaching the program seminars of the FLC. Responsibilities include researching material appropriate for seminar discussions and helping students with interdisciplinary research papers.

Prerequisites: Completion of an FLC minor; permission of FLC director

Corequisites: At least two courses federated with the program seminar

3 credits, S/U grading

FLC 487 Directed Research

Independent projects arranged in consultation with the program director. May be repeated.

Prerequisite: Permission of FLC director

0-6 credits

FRN

French

FRN 101 Intensive Elementary French

An intensive course covering the elementary French program (FRN 111, 112) in one semester. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of French in high school (or who has otherwise acquired an equivalent proficiency) may not take FRN 101 without written permission from the supervisor of the course. May not be taken for credit after any other course in French.

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. FRN 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of French in high school (or who has otherwise acquired an equivalent proficiency) may not take 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

4 credits per course

FRN 201 Intensive Intermediate French

Review of grammar and analysis of simple French texts through reading, writing, and discussion. Language laboratory supplements class work. May not be taken for credit in addition to FRN 211 or FRN 212.

Prerequisite: FRN 101 or 112

6 credits

FRN 211, 212 Intermediate French I, II

Intermediate courses in conversation, composition, and the interpretation of French texts.

Prerequisite: to FRN 211: FRN 101 or 112

Prerequisite: to FRN 212: FRN 211

3 credits per course

FRN 311 Conversation and Composition

A course in the active use of spoken and written French. Language laboratory supplements class work.

Prerequisite: FRN 212 or 201

3 credits

FRN 312 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 311

3 credits

FRN 313 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 includes poetry of recognized poets (Ronsard, Baudelaire, Verlaine, Prévert) put to music, folk songs, and "chansons."

Prerequisite: FRN 311

1 credit

FRN 331-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 312

3 credits

FRN 332-G The French Comedy from Molière to Ionesco

The study of the comic tradition from Molière to the contemporary theatre.

Prerequisite: FRN 312

3 credits

FRN 395-G, 396-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 312

3 credits per course

FRN 410 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 312

3 credits

FRN 411 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 312

3 credits

FRN 412 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 312

3 credits

FRN 413 Advanced French Conversation

A course designed to develop and maintain complete fluency in the language.

Prerequisite: FRN 312
3 credits

FRN 432 Studies in Renaissance Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.

Prerequisites: FRN 395 or 396
3 credits

FRN 433 Studies in 17th-Century Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.

Prerequisite: FRN 395 or 396
3 credits

FRN 434 Studies in 18th-Century Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.

Prerequisite: FRN 395 or 396
3 credits

FRN 435 Studies in 19th-Century Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.

Prerequisite: FRN 395 or 396
3 credits

FRN 436 Studies in 20th-Century Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.

Prerequisite: FRN 395 or 396
3 credits

FRN 438-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.

Prerequisite: FRN 395 or 396
3 credits

FRN 441-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.

Prerequisite: FRN 395 or 396
3 credits

FRN 442 Free Seminar

A seminar built around themes like "Women in French Literature," "Self-Deception in the 17th-Century Moralists 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 as topic changes.

Prerequisite: FRN 395 or 396
3 credits

FRN 447 Directed Readings in French

Individually supervised readings in selected topics in 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
1-6 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.

Prerequisites: Fluency in French; permission of instructor and department
3 credits; S/U grading

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
3 credits

GEO

Geology

GEO 101-E Environmental Geology

Fundamental earth science concepts are used to assess the impact of increasing global population and development on earth's natural resources and also to examine how natural processes affect human activities. Topics include water usage and pollution, soil pollution and erosion, radioactive and solid waste disposal, landslides, stream flooding, coastal erosion, environmental consequences of energy and mineral resource utilization, acid rain, global climate change, and the environment effects on human health. Aspects of environmental geology that are particularly applicable to Long Island and metropolitan New York are emphasized.

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 include the earth in the solar system; earth materials and rock-forming processes; surface processes and their bearing on human activities; crustal deformation and global tectonics; the earth's interior; and (6) the geological features, compositions, and evolution of the terrestrial planets.

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.

3 credits

GEO 106-E Planetary Geology

A study of Earth in the light of growing knowledge of the Moon, Mercury, Venus, Mars, the minor planets or asteroids, and comets. May not be taken for credit in addition to AST 105.

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. 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.

3 credits

GEO 111 Environmental Geology Laboratory

Emphasis is on collecting geologic data in the field and laboratory and preparing professional quality reports. Exercises include basic field mapping; determination of hydraulic properties of sediment; analysis of soil and water; and observing a drill site, a water supply well system, a sewage treatment system, and a waste to energy system.

Pre- or Corequisite: GEO 101
1 credit

GEO 112 Physical Geology Laboratory

Rock and mineral identification, introduction to topographic and geologic maps.

Pre- or Corequisite: GEO 102
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 per week.

Pre- or Corequisite: GEO 103
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.

Advisory Prerequisite: High school chemistry or CHE 121

4 credits

GEO 133 Methods and Ethics of Science Research

Introduction to the methods and ethics of scientific research. The foundation of the course is a weekly one-hour seminar in which students discuss assigned readings on the history and ethics of research. In addition, students are assigned to a research laboratory and visit the laboratory to interview faculty, post-doctoral fellows, and graduate students about their research. Students write a feature news article about the research and make an oral presentation.

Advisory Prerequisite: An introductory course in geology, chemistry, or physics

1 credit

GEO 201-H Environmental Geology of Long Island and Metropolitan New York

The role of geologic factors in regional environmental problems, especially those related to development, sewage treatment, municipal garbage disposal, and the potential for contamination of our drinking water.

Prerequisite: One of the following: GEO 101, 102, 103, 107, or 122

3 credits

GEO 287 Introductory Research in Geology

Independent research, under the supervision of a faculty member, at a level appropriate to lower-division students.

Prerequisites: U1 or U2 standing; one GEO course; permission of instructor and departmental research coordinator

0-3 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 paleobiogeog-

raphy and dating are considered. Three hours of lecture and one three-hour laboratory per week.

Prerequisites: GEO 103 and 113
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 non-metallic 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.

Prerequisite: GEO 101 or 102 or 122

Advisory Prerequisite: CHE 111 or high school chemistry
3 credits

GEO 305 Field Geology

A field course that may be taken at any one of several approved university field stations.

Advisory Prerequisite: U4 standing
1-6 credits

GEO 306 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.

Prerequisites: GEO 122 or GEO 102 and 112

Pre- or Corequisite: CHE 132 or 142
4 credits

GEO 309 Structural Geology

Principles of structural geology, including classification, criteria for recognition, and mechanics of formation of crustal structural features. Elementary concepts of rock mechanics. Discussion of important tectonic features of the continents and oceans. Accompanying laboratory to cover map interpretation and algebraic and graphical solutions of structural problems. Three hours of lecture and one three-hour laboratory per week. A two-day weekend field trip visits 'classic' structural localities in the East.

Prerequisites: GEO 122 or GEO 102 and 112; one semester of calculus; PHY 121 or 131 or 141
4 credits

GEO 310 Introduction to Geophysics

An introduction to theoretical and applied geophysics. Topics in global geophysics include seismology, gravity, geomagnetics and heat flow, with applications to the structure and dynamics of the earth's interior. Students conduct computer-based analysis of geophysical data, some of which they collect using techniques of geophysical exploration and environmental geology. Three hours of lecture per week, plus group field experiments and analysis.

Prerequisites: MAT 127 or 132 or 142 or AMS 161; GEO 122 or GEO 102 and 112; PHY 122 or 132 or 142 or PHY 126 and 127
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 warming, fossil fuel resources, nuclear waste disposal, and earthquake prediction and preparedness.

Prerequisite: GEO 101 or 102 or 107 or 122
3 credits

GEO 315 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 or 122; MAT 127 or 132 or 142 or AMS 161

3 credits

GEO 316 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 and 112; CHE 132 or 142
4 credits

GEO 318 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 GEO 102 and 112; MAT 127 or 132 or 142 or AMS 161

3 credits

GEO 327 Computerized Modeling of Geological Phenomena

Practical experience in creating software that implements mathematical models of selected geological phenomena. Through lectures, discussions, and homework exercises, students familiarize themselves with the details of a mathematical model that describes a selected phenomenon. Students develop specifications for a software user interface and an outline for the design of a software model. As a team, the class develops, tests, and refines the software, with each student writing a particular portion of the software according to the specifications. The course requires a significant amount of computer work outside of class time.

Prerequisites: GEO 122 or GEO 102/112; MAT 131 or 126 or AMS 151; U3 or U4 standing; permission of instructor

4 credits

GEO 353 Marine Ecology

A survey of biotic responses to ecological challenges in different marine realms. Controls of diversity and trophic structure in the marine ecosystem, historical aspects of marine realms, productivity in the oceans, plankton, soft-bottom communities, intertidal habitats, coral reefs, deep-sea environments, and effects of pollution in the ocean are discussed. Crosslisted with BIO 353.

Prerequisite: BIO 201 or MAR 104

Advisory Prerequisite: BIO 343

3 credits

GEO 401 Optical Mineralogy

An introduction to the use of optical crystallography for mineral identification using polarized light microscopy. Topics include indices of refraction of isotropic, uniaxial, and biaxial minerals; optical indicatrix theory; interference figures, and other optical characteristics of minerals. Laboratory exercises provide hands-on experience in using the polarizing light microscope for mineral identification.

Prerequisite: GEO 306

1 credit

GEO 403 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

Corequisite: GEO 401

4 credits

GEO 407 Mineralogy and Petrology II

Topics 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.

Prerequisites: GEO 306 and 401

3 credits

GEO 420 Environmental Analysis Using Remote Sensing and Geographic Information Systems

The use of aerial and satellite imagery in environmental analysis and the manipulation of geographic data sets of all types using Geographic Information Systems. Concentrating on Long Island, each student designs and completes a research project on a particular section of the area, focusing on the habitats of local wildlife, the locations of archaeological sites, coastal regimes, etc. Students should expect to spend approximately 10 hours per week beyond regularly scheduled classes in a University computer laboratory. Crosslisted with ANT 420.

Prerequisite: Upper-division course in ANT or BIO or GEO or MAR

4 credits

GEO 447 Senior Tutorial in Geology

Independent readings in advanced topics. May be repeated once.

Prerequisites: Permission of instructor and chairperson

1-3 credits

GEO 452 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 PHY 126 and 127

3 credits

GEO 475, 476 Undergraduate Teaching Practicum I, II

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. In GEO 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites to GEO 475: U4 standing; previous preparation in subject field; interview; permission of instructor

Prerequisites to GEO 476: GEO 475; previous preparation in subject field; interview; permission of instructor and department

3 credits per course, S/U grading

GEO 487 Senior Research in Geology

Under the supervision of a faculty member, a major in the department may conduct research for academic credit.

Prerequisites: Permission of instructor and chairperson

0-6 credits

GEO 488 Internship

Participation in local, state, or national private enterprises, public agencies, or nonprofit institutions. May be repeated to a limit of 6 credits.

Prerequisites: Permission of instructor and department
0-6 credits, S/U grading

GER

German

GER 101 Intensive Elementary German

An intensive course covering the elementary German program (GER 111, 112) in one semester. GER 101 is designed for students who have no prior knowledge of the language. A student who has had two or more years of German in high school (or who has otherwise acquired an equivalent proficiency) may not take 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.
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. GER 111 is designed for students who have no prior knowledge of German. A student who has had two or more years of German in high school (or who has otherwise acquired an equivalent proficiency) may not take GER 111 without written permission from the supervisor of the course.
Prerequisite to GER 112: GER 111
4 credits per course

GER 211, 212 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 211: GER 101 or 112
Prerequisite to GER 212: GER 211
3 credits per course

GER 311, 312 German Conversation and Composition

The active use of spoken and written German.
Prerequisite: GER 212
3 credits per course

GER 343-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 212
3 credits

GER 344-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 343
3 credits

GER 401 German Drama

A survey of German drama and its subgenres. All work is done in German.
Prerequisite: GER 344
3 credits

GER 402 German Prose

A survey of German prose and its subgenres. All work is done in German.
Prerequisite: GER 344
3 credits

GER 403 German Poetry

A survey of German poetry and its subgenres. All work is done in German.
Prerequisite: GER 344
3 credits

GER 404 Goethezeit

An intensive study of German literature in the period 1750-1832. All work is done in German.
Prerequisite: GER 344
3 credits

GER 411, 412 Advanced German Conversation and Composition

These courses are 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 311 and 312
3 credits per course

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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisites: GER 411 and 412
3 credits

GER 431, 432 Business German I, II

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 "Wirtschaftsprüfung Deutsch International" examination.
Prerequisites: GER 311 and 312
3 credits per course

GER 438 Structure of German

Development of the German language from Indo-European to modern High German. Special emphasis is placed on modern phonology, graphemics, morphology, syntax, and semantics. Conducted as a seminar.
Prerequisite: GER 212
3 credits

GER 439 History of German

The development of the German language from Indo-European to Modern High German. A representative selection of texts from different periods is examined.
Prerequisite: GER 212
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
3 credits

GER 488 Internship

Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce language and related skills and knowledge of social and cultural institutions.
Prerequisites: GER 311 and 312; permission of instructor

tor and department; specific placement examinations where applicable
0-6 credits, S/U grading

GER 495 Senior Honors Project in German

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
3 credits

GRK

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
3 credits

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
3 credits

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 instructor
1-6 credits

HAD

Clinical Laboratory Sciences

HAD 210 Introduction to the Clinical Laboratory Sciences

Defines basic clinical laboratory sciences terminology and application. Introduces the specialties 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
1 credit

HAN

Health Science

HAN 300 Health Care Issues

Provides students with an overview of the organization of the health care delivery system. Includes the role of health care professionals and health care organizations. Explores issues regarding health care insurance, the uninsured and underserved, managed care and changes in the health care marketplace. Provides an overview of major diseases including epidemics, chronic and acute illness. Discusses the role of health promotion and prevention as well as alternative medicine.
Prerequisite: Health Science major
3 credits

HAN 333 Communication Skills

Introduces the principles of effective communication and stages of group development. Offers theory and practice of interpersonal communication and groups. Provides specific topics related to health care teams.
Prerequisite: Health Science major
3 credits

HAN 335 Professional Ethics

Provides students with a framework for identifying ethical dilemmas in professional settings and with the skills and resources for addressing them. Through the use of case studies and role-playing, students simulate ethical situations relating to confidentiality, informed consent and truth-telling, and explore various approaches for resolving these conflicts. Presents professional codes of ethics using small and large group discussions. Presents and discusses ethics-related topics such as genetics, transplants, cloning advance directives, and health care accessibility.
Prerequisite: Health Science major
3 credits

HAN 364 Issues in Health Care Informatics

Acquaints students with the use and application of personal computers and medical information systems used in health care. Emphasizes the optimization and customization potential of computer functions for standard and specialized tasks. Examines the present and potential use of the Internet in the health care arena. Presents the application of medical informatics to health care delivery through classroom demonstrations and discussions.
Prerequisite: Health Science major
3 credits

HAN 383 Professional Writing

Examines basic writing skills. Students will learn descriptive writing, writing as a communication skill, and compiling, organizing and logically presenting scientific/health information using citation and references. Offers training in the use of computer searches (search engines, the Web, accessing library resources at the University) for locating data and content to develop a paper. Students will learn how to prepare manuscripts for professional publication and understand copyright regulations.
Prerequisite: Health Science major
3 credits

HAN 432 Introduction to Health Care Management

Introduces students to the practices and theories of health care policy and management. Presents overview of the trends in public policy and management techniques. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 434 Corporate Compliance and Regulation

Provides overview of recently enacted legislation requiring healthcare institutions' compliance programs. Introduces regulations and compliance including anti-trust, controlled substances, Americans with Disabilities Act, Occupational Safety and Health Act, Joint Commission on Accreditation of Health Care Organizations, Department of Health jurisdiction over hospitals, and licensure requirements. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 436 Continuous Quality Improvement in Health Care

Provides basic principles associated with Total Quality Management (TQM) and Continuous Quality Improvement (CQI). Aids identification and quality problem-solving found in all healthcare organizations utilizing continuous quality improvement (CQI) tools and techniques. Through the use of case studies, current events, and textbook materials, students will learn

how to identify problems, recommend improvements, and collect data to demonstrate process improvement. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits

HAN 438 Coding ICD-9-CM/CPT

Introduces students to medical terminology. An overview of the International Classification of Diseases, 9th version (ICD-9-CM), and Current Procedural Terminology (CPT) coding will be presented. Discusses the relationship between coding and reimbursement. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits

HAN 440 Introduction to Community Health Education

Introduce students to the foundation of planning, implementing and evaluating community-based health education programs. Presents classic theories of health education including, the social learning theory, health belief model, and the attribution theory. Reviews relevant health education programs. Examines various learning styles and skills. Basic health education models are introduced and critiqued through individual and group projects. Reviews health education professional organizations and associations. Each student is required to design a health education program for a selected population. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 442 Community Health Education Models and Resources

Reviews past and present community health education models utilized locally, nationally and internationally. Analyzes health education program and teaches skills that may be applied to future projects. Discusses resources for providing community health education from private corporations, foundations, and public organizations and agencies. Introduces governmental and non-governmental resources for planning and implementing health education programs for diverse and special populations. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits

HAN 444 Teaching Strategies

Students examine their roles as health planners and health teachers for diverse communities. Presents written goals, behavioral objectives, health education teaching strategies and evaluation plans. Reviews appropriate media (print, audiovisual, software, interactive programs) for selective programs. Requires students to prepare, deliver and evaluate a community health education session that is videotaped and reviewed by the class. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 450 Introduction to Public Health

Introduces principles and practices of public health, including definitions and concepts, history and development, determinants of health, and ethical and legal aspects of public health. Orients students to various public health settings such as local and state health departments, not-for-profit community organizations, and agencies for special populations. Provides students with basic knowledge and skills for conducting community needs assessment with diverse populations. Addresses infectious disease control, environmental health, chronic disease control, tobacco and drug control, maternal and child health, women's health, and injury control topics. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 452 Epidemiology and Biostatistics

Provides students with the basic knowledge and skills for studying diseases of individuals and groups. Introduces biostatistical approaches and skills for collecting and organizing data of communities to meet health needs. Addresses epidemiological concepts, limitations and resources. Through the use of case studies, students study various epidemiological models used regionally, nationally and internationally. Includes discussions about ethical situations related to research and statistical studies. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 454 Issues in Public Health

Addresses contemporary topics related to public health policies and practices. Topics include recent regional and national pandemics, changes in public health prevention programs and current political policy-making. Introduces health trends and patterns through the study of changing laws and policies governing public health services and education. Guest lecturers from the county health department and local community health and public health organizations present up-to-date information on public health issues. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits

HAN 456 Behavioral and Social Aspects of Health

Introduces social and behavioral factors as determinants of health. Explores theories of human and group behavior and health behavior change models through lecture and case study. Explores the dynamics between health behaviors and culture, gender, age and socioeconomic status. Students study various inventory tools for measuring health-related knowledge and methods for measuring behavior change. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits

HAN 462 Developing Health Information Systems

Introduces students to fundamental hardware and software concepts, operating systems, GUI environments and system development life cycles. Reviews Windows applications such as spreadsheet, database, forms, queries and reports. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 464 Health Information Systems Management

The course includes organizational change issues in healthcare environments, resource management (inventory, tracking and acquisition) and the role of policy formulation. Consumer issues, standards and security and the provision of health information resources to health care workers will also be covered. Relevant applications and issues related to health services will also be explored. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 466 Applied Health Care Informatics

Provides overview of the role of information systems in health care organizations. Emphasizes the integration of evidence-based research into clinical decision-making and the influence of information systems on health outcomes. Explores technical, organizational and cost-benefit issues related to health care information systems, including clinical decision-support, integrated networking and distributed computing technologies, telemedicine applications, and artificial intelligence solutions. Through a combination of classroom-based seminars, group case studies, and computer-laboratory exercises, students will develop and exercise analytical skills for appraising health infor-

mation systems, as well as acquire practical experience using biomedical research databases, desktop application software, and electronic communication systems. Restricted to students approved for appropriate senior year track in the Health Science major.
3 credits

HAN 467 Utilization and Outcomes Research Methods

Provides the necessary tools to evaluate and implement research methods and utilize outcomes within the health care system. Presents an overview of statistics and research methods, and evaluation techniques utilizing group discussions and case studies. Demonstrates the utilization of technology as a resource for existing research as well as management tools. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 470 Environmental Health, Radiation Safety, and Safety Engineering

Presents an overview of the field of occupational health and safety. Focuses on three key areas including radiation protection, environmental health, and safety engineering. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 474 Industrial Hygiene

Introduces basic concepts of industrial hygiene. Provides understanding of the methodology and procedures that professionals in the field use to identify, measure, and correct hazards in the work environment. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 476 Hazardous Material, Emergency Response and Environmental Auditing

Concentrates on the nature of hazardous materials and how they are handled in the workplace. Presents the fundamentals of emergency response planning and how to perform environmental audits. Restricted to students approved for appropriate senior year track in the Health Science major.
4 credits

HAN 478 Independent Study in Environmental Health

Proposals for special projects involving advanced readings, reports, and discussions on selected environmental health topics must be submitted. A research paper on the selected topic will be submitted to an assigned faculty sponsor. Restricted to students approved for appropriate senior year track in the Health Science major.
2 credits

HAS

Health Sciences

HAS 190 Introduction to the Health Professions

Presents topics of interest to students considering careers as health professionals. Introduces the student to basic concepts of health, factors influencing health care, health care settings, and selected health professions. May not be taken for credit in addition to LHW 102.
1 credit

HAT

Respiratory Care

HAT 210 Introduction to Respiratory Care

An introduction to the science of respiratory care. Current trends in professional practice are discussed and students have the opportunity to 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.
Prerequisite: Permission of instructor
1 credit

HBA

Anatomical Sciences

HBA 349 Biodiversity and Evolution in the Fossil Record

An examination of biodiversity as preserved in the fossil record and how it contributes to the understanding of evolution. Species examined include invertebrates, plants, dinosaurs, and mammals and the ultimate origin and evolution of humans. Principles of evolution, paleontology, phylogeny reconstruction, and conservation are discussed. Crosslisted with BIO 349.
Prerequisite: BIO 201
Advisory Prerequisite: BIO 202 or 203
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.
Prerequisites: U3 or U4 standing; permission of instructor
1-2 credits per course

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: U3 or U4 standing; laboratory experience; permission of supervising instructor
0-4 credits per course

HBH

Pharmacological Sciences

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. May not be used toward the requirements for the major in pharmacology.
Prerequisites: U3 or U4 standing; permission of instructor
1-5 credits per course

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. May be repeated. May not be taken for credit in addition to BCP 487.
Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor
0-6 credits per course

HBM

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. Non-specific and specific host defenses and the control of microorganisms also are covered. Satisfies the microbiology requirement for admission to most allied health, nursing, optometry, and veterinary medicine professional schools.
Prerequisites: BIO 202; CHE 112 or 132
3 credits

HBM 321 General Microbiology Laboratory

Complementing the lecture material of HBM 320, this 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-allied health, pre-nursing, and pre-veterinary students.
Prerequisites: BIO 202; CHE 112 or 132; permission of instructor
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. May be repeated.
Prerequisites: U3 or U4 standing; permission of instructor
1-2 credits per course

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. Project report required. May be repeated.
Prerequisites: U3 or U4 standing; prior laboratory experience; permission of instructor
0-4 credits per course

HBP

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: U3 or U4 standing; BIO 202 and 203; permission of instructor
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: U3 or U4 standing
Pre- or corequisite: BIO 361
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. May be repeated.

Prerequisites: U3 or U4 standing; permission of instructor

1-2 credits per course

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. May be repeated.

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

0-4 credits per course

HBW**Hebrew****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. HBW 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Hebrew in high school (or who has otherwise acquired an equivalent proficiency) may not take HBW 111 without written permission from the supervisor of the course.

Prerequisite to HBW 112: HBW 111

3 credits per course

HBW 211, 212 Intermediate Hebrew I, II

Intermediate courses in conversation, composition, and the reading of texts in modern Hebrew.

Prerequisite to HBW 211: HBW 112

Prerequisite to HBW 212: HBW 211

3 credits per course

HBW 311 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 212

3 credits

HBW 312 Advanced Hebrew II

Readings in modern Hebrew authors. Oral and written reports. Discussion is conducted mainly in Hebrew.

Prerequisite: HBW 311

3 credits

HBW 405 Studies in Hebrew Literature

May be repeated as the topic changes.

Prerequisite: HBW 311 or 312

3 credits

HBW 415 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 311

3 credits

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

1-4 credits

HB Y**Physiology and Biophysics****HB Y 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. Priority given to Health Sciences students. Modules 1 through 3.

Prerequisites: U3 or U4 standing; college courses in biology and chemistry; permission of instructor

Advisory Prerequisite: Some background in physical science

4 credits

HB Y 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. May be repeated.

Prerequisites: U3 or U4 standing; permission of instructor

1-2 credits per course

HB Y 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. May be repeated.

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

0-4 credits per course

HDH**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 when topic is Health Care Delivery; approval of department chairperson

3 credits

HDO**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. A copy of the student's transcript must be submitted with the application to the department.

Prerequisites to HDO 320: U3 standing; permission of the department prior to registration

Advisory Prerequisites: BIO 202; CHE 132/134 or CHE 142/144

Prerequisite to HDO 321: HDO 320

0-4 credits per course

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. A copy of the student's transcript must be submitted with the application to the department.

Prerequisites to HDO 420: U4 standing; permission of department prior to registration

Advisory Prerequisites: BIO 202; CHE 132/134 or CHE 142/144

Prerequisite to HDO 421: HDO 420

0-4 credits per course

HDP**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 132/134 or CHE 142/144; BIO 202; permission of instructor

0-4 credits per course

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

0-4 credits per course

HIN**Hindi****HIN 111, 112 Elementary Hindi I, II**

An introduction to spoken and written Hindi, stressing pronunciation, speaking, comprehension, reading, and writing. HIN 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Hindi in high school (or who has otherwise acquired an equivalent proficiency) may not take HIN 111 without written permission from the supervisor of the course.

Prerequisite to HIN 112: HIN 111

3 credits per course

HIN 211, 212 Intermediate Hindi I, II

Advanced speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work. A student who has had more than four years of Hindi in high school (or who has otherwise acquired an equivalent proficiency) may not take HIN 211, 212 without the written permission of the supervisor of the course.

Prerequisite to HIN 211: HIN 112

Prerequisite to HIN 212: HIN 211

3 credits per course

HIS

History

HIS 101-F European History: From Antiquity to Revolution

An introduction to the ideas and institutions of "the West" from the beginnings of civilization to the French Revolution. Topics include ancient cultures; the rise of Christianity; medieval politics and society, Renaissance art and thought; the Reformation and Counter-Reformation; the new science; absolutism and the modern state; and the Enlightenment.

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.

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 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.

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.

3 credits

HIS 109-F History Through Documents

Introduction to social-historical issues and problems focusing on well-defined topics. Students work with primary materials and consider the conjunction between published and accepted interpretations and what the documents seem to say.

Prerequisite: U1 standing

3 credits

HIS 111-F Introduction to the Social History of Medicine

Introduction to the themes in the social history of medicine: the social construction of disease, cultural significance of bodily fluids, medical politics, religions and medicine, international considerations. Themes are explored through the history of a particular medical event such as AIDS or the Black Death.

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.

3 credits

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.

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.

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.

Advisory Prerequisite: LAC 200

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.

Advisory Prerequisite: LAC 200

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.

Advisory Prerequisite: One HIS course

3 credits

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.

Advisory Prerequisite: One HIS course

3 credits

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.

Advisory Prerequisite: One HIS course

3 credits

HIS 221-J Introduction to Modern African History

Historical themes in 19th- and 20th-century Africa. Topics include social and political relations in African states; slavery and the slave trade in West Africa; the impact of Christianity and Islam on African colonialism; colonialism and its consequences; nationalist movements and de-colonization; pan-Africanism and the politics of African unity; the postcolonial state project; economic planning in postcolonial Africa; and African states and international politics in the Cold War era. Crosslisted with AFS 221.

Advisory Prerequisite: One D.E.C. category F course

3 credits

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.

Advisory Prerequisite: RLS 101 or 110 or one HIS course

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.

Advisory Prerequisite: RLS 101 or 110 or one HIS course

3 credits

HIS 227-J Islamic Civilization

Selected topics in Islamic civilization beginning with the Arabian world at the time of Muhammed and extending to current events. The focus of the course is primarily on history and culture, but the interplay of politics and religion is also examined.

3 credits

HIS 235-I The Early Middle Ages

A survey of Europe in the Early Middle Ages (300-1100) from the emergence of Christianity and the decline of the Roman Empire in the West through the Investiture Struggle and the early Crusades. The course covers social, political, cultural, and religious developments. Emphasis is placed on the reading of primary sources—literary and religious texts and the public record.

3 credits

HIS 236-I The Late Middle Ages

A survey of Europe in the Later Middle Ages (1100-1500) from the Crusades and rise of towns and feudal monarchy through the years of war, plague, and the Great Schism and Conciliarism. The course covers social, political, cultural, and religious developments. Emphasis is placed on the reading of primary sources—literary and religious texts and the public record.

3 credits

HIS 237-H Science, Technology, and Medicine in Western Civilization I

An examination of science, technology, medicine, and their social organization from 1450-1790 (from the Renaissance to the French Revolution) and the origin of those systems in Western cultures. Among the topics covered are experimentation and mathematics, funding of technological development by the state, organizations of scientists, the place of science and technology in cultural life, industrialization, and the character and organization of medical practice.

Advisory Prerequisite: One D.E.C. category E course

3 credits

HIS 238-H Science, Technology, and Medicine in Western Civilization II

An examination of science, technology, medicine, and their social organization from 1790 to the present (from the French Revolution to the end of the Cold War) and the development of these systems world wide. Among the topics covered are professionalization of medicine, implications of physics for defense industries, growth of biotechnology, and the impact of Darwinism on culture.

Advisory Prerequisite: HIS 102

3 credits

HIS 241-I The Holocaust: The Destruction of European Jewry—Causes and Consequences

The rise of modern anti-Semitism since the late 18th century and its political application in Nazi Germany. Topics include the destruction process, ghetto life, resistance, foreign response, and the war crimes trials. Crosslisted with JDS 241.

Advisory Prerequisite: JDS/HIS 226 or HIS 101 or 102

3 credits

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.

Advisory Prerequisite: HIS 101 or 102

3 credits

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. Consideration of the historic forces leading up to the events of 1914.

Advisory Prerequisite: HIS 102
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.

Advisory Prerequisite: HIS 102
3 credits

HIS 251-I Europe Since 1945

A study of contemporary Europe against the background of 20th-century history, emphasizing political developments beginning with the Cold War, de-colonization, the problems of postindustrial society, managed capitalism, and intellectual and cultural movements, such as existentialism and Marxist humanism.

Advisory Prerequisite: HIS 102
3 credits

HIS 261-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 these changing conditions. Includes early 19th-century background and explores implications for the present day.

Advisory Prerequisite: HIS 104
3 credits

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.

Advisory Prerequisite: HIS 103
3 credits

HIS 263-K Age of the American Revolution

The social, economic, and political history of the period 1763-1787, set against the background of the development of colonial society. 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.

Advisory Prerequisite: HIS 103
3 credits

HIS 264-K The Birth of Modern America

Against the background of colonial and revolutionary developments, the course examines the beginnings of modern political, economic, and social institutions in the United States. Areas covered include the conflict between the North and South, 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.

Advisory Prerequisite: HIS 103
3 credits

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, going back to the earliest settlements and Constitutional debates. 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.

Advisory Prerequisite: HIS 103
3 credits

HIS 266-K History of the United States West

Study of the United States West as both a place and a process, examining the region through its history as the homeland of various Native American peoples; as an object of European imperial designs and then Mexican and U.S. economic, territorial, and cultural expansionism; and finally as a region with particular ties to the United States federal government as well as distinctive patterns of race relations and a unique place in U.S. cultural memory.

Advisory Prerequisite: HIS 103 or 104
3 credits

HIS 268-K Recent U.S. History, 1919-Present

A survey of recent U.S. history: the 19th- and early 20th-century social, cultural, and economic developments. Topics include the 1920's, the Great Depression and New Deal, the Cold War, the 1960s and after.

Advisory Prerequisite: HIS 104
3 credits

HIS 277-K The Modern Color Line

An exploration of the significance of race in 19th- and 20th-century America. Topics include forms of political organization and collective struggle; the social and psychic consequences of racial subjection; the relationship among race, racism, and culture; and the cultural politics of race and gender. Crosslisted with AFS 277.

Advisory Prerequisites: AFS 101 and 102; completion of D.E.C. categories I and J
3 credits

HIS 300-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
3 credits

HIS 301 Reading and Writing History

How modern historians have written history, focusing on the methods of three types of history—social, cultural, and political—and how historians have addressed three major problems of historical analysis—causation, motivation, and the significance or meaning of events. Readings include material from U.S., European, and Latin American history.

Prerequisites: At least six credits in history
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
3 credits

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
3 credits

HIS 311-I The Rise of Imperial Germany, 1806-1890

The course of German history from the Napoleonic to the Bismarckian era, examining the power struggles

of traditional authoritarianism versus liberalism and socialism in an age of drastic economic transformation.

Prerequisite: HIS 102
3 credits

HIS 312-I From Empire to Third Reich: Germany, 1890 to Present

From Bismarck's dismissal through the Wilhelminian 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
3 credits

HIS 316-F The Healer and the Witch in History

Female healers from the Middle Ages to the present, their association with "diabolic" powers, and the progressive development of a mechanism for their repression and control and how they related to their societies. The course also treats the development of organized medicine and its impact upon female healers and patients. Crosslisted with WST 316.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One HIS or WST course
3 credits

HIS 317-F Expansion of Europe

The European influence on the wider world during the modern period. Forms of European overseas settlement, conditions of conquest, local responses to European domination, and de-colonization are studied. The course emphasizes comparisons and original documents.

Prerequisite: One 200-level course on modern Europe
3 credits

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. Themes may include liberalism, conservatism, romanticism, 19th-century realism, and the discovery of the unconscious.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: HIS 101 or 102
3 credits

HIS 321-K Long Island History

An exploration of U.S. history through the lens of Long Island's 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 Railroad, suburbanization and modern cultural, social, and economic developments.

Prerequisite: U3 or U4 standing
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.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: HIS 104 or AFS 101 or 102
3 credits

HIS 326-K History of Popular Culture

The development of popular culture in the United States. The course examines the history of different aspects and genres of popular mentality—18th century artisanal culture; 19th-century commercial culture; and the rise of mass media culture in the 20th century.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: HIS 103 or 104
3 credits

HIS 327-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 de Tocqueville.

Prerequisite: One course in U.S. history

Advisory Prerequisite: HIS 103

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 WST 333.

Prerequisite: one of the following: HIS 103, HIS 104, WST/SSI 102, or WST 103

Advisory Prerequisites: Completion of D.E.C. categories I and J

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 WST 334.

Prerequisite: HIS 102 or WST/SSI 102 or WST 103

3 credits

HIS 340-J Topics in Asian History

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes

Prerequisite: HIS 219 or 220

3 credits

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: One HIS course

Advisory Prerequisite: HIS 219

3 credits

HIS 343-J Roots of Modern Japan

The history of Japan from prehistory to the 20th century, emphasizing those aspects of history and culture that are still shaping Japanese society today.

Prerequisite: One HIS course

Advisory Prerequisite: HIS 220

3 credits

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: One HIS course

Advisory Prerequisite: HIS 220

3 credits

HIS 345-J Women and Gender in Chinese History

Exploration of traditional cultural practices and values, and the 20th-century changes in Western and Asian relations in China brought about by nationalism, interaction with Western influences, and socialist rule. Crosslisted with WST 345.

Prerequisite: One of the following: HIS 219, HIS 220, CNS 249, CNS 250, or any WST course

3 credits

HIS 346-J Political and Social History of Africa

An exploration of theoretical perspectives in the historical sociology and comparative politics of Africa. Topics include the crisis of state legitimacy; the patriarchal society; ethnicity, religion, and politics; the politics of modernization; development and the environment; population growth and underdevelopment; globalization, neo-liberal economic policy and the postcolonial state; and the history of state and society relations. Crosslisted with AFS 346.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two AFS or HIS courses

3 credits

HIS 348-J History of British India

The rise, development, and decline of British power in India from the mid-18th century to the mid-20th century; the nature and extent of British power, British social, cultural, and economic policies, and their impact on Indian society. Indian responses to British rule, resistance and collaboration, religious and cultural movements, and the rise of Indian nationalism; Hindu-Muslim conflict; partition and the transfer of power.

Prerequisite: One of the following: HIS 101, 102, 219, or 220 or SAS 240

3 credits

HIS 349-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. Not for credit in addition to the discontinued HIS 395.

Prerequisite: HIS 101 or 102

Advisory Prerequisite: AFS 221

3 credits

HIS 350-J Topics in African History

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: two AFS or two HIS courses

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 examines women's roles in the family and political life; women's economic activities; women and the Christian church; cultural attitudes concerning women; and women's own writing and creativity. Crosslisted with WST 360.

Prerequisite: One HIS course or any WST course

3 credits

HIS 361-F American History/American Film

Panorama of American history from colonial times to the present through the medium of film. Film is viewed as a product of history and a reflection of the social and ideological context in which it is created.

Prerequisite: U3 or U4 standing

3 credits

HIS 362-F Making Peace With the Sixties

A study of the 1960's, emphasizing conflict within American liberalism between cold warriors and anti-war activists, advocates of the bureaucratic welfare state versus those favoring small-scale community operations, and technocratic liberalism versus a policy 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.

Advisory Prerequisite: U3 or U4 standing

3 credits

HIS 365-K Environmental History of North America

The history of interactions between human beings and their natural environment on this continent, with special attention to the Northeastern region. Transformations of forests, homes, farms, and industrial workplaces will be considered. Cultural, economic, political and technological perspectives on the relationship between humans and nature from pre-Columbian to late 20th-century times.

Prerequisites: HIS 103 and 104

3 credits

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.

Prerequisite: HIS 103

3 credits

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.

Prerequisite: HIS 104

3 credits

HIS 371-K American Economic History to 1860

The economic and social development of North America and the United States from colonial settlement through early industrialization. The emphasis is on changing population patterns, use of natural resources, technological advances in production and transport, the development of markets, and the role of public policy.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 103

3 credits

HIS 374-F Historical Perspectives on Gender Orientation

An examination of contemporary American gender orientation from an historical perspective. Topics include gay marriage, gay clergy, medical definitions of gender orientation, and gays in the military. Crosslisted with WST 374.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One HIS or WST course.

3 credits

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.

Prerequisite: HIS 103 or 104

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

HIS 376-K 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
3 credits

HIS 378-F War and the Military

The causes and origins of wars, and the impact of war on social change. Topics covered include issues of military organization, recruitment, training, morale, war planning, and the integration of women, gays, and minorities in the military. Crosslisted with SOC 378.

Prerequisite: One HIS course or SOC 105
3 credits

HIS 380-J Topics in Latin-American History

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: HIS 213 or HIS/POL 214 or HIS/POL 216
3 credits

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 guerrilla warfare. Crosslisted with POL 382.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: HIS 213 or HIS/POL 214 or HIS/POL 216 or LAC 200
3 credits

HIS 385-J Aztec Civilization

An introduction to the historical development of the Aztec civilization. Combining historical, anthropological, literary, and visual sources, this course traces the rise and decline of the Aztec empire, with special emphasis on the Spanish conquest of the Aztec people.

Prerequisite: HIS 213 or HIS/POL 214
Advisory Prerequisite: LAC 200
3 credits

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.

Prerequisites: HIS/POL 214; U3 or U4 standing
Advisory Prerequisite: LAC 200
3 credits

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 WST 387.

Prerequisite: HIS 213 or HIS/POL 214 or any WST course
3 credits

HIS 388-J Slavery in Latin America and the Caribbean

The institution of slavery and its impact on plantation societies in the Americas, with particular attention to Brazil and the Caribbean. Topics include conquest and enslavement, the formation of slave communities, African culture in Latin America, resistance and oppression, the process of emancipation, and race relations. Crosslisted with AFS 388.

Prerequisite: One of the following: AFS 239, AFS 240, AFS 277, HIS 213, HIS 214 or LAC 200
3 credits

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
3 credits

HIS 390-I Topics in Ancient and Medieval Europe

Semester supplements to this *Bulletin* contain descriptions when the course is offered. Recent topics have included Early and Medieval Christianity; Leaders in Ancient Greece and Rome. May be repeated as the topic changes.

Prerequisite: One course in European history
3 credits

HIS 391-I Topics in Early Modern Europe

Semester supplements to this *Bulletin* contain descriptions when the course is offered. Recent topics have included Europe in the 16th Century; Before and After the Reformation; Early Modern England. May be repeated as the topic changes.

Prerequisite: One course in European history
3 credits

HIS 392-I Topics in European History

Semester supplements to this *Bulletin* contain descriptions when the course is offered. Recent topics have included England and France in the 18th Century; 17th Century Europe. May be repeated as the topic changes.

Prerequisite: One course in modern European history
3 credits

HIS 393-I Topics in Modern European History

Semester supplements to this *Bulletin* contain descriptions when the course is offered. Recent topics have included London, Paris and Berlin from 1900 to 2000; Victorian England and its legacy; European capitalism from 1900 to the present. May be repeated as the topic changes.

Prerequisite: HIS 102
3 credits

HIS 394-H Topics in History of Medicine and Reproduction

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: One HIS course
3 credits

HIS 395-I Topics in Russian History

Semester supplements to this *Bulletin* contain descriptions when the course is offered. Topics may include Marxism and its aftermath; modern Russian social history, 1750-1921; Russian intellectual history from the 18th to the 20th Century. May be repeated as the topic changes.

Prerequisite: One course in modern European history
3 credits

HIS 396-K Topics in U.S. History

Semester supplements to this *Bulletin* contain descriptions when the course is offered. Topics may include the rise of the American corporation in the 19th and 20th centuries; and economic history and changing population patterns. May be repeated as the topic changes.

Prerequisite: HIS 103 or 104
3 credits

HIS 397-K Topics in History of U.S. Immigration and Ethnicity

Semester supplements to this *Bulletin* contain descriptions when the course is offered. Topics may include Asian and Pacific Islanders throughout American history; and Latino immigration from 1848 to the present. May be repeated as the topic changes.

Prerequisite: HIS 103 or 104 or AFS 102
3 credits

HIS 398-H Topics in History of Science and Technology

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: HIS 237 or 238
3 credits

HIS 399-K Topics in U.S. History

Semester supplements to this *Bulletin* contain descriptions when the course is offered. Recent topics have included history of diseases in 19th- and 20th-century America; and crime and police in the 20th century. May be repeated as the topic changes.

Prerequisite: HIS 103 or 104
3 credits

HIS 401, 402, 403 Colloquia in European History

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
3 credits per course

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, focusing on the impact of social and behavioral science theories on social practice. Topics may include the origins of social theory, the impact of Marxism on the social sciences, or the history of psychoanalysis in the 20th century. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
3 credits

HIS 411-414 Colloquia in American History

Colloquia considering 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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
3 credits per course

HIS 421, 422 Colloquia in Latin American History

Colloquia considering such topics as slavery and race relations, culture and ideology, peasant movements and popular rebellion, and 20th-century revolutions. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
3 credits per course

HIS 431, 432 Colloquia in Asian History

Colloquia considering such topics as Japanese nationalism and expansion, Far Eastern diplomatic history, and nationalism in Southeast Asia. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
3 credits per course

HIS 441 Colloquium in World History

Colloquia considering such topics as the expansion of Europe, theories of imperialism, revolutionary and religious movements, the psychoanalytical interpretation of history, and slavery. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
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 chosen by the student in consultation with the faculty member. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated.

Prerequisites: A strong background in history; permission of instructor and department
1-3 credits

HIS 451 Colloquium in Medieval History

Selected topics in medieval history are studied with attention to primary sources and current hagiographic controversies and developments. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
3 credits

HIS 461 Colloquium in the History of Science

Colloquium considering such topics as the history of American science, the social history of science, the impact of Darwinism, modern physics, and technology and social change. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
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.

Prerequisites: Permission of instructor and either department or departmental research coordinator
0-6 credits

HIS 488 Internship

Participation in local, state, and national public and private agencies and organizations. May be repeated up to a limit of 12 credits.

Prerequisites: 15 credits in history; permission of instructor and department
0-6 credits, S/U grading

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. Students receive only one grade upon completion of the sequence.

Prerequisite: Admission to the history honors program
3 credits per course

HMC**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.

3 credits

HMC 331-G Legal and Ethical Issues in Health Care

Introduction to ethics, its application to the health care profession, and 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.

Prerequisites: U3 or U4 standing; one D.E.C. category B course
3 credits

HNI**Nursing****HNI 190 Introduction to the Health Professions**

Presents topics of interest to students considering a career as a health professional. Introduces basic concepts of health, factors influencing health care, health care settings, and selected health professions. Professional roles assumed by allied health professionals, nurses, and social workers are explored. Directs students in examining personal, cultural, and social values as they relate to the implementation of these roles.

1 credit

HNI 290 Introduction to Nursing

An introduction to nursing for students who plan a career in nursing but are not yet enrolled in a school of nursing. The student is oriented to the nature and scope of the profession of nursing and settings where nursing is practiced.

2 credits

HON**Honors College****HON 105 Modes of Knowledge**

An examination of the structure and content of knowledge, as well as the ways in which various kinds of knowledge are constituted. The course examines some classical epistemological and ethical texts and also considers the ways in which modern epistemological theories, as well as knowledge forms characteristic of the natural sciences, social sciences, arts and humanities, have altered and/or affected our understanding of the nature of knowledge. Not for credit in addition to the discontinued HON 101.

Prerequisite: Acceptance into the Honors College
3 credits

HON 106 Modes of Being

Examination of the many different modes of being— aspects of the ways in which people think of themselves and behave in the world—through analysis of literary works and through texts that derive from the

various social sciences, including psychology. Not for credit in addition to the discontinued HON 102.

Prerequisite: Acceptance into the Honors College
3 credits

HON 110-120 Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College
1 credit per course

HON 201 The Arts and Society

An exploration of the interconnections between art and society, using the biographies and autobiographies of notable visual artists, performers, and composers when appropriate, but also using other texts that focus on art works by anonymous creators such as the architects and sculptors who designed and created medieval cathedrals or the anonymous lyricists and composers who created the songs and dances of traditional cultures. Close examination of the works themselves is an integral part of the course, generally involving several field trips.

Prerequisite: Acceptance into the Honors College
3 credits

HON 301 Science, Engineering, Medicine, and Society

An examination of the mutual relations among science, technology, medicine, and society: how the sciences and various technologies affect society and, at the same time, are affected by it. This examination is conducted through the perspectives of disciplines outside the sciences—such as history, philosophy, sociology, and economics—in combination with the natural sciences, applied sciences, clinical medicine, and engineering.

Prerequisite: Acceptance into the Honors College
3 credits

HON 401 Global Issues

Using historical, geographical, sociological, political, and economic perspectives, students examine global issues. This examination may be either topical or regional and may be oriented either toward the past, the present, or the future.

Prerequisite: Acceptance into the Honors College
3 credits

HON 495-496 Honors College Senior Project

A two-semester, six-credit, research or creative project to be arranged with and approved by the Honors College Chair and a faculty supervisor. Both the Chair of the Honors College and the selected faculty member provide ongoing project supervision. With the approval of the Chair of the Honors College, students may substitute an appropriate credit-bearing departmental honors project or they may, with the approval of the department, submit their Honors College Senior Project for departmental honors. In no case, however, may they submit the same project for academic credit under two different sets of course numbers and/or designators. At the end of the first term, a progress report is expected; at the end of the second term, the student must make an oral presentation at the Honors College Symposium and must submit an appropriate thesis. Students receive only one grade upon completion of the sequence.

Prerequisite: U3 or U4 standing in the Honors College
3 credits per course

HUE

East European Literature and Culture Courses in English

HUE 269-I Topics in Contemporary Slavic Culture

Analysis and discussion of contemporary literary and social topics dealing with Russia or Eastern Europe. Attention is paid to the historic political, social and cultural forces out of which contemporary culture has evolved. Recent topics have included the apocalypse in literature; 20th-century Poland; Yugoslavia, past and present. May be repeated as topic changes, but counts toward fulfillment of Russian major requirements only once.

3 credits

HUE 392-I Topics in Slavic Studies

Semester supplements to this *Bulletin* contain descriptions when the course is offered. Recent topics have included consideration of literary representations of women and war in film and through literary and biographical writings. May be repeated as topic changes, but counts toward fulfillment of Russian major requirements only once.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher

3 credits

HUF

French Literature and Culture Courses in English

HUF 211-D French Cinema

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.

3 credits

HUF 212-J French Caribbean Literature

A study of representative texts from the French Caribbean translated into English, focusing on literary manifestations of a search for a specific identity by writers from Martinique, Guadeloupe, French Guiana, and Haiti. Crosslisted with AFH 212.

Prerequisites: Completion of D.E.C. category A; one course in literature

3 credits

HUF 213-G Caribbean and American Connections in Literature

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. Crosslisted with AFH 213.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUF 216-I French Civilization through the Ages

An overview of French civilization seen through its diverse manifestations in various cultural fields. The heritage of French society is analyzed through the arts, philosophy, science, literature, and theatre.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUF 219-I Modern France

A survey of contemporary France and its political, social, and economic structure, as well as the study of cultural life and institutions within the context of its historical development. Special attention is given to other French-speaking countries and their relations to France.

3 credits

HUF 235-G The "Stranger" in World Literature

Literary representations of "strangeness" and the strategies adopted by society to contain or expel this subversive presence. Authors include Faulkner, Melville, Camus, Sartre, Plath, and Rousseau. May be used to satisfy English major requirements.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUF 311-G French Literature

A course given in English on a major French author or literary movement in relation to European or American literature. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes. May be used to satisfy English or Comparative Literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher

3 credits

HUF 318-J Pan-African Literature I

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. Crosslisted with AFH 329.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

HUG

German Literature and Culture Courses in English

HUG 221-D German Cinema Since 1945

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.

3 credits

HUG 229-I Germany Today

A survey of contemporary Germany and its political, social, and economic structure, as well as the study of cultural life and institutions, within the context of its historical development, with comparisons to American models and standards.

3 credits

HUG 321-G Topics in the Literature of Germany

A course given in English on a major German author or literary movement, designed primarily to give students in other disciplines an opportunity to become

acquainted with the German tradition. (German majors are admitted by special permission of their advisors, and do the reading and term papers in German.) Semester supplements to this *Bulletin* contain descriptions when the course is offered.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two literature courses

3 credits

HUI

Italian Literature and Culture Courses in English

HUI 216-I Italian Civilization Through the Ages

The historical development of civilization in Italy with reference to literature and connection to artistic expression such as visual arts, music, and theatre.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUI 231-D Sex and Politics in Italian Cinema

The cinematic representation of gender, class, and sexual politics in post-World War II Italian films and the relationship of these themes to Italian history, society, and culture are discussed. Films by directors such as Bertolucci, Fellini, and Wertmüller are studied. Readings include selected works of film history, criticism, and theory.

3 credits

HUI 234-G Introduction to 20th-Century Drama

A study of avant-garde drama through the analysis of texts by Marinetti, Bontempelli, Pirandello, Betti, Beckett, Ionesco, and Tennessee Williams. Important questions such as identity and diversity are discussed from a variety of perspectives within the social, psychological, sexual, and multicultural context of our time.

Advisory Prerequisite: Completion of D.E.C. category B or THR 101

3 credits

HUI 235-G Sex, Love, and Tragedy in Early Italian Literature

A study of the interactions between the sexes in contrast with man's spiritual needs in the major works of early Italian literature. Dante's *Inferno* and *Purgatorio*, Boccaccio's *Decameron* and Petrarch's poetry are analyzed. May be used to satisfy English major requirements.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUI 236-K The Italian-American Scene

Exploration of the phenomenon of Italian-American experiences, with emphasis on issues of immigration and ethnicity. Studies in anthropology, history, sociology, literature, and culture provide historical and theoretical backgrounds of the experience of Italians in North and South America and their contributions to American culture.

Advisory Prerequisite: One D.E.C. category B course

3 credits

HUI 237-K Images of Italian-American Women

Examination of the role of Italian-American women through literature, film, politics, and music. The specific ways they have contributed artistically and socially to the American cultural scene from the first wave of Italian-American immigration to the present is considered. Crosslisted with WST 237.

Advisory Prerequisite: One D.E.C. category B course

3 credits

HUI 239-I Modern Italy

A survey of contemporary Italy and its political, social, and economic structure, as well as the study of cultural life and institutions, within the context of its historical development, with comparisons to American models and standards.

3 credits

HUI 331-G Italian Literature

A topics course given in English on a major Italian author or literary movement in relation to European or American literature. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes. May be used to satisfy English or comparative literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher

3 credits

HUI 333-K The Italian-American Experience in Literature

Literary and historical perspectives on the experience of Italians in America and their contribution to American culture from the earliest wave of Italian immigration to the present day. May be used to satisfy English or comparative literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher.

3 credits

HUI 336-K Italian Americans and Ethnic Relations

An historical and sociological examination of Italian-Americans from colonial America to the present with the major focus on the period from 1870 to the present. The Italian-American experience is compared with the experiences of other ethnic and minority groups within the U.S.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: One D.E.C. category F course; completion of D.E.C. categories I and J

3 credits

HUI 338-K Images of Italian Americans in Film

Italian-American ethnicity as represented in mainstream and independent American cinema from the silent era to the present. Particular attention is paid to the origin and existence of the traditional stereotypes associated with these representations, how they reflect the changing role of immigrants from the Industrial Revolution to the present, and how Italian-American filmmakers respond to them.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: HUM 201; HUI 231

3 credits

HUI 390-G Italian-American Studies in the Humanities

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One 200-level literature course

3 credits

HUI 392-F Italian-American Studies in the Social and Behavioral Sciences

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

3 credits

HUI 431 Special Topics in Italian Cinema

A topics course given in English on Italian cinema. Topics may include films of a particular actor or director, genre, theme, or historical period. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: HUI 231

Advisory Prerequisite: HUI 338

3 credits

HUI 447 Directed Readings in Italian Studies

Individually supervised readings in Italian studies. Primarily for students who do not have the language proficiency to take ITL 447. May be repeated.

Prerequisite: Permission of department

1-6 credits

HUI 475, 476 Undergraduate Teaching Practicum in Italian and Italian-American Studies I, II

Students may not serve as teaching assistants in the same course twice.

Prerequisite to HUI 475: Permission of department

Prerequisites to HUI 476: HUI 475; permission of department

3 credits per course, S/U grading

HUL

Romance Language Courses in English**HUL 424 The Linguistics of Romance Languages**

The linguistic evolution of the Romance languages is studied, along with their synchronic grammars. The course is conducted in English.

Prerequisite: One of the following: FRN 312, ITL 311 or 312, LAT 112, SPN 312, or LIN 201 and 211

3 credits

HUM

Humanities**HUM 109-B Philosophy and Literature in Social Context**

The role of literature and philosophy in understanding and critically assessing personal experience and social life. The links among literary texts, philosophical issues, and political and social commitments are explored. Topics include the relations between language and experience, the role of philosophical thinking through literary texts, and the significance of literary expression in different cultural and historical situations. Crosslisted with PHI 109.

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.

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.

3 credits

HUM 123-B Sin and 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.

3 credits

HUM 201-D Film and Television: Genres

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

3 credits

HUM 202-D Film and Television: History and Theory

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

3 credits

HUM 220-G Cross-Cultural Encounters

Introduction to the process and effects of the encounter of two or more previously separate cultures, illustrated by study of historical or contemporary instances of such encounters, and drawing from the art, music, theatre, literature, philosophy or religion of the selected cultures. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: One D.E.C. category B course

3 credits

HUM 495 Humanities Honors Project

A one-semester project for humanities majors who are candidates for the degree with honors. 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

3 credits

HUR

Russian Literature and Culture Courses in English**HUR 141-B Russian Literature and Empire**

A survey in English of major Russian writers of the 19th and 20th centuries, including Pushkin, Dostoevsky, and Solzhenitsyn. 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.

3 credits

HUR 142-B Russian Literature and Revolution

Introduction to the major texts of modern Russian literature. Topics include the social and aesthetic rebellions of writers confronted with political oppression (labor camps, prisons, Stalin's reign of terror) or with literary tradition. Typical cultural modes of rebellion, including avant-garde and popular forms of carnival and folk laughter, in examples from prose and poetry.

3 credits

HUR 145-D Russian Film and Culture

Study of Russian films from the 1920s to the present viewed in terms of their interaction with Russian culture.

3 credits

HUR 231-I Saints and Fools

An introduction to literature about the lives of saints and the holy fool tradition in major texts of Russian and English literature. Emphasis is placed on the ways authors have used fundamental religious values of humility, the transcendent irrational, and kenosis to confront their own times. Authors considered include Dickens, Chaucer, Gogol, and Pushkin; films include *Murder in the Cathedral* and *Forrest Gump*. Crosslisted with EGL 231.

Advisory Prerequisite: One D.E.C. category B course
3 credits

HUR 232-I Rebels and Tyrants

An exploration of literary rebels and tyrants central to Russian and Anglo-American traditions. The subversive tactics of such writers as Shakespeare, Dostoevsky, Sir Walter Scott, Solzhenitsyn, and Salinger are appraised in the light of the dominant social, political, and aesthetic systems they confront. Crosslisted with EGL 232.

Advisory Prerequisite: One D.E.C. category B course
3 credits

HUR 235-G Crime and Punishment in World Literature

An exploration of the nature of crime and punishment in literature, including readings from Dostoevsky, Dickens, and Nabokov on the depiction of criminals, villains, acts of violence, and the moral code of their time. May be used to satisfy English major requirements.

Advisory Prerequisite: One D.E.C. category B course
3 credits

HUR 249-I Russia Today

Contemporary cultural trends viewed in terms of their historic social and political context. Recent responses to historical change such as the breakup of the Soviet Union and its relation to the forces that brought about the Russian Revolution, the new economic order, and the search for Russian national identity are explored in literature, the arts, and media.

3 credits

HUR 341-G Russian Literature

A topics course given in English on a major Russian author or literary movement in relation to European or American literature. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes. May be used to satisfy English or comparative literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher

3 credits

HUR 393-G Literary Analysis of Russian Texts

Selected topics in literary analysis focusing on the work of one or more Russian authors in translation. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: One literature course at the 200 level or higher

3 credits

HUS

Spanish Literature and Culture Courses in English

HUS 254-J Latin America Today

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.

3 credits

HUS 255-I Modern Spain

An examination of major cultural and social developments in Spain throughout 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.

3 credits

HUS 361-G Latin-American Literature

A topics course given in English on a major Latin American author or literary movement in relation to European or American literature. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes. May be used to satisfy English or comparative literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher

3 credits

HUS 371-G United States Latino Literature

A topics course given in English on a major Latino author or literary movement in relation to European or American literature. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes. May be used to satisfy English or comparative literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher

3 credits

HUS 390-J Latin-American Cinema

A contextual approach to the national cinemas of Latin America. Students develop their skill in film analysis as they examine the specific role of film in re-focusing the terms of ongoing debates on questions of national identity and the function of culture in society.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One 200-level course in film or one course in Latin American literature, culture, or history

3 credits

HWC

Social Welfare

HWC 210 Introduction to Social Work

Introduces the student to the field of social work. Provides an overview of the variety of settings in which social workers practice. Describes the knowledge, values, and skills which social workers use in order to help individuals, families, groups, and communities.

1 credit

HWC 326 Social Work in Health Care with Diverse Populations

An overview of the many facets of health care delivery and the role of social workers in that delivery. Students look at various health care systems such as community-based health services, hospital care, long term care, and how diverse populations, including women, African Americans, Latinos, the developmentally disabled, children, and the aged, are treated by these systems.

Prerequisites: U3 or U4 standing; permission of instructor or School of Social Welfare Office of Student Services

3 credits

HWC 349 Overview of Gay and Lesbian Issues

Examines the status of homoerotic individuals and groups within the United States in order that 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.

Prerequisites: U3 or U4 standing; permission of instructor or School of Social Welfare Office of Student Services

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, and on the implications for effective social work.

Prerequisites: U3 or U4 standing; permission of instructor and of School of Social Welfare Office of Student Services

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.

Prerequisites: U3 or U4 standing; permission of instructor or School of Social Welfare Office of Student Services

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 homelessness a major social problem.

Prerequisites: U3 or U4 standing; permission of instructor or School of Social Welfare Office of Student Services

3 credits

ISE

Information Systems

ISE 203 Using the Internet for Research

Presents methods of information retrieval from large databases and Internet resources. Emphasis on developing cognitive skills for effective information retrieval from Web-based search engines and the very large textual databases that are increasingly available to end-users through the Internet. Includes the use of Boolean operators to retrieve relevant information.

Students learn to create search strategies, to develop an understanding of how to discern relevance in the research process, and complete a project in which they apply these skills by thoroughly investigating a research topic and creating a Website featuring the subject of their database research. Not for CSE or ISE major credit.

Prerequisites: CSE 103 or equivalent; U3 or U4 standing; permission of instructor
2 credits

ISE 300 Writing in Information Systems

See Requirements for the Information Systems Major, Upper-Division Writing and Oral Skills Requirement.

Prerequisites: U3 or U4; ISE major
Corequisite: ISE 440

1 credit, S/U grading

ISE 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 CSE 305.

Prerequisites: CSE 214 and 220
4 credits

ISE 308 Software Engineering

Introduces the basic concepts and modern tools and techniques of software engineering. Emphasizes the development of reliable and maintainable software via system 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 factor issues. Crosslisted with CSE 308.

Prerequisite: CSE 214
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. Not for credit in addition to CSE/ESE 346. Crosslisted with CSE 310.

Prerequisites: CSE 214 and 220
3 credits

ISE 315 Database Transaction Processing Systems

Theory and practice of design for applications involving transactional access to a database. Transaction design, schema design, restart and recovery, journaling, concurrency control distributed databases. Student groups perform design and implementation of significant database application. Crosslisted with CSE 315.

Prerequisites: CSE/ISE 305
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 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
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 recommended
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 or ISE major; U3 or U4 standing
3 credits

ISE 336 Internet Commerce Programming

Introduces the design and development of software for Internet commerce. Topics include Extended Markup Language, servlets, cookies, sessions, Internet media types, Web protocols, digital signatures, certificates, encryption, and the wireless Internet. Crosslisted with CSE 336.

Prerequisite: CSE 219
3 credits

ISE 364 Advanced Multimedia Techniques

Digital media production techniques for high-bandwidth applications such as electronic magazine illustration, broadcast television, and motion picture special effects. Students explore techniques such as 3D modeling and character animation, video compositing, and high-resolution image processing in a state-of-the-art multimedia computing laboratory. High-capacity multimedia storage, high-speed networks, and new technologies such as DVD, HDTV, and broadband will be reviewed. Crosslisted with CSE 364.

Prerequisites: CSE/ISE 334 and permission of the instructor
3 credits

ISE 390 Special Topics in Information Systems

Lecture or seminar course on a current topic in information systems. May be repeated as the topic changes, but cannot be used more than twice to satisfy ISE major requirements.

Prerequisites: ISE or CSE major; U3 or U4 standing
3 credits

ISE 440 Information Systems Design

Student groups select an appropriate senior design project; analyze application; and produce detailed documentation for requirements, specification, and high-level design.

Prerequisites: ISE major; CSE/ISE 305 or 310
Corequisite: ISE 300
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: U4 standing as an undergraduate CEAS major; a minimum g.p.a. of 3.00 in all Stony Brook courses; grade of B in the course in which the student is to assist; or permission of department
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, ESE 499, ESM 499, EST 499, ISE 487, MEC 499) 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
0-6 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. May be repeated up to a limit of 12 credits but cannot be used an elective to satisfy ISE major requirements.

Prerequisites: ISE major; U3 or U4 standing; permission of faculty sponsor and department
3 credits, S/U grading

ITL Italian

ITL 101 Intensive Elementary Italian

An intensive course covering the elementary Italian program (ITL 111, 112) in one semester. ITL 101 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Italian in high school (or who has otherwise acquired an equivalent proficiency) may not take this course without written permission from the supervisor of the course. May not be taken for credit after any other course in Italian.

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. ITL 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Italian in high school (or who has otherwise acquired an equivalent proficiency) may not take 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
4 credits per course

ITL 201 Intensive Intermediate Italian

An intensive course covering the intermediate Italian program (ITL 211, 212) in one semester. May not be taken for credit in addition to ITL 211, 212.

Prerequisite: ITL 101 or 112
6 credits

ITL 211, 212 Intermediate Italian I, II

Intermediate courses in the reading and discussion of selected Italian texts. Completion of grammatical and syntactic points not covered in Elementary Italian. Extensive practice in conversational ability. May not be taken for credit in addition to ITL 201.

Prerequisite: to ITL 211: ITL 101 or 112
Prerequisite: to ITL 212: ITL 211

3 credits per course

ITL 311 Italian Conversation and Composition

A course in spoken and written Italian, with emphasis on precision and fluency in the spoken form.

Prerequisite: ITL 201 or 212
3 credits

ITL 312 Italian Conversation and Composition

Reading of selected short passages of prose and poetry in class, with emphasis on improved writing skills, oral expression, and increased mastery of Italian syntax and techniques of literary analysis.
Prerequisite: ITL 201 or 212
3 credits

ITL 313 Italian Vocabulary

A course designed to increase the vocabulary and oral comprehension of students of Italian through media such as television commercials, popular music, folk songs, etc. The particular theme changes each semester. May be repeated twice for credit as the topic changes.
Prerequisite: ITL 201 or 212
1 credit

ITL 395-G, ITL 396-G Readings in Italian Literature

Literary analysis and its application to representative texts chosen from the various periods of Italian literature. Readings, writings, and discussions are in Italian.
Prerequisite: ITL 311 or 312
3 credits per course

ITL 410 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 311 or 312
3 credits

ITL 411 Advanced Conversation and Composition

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 311 or 312
3 credits

ITL 412 Advanced Conversation and Syntax

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 411
3 credits

ITL 424 History of the Italian Language

A study of the history of the Italian language from Latin to its present form.
Prerequisite: ITL 311 or 312
3 credits

ITL 425 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 311 or 312
3 credits

ITL 426 Italian Linguistics

An examination of the linguistic evolution and the synchronic structures (phonology, morphology, and syntax) of standard Italian and some Italo-Romance dialects.
Prerequisite: ITL 311 or 312
3 credits

ITL 430, 431 Studies in 13th- and 14th-Century Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as

the topic changes.
Prerequisite: ITL 395 or 396
3 credits

ITL 432 Studies in 15th- and 16th-Century Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: ITL 395 or 396
3 credits

ITL 433 Studies in 17th- and 18th-Century Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: ITL 395 or 396
3 credits

ITL 434 Studies in 19th-Century Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: ITL 395 or 396
3 credits

ITL 435 Studies in Contemporary Literature

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: ITL 395 or 396
3 credits

ITL 440-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 312 or 395 or 396
3 credits

ITL 441 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 changes.
Prerequisite: ITL 311 or 312
3 credits

ITL 447 Directed Readings in Italian

Individually supervised readings in selected topics in 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 instructor
1-6 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 materials for discussion and helping students with problems. Not for major or minor credit.
Prerequisites: Fluency in Italian; permission of instructor and department
3 credits, *S/U grading*

ITL 488 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.
Prerequisites: ITL 410; permission of instructor and department
0-6 credits, *S/U grading*

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
3 credits

JDH**Judaic Studies in the Humanities****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.
3 credits

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: Completion of D.E.C. category A
3 credits

JDH 320 The Rabbinic Tradition

The origin and development of the Rabbinic tradition, examination of the chief elements of Rabbinic teaching at various times, and analysis of the major types of Rabbinic literature. Crosslisted with RLS 320.
Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230
3 credits

JDH 361-G Women in the Biblical World

Consideration of how we define, on the basis of biblical and other contemporaneous literature, women's position in the socio-political sphere, including women in professions and institutions, such as goddesses, leaders of the community, queens, "wise women", writers, prophetesses, magicians, and prostitutes; and examination of literary types such as the Wife (and concubine), the Mother, the Daughter, the Tempress, and the Ancestress. Crosslisted with WST 361.
Prerequisite: One JDH or JDS or WST or literature course at the 200 level or higher
3 credits

JDH 369-G Topics in Biblical Interpretation

A study of some of the ways a selected book in the Hebrew Bible, 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 changes.
Prerequisite: JDH 230 or one literature course at the 200 level or higher
3 credits

JDH 390-G Humanities Topics in Judaic Studies

An examination of a selected topic in Judaic studies within the humanities area. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230
3 credits

JDH 415-G Judaic Response 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 415.
Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230
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.
Prerequisite: Permission of Instructor
1-6 credits

JDS

Judaic Studies in the Social and Behavioral Sciences

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 which then arose, and ends with the consolidation of rabbinic Judaism on one hand and Christianity on the other. Crosslisted with HIS 225.
Advisory Prerequisite: RLS 101 or 110 or one HIS course
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.
Advisory Prerequisite: RLS 101 or 110 or one HIS course
3 credits

JDS 241-I The Holocaust: The Destruction of European Jewry—Causes and Consequences

The rise of modern anti-Semitism since the late 18th century and its political application in Nazi Germany. Topics include the destruction process, ghetto life, resistance, foreign response, and the war crimes trials. Crosslisted with HIS 241.
Advisory Prerequisite: JDS/HIS 226 or HIS 101 or 102
3 credits

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 WST 320.
Prerequisite: One JDS or WST course
3 credits

JDS 390-F Social Sciences Topics in Judaic Studies

An examination of selected topics within the social and behavioral sciences area to be announced whenever the course is offered. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: JDS/HIS 225 or 226
3 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
1-6 credits

JNH

Japanese Studies in the Humanities

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.
Advisory Prerequisite: Completion of D.E.C. category B
3 credits

JNH 251-J Japanese Literature

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 formed them.
Prerequisite: Completion of D.E.C. category A
3 credits

JNH 331, 332 Topics in Japanese Studies

An investigation of a specific area of Japanese studies in the humanities. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: JPN 211 or any course listed in Japanese Studies minor requirement 2
3 credits per course

JNH 351 Studies in Japanese Literature

A study in translation of a particular author, period, genre, or theme in Japanese literature. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: JNH 251
3 credits

JNH 447 Independent Study

Directed reading and research in Japanese studies in the humanities. Limited to Japanese studies minors or upper-division students working on advanced problems in Japanese studies. May be repeated.
Prerequisites: Permission of instructor and director of the minor
1-6 credits

JNS

Japanese Studies in the Social and Behavioral Sciences

JNS 331, 332 Topics in Japanese Studies

An investigation of a specific area of Japanese studies in the social and behavioral sciences. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: JPN 211 or any course listed in Japanese Studies minor requirement 2
3 credits per course

JNS 447 Independent Study

Directed reading and research in Japanese studies in the social and behavioral sciences. Limited to Japanese studies minors or upper-division students working on advanced problems in Japanese studies. May be repeated.
Prerequisites: Permission of instructor and director of the minor
1-6 credits

JPN

Japanese Language

JPN 111, 112 Elementary Japanese

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. These courses are designed for students who have no prior knowledge of the language. A student who has had two or more years of Japanese in high school (or who has otherwise acquired an equivalent proficiency) may not take JPN 111 or 112 without written permission from the supervisor of the course.
Prerequisite: to JPN 112: JPN 111
4 credits per course

JPN 211, 212 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. A student who has had three or more years of Japanese in high school (or has otherwise acquired an equivalent proficiency) may not enroll in JPN 211 or 212 without written permission from the supervisor of the course.
Prerequisite: to JPN 211: JPN 112
Prerequisite: to JPN 212: JPN 211
3 credits per course

JPN 311, 312 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 311: JPN 212
Prerequisite: to JPN 312: JPN 311
3 credits per course

JPN 475, 476 Undergraduate Teaching Practicum I, II

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. In JPN 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.
Prerequisites: to JPN 475: Fluency in Japanese; senior standing; permission of instructor
Prerequisites: to JPN 476: JPN 475; permission of instructor
3 credits per course, S/U grading

JRN

Journalism

JRN 287 Basic News Reporting and Writing

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: Completion of D.E.C. category A; typing speed of at least 25 words per minute
3 credits

JRN 288 Feature Writing

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.

Prerequisite: JRN 287
3 credits

JRN 387 Advanced News Reporting and Writing

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
3 credits

JRN 388 Advanced Feature and Magazine Writing

A continuation of JRN 288. The emphasis is on writing for publication in newspapers or magazines. Students do extensive research and write and re-write long features.

Prerequisite: JRN 288
3 credits

JRN 389 Investigative Reporting

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
Advisory Prerequisite: JRN 288
3 credits

JRN 390 Computer-Assisted Reporting

An advanced course in the use of computers, databases and the Internet to develop meaningful and complex stories. Emphasis is placed on finding raw data, interpreting it, organizing it and writing longer stories intended for publication. The course deals with critical thinking and the methodology of using computers as a journalistic tool.

Prerequisite: JRN 288 or 387
Advisory Prerequisite: Computer literacy in Windows
3 credits

JRN 394 Journalism Practicum

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
3 credits

JRN 395 News Editing

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
Advisory Prerequisite: JRN 288
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.

Prerequisites: 12 credits of journalism courses; 2.50 g.p.a.; permission of instructor and director of the minor
0-6 credits, S/U grading

KOR

Korean Language Courses

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. These courses are designed for students who have no prior knowledge of the language. A student who has had two or more years of Korean in high school (or who has otherwise acquired an equivalent proficiency) may not take KOR 111 or 112 without written permission from the supervisor of the course.

Prerequisite: to KOR 112: KOR 111
4 credits per course

KOR 211, 212 Intermediate Korean I, II

Intermediate courses 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 211: KOR 112 or placement test
Prerequisite: to KOR 212: KOR 211 or placement test
3 credits per course

KOR 311 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 212 or placement test
3 credits

KOR 351 Studies in Korean Literature

A detailed study of a particular author, genre, period, or topic in Korean literature. The readings, class discussions, and students' written assignments are in Korean. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: KOR 311
Advisory Prerequisite: One additional Asian studies course
3 credits

KOR 475, 476 Undergraduate Teaching Practicum I, II

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. In KOR 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. Not for Korean Studies minor credit.

Prerequisites: to KOR 475: Fluency in Korean; U3 or U4 standing; permission of instructor and director of Korean Studies minor
Prerequisites: to KOR 476: KOR 475; permission of instructor and director of Korean Studies minor
3 credits per course; S/U grading

KRH

Korean Studies in the Humanities

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.

3 credits

KRH 251-J Korean Literature

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: Completion of D.E.C. category A
3 credits

KRH 331, 332 Topics in Korean Studies

Investigation of a specific area of Korean studies in humanities. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated with permission of the program director.

Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in Asian studies
3 credits per course

KRH 346 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 ways in which they were adapted and modified by his followers over the centuries.

Prerequisite: One 200-level course in Asian religion or philosophy
3 credits

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 as topic changes.

Prerequisites: U3 or U4 standing; one 200-level course in Korean Studies
3 credits

KRH 447 Directed Readings in Korean Studies in the Humanities

Individually supervised readings in selected topics in Korean studies in humanities. May be repeated.

Prerequisites: U3 or U4 standing; permission of instructor
3 credits

KRH 475, 476 Undergraduate Teaching Practicum I, II

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. In KRH 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. May not count for Korean Studies

minor credit.

Prerequisites to KRH 475: Fluency in Korean; U3 or U4 standing; permission of instructor and director

Prerequisites to KRH 476: KRH 475; permission of instructor and director

3 credits per course; S/U grading

KRS

Korean Studies in the Social and Behavioral Sciences

KRS 331, 332 Topics in Korean Studies

Investigation of a specific area of Korean studies in the social and behavioral sciences. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated with permission of the program director.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in Asian studies
3 credits per course

KRS 447 Directed Readings in Korean Studies

Individually supervised readings in selected topics in Korean studies in the social and behavioral sciences. May be repeated.

Prerequisites: U3 or U4 standing; permission of instructor

3 credits

LAC

Latin American and Caribbean Studies

LAC 200-J Introduction to Latin American and Caribbean Societies

Introduction to 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 and broad understanding of Latin America's social and historical problems and challenges and an appreciation of the region's economic and cultural contributions.

Advisory Prerequisites: One D.E.C. category F course; one D.E.C. category B or G course

3 credits

LAC 488 Internship

Participation in local, state, and national public and private organizations related to Latin America and the Caribbean, or to Latinos in the United States.

Prerequisites: 15 credits in LAC studies; permission of instructor and director

0-6 credits, S/U grading

LAN

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. These courses are designed for students who have no prior knowledge of the language. A student who has had two or more years of the offered language in high school (or who

has otherwise acquired an equivalent proficiency) may not take LAN 111 in that language without written permission from the supervisor of the course.

Prerequisite to LAN 112: LAN 111

3 credits per course

LAN 211, 212 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. A student who has had four years of the offered language in high school (or who has otherwise acquired an equivalent proficiency) may not take LAN 211 in that language without written permission from the supervisor of the course.

Prerequisite to LAN 211: LAN 112

Prerequisite to LAN 212: LAN 211

3 credits per course

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.

Prerequisites to LAN 475: LIN 101; fluency in the language being taught; U3 or U4 standing; permission of instructor.

Prerequisites to LAN 476: LAN 475; fluency in the language being taught; permission of instructor.

3 credits per course, S/U grading

LAT

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. LAT 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Latin in high school (or who has otherwise acquired an equivalent proficiency) may not take LAT 111 without written permission from the course supervisor.

Prerequisite to LAT 112: LAT 111

3 credits per course

LAT 251, 252 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

3 credits per course

LAT 353 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: LAT 252

3 credits

LAT 354 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: LAT 252

3 credits

LAT 355 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: LAT 252

3 credits

LAT 356 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: LAT 252

3 credits

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. May be repeated.

Prerequisite: Permission of director of the classics minor

1-6 credits

LBR

Library

LBR 150 An Introduction to Library Research

The basics of library research, with emphasis on skills for gathering information for term papers. Printed and on-line electronic resources are presented. Topics include STARS (the Stony Brook Library automated catalog), searching indexes for accessing articles in magazines and scholarly journals, locating newspaper articles and government documents, and connecting to Internet sites.

Prerequisite: U1 or U2 standing or transfer student with fewer than 30 Stony Brook credits

1 credit

LCR

Living/Learning Center in Service Learning for Community-Based Action Research

LCR 200 The Nature of Community

The course examines the nature of human communities, their conceptualization, definition, and dynamics while providing an introduction to service learning strategies. Exploring issues such as organization and leadership, hierarchy and stratification, students examine the notion of community formation through processes of exchange and reciprocity, institutionalization, alienation and solidarity, marginalization, and empowerment. Priority given to residents of Douglass College.

3 credits

LCR 201 Methods for Community-Based Action Research

An introduction to basic methods of community action research. Students develop a fundamental set of "field-work" skills, learning to apply their academic knowledge in the service of community-based initiatives for social change. Covering theoretical, methodological, ethical, and legal issues, students conduct a series of field assignments to master key concepts in research design, implementation, and analysis. Priority given to residents of Douglass College.

3 credits

LCR 487 Directed Research in Service Learning for Community-Based Action Research

Independent research projects under the supervision of a faculty member. May be repeated.
Prerequisite: Permission of director of the minor
 0-6 credits

LCR 488 Internship in Service Learning for Community-Based Action Research

Student teams work in specific communities, applying their academic, intellectual, and technical skills to address community concerns. Working with local community members to develop effective plans for community action, students engage in service learning. May be repeated to a limit of 12 credits.
Prerequisites: LCR 200; LCR 201; permission of director of the minor
 0-6 credits

LCR 490 Senior Seminar in Service Learning for Community-Based Action Research

A capstone seminar for the minor in Service Learning for Community-Based Action Research. The course is designed to bring together students completing the minor and relevant community members to reflect on the nature of the research projects carried out and their expected consequences.
Prerequisites: LCR 488; permission of director of the minor
 3 credits

LHD**Living/Learning Center in Human Sexual and Gender Development****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, and sexual orientation. These issues are examined from an interdisciplinary perspective. Priority given to residents of Eisenhower College.
 1 credit

LHD 301 Human Sexual and Gender Development Issues

An examination of the human life cycle—infancy and childhood, youth and adolescence, mid-life and aging—with regard to gender and sexual self-concepts. Semester supplements to this *Bulletin* contain descriptions when the course is offered. Priority given to residents of Eisenhower College.
 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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated once as the topic changes. Priority given to residents of Eisenhower College.
 1 credit

LHD 305, 306 HIV Risk Reduction in the Campus Context

A two-semester sequence addressing issues of HIV transmission and risk reduction, including identifying opportunities to discuss risk and promote risk reduction, and supporting the process of behavior change. Examination of the history of the AIDS epidemic in the

U.S. and around the world. Priority given to residents of Eisenhower College.

Prerequisite to LHD 305: Permission of instructor

Corequisite to LHD 305: LHD 307

Prerequisites to LHD 306: LHD 305 and 307; permission of instructor

Corequisite to LHD 306: LHD 308

2 credits per course

LHD 307, 308 Laboratory in HIV Risk Reduction in the Campus Context

A forum for discussion of the application of material learned in LHD 305 and 306. The course focuses on the development of skills necessary to accomplish education and behavior changes among the peers of course participants, and monitors individual progress toward that end. Priority given to residents of Eisenhower College.

Prerequisite to LHD 307: Permission of instructor

Corequisite to LHD 307: LHD 305

Prerequisites to LHD 308: LHD 305 and 307; permission of instructor;

Corequisite to LHD 308: LHD 306

1 credit per course, S/U grading

LHD 401 Advanced Seminar in Human Sexual and Gender Development

Consideration of human sexual and gender development issues through examination of primary source material. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated once as the topic changes. Priority given to residents of Eisenhower College.
 1 credit

LHD 402 Parenting Children in the Next Generation

A sociological examination of the evolution of parenting in the post-World War II era. Topics covered include the sociology of childhood, the sociology of the family, parent and child development and parenting responsibilities, and parenting challenging children. Priority given to residents of Eisenhower College.

Prerequisite: LHD 301

3 credits

LHD 475, 476 Undergraduate Teaching Practicum I, II

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. In LHD 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites to LHD 475: LHD 487; U3 or U4 standing; permission of instructor and director of the minor

Prerequisites to LHD 476: LHD 475; permission of instructor and director of the minor

3 credits per course; S/U grading;

LHD 487 Independent Study in Human Sexual and Gender Development

The completion of an individual project by one student or a group of students on human sexual and gender development and the life course. Projects must include both library and field research, or a literary or artistic endeavor. May be repeated once.

Prerequisites: LHD 101 or 301; LHD 302; permission of director of the minor

0-3 credits

LHD 488 Internship

Participation in public and private agencies and organizations. May be repeated up to a limit of 6 credits.

Prerequisite: Permission of director of the minor or instructor

0-6 credits, S/U grading

LHW**Living/Learning Center in Health and Wellness****LHW 102 Introductory Seminar to the Health Professions**

An exploration of the scope of practice for selected health professions. The course includes seminars by invited speakers in the health professions. Students are required to actively investigate several similar professions in order to better understand similarities and differences. Professions explored include medicine, nursing, dentistry, physical therapy, occupational therapy, clinical laboratory sciences, respiratory care, and physician assistant. Not for credit in addition to HAS 190. Priority given to residents of Mount College.
 1 credit

LHW 301 Issues in Health and Wellness

An investigation of selected topics in health and wellness, chosen by the class as a whole. Students are required to actively investigate their chosen area and present their findings to the class. Topics are determined through class discussion, individual investigation, and mutual consent. Priority given to residents of Mount College.
 3 credits

LHW 488 Internship in Health and Wellness

An experience in health and/or wellness promotion, prevention, and/or education. Students learn about contemporary issues in health and wellness through hands-on work with faculty mentors and on- and off-campus health and wellness professionals. May be repeated up to a limit of 6 credits.

Prerequisites: LHW 301; permission of director of the minor

0-6 credits, S/U grading

LIA**Living/Learning Center in Interdisciplinary Arts****LIA 101-D Introduction to the Interdisciplinary Arts**

An exploration of the interdisciplinary and collaborative nature of the fine arts. The course traces the general development of the arts from their common practical origins in basic communication, ritual, and decoration to the present, and examines how these factors unify the arts in modern culture and society. Students develop in-class presentations using multiple art forms. Priority given to residents of Greeley College.
 3 credits

LIA 102 Opportunities in the Arts

An introductory seminar concerning career opportunities in the arts. Students meet once a week for discussion, networking, establishing career strategies, career planning, and investigations of continued study. Guest lecturers discuss their area of expertise in relation to career opportunities for students entering the field. Priority given to residents of Greeley College.
 1 credit

LIA 401 Senior Seminar

An intensive investigation of theatre theorists with particular emphasis on the application of theory to practice. Crosslisted with THR 401.

Prerequisites: U4 standing

3 credits

LIA 487 Projects in the Interdisciplinary Arts

The completion of a group-generated or individual creative project under the supervision of an instructor.
Prerequisites: LIA 101; any 200-level art, dance, music, or theatre course; permission of instructor and director of the minor
 0-6 credits

LIA 488 Internship in Arts Management

Study of the field of arts management, including public relations, scheduling, resource coordination, and community interaction. Practical work with management of the annual Shirley Strum Kenny Student Arts Festival.
Prerequisite: Permission of director of the minor
 0-6 credits

LIN

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 may include historical linguistics (how languages change over time), dialects, writing systems, and psycholinguistics (especially the question of how children acquire a language).
 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; the use of Spanish; language attitudes and politics including bilingual education; and official language movements. Particular attention is paid to the 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.
Advisory Prerequisites: Completion of D.E.C. categories I and J
 3 credits

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.
 4 credits

LIN 211-F Syntax

An introduction to transformational-generative grammar: the formal theory of sentence structure.
 4 credits

LIN 250-K Languages and Cultures of Asian Americans

Study of language use and cultural accommodation in selected Asian American communities in relation to the changing roles of Asians in U.S. society from the early democracy to the present. Issues include linguistic and cultural diversity of Asia and Asian Americans; comparison of Asian and European immigration patterns; struggle for equality and acceptance; cultural factors in assimilation; patterns of Asian language use and maintenance in various domains; the role of language in ethnic identity; attitudes toward English and bilingualism; bilingualism as a problem and as a resource.
Prerequisite: Completion of D.E.C. category A
 3 credits

LIN 300 Writing in Linguistics

Majors in linguistics refine their skills in writing for the discipline by critiquing successive revisions of previously written work under the guidance of the undergraduate director.
Prerequisites: Major in linguistics; U3 or U4 standing
 1 credit, *SIU* grading

LIN 301 Phonology

The theory of sound systems of languages and the interaction of sounds in language.
Prerequisite: LIN 201
 3 credits

LIN 307-F 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. Study of the development of dialects including African-American Vernacular English, and pidgins and creoles such as Hawaiian Pidgin English and Chinook Trade Jargon, within the context of historical developments in the U.S. from colonial times to the present.
Prerequisite: One 200-level linguistics course
Advisory Prerequisites: Completion of D.E.C. categories I and J
 3 credits

LIN 330 Language Acquisition

Introduction to the field of language acquisition. Issues include cognitive processes, role of innate ability and environment, developmental stages, individual variation, universal tendencies, interaction of language and cognition, bilingualism, similarities and differences between first- and second-language acquisition, and language disorders.
Prerequisites: LIN 201 and 211
 3 credits

LIN 340 Historical Linguistics

The application of linguistic theory to the comparative reconstruction of language systems.
Prerequisites: LIN 211 and 301
 3 credits

LIN 345-J Writing Systems of the World

A survey of the major types of writing and their history and the peoples who have used them. Special attention is given to the decipherment of ancient writing.
Prerequisite: LIN 101 or one year of a foreign language
 3 credits

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.
Prerequisite: LIN 101 or 211
 3 credits

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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated once as the topic changes.
Advisory Prerequisite: LIN 101
 3 credits

LIN 356-I Topics in Language and Life in Europe

Consideration of the language of a particular country or region and the relationship between language and

the society, culture, history, and politics of the country or region. May be repeated as the language examined changes.

Prerequisite: One LIN course or satisfaction of entry Skill 3 foreign language proficiency
 3 credits

LIN 375 Methods and Materials of Teaching English as a Second Language I

The application of linguistic methodology to teaching English to non-native speakers. The course involves current review of ESL teaching materials applicable to all levels. Students are given an opportunity to observe ESL classes on campus.
Prerequisites: One 200-level linguistics course; two years of a modern foreign language
 3 credits

LIN 378 Methods and Materials of Teaching English as a Second Language II

Pedagogical issues in the acquisition of English as a second and foreign language are explored with a focus on literacy, content-area instruction, lesson planning, and evaluation models.
Prerequisite: LIN 375
 3 credits

LIN 425, 426, 427 Special Topics in Linguistics

Seminars for advanced linguistics students. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisite: Varies with subject matter
 3 credits per course

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.
Pre- or Corequisites: LIN 211 and 301
 3 credits

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 guidance of a faculty member. May be repeated.
Prerequisite: Permission of department
 1-6 credits

LIN 451, 452 Supervised Teaching—English as a Second Language: Primary Grades N-6, Secondary Grades 7-12

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.
Prerequisites: Linguistics major, 3.00 g.p.a. in major; 2.75 g.p.a. overall; permission of department
Corequisite: LIN 454
 6 credits per course, *SIU* grading

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.
Corequisites: LIN 451 and 452; permission of instructor.
 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
3 credits

LIN 475, 476 Undergraduate Teaching Practicum I, II

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. In LIN 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. Not for major credit.

Prerequisites: to LIN 475: Linguistics major; U3 or U4 standing; permission of instructor.
Prerequisites: to LIN 476: LIN 475; permission of instructor
3 credits per course, S/U grading

LIN 487 Directed Research in Linguistics

Qualified advanced undergraduates in linguistics may carry out individual research projects under the direct supervision of a faculty member. May be repeated up to a limit of six credits.

Prerequisite: Permission of department
0-6 credits

LIN 488 Internship

Participation in local, state, and national public and private agencies and organizations. May be repeated up to a total of 12 credits.

Prerequisites: 15 credits in linguistics; permission of department
0-6 credits, S/U grading

LIN 495-496 Senior Honors Project in Linguistics

A two-semester sequence for linguistics majors who are candidates for the degree with honors. The project involves independent readings or research and the writing of a thesis. Students enrolled in LIN 495 are obliged to complete LIN 496 the next semester. Students receive only one grade upon completion of the sequence.

Prerequisite: Admission to the Linguistics Honors Program
3 credits per course

LIS**Living/Learning Center in International Studies****LIS 201 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. Priority given to Stimson College residents.

Prerequisite: Permission of director of the minor required for students who do not reside in Stimson College
1 credit

LIS 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 discus-

sions, oral presentations, and a substantial essay on themes drawn from various topics and regions. May be repeated twice as the topic changes. Priority given to residents of Stimson College.

Prerequisite: LIS 201
1 credit

LIS 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. Priority given to residents of Stimson College.

Prerequisite: LIS 302
1 credit

LIS 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: LIS 401; permission of director of the minor
0-6 credits

LRN**Learning Communities****LRN 104-G, 105-F The Person; Ecology and Society**

A two-semester sequence providing a broad cross-disciplinary approach to study in the humanities and social sciences, while laying the foundation for future academic success by fostering critical and conceptual skills through collaborative research projects. In LRN 104 issues associated with human identity and human values are examined in the context of modern social, psychological, and humanistic thought on learning, perception, cognition, and the self, including representations of the person and the self in literature and the arts. LRN 105 focuses on the variety of images of humanity's relationship with the natural environment and examines the implications of these images for human society. Students are expected to attend several events outside the regularly scheduled classtime.

Prerequisite: Enrollment in Freshman Learning Communities program
4 credits per course

LRN 131-G, 132-F Thinking About Science; Thinking About Biology

A two-semester sequence exploring the history and philosophy of science from a broad cross-disciplinary background, providing humanities and social sciences perspectives on the students' other courses while laying the foundation for future academic success by fostering critical and conceptual skills through collaborative research projects. LRN 131 considers questions about the nature and scope of scientific method, as well as the ethical and political issues that emerge when science is considered as a social institution. LRN 132 focuses specifically on critical theoretical and social issues in the history and philosophy of biology. Students are expected to attend several events outside the regularly scheduled classtime.

Prerequisite: Enrollment in Freshman Learning Communities program
4 credits per course

LRN 141-G, 142-H Perspectives from the Humanities; Technology in Social Perspective

A two-semester sequence for students participating in the Freshman Learning Communities in engineering

or physical science. LRN 141 provides an interdisciplinary introduction to key methods and ideas in the humanities. Topics may include the varieties of knowledge, the nature of personal identity, ethics, aesthetics, and others. LRN 142 focuses on case studies on the interaction of technology and society. Topics may include the history of technology, ideas of progress and growth, the influence of economics on technological development, environmental impacts, and others.

Prerequisite: Enrollment in Freshman Learning Communities Program
3 credits per course

LRN 301-K U.S. Cultures

Investigation of connections among various racial and ethnic communities within the U.S. considered within the context of their historical development from the early years of the nation to the present. The course encourages the development of intellectual and critical skills through discussion and collaborative research. Topics may include Biology throughout American History, Latino-American Culture and Philosophy in American Literature. May be repeated as the topic changes.

Prerequisite: Enrollment in upper-division Learning Communities program
Corequisite: Announced with the Learning Community
3 credits

LRN 331-I The Western Medical Tradition

An interdisciplinary examination of the Western medical tradition and its relation to Western culture. Topics may include consideration of ideas such as theories of disease and therapeutics; cultural expressions of these ideas including representations in art and literature; institutions such as hospitals, the role of the state and the corporate sector; and people, such as practitioners, patients, and scientists.

Prerequisite: U2 standing or higher; completion of D.E.C. category E; preference given to students in Learning Communities Program.
3 credits

LRN 332-H Ethical and Social Issues in Health Care

An interdisciplinary approach to concepts of medical ethics through application to current issues in medicine and society. Topics may include issues arising from advances in medical care, such as the human genome project; issues that have a long history, such as human experimentation; and issues of professional standards, such as physician advertising and legislative control.

Prerequisite: U2 standing or higher; one D.E.C. category F course; preference given to students in Learning Communities Program.
3 credits

LSE**Living/Learning Center in Science and Engineering****LSE 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. May not be taken for credit in addition to EAS 101, ENS 102, or USB 101. Priority given to students who reside in Keller College.

Prerequisite: U1 standing
1 credit, S/U grading

LSE 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. Priority given to students who reside in Keller College.

1 credit, S/U grading

LSE 301 Colloquium in Science and Engineering Research

A weekly seminar by science and engineering faculty on their research. Presentations are made at a level understandable to junior and seniors. The interdisciplinary nature of science and engineering is emphasized. Priority given to students who reside in Keller College.

Prerequisites: U3 or U4 standing; completion of at least two upper-division science or engineering courses

1 credit, S/U grading

LSE 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. Priority given to students who reside in Keller College.

Prerequisites: U3 or U4 standing; completion of at least two upper-division science or engineering courses

3 credits

LSE 475 Undergraduate Teaching Practicum

Students work with the instructor in an LSE course in leading discussion sections, helping students improve research skills, or assisting with the educational program presented as part of coursework. Students meet regularly with the supervising instructor.

Prerequisites: U3 or U4 standing; permission of instructor and director of the minor

3 credits, S/U grading

MAE**Mathematics Secondary Education****MAE 301 Foundations of Secondary School Mathematics**

A re-examination of elements of school mathematics, including topics in algebra, geometry, and elementary functions. Competence in basic secondary-level ideas and techniques are tested.

Prerequisite: MAT 200 and 211

Corequisite: MAE 311

3 credits

MAE 302 Methods and Materials for Teaching Secondary School Mathematics

The goals of mathematics education, learning theories, mathematics curricula, lesson planning, evaluation, and teaching strategies. Lesson plans are drawn up and presented to the group.

Prerequisites: MAE 301 and 311

Pre- or Corequisite: MAE 312

3 credits

MAE 311 Introduction to Methods of Teaching Secondary School Mathematics

Aspects of teaching mathematics on the secondary school level, including lesson designs based on the NCTM standards, cooperative learning, and technology in mathematics education. Students observe class-

es in middle school and high school settings.

Prerequisite: MAT 211

Corequisite: MAE 301

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

2 credits

MAE 330 Technology in Mathematics Education

Introduces students in the secondary mathematics teacher preparation program to techniques and requirements for effective use of technology in the mathematics classroom. Emphasis on projects. Use of graphing calculators and computer software such as geometry sketchpad.

Prerequisites: MAE 301 and 311

3 credits

MAE 447 Directed Readings in Mathematics Education

Tutorial studies in recent advances in mathematics education.

Prerequisite: MAE 312

1 credit

MAE 451, 452 Supervised Teaching — Mathematics; Middle Level Grades 7-9, High School Grades 10-12

Intensive supervised teaching in secondary schools. Students work in the school under the supervision of an experienced teacher.

Prerequisites: MAE 312; MAT 310 or 313; MAT 320; permission of director of mathematics teacher preparation program

Corequisite: MAE 454

6 credits per course, S/U grading

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.

Corequisites: MAE 451 and 452

3 credits

MAP**Mathematics Proficiency Courses****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. The Pass/No Credit option may not be used.

3 credits, A-C/U grading

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. The Pass/No Credit option may not be used.

3 credits, A-C/U grading

MAR**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.

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.

3 credits

MAR 301 Environmental Microbiology

Microbiological mediation of natural processes in marine, freshwater, soil, and groundwater habitats, as well as microbial potential for remediation of pollutants and public health issues. The course includes a survey of taxonomic and metabolic diversity, elementary cell biology, nutrition, environmental controls on physiology and adaptations, biogeochemical cycles, and modern methods of sampling and analysis. Not for credit in addition to BIO 357.

Prerequisites: BIO 202; CHE 131 or 141

4 credits

MAR 302 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 micro-organisms 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 201, 202; CHE 132 or 142

Advisory Prerequisite: MAR 301

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: U3 or U4 standing; BIO 201

Advisory Prerequisites: AMS 110 or other statistics course; MAR 101 or 104 or 333

4 credits

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.

Prerequisite: MAT 127 or 132 or 142

Advisory Prerequisites: MAR 101 or 104 or 333; PHY 122/124 or 126 or 132 or 142 or AMS 161

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: U3 or U4 standing; BIO 201 (or the discontinued BIO 151)

Advisory Prerequisites: CHE 131 or 141; AMS 110 or other statistics course; MAR 101 or 104 or 333

3 credits

MAR 307 Communication in Environmental Science

Scientific writing and speaking skills through practice, including researching topics in the scientific literature, critically reading and writing scientific papers, presenting qualitative and quantitative data, and giving effective oral presentations of scientific material.

Prerequisites: U3 or U4 standing and completion of at least 6 credits of upper-division science courses

3 credits

MAR 308 Principles of Instrumental Analysis

The development of familiarity in the laboratory with the techniques and instrumentation used in environmental analytical chemistry, emphasizing determination of trace inorganic species. Primary emphasis on applications utilizing the absorption of emission of electromagnetic radiation. Topics include metal determinations in sediment and in river water using molecular ultraviolet-visible and atomic absorption spectrometry.

Prerequisites: CHE 132/134 or 142/144

3 credits

MAR 313 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 silification, marine natural products and toxins, bioluminescence, and photosynthetic light adaptation.

Prerequisites: BIO 201, 202; CHE 322

3 credits

MAR 315-H Conservation Biology and Marine Biodiversity

The fundamental concepts of conservation biology, a new synthetic field that incorporates principles of ecology, biogeography, population genetics, systematics, evolutionary biology, environmental sciences, sociology, anthropology, and philosophy toward the conservation of biological diversity. Examples drawn from the marine environment emphasize how the application of conservation principles varies from terrestrial, aquatic, and marine realms.

Prerequisite: BIO 351 or 353

3 credits

MAR 318 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, beach and tidal inlet stability, and channel sedimentation. Crosslisted with GEO 318.

Prerequisites: GEO 122 or GEO 102 and 112; MAT 127

or 132 or 142 or AMS 161

3 credits

MAR 320 Limnology

The physical, chemical, and biological aspects of lakes and ponds. The morphology of lake basins, physics of water movement, water chemistry, and ecology of organisms are explored through lecture and laboratory instruction. The laboratory portion of the course includes field sampling to investigate temporal variation in water chemistry and plankton biology, and laboratory experiments to demonstrate important concepts.

Prerequisites: BIO 201; CHE 131

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 125 or 131 or 141 or AMS 151; completion of D.E.C. category E

3 credits

MAR 334-E Remote Sensing of the Environment

A study of the theory of remote sensing and its application in the fields of atmospheric science and 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.

Prerequisite: One of the following: PHY 119, 127, 132, or 142

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.

Prerequisites: CHE 132 or 142; BIO 201 and 202

Advisory Prerequisites: CHE 322 or 332; one upper-division BIO course

3 credits

MAR 336 Marine Pollution

A review of the sources, transport, and fate of toxic and non-toxic contaminants in the ocean. The interactions of biological, chemical, and physical processes that control the cycling and toxicity of contaminants are considered. Contaminants include metals, oil, halogenated hydrocarbons, radioactive wastes, excess nutrients, plastics, and solid wastes.

Prerequisites: BIO 201; CHE 131 or 141; MAR 333

3 credits

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: U3 or U4 standing; one D.E.C. category E course in chemistry or biology

3 credits

MAR 346 Marine Sedimentology

A study of sedimentology in the marine environment, including an introduction to fluid mechanics, sediment transport theory, quantitative models of sedimentation, and dynamic stratigraphy.

Prerequisites: GEO 102 or 122; PHY 126 or 132 or 142

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.

Prerequisites: PHY 119 or 121/123 or 125 or 131 or 141; MAT 127 or 132 or 142 or AMS 161

2 credits

MAR 351 Introduction to Ocean Chemistry

Chemical principles applied to the study of the oceans. How chemical tracers are used to determine the geological, physical, and biological characteristics of present and past oceans. Other topics include physical marine chemistry, organic geochemistry, sediment chemistry and diagenesis, carbon dioxide, air-sea exchange, and the fate of pollutants in the coastal oceans.

Prerequisites: CHE 131 and 132; MAR 101 or 104 or 333

4 credits

MAR 366 Plankton Ecology

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. When offered in summer, the course has a significant field/laboratory component.

Prerequisites: BIO 201 and 202

3 credits

MAR 385 Principles of Fishery Biology and Management

The theory, techniques, history, and practical problems of fishery management, with emphasis on Long Island fisheries. Three field trips outside regularly scheduled class meetings are required.

Prerequisites: BIO 201; MAT 125 or 131 or 141 or AMS 151

3 credits

MAR 391-H Environmental Policy

An introduction to the legislative process, governmental and non-governmental roles, risk factors, and economic analysis in formulating environmental policies. Using a case study approach, strategies that may be employed to address environmental issues are presented.

Prerequisites: U3 or U4 standing; completion of D.E.C. category E

3 credits

MAR 392-H Waste Management Issues

Conventional and innovative approaches to waste reduction, recycling, and reuse. The environmental impacts of waste on the terrestrial and marine environment are introduced as are the complex social, political, and scientific issues of making sound policy decisions.

Prerequisites: GEO 101; CHE 131 or ENS/PHY 119

3 credits

MAR 393 Treatment Technologies

This course examines technologies such as wastewater management, solid waste practices, and drinking water treatments that minimize the effects of human wastes. Pollution prevention, especially for marine environments, is also discussed.

Prerequisites: Announced when course is scheduled

3 credits

MAR 394-H Environmental Toxicology and Public Health

Principles of toxicology are presented and problems associated with major classes of toxic chemicals to human and environmental health are examined. Case studies dealing with current waste management issues are also discussed. May not be taken for credit in addition to MAR 336. Crosslisted with BCP 394.

Prerequisites: BIO 201; CHE 131

3 credits

MAR 395 Topics in Marine Environmental Sciences

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: One upper-division MAR course
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.

Prerequisite: MAT 127 or 132 or 142 or AMS 161
Advisory Prerequisites: CHE 301; MAR 333
3 credits

MAR 475 Undergraduate Teaching Practicum

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.

Prerequisites: U3 or U4 standing; permission of instructor and MSRC Undergraduate Studies Committee
3 credits, S/U grading

MAR 487 Research in Marine Sciences

A student may conduct research for credit. May be repeated.

Prerequisites: Permission of instructor and MSRC Undergraduate Studies Committee
0-6 credits

MAR 488 Internship

Participation in research at off-campus laboratories or in the activities of public and private agencies and organizations. May be repeated up to a limit of 12 credits.

Prerequisites: MAR 333; permission of instructor, and department
0-6 credits, S/U grading

MAT

Mathematics

MAT 118-C Mathematical Thinking

Development of quantitative thinking and problem solving abilities through a selection of mathematical topics: logic and reasoning; numbers, functions, and modeling; combinatorics and probability; growth and change. Other topics may include geometry, statistics, game theory, and graph theory. Through their engagement in problem solving, students develop an appreciation of the intellectual scope of mathematics and its connections with other disciplines.

Prerequisite: MAP 103 or level 3 on the mathematics placement examination
3 credits

MAT 122-C Overview of Calculus with Applications

The basics of calculus in a self-contained, one-semester course. Properties and applications of polynomial, exponential, and logarithmic functions. Derivatives: slopes, rates of change, optimization, integrals, area, cumulative change, and average. The fundamental theorem of calculus. Emphasis on modeling examples from economics. Students who subsequently wish to enroll in MAT 125 or 131 will be required to take MAT 130 as a pre- or corequisite to either course or to score

level 4 on the mathematics placement examination before taking either course.

Prerequisite: MAP 103 or level 3 on the mathematics placement exam. Prerequisite must be met within one year prior to beginning MAT 122
3 credits

MAT 123-C Introduction to Calculus

Comprehensive preparation for the regular calculus sequences, with introduction to derivatives. Careful development of rational, exponential, logarithmic, and trigonometric functions and their applications. Asymptotics and limits. Linear approximations, slope and derivatives, detailed curve sketching. General modeling examples.

Prerequisite: MAP 103 or level 3 on the mathematics placement exam. Prerequisite must be met within one year prior to beginning MAT 123
3 credits

MAT 125-C Calculus A

Differential calculus, emphasizing conceptual understanding, computations and applications for students who have the necessary background from 12th-year high school mathematics. Differentiation of elementary algebraic, trigonometric, exponential and logarithmic functions; graphing; modeling; and maximization. May not be taken for credit in addition to MAT 131 or 141 or AMS 151.

Prerequisite: MAT 123; or level 4 on the mathematics placement examination; or MAT 122 and coregistration in MAT 130
3 credits

MAT 126-C Calculus B

A continuation of MAT 125, covering integral calculus: the fundamental theorem, symbolic and numeric methods of integration, area under a curve, volume, applications such as work and probability. May not be taken for credit in addition to MAT 132 or 142 or AMS 161.

Prerequisite: C or higher in MAT 125 or 131 or 141 or AMS 151 or level 6 on the mathematics placement examination
3 credits

MAT 127 Calculus C

A continuation of MAT 126, covering improper integrals and l'Hospital's rule, complex numbers, sequences, series, Taylor series, differential equations, and modeling. May not be taken for credit in addition to MAT 132 or 142 or AMS 161.

Prerequisite: C or higher in MAT 126 or level 8 on the mathematics placement examination
3 credits

MAT 130 Functions

Inverse functions, exponential and logarithmic functions, radian measure of angles and trigonometric functions. Open to prospective students in engineering, physical sciences, and mathematics who need to bridge the gap between MAT 122 and 125 or MAT 131 or AMS 151. May not be taken for credit in addition to MAT 123.

Advisory Prerequisite: C or higher in MAT 122
Advisory Corequisite: MAT 125 or 131 or AMS 151
1 credit

MAT 131-C Calculus I

The differential calculus and integral calculus, emphasizing conceptual understanding, computations and applications, for students who have the necessary background from 12th-year high school mathematics. Differentiation of elementary algebraic; trigonometric, exponential, and logarithmic functions; graphing; modelling and maximization; the Riemann integral; and the fundamental theorem. May not be taken for credit in addition to MAT 125 or 141 or AMS 151.

Prerequisite: B or higher in MAT 123, or level 5 on the mathematics placement examination, or B or higher in MAT 122 and coregistration in MAT 130
4 credits

MAT 132 Calculus II

A continuation of MAT 131, covering symbolic and numeric methods of integration; area under a curve; volume; applications such as work and probability; improper integrals and l'Hospital's rule; complex numbers; sequences; series; Taylor series; differential equations; and modelling. May not be taken for credit in addition to MAT 126 or 127 or 142 or AMS 161.

Prerequisite: C or higher in MAT 131 or 141 or AMS 151, or level 7 on the mathematics placement examination
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 125 or 131.

Prerequisite: Level 4 on the mathematics placement examination; priority given to students in the University's honors programs
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 or 127 or 132 or AMS 161.

Prerequisite: C or higher in MAT 141, or B or higher in MAT 131 or AMS 151, or level 7 on the mathematics placement examination
4 credits

MAT 160 Mathematical Problems and Games

Intended for students interested in sharpening their problem-solving skills and in developing their ability to express mathematical ideas.

1 credit, S/U grading

MAT 200 Logic, Language and Proof

A basic course in the logic of mathematics, the construction of proofs and the writing of proofs. The mathematical content will be primarily set theory, combinatorics, and Euclidean geometry. There will be considerable focus on writing.

Prerequisite: MAT 131 or 141 or AMS 151, or coregistration in MAT 126, or level 7 on the Mathematics Placement Examination
3 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 AMS 261 or MAT 205.

Prerequisite: MAT 127 or 132 or 142 or AMS 161 or level 9 on the mathematics placement examination
4 credits

MAT 205 Calculus III

Vector algebra, matrices and linear transformations, 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.

Prerequisite: MAT 127 or 132 or 142 or AMS 161 or level 9 on the mathematics placement examination
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 AMS 201 or 210.

Prerequisite: MAT 131 or 141 or coregistration in MAT 126 or level 7 on the mathematics placement examination
3 credits

MAT 260 Problem Solving in Mathematics

Students actively solve challenging problems in plane geometry, basic number theory, and calculus, and write precise arguments. Relevant preparation for problem-solving is provided in the course.

Prerequisite: MAT 203 or 205 or 211 or AMS 261, or B or higher in MAT 127 or 132 or 142
3 credits

MAT 303 Calculus IV with Applications

Homogeneous and inhomogeneous linear differential equations; systems of linear differential equations; series solutions; Laplace transforms; introduction to wave, 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 AMS 361 or MAT 305.

Advisory Prerequisite: MAT 203 or 205 or AMS 261
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.

Advisory Prerequisite: MAT 203 or 205 or AMS 261
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.

Prerequisites: MAT 211 or 305 or AMS 210; MAT 200 or permission of instructor
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 312 or 313 or 318; MAT 200 or permission of instructor
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.

Prerequisite: MAT 211 or AMS 210
3 credits

MAT 313 Abstract Algebra

Groups and rings together with their homomorphisms and quotient structures. Unique factorization, polynomials, and fields.

Prerequisites: MAT 310 or 312 or 318; MAT 200 or permission of instructor
3 credits

MAT 316 Invitation to Modern Mathematics

Mathematical reasoning and the process of mathematical research. The power and range of modern mathematics are discussed in detail through a few key theorems in algebra, analysis, geometry, and topology together with some applications.

Prerequisites: MAT 211 or AMS 210; MAT 203 or 205 or AMS 261; MAT 200 or permission of instructor
3 credits

MAT 318 Classical Algebra

Re-examines algebra from an historical perspective: the Hindu-Arabic number system; mathematics in ancient Egypt and China; the Greek contribution (unique factorization, Euclidean division algorithm, polynomials); unsolvability of the three great problems (trisecting the angle, squaring the circle, solving quintics); modern perspectives.

Prerequisites: MAT 125 or 131 or AMS 151; MAT 211 or AMS 210; MAT 200 or permission of instructor
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.

Prerequisites: MAT 200 or permission of instructor and one of the following: MAT 203, 205, 211, AMS 261, or A- or higher in MAT 127, 132, 142, or AMS 161
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
3 credits

MAT 331 Computer-Assisted Mathematical Problem Solving

Exploration of the use of the computer as a tool to gain insight into complex mathematical problems through a project-oriented approach. Students learn both the relevant mathematical concepts and ways that the computer can be used (and sometimes misused) to understand them. The particular problems may vary by semester; past topics have included cryptography, fractals and recursion, modeling the flight of a glider, curve fitting, the Brachistochrone, and computer graphics. No previous experience with computers is required.

Prerequisite: MAT 203 or 205 or AMS 261
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.

Prerequisites: MAT 203 or 205 or AMS 261; MAT 303 or 305 or AMS 361
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.

Prerequisites: MAT 203 or 205 or AMS 261; MAT 303 or 305 or AMS 361; MAT 200 or permission of instructor
3 credits

MAT 351 Differential Equations: Dynamics and Chaos

A study of the long-term behavior of solutions to ordinary differential equations or of iterated mappings, emphasizing the distinction between stability on the one hand and sensitive dependence and chaotic behavior on the other. The course describes examples of chaotic behavior and of fractal attractors, and develops some mathematical tools for understanding them.

Prerequisites: MAT 203 or 205 or AMS 261; MAT 303 or 305 or AMS 361; MAT 200 or permission of instructor
3 credits

MAT 360 Geometric Structures

Formal geometries and models. Topics selected from projective, affine, Euclidean, and non-Euclidean geometries.

Pre- or Corequisites: MAT 203 or 205 or AMS 261; MAT 211 or AMS 210; MAT 200 or permission of instructor
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 320 or 364
3 credits

MAT 364 Topology and Geometry

A broadly based introduction to topology and geometry, the mathematical theories of shape, form, and rigid structure. Topics include intuitive knot theory, lattices and tilings, non-Euclidean geometry, smooth curves and surfaces in Euclidean 3-space, open sets and continuity, combinatorial and algebraic invariants of spaces, higher dimensional spaces.

Prerequisites: MAT 203 or 205 or AMS 261; MAT 200 or permission of instructor
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.

Pre- or Corequisite: MAT 313 or CSE 213
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
3 credits

MAT 401, 402 Seminars in Mathematics

Discussions of a specific area of interest in mathematics. The work of each semester covers a different area of mathematics. May be repeated as topic changes.

Prerequisite: MAT 320
3 credits per course

MAT 475 Undergraduate Teaching Practicum

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. May not be used for major credit.

Prerequisite: Permission of the director of undergraduate studies
3 credits, S/U grading

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
0-6 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
 3 credits

MEC

Mechanical Engineering

MEC 100 Introduction to Mechanical Engineering

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.
 3 credits

MEC 104-E The Practical Science of Things

A practical introduction to the science and engineering of objects and phenomena in everyday life. The basic principles that underlie the operation common to modern devices such as rollercoasters, balloons, vacuum cleaners, airplanes, bicycles, thermostats, air conditioners, automobiles, and GPS systems are developed by investigating how they work. Issues of design, safety, and environmental impact are also discussed.

Prerequisite: Satisfaction of entry skill in mathematics requirement
 3 credits

MEC 105-E Everyday Science

A practical introduction to the science and engineering of objects and phenomena in everyday life. The basic principles that underlie the operation common to modern devices such as xerographic copiers, tape recorders, computers, microwaves, lasers, CDs, plastics, nuclear weapons, and magnetic resonance imaging (MRI) are developed by investigating how they work. Issues of design, safety, and environmental impact are also discussed.

Prerequisite: Satisfaction of entry skill in mathematics requirement
 3 credits

MEC 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 MEC 111.

Pre- or Corequisites: AMS 151 or MAT 125, 131 or 141; PHY 125, 131 or 141
 3 credits

MEC 112 Practical C/C++ for Scientists and Engineers

Introduces computer sciences and the use of the computer for solving scientific and engineering problems using the C/C++ programming language. Students gain experience using graphical interface (GUI) and object-oriented programming concepts. Primarily for engineering students who are not planning to take advanced computer science courses. Students who have earned a C or higher in CSE 114 may not take MEC 112.

Prerequisites: AMS 151 or MAT 12, 131 or 141 (or the discontinued 124); PHY 125, 131 or 141
 3 credits

MEC 125 Fundamentals of Machining

Hands-on experience in the fundamentals of machining. Topics include introductions to various metrology tools and devices, band saw, sheet metal cutting and punching, drilling, reaming, tapping, turning, boring, milling, and welding.

Prerequisite: MEC major
 3 credits

MEC 160-E Introduction to Nuclear Science and Technology

Introduces the basic concepts of nuclear science. Topics include basic atomic structure; isotopes; mass-energy equivalence; binding energy; decay of radionuclides; nuclear reactions; fission and fusion; the interaction of radiation with matter; and biological effects of radiation. Discusses nuclear science concepts in the context of relevant applications such as nuclear medicine and imaging, nuclear power, radioactive waste, food irradiation, and weapons. Not intended for science majors.

Prerequisite: MAT 123 or level 4 on the mathematics placement examination
 3 credits

MEC 200 Technical Communication in Mechanical Engineering I

Introduction to technical writing and oral communication with topics chosen from mechanical engineering. Includes technical memo and report writing and an introduction to researching sources of information. Emphasizes the development of oral presentation skills.

Prerequisites: MEC major; U2 standing
 1 credit, S/U grading

MEC 202 Technical Drawing and Computer-Aided Drafting I

Introduces methods used to communicate design ideas through the techniques of freehand technical sketching and computer-aided drafting of engineering drawings.

Prerequisite: MEC major or permission of department
 1 credit

MEC 203 Technical Drawing and Computer-Aided Drafting II

Application of computer graphics and solid modeling to design and representation of 3D objects, their assembly and tolerance analysis. Includes hands-on experience in the use of CAD software packages for solid modeling.

Prerequisite: MEC 202
 1 credit

MEC 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 125, 131 or 141
Pre- or Corequisite: AMS 261 or MAT 203
 4 credits

MEC 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
 3 credits

MEC 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: MEC 259 or 260
 3 credits

MEC 280-H Pollution and Human Health

An examination of major environmental pollution problems such electromagnetic radiation, ozone layer depletion, and global warming, with a specific focus on the resulting effects on human health. Assessment of health risks in relation to the formulation of environmental and workplace regulations is also considered.

Prerequisite: one D.E.C. category E course
 3 credits

MEC 290-H Nuclear Technology: History, Society, Medicine and the Environment

Introduces the history and applications of nuclear technology in our society and addresses the social and environmental implications and issues. Topics include radiation types and sources; biological effects, standards, and radiation protection; fission, breeding, and fusion; nuclear waste; weapons. Discusses current applications including power, food irradiation, medical applications, isotope dating, and advanced applications such as space power and propulsion, accelerators, and antiprotons.

Prerequisites: One D.E.C. category E course
 3 credits

MEC 300 Technical Communication in Mechanical Engineering II

Technical writing and oral communication skills developed in conjunction with laboratory work in MEC 317 through the use of written laboratory reports and oral presentations of experimental procedures and results.

Prerequisites: MEC 200
Corequisite: MEC 317
 1 credit, S/U grading

MEC 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
 3 credits

MEC 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: MEC 301 and 364; MEC 111 or CSE 114
 3 credits

MEC 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.

Prerequisites: MEC 111; AMS 261 or MAT 203

Pre- or Corequisites: AMS 361 or MAT 303

3 credits

MEC 310 Introduction to Machine Design

Application of graphical and analytical methods to the analysis and synthesis of mechanism. Covers concepts of degrees of freedom, graphical and analytical linkage synthesis, position, velocity, acceleration, and force analysis of linkage mechanisms. Introduces principles behind the operation of various machine elements such as gears and gear trains, cams, flywheels, roller and journal bearings, couplings, clutches, brakes, belts, and chains and their design, and analysis techniques.

Prerequisites: MEC 111; MEC 203 and 262 (ESG 316 for engineering science majors)

3 credits

MEC 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: AMS 361 or MAT 303; MEC 363; AMS 236

Corequisites: MEC 301 and 364

3 credits

MEC 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: MEC 316 and 364

Corequisite: MEC 300 and 305

2 credits

MEC 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; design creativity; formulation of analyzable models; simulation and optimization techniques; design for manufacture; design for reliability; engineering economics; and engineering ethics.

Prerequisites: AMS 236 and MEC 309

Corequisite: MEC 310

3 credits

MEC 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; and engine operating characteristics. Includes both the relevant fundamental concepts and the extensive practical knowledge base on which engine research, devel-

opment, and design depend.

Prerequisites: MEC 305

3 credits

MEC 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

Pre- or Corequisite: MEC 125

3 credits

MEC 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: MEC 363

3 credits

MEC 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: MEC 301

3 credits

MEC 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: MEC 260

4 credits

MEC 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: MEC 262

Corequisite: MEC 301

4 credits

MEC 381 Transport and Fate of Pollutants

General mechanisms that describe the physical transport and chemical transformations of pollutants in the air, water, and soil. Major global cycles are also considered from a transport-transformation perspective. Specific examples include lake eutrophication, acid rain deposition, river pollution, and the dispersal of air pollutants from single (point) sources and multiple (area) sources.

Prerequisite: AMS 361 or MAT 303

3 credits

MEC 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 MEC 364.

Prerequisite: MEC 364

3 credits

MEC 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 co-generation plants. Refrigeration cycles.

Prerequisites: MEC 301 and 364

3 credits

MEC 402 Mechanical Vibrations

Modeling, analysis and design for mechanical vibrations. Fundamentals of free vibration, harmonically excited vibration and vibration under general forcing conditions are considered for one degree, two degree and multidegree of freedom systems; continuous systems; vibration design strategies including isolation and absorbers.

Pre- or Corequisite: MEC 411

3 credits

MEC 406 Energy Management in Commercial Buildings

Basic heating, ventilating, and air-conditioning (HVAC) system design and selection for commercial buildings. Includes both low-rise and high-rise structures. Selection of central plant components and equipment, calculation of space heating and cooling load, computer techniques for estimating annual energy consumption. ASHRAE codes. Building controls. BACnet.

Prerequisite: MEC 398

3 credits

MEC 410 Design and Analysis of Machine Elements

Study of advanced topics in the analysis of stress and deformation of elastic bodies, with applications to the design of machine and structural elements. Introduction of solution techniques for elastic analysis and design of machine components. Design in terms of failure strength, factor of safety, fracture mechanics and fatigue strength, and their application to the design of mechanical components such as shafts, gears, springs and joints.

Prerequisites: MEC 310 and 363

3 credits

MEC 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: MEC 262 and 309

4 credits

MEC 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: MEC 310 and 363
4 credits

MEC 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. Laboratory fee required.

Prerequisites: MEC 317 and 411
2 credits

MEC 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: MEC 364
3 credits

MEC 421 Statistical Quality Control and Design of Experiments

Online techniques that determine and control the quality of mass-manufactured products on a real-time basis by means of statistical analysis. Offline 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 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 lobby-lot inspection. Crosslisted with AMS 421.

Prerequisite: MEC 317
3 credits

MEC 422 Thermal System Design

Device design and system design. Quantitative data for system design including operating characteristics 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.

Prerequisite: MEC 305
3 credits

MEC 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: MEC 310 and 320; MEC major; U4 standing
Corequisites: MEC 410 and 411
3 credits

MEC 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: MEC 440
3 credits

MEC 455 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: MEC 410
3 credits

MEC 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: U4 standing; a minimum g.p.a. of 3.00 in all Stony Brook courses and a grade of B or better in the course in which the student is to assist; permission of department
3 credits

MEC 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.

Prerequisite: Permission of undergraduate program director
3 or 9 credits, S/U grading

MEC 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: U3 or U4 standing in a B.E. degree major; permission of department (course prerequisites vary with topic)
1-4 credits

MEC 499 Research in Mechanical Engineering

An independent research project under the supervision of a mechanical engineering faculty member. Permission to register requires an average of 3.00 or better 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, EST 499, ISE 487, MEC 499) may be counted toward technical elective requirements.

0-4 credits

MUS

Music

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 val-

ues. No previous musical training is assumed. Not for credit after MUS 130.

3 credits

MUS 105-G Musics of the World I

An introduction to musical traditions of Asia. Consideration of selected musical genres and styles in their relation to religious beliefs, social systems, and other aspects of culture. Not for music major credit.

3 credits

MUS 106-G Musics of the World II

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 music major credit.

3 credits

MUS 119-D The Elements of Music

Beginning with the rudiments of music, such as meter, tempo, rhythm, and how to read notes in several clefs, this hands-on course goes on to examine how music is organized, covering scales, keys, intervals, chords, form, and style in classical music. Students also compose throughout the semester and sharpen their listening skills through attendance at concerts. Serves as prerequisite to many music department courses.

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 music major credit.

Prerequisite: MUS 119 or 130 or placement by undergraduate musicianship examination
2 credits

MUS 121 Musicianship I

Sight-singing, dictation, and transcription of melodic, harmonic, and rhythmic material.

Prerequisite: Placement by undergraduate musicianship examination (consult department concerning dates)
Corequisites: MUS 122 and 321
2 credits

MUS 122 Beginning Keyboard

Basic keyboard skills, including reading in clefs and rudimentary technical competence.

Prerequisite: Placement by undergraduate keyboard examination
Corequisites: MUS 121 and 321
1 credit

MUS 130-D Sound Structures

Development of strategies for informed listening, analysis, and writing about music. Topics include timbre and sonority, meter and rhythm, melodic design, form, organization of pitch and harmony, and interactions between music and language. Repertory is drawn from a wide range of historical periods and cultural contexts. Considerable emphasis on writing and on acquiring concepts and vocabulary appropriate to diverse types of music.

Prerequisite: Primarily intended for prospective music majors and minors; others with sufficient musical background by permission of instructor
3 credits

MUS 141, 142 Keyboard Harmony A, B

Practical studies in music theory through basic keyboard exercises.

Prerequisite to MUS 141: MUS 122
Corequisite to MUS 141: MUS 220 and 321
Prerequisite to MUS 142: MUS 141
Corequisite to MUS 142: MUS 221 and 323
1 credit per course

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 45-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 161, 163, and 169: MUS 391
Corequisite to MUS 165-168, 170-180, 187: MUS 262 or 263 or 264

Corequisite to MUS 182: MUS 261 or 393
 2 credits per course

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. Additional hours in Laboratory for Technology in the Arts or Fine Arts SINC site required. Crosslisted with ARS 208 and THR 208.

Prerequisite: One 200-level ARS, MUS, or THR course
 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.

Prerequisites: MUS 121 and 122
Corequisites: MUS 141 and 322
 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 141 and 220
Corequisites: MUS 142 and 323
 2 credits

MUS 261 Stony Brook Chorale

Study and performance of a repertory from the Middle Ages to the present. Grading is based upon attendance. Ability to read music is required; advanced sight-reading is not. May be repeated.

Prerequisite: Audition, held at first class meeting; ability to read music
 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
 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
 1 credit

MUS 264 Big Band Jazz Ensemble

Study and performance of works for jazz ensemble. Grading is based on attendance. May be repeated.

Prerequisite: Audition
 1 credit

MUS 265 Workshop in Performance

Practice in performance skills in a small group workshop setting under the guidance of a performance instructor. May be repeated.

Prerequisite: Audition
 1 credit

MUS 266 Guitar Workshop

An overview of guitar technique and fingerboard harmony, featuring in-class performance, transcription of tablature systems, and arranging for solo guitar. May be repeated.

Prerequisite: Audition
 1 credit

MUS 267 Jazz Combo

Arranging and extended improvising skills for the small jazz ensemble. Emphasis on in-class performances, transcription assignments, and learning standard jazz compositions. May be repeated.

Prerequisite: Permission of instructor
 1 credit

MUS 290 Vocal Repertory

Performance and analysis of works from the vocal repertory. May be repeated.

Corequisite: MUS 182 or 382
 1 credit

MUS 301-I Music of the Baroque

The development during the late Renaissance of a new style in Italy and elsewhere is 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 music major credit.

Prerequisite: MUS 101 or 119 or 130
 3 credits

MUS 302-I The Music of J.S. Bach

Study of the vocal and instrumental works of Johann Sebastian Bach, considering the cultural and musical traditions in which they were grounded and their continuing impact on musical developments from the Bach revival of the 19th century to the "authentic" performance practice movement of the 20th century. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130
 3 credits

MUS 303-I The Music of Beethoven

Study of the symphonic, vocal, and chamber music of Ludwig van Beethoven, one of the pivotal composers of the Western world, through consideration of the cultural and musical context of late 18th- and early 19th-century Europe and of the heroic image of Beethoven in the 20th century. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130
 3 credits

MUS 304-K Contemporary Traditions in American Music: 1900 to the Present

Study of the development of diverse 20th-century musical traditions in the U.S. from the perspectives of the musical structures and social contexts that define an "American music." The traditions of jazz, blues, musical theatre, folk music, and popular music are considered, for instance, with respect to such issues as how historical events, race, and gender affect the production and reception of music, how philosophical beliefs shape musical composition, and how technological changes resulted in the music "consumer." Not

for music major credit.

Prerequisite: MUS 101 or 119 or 130

Advisory Prerequisites: Completion of D.E.C. categories I and J
 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 music major credit.

Prerequisite: MUS 101 or 119 or 130
 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 music major credit.

Prerequisite: MUS 101 or 119 or 130
 3 credits

MUS 307-I Imaginative Worlds of Opera

Considering opera's blend of drama, music, spectacle, and stage action, the course examines diverse European operatic traditions from a variety of angles, ranging from expressive roles for music to social and cultural value embodied in individual works. Study focuses on outstanding repertory pieces such as Mozart's *Marriage of Figaro*, Verdi's *Otello*, and Berg's *Wozzeck*. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130
 3 credits

MUS 308-K History of Jazz

Historical survey of jazz styles from their antecedents in the late 19th century and early ragtime and blues, through 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 music major credit.

Prerequisite: MUS 101 or 119 or 130
Advisory Prerequisites: Completion of D.E.C. categories I and J
 3 credits

MUS 309-G Music Since 1900

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 music major credit.

Prerequisite: MUS 101 or 119 or 130
 3 credits

MUS 310-G Music and Culture in the 1960s

The music of Bob Dylan, John Cage, the Beatles, Pauline Oliveros, Ornette Coleman, Elliott Carter, John Coltrane, Laura Nyro, and others is studied in conjunction with texts from or criticism of the 1960s. Music and texts are correlated through the topics of chaos, protest, Black culture, technology, the women's movement, youth culture, and others. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130
 3 credits

MUS 311-J Topics in Non-Western Music

A survey of 20th-century musical styles within a selected non-Western area. Individual genres are examined in terms of their musical features and in their relationship to aspects of life such as religious observance, social relations, issues of ethnic and national identity, migration, and transnational cultural exchange. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be

repeated as the topic changes.

Prerequisite: MUS 101 or 105 or 106 or 119 or 130
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 music major credit.

Prerequisite: MUS 101 or 105 or 106 or 119 or 130
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 music major credit.

Prerequisite: MUS 101 or 105 or 106 or 119 or 130
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 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 WST 314.

Prerequisite: MUS 101 or 119 or 130
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 music major credit.

Prerequisite to MUS 315: MUS 119
Prerequisite to MUS 316: MUS 315
3 credits per course

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. Additional hours in Laboratory for Technology in the Arts or Fine Arts SINC site required. Crosslisted with ARS 317 and THR 317.

Prerequisite: At least one 200- or 300-level ARS, MUS, or THR studio or performance course
3 credits

MUS 318 Music and the Moving Image

An investigation of the relationship between music and film and video. Students shoot, edit, and create music for short videos, exploring different aspects of visuals and music. Meets in the Laboratory for

Technology and the Arts.

Prerequisites: Familiarity with the use of computers; permission of instructor
Advisory Prerequisite: ARS/MUS/THR 208 or ARS/MUS/THR 317
3 credits

MUS 321, 322 Tonal Harmony I, II

Practice in homophonic writing, including the harmonization of chorales.

Corequisites to MUS 321: MUS 121 and 122
Prerequisites to MUS 322: MUS 121, 122, and 321
Corequisites to MUS 322: MUS 141 and 220
3 credits per course

MUS 323 Techniques of Music, 1880 to the Present

Study and practice in the techniques used in the late 19th and 20th centuries to organize pitch, rhythm, tone color, and dynamics.

Prerequisites: MUS 141, 220, and 322
Corequisites: MUS 142 and 221
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, 142, and 322
2 credits

MUS 339 Beginning Composition

Individual projects in composition discussed and criticized in class. Enrollment limited to eight. May be repeated once.

Pre- or Corequisite: MUS 323
3 credits

MUS 340 Introduction to Music Technologies

An introduction to the computer-based technologies that are changing the art of music. Hands-on experience with hard-disk recording and sound manipulation, MIDI, sequencing, notation programs, sound module programming, and using the Web. Exploration of the impact of these technologies on aesthetic choices. Significant time in the computer lab required.

Prerequisites: MUS 130 and 322
3 credits

MUS 350-G Western Music before 1600

The vibrant traditions of Western music from Gregorian chant and the beginnings of polyphony to the suave motets of Palestrina and the expressive madrigals of Monteverdi. Emphasis is on learning to think historically, on development of writing skills, and on cultivation of listening skills.

Prerequisites: MUS 141, 220, and 321
4 credits

MUS 351-I Western Music 1600-1830

Musical traditions in early modern Europe from Monteverdi through Beethoven. Study of diverse genres such as opera, cantata, symphony, and string quartet within their cultural contexts. Focus is on understanding of historical processes, on academic prose writing, and on comprehension of complex musical structures.

Prerequisite: MUS 350
4 credits

MUS 352-G Western Music from 1830 to the Present

Western musical traditions from Schubert through David Lang, John Zorn, and Laurie Anderson. Consideration of the central genres of orchestral, vocal, and chamber music and their transformations by various cultural and technological forces. Focus on music stylistic change and proliferation, and on acad-

mic writing about music.

Prerequisites: MUS 322 and 351
4 credits

MUS 355-G Special Topics in Music

May be repeated as topic changes. Semester supplements to this *Bulletin* contain descriptions when the course is offered.

Prerequisite: MUS 101 or 105 or 106 or 119 or 130
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.

Prerequisite: Audition; permission of instructor
Prerequisite to MUS 387: Approval of department undergraduate studies committee
Corequisites to MUS 361, 363, and 369: MUS 391
Corequisite to MUS 365-368, 370-380, and 387: MUS 262 or 263 or 264
Corequisite to MUS 382: MUS 261 or 393
4 credits per course

MUS 388 Fundamentals of Accompanying

Development of skills required of an accompanist, including sight-reading and instrumental and vocal accompaniment. Specific accompanying assignments are made throughout the semester. May be repeated once.

Prerequisite: MUS 161 or 361
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 or 130; audition; permission of instructor
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 repertoire. Two hours of rehearsal per week under the supervision of a faculty member or graduate assistant. May be repeated.

1 credit

MUS 393 Women's Chorus

Performance of works for small women's chorus.

Repertory to be chosen from all periods. Ability to read music is required; advanced sight-reading is not. May be repeated.

Prerequisite: Audition, held at first class meeting; ability to read music
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

Corequisite: MUS 331

Advisory Prerequisite: MUS 351

3 credits

MUS 422 Analysis of Post-Tonal Music

Music to be studied is selected from representative works by Debussy, Bartok, Schoenberg, Stravinsky, Webern, and others.

Prerequisite: MUS 421

Advisory Prerequisite: MUS 352

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

Advisory Prerequisite: MUS 351

3 credits

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

Advisory Prerequisites: MUS 323 and MUS 350-352

3 credits

MUS 437 Electronic Music

Historical background, musical works, aesthetic concepts, and creative approaches to electronic music. Basic acoustics and sound engineering skills; electronic/live sound production, recording, modification, and editing; critical listening, improvisation, timbral design; *musique concrète* and live performance will be included. Studio work includes technical practice and creative assignments. Technical background is not required.

Prerequisites: MUS 321; permission of instructor

3 credits

MUS 439 Composition

Open only to students demonstrating sufficient aptitude and capacity for original work. May be repeated.

Prerequisite: Permission of instructor

Advisory Prerequisite: MUS 339

3 credits

MUS 450 Seminar in the History of Music

Advanced study of a topic in music history for music majors. Topics may include study of major composers, major genres, dramatic music, the relation of music and poetry in song, or an historically or geographically defined musical style. May be repeated as the topic changes.

Advisory Prerequisite: MUS 350-352; MUS 322 or 323, depending on topic

3 credits

MUS 475, 476 Undergraduate Teaching Practicum I, II

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. In MUS 476, students assume greater responsibility in such areas as leading discussions and analyzing results of

tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites: to MUS 475: U3 or U4 standing; music major; permission of instructor and department
Prerequisites: to MUS 476: MUS 475; permission of instructor and department

3 credits per course, S/U grading

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

0-6 credits

MUS 488 Internship

Internship projects arranged in consultation with a faculty member and an outside agency.

Prerequisites: U3 or U4 standing; 15 credits in music department courses; permission of department

0-6 credits, S/U grading

MUS 491 Conducting

Manual technique and the analysis and preparation of scores for performance. May be repeated.

Prerequisites: MUS 322; permission of instructor

Advisory Corequisite: MUS 261 or 262 or 263 or 393

3 credits

MVL

Medieval Studies

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.

3 credits

MVL 241-G Heroes and Warriors

A study of the warrior-hero in Western literature from the Greeks through the Middle Ages. Works include Homer's *Iliad*, the *Poetic Edda*, *The Lay of Hildebrand*, *Beowulf*, *The Lay of the Nibelungen*, and the *Song of Roland*.

Advisory Prerequisite: One course in medieval history or literature

3 credits

MVL 447 Independent Readings and Research

Independently supervised readings in selected topics in medieval studies. May be repeated.

Prerequisites: Permission of instructor and department

1-3 credits

MVL 475, 476 Undergraduate Teaching Practicum I, II

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. In MVL 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites: to MVL 475: U3 or U4 standing; permission of instructor and department

Prerequisites: to MVL 476: MVL 475; permission of instructor and department

3 credits per course

PEC

Physical Education

PEC 101 Racquetball

A basic course in racquetball covering skills, rules, safety, court etiquette, and competition.

1 credit, S/U grading

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.

Prerequisite: PEC 101

1 credit, S/U grading

PEC 103 Beginning Squash

Squash, covering skills, rules, safety, court etiquette, and competition.

1 credit, S/U grading

PEC 104 Power Walking

Development of cardiovascular and muscular endurance through the frequency, intensity, and time principle of power walking.

1 credit, S/U grading

PEC 105 Introduction to Fitness

A course designed for the overweight, beginner, or out-of-shape person. Various methods of becoming more physically fit are investigated. Activities include individual evaluations of food consumption, introduction to physical exercise activities, and general well-being sessions.

1 credit, S/U grading

PEC 106 Basic Karate

Instruction in and practice of the fundamentals of karate.

1 credit, S/U grading

PEC 107 Intermediate Karate

A continuation of skills instruction in karate beyond the beginner's level with testing for the various degree levels.

Prerequisite: PEC 106

1 credit, S/U grading

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).

1 credit, S/U grading

PEC 109 Self-Defense

Instruction in the various methods of protecting oneself from attack by use of various parries and falls.

1 credit, S/U grading

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.

1 credit, S/U grading

PEC 120 Basic Swimming

Designed to equip students at the beginner's level with basic swimming skills and knowledge.

1 credit, S/U grading

PEC 121 Intermediate Swimming

Designed to equip the deep-water swimmer with more advanced strokes and water skills.

1 credit, S/U grading

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.
Prerequisites: PEC 121; skill proficiency test
 1 credit, S/U grading

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.
Prerequisite: Intermediate-level swimming proficiency
 1 credit, S/U grading

PEC 127 Hydro-Aerobics

A water exercise program appropriate for individuals at all fitness levels. Strong emphasis 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.
 1 credit, S/U grading

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.
 1 credit, S/U grading

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.
Prerequisite: PEC 133
 1 credit, S/U grading

PEC 135 Yoga

Designed to improve self awareness through various Hatha Yoga Asanas, breath control, and meditation.
 1 credit, S/U grading

PEC 136 Basic Social Dance

Fundamental steps in such ballroom dances as fox trot, waltz, rhumba, cha-cha, tango, and lindy.
 1 credit, S/U grading

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.
Prerequisite: PEC 136
 1 credit, S/U grading

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 Nautilus and Hammer machines or free weights, stretching, calisthenics, and other activities known for their physical conditioning benefits.
 1 credit, S/U grading

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 Nautilus and Hammer machines or free weights, stretching,

calisthenics, and other activities known for their physical conditioning benefits.

Prerequisite: PEC 145
 1 credit, S/U grading

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.
 1 credit, S/U grading

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.
Prerequisite: PEC 147
 1 credit, S/U grading

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.
 1 credit, S/U grading

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.
 1 credit, S/U grading

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.
 1 credit, S/U grading

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.
 1 credit, S/U grading

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.
 1 credit, S/U grading

PEC 180 Horsemanship I

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.
 1 credit, S/U grading

PEC 181 Horsemanship II

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.
Prerequisite: PEC 180
 1 credit, S/U grading

PEC 182 Riding

Designed for the student who wants to become profi-

cient in riding towards possible competition in the Intercollegiate Horse Shows Association on the Stony Brook Riding Team.
Prerequisite: PEC 181
 1 credit, S/U grading

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 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.
Prerequisite: Permission of instructor
 1 credit per course, S/U grading

PEC 221 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.
Prerequisite: PEC 122
 2 credits

PEC 222 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.
Prerequisite: PEC 221
 2 credits

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 221; skill proficiency test
 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
 2 credits per course

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 221 and 223; permission of instructor
Prerequisites to PEC 228: PEC 227; permission of instructor
 2 credits per course

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
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.

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.

3 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. Course includes teaching methods and protocols of cardiopulmonary resuscitation, including infant, child, and adult procedures.

Prerequisites: PEC 270; permission of instructor
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
2 credits

PEC 310 Basic Athletic Training

Basic instruction for students interested in athletic training or the health care of athletes in the prevention, protection, and first aid care of injuries occurring in athletics. The nature and evaluation of injuries, their mechanisms, protective devices utilized, and rehabilitation are discussed. Consists of lecture and laboratory experience.

Prerequisites: BIO 232; permission of instructor
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
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 inter-collegiate sport or an intramural season) and assumes the responsibility for injury prevention, recognition, emergency care, and rehabilitation.

Prerequisite: PEC 311
2 credits per course

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. Students may not serve as teaching assistants in the same course twice.

Prerequisites: Advanced skill level; permission of instructor and department
2 credits, S/U grading

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. Students may not serve as teaching assistants in the same course twice.

Prerequisites: Advanced skill level; permission of instructor and department
2 credits, S/U grading

PHI

Philosophy

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.

3 credits

PHI 103-B Philosophic Problems (II)

An introduction to philosophy through the analysis of one or more aspects of contemporary life such as technology, war, international relations, families and friendships, or race, class, and gender. A variety of texts are used.

3 credits

PHI 104-B Moral Reasoning (II)

An introduction to philosophy through inquiry into the formation, justification, and evaluation of moral judgments. Students are introduced to the major theories and problems of ethics, such as utilitarianism, Kant's categorical imperative, ethical relativism, egoism, and classical conceptions of the good and virtue. Against this background students engage in discussions of contemporary moral issues.

3 credits

PHI 105-G Politics and Society (II)

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.

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.

3 credits

PHI 109-B Philosophy and Literature in Social Context (III)

The role of literature and philosophy in understanding and critically assessing personal experience and social life. The links among literary texts, philosophical issues, and political and social commitments are explored. Topics include the relations between language and experience, the role of philosophical think-

ing through literary texts, and the significance of literary expression in different cultural and historical situations. Crosslisted with HUM 109.

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, Tang 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.

3 credits

PHI 111-B Introduction to Eastern Philosophy (I)

An introduction to different systems of Eastern philosophy and 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.

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.

Advisory Prerequisite: U2 standing or one course in philosophy
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., Descartes, Leibniz, Spinoza, Hobbes, Locke, Berkeley, Hume, and Kant.

Advisory Prerequisite: U2 standing or one course in philosophy
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.

Advisory Prerequisite: U2 standing or one course in philosophy
3 credits

PHI 215-B Argumentative Writing (III)

An intensive course in techniques of argumentation and interpretation. Logical and critical thinking skills are applied in formulating arguments and refutations of the sort required for the standard term paper. The course focuses on imparting interpretative skills necessary for forming critical responses to articles, academic essays, and studies as they are found in various disciplines. Crosslisted with WRT 215.

Prerequisite: Completion of D.E.C. category A
3 credits

PHI 220-C Introduction to Symbolic Logic (II)

This first course in symbolic logic emphasizes the development of systematic techniques for assessing the validity of arguments: truth tables and truth values analysis, Venn diagrams, elementary quantification theory, and deduction in both the propositional calculus and quantification theory.

Prerequisite: Satisfaction of entry skill in mathematics requirement
Advisory Prerequisite: U2 standing or one course in philosophy
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.

Prerequisite: U2 standing or one course in philosophy
Advisory Prerequisite: One D.E.C. category E course
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: U2 standing; one course in philosophy
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, and Foucault.

Prerequisite: U2 standing or one course in philosophy
Advisory Prerequisite: PHI 105
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.

Advisory Prerequisite: U2 standing or one PHI, ARH, MUS, or THR course
3 credits

PHI 277-G Political Philosophy (II)

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: U2 standing or one course in philosophy
Advisory Prerequisite: PHI 105
3 credits

PHI 284-G Introduction to Feminist Theory (III)

The social construction of gender and how this construction affects philosophical thought and practice. 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 WST 284.

Advisory Prerequisite: U2 standing or one PHI or WST course
3 credits

PHI 285-G The Uses of Philosophy (III)

Introductory study of the bearing of philosophic considerations on the special arts and sciences. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Advisory Prerequisite: U2 standing or one course in philosophy
3 credits

PHI 300-I Ancient Philosophy (I)

Advanced studies in selected Greek thinkers from the pre-Socratics to the classical Athenian philosophers and the Hellenistic schools.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: PHI 200 or 206 or 208
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
Advisory Prerequisite: PHI 200
3 credits

PHI 306-I Modern Philosophy (I)

Advanced studies in selected thinkers such as Descartes, Vico, Spinoza, Locke, Berkeley, Hume, and Kant.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: One of the following: PHI 200, 206, 208, 247, or 300
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
Advisory Prerequisite: One of the following: PHI 200, 206, 208, 247, 300, or 306
3 credits

PHI 309-I 20th-Century Philosophy (I)

A study of selected major philosophical problems and movements during the 20th century, e.g., logical positivism, the problem of induction, incommensurability meta-ethics, the linguistic turn, deconstruction, foundationalism and anti-foundationalism.

Pre- or Corequisites: Two philosophy courses
Advisory Prerequisite: One of the following: PHI 206, 208, 220, 230, 306, 308, 310
3 credits

PHI 310-K American Philosophy (I)

A study of selected major figures in the history of American philosophy, e.g., Jefferson, Emerson, Edwards, James, Peirce, Dewey, Whitehead, and Santayana. American history is viewed through the lens of American philosophies such as pragmatism and transcendentalism.

Prerequisites: Two courses in philosophy
Advisory Prerequisites: Completion of D.E.C. categories I and J; one of the following: PHI 200, 206, 208, 247, 300, 306, or 308
3 credits

PHI 312-I Topics in Contemporary European Thought (I)

Topics in major developments in contemporary European philosophy from 1900 to the present. Semester supplements to the *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: One of the following: PHI 200, 206, 208, 247, 300, 304, 306, 309, or 310
3 credits

PHI 315 Majors' Introductory Seminar A

Seminar using various philosophical texts as a basis for intense study, discussion, and extensive writing. Designed for new or intending philosophy majors, the course provides training in the skills of writing and reading required for success in the major. Authors selected for study and discussion may be taken from any historical period; texts provide experience in reading a variety of philosophical styles and outlooks.

Prerequisites: Two courses in philosophy; philosophy major
3 credits

PHI 316 Majors' Introductory Seminar B

Introduction to the major questions in philosophy today and to members of the philosophy faculty. One faculty member coordinates the course and each week a different faculty member assigns a reading, gives a presentation, and/or leads a discussion on a topic or area of current philosophical interest. Students respond in discussion and writing. Designed for new philosophy majors or those considering the major;

intended to solidify reading/writing skills required for the major, and to provide some acquaintance with what are the main topics and/or approaches to philosophy.

Prerequisites: Two courses in philosophy; philosophy major
3 credits

PHI 320-G Metaphysics (II)

An inquiry into the first principles of science, art, and action as these are treated by representative classical and modern authors.

Prerequisites: Two courses in philosophy
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
Advisory Prerequisite: PSY 103
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
3 credits

PHI 330 Advanced Symbolic Logic (II)

A study of such topics as a natural deduction system of quantification theory including consistency and completeness proofs; axiomatic formal systems and associated concepts of consistency, completeness, and decidability; elementary modal logic; and introductory set theory.

Prerequisite: PHI 220
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
Advisory Prerequisite: PSY 103
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 or physics
3 credits

PHI 336-G Philosophy of Religion (II)

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 or one course in religious studies
3 credits

PHI 340-J Philosophical Traditions of East Asia (I)

A study of influences and confluences among major currents of thought in East Asia, surveying the major debates that shaped the great intellectual traditions of China and their transformation as they were assimilated in Korea and Japan. Particular attention is given to the rise of Neo-Confucian orthodoxy in East Asia and the philosophical and political reasons its basic concepts were challenged during the Ming, late Choson, and Tokugawa periods.

Prerequisites: PHI 111 or RLS 240 or 246 or 260; one other course in philosophy
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
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
3 credits

PHI 347-G Hermeneutics and Deconstruction (II)

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.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: PHI 247, 264, 306, 308, or 312
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
Advisory Prerequisite: PSY 103
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
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; completion of D.E.C. category F
Advisory Prerequisite: PHI 105, 206, 249, or 277
3 credits

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; completion of D.E.C. category E
3 credits

PHI 365-H Philosophy and Computers (III)

An investigation of topics at the interface between philosophy and computation drawing on classical and contemporary sources. Philosophical questions about computers, computation, information, logic, language, and mind, and the prospects for computer modeling as a tool in philosophical investigation.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: PHI 220 or one course in computer science
3 credits

PHI 366-G Philosophy and the Environment (III)

Philosophical questions raised by human relations with the natural world, ranging from basic concepts such as nature, ecology, the earth, and wilderness, to the ethical, economic, political, and religious dimensions of current environmental problems, including the question of whether there are values inherent in nature itself beyond those determined by human interests alone.

Prerequisites: Two courses in philosophy, or one course in philosophy and completion of D.E.C. category E
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; completion of D.E.C. category E
Advisory Prerequisites: PHI 206 and 230
3 credits

PHI 369 Philosophy of Mathematics (III)

An investigation of philosophical issues that arise in mathematics. Topics include foundational issues within mathematics (logicism, formalism, intuitionism, 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; completion of D.E.C. category C
Advisory Prerequisites: PHI 206 and 220
3 credits

PHI 370-G Philosophical Psychology (III)

An examination of philosophical issues and some psychological theories concerning the nature of the person and the sources of the self. The course includes such topics as the dimensions of the person, the nature of conscious life, the scope of human cognition, and gender identity.

Prerequisites: One course in philosophy
Advisory Prerequisite: PHI 100 or 103 or 104
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: PHI 104 and one other PHI course
Advisory Prerequisite: One of the following: PHI 108, 200, 206, 208, 300, 304, 306, 308, 309, or 366
3 credits

PHI 373-G, 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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: Two courses in philosophy
3 credits per course

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
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: Two courses in philosophy
Advisory Prerequisite: HIS 237 or 238 or SOC/HMC 200 or HMC 331
3 credits

PHI 377 Contemporary Political Philosophy (II)

A critical examination of selected issues in contemporary political philosophy, for example, the nature and justification of basic rights, the legitimization 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
Advisory Prerequisites: PHI 105 or 277 or 375; one upper-division political science course
3 credits

PHI 378-K Philosophical Topics in Asian-American History (III)

Analysis and interpretation of Asian and American literature, film, law, and history to understand the experiences of Asians in the Americas and to reconceptualize the concepts of power, race, class, gender, and ethnicity from the era of the early immigration period through the present day. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One course in philosophy
3 credits

PHI 379-K Philosophy of Race (III)

Examination of our assumptions about race and the impact of those assumptions on issues concerning gender, class, and sexuality throughout American history. Readings include critical race theory, feminist theory, and critical legal theory. Students examine racial issues from a philosophical perspective and consider the ways in which representations of race may reinforce patterns of power and privilege. Crosslisted with AFH 379.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One course in philosophy
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 rela-

tions between literature and philosophy. Primary texts are selected to demonstrate the precise nature of the relationship. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: One philosophy course; one literature course
Advisory Prerequisite: PHI 109 or 110
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; completion of D.E.C. category D course
Advisory Prerequisites: PHI 109 or 110; PHI 264
3 credits

PHI 383-G Philosophical Issues of Race and Gender (III)

Issues of race and gender and how the notion that racism and sexism are analogous forms of oppression aids and detracts from consideration of these issues. Examination of the dynamics of race and gender in various contexts such as activism, art, law, literature, the media, medicine, and philosophy. Crosslisted with WST 383.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One PHI or WST course
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 traditional areas of philosophy as well as providing a detailed understanding of particular feminist theories. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes. Crosslisted with WST 384.

Prerequisites: One PHI course; one WST course
Advisory Prerequisites: PHI/WST 284; one other PHI or WST course
3 credits

PHI 400-G, 401-G Individual Systems of the Great Philosophers (I)

A detailed study of the works of a single great philosopher. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: One of the following: PHI 300, 304, 306, 308, 309, 310, or 312
3 credits per course

PHI 402-G Analysis of Philosophic Texts (I)

Detailed analysis of a major philosophic text. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: One of the following: PHI 300, 304, 306, 308, 309, 310, or 312
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. Semester supplements to this

Bulletin contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U4 standing or five courses in philosophy
3 credits

PHI 421 Research Tracks in Philosophy (I, II, III)

A survey of recent literature necessary to prepare a team of students in a Research Track for two additional semesters of collaborative research.

Prerequisite: Consent of Research Track faculty
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: U4 standing; six courses in philosophy; satisfaction of upper-division writing requirement for the philosophy major
3 credits

PHI 475, 476 Undergraduate Teaching Practicum I, II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled courses. 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. In PHI 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites to PHI 475: Prior preparation in subject field; permission of instructor and director of undergraduate studies

Prerequisites to PHI 476: PHI 475; prior preparation in subject field; permission of instructor and director of undergraduate studies

3 credits per course, S/U grading

PHI 487 Readings and Research in Philosophy (II)

Advanced-level inquiry with individualized instruction in one particular philosophical style of reasoning. Consult undergraduate advisor for specific details. May be repeated.

Prerequisites: U4 standing in philosophy major; permission of department
0-6 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: U4 standing in philosophy major; permission of department
0-6 credits

PHI 490 Readings and Research in Philosophical Investigations of Other Disciplines (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: U4 standing in philosophy major; permission of department
0-6 credits

PHY

Physics

PHY 112-E Light, Color, and Vision

An introduction to the modern understanding of light, color, and vision for students not majoring in the physical sciences. Topics include the nature of light, light in modern physics (spectra, lasers, relativity), optical phenomena in the atmosphere (mirages, rainbows, halos, etc.); the camera and photography, simple optical instruments (eyeglasses, telescopes, binoculars), the human eye and vision; illusions, color, color perception and color theory. The course is especially beneficial for students majoring in theatre, fine arts, and art. Not for major credit.

Prerequisite: Satisfaction of entry skill in mathematics requirement
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.

Prerequisites to PHY 117: High school algebra and trigonometry

Prerequisite to PHY 118: PHY 117

4 credits per course

PHY 119-E Physics for Environmental Studies

The principles of physics as they apply to environmental issues. A review of mathematics, followed by a discussion of Newton's laws, conservation principles, topics in fluids and wave motion, optical instruments, and radioactivity. Crosslisted with ENS 119.

Prerequisite: MAT 125 or 131 or 141 or AMS 151
4 credits

PHY 121-E, 122-E Physics for the Life Sciences I, II

Primarily for students majoring in biological sciences or in pre-clinical 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 and one recitation hour per week. PHY 121 may not be taken for credit in addition to PHY 125, 131 or 141. PHY 122 may not be taken for credit in addition to PHY 126, 127, 132, or 142.

Prerequisites to PHY 121: MAT 125 or 131 or 141 or AMS 151; CHE 132 or 142

Prerequisite to PHY 122: PHY 121/123

3 credits per course

PHY 123, PHY 124 Physics for Life Sciences Laboratory

Laboratory component of PHY 121, PHY 122. Two hours of laboratory per week.

Corequisite to PHY 123: PHY 121

Corequisite to PHY 124: PHY 122

1 credit per course

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 hour, and two laboratory hours per week. Not for credit in addition to PHY 121/123, 131, or 141.

Corequisite: MAT 125 or 131 or 141 or AMS 151
4 credits

PHY 126-E Classical Physics B

An introduction to fluid mechanics, thermodynamics, wave mechanics, and optics. Three lecture hours, one recitation hour, and two laboratory hours per week. Not for credit in addition to PHY 122/124, 132, or 142.

Prerequisite: PHY 125 or 131 or 141
Corequisite: MAT 126 or 131 or 141 or AMS 151
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 hour, and two laboratory hours per week. Not for credit in addition to PHY 122/124, 132 or 142.

Prerequisite: PHY 125 or 131 or 141
Corequisite: MAT 126 or 132 or 142 or AMS 161
4 credits

PHY 131-E Classical Physics I

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 hour, and two laboratory hours per week. Not for credit in addition to PHY 121/123, 125, or 141.

Corequisite: MAT 131 or 141 or 126 or AMS 151
4 credits

PHY 132-E Classical Physics II

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 hour, and two laboratory hours per week. Not for credit in addition to PHY 122/124, 126, 127, or 142.

Prerequisite: PHY 131 or 141
Corequisite: MAT 132 or 142 or 127 or AMS 161
4 credits

PHY 141-E, 142-E Classical Physics I, II: Honors

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. PHY 141 may not be taken for credit in addition to PHY 121/123, 125, or 131. PHY 142 may not be taken for credit in addition to PHY 122/124, 126, 127, or 132.

Prerequisite: to PHY 141: Permission of department; priority given to students in the University's honors programs.

Corequisite: to PHY 141: MAT 131 or 141 or 126 or AMS 151

Prerequisite: to PHY 142: PHY 141 or permission of department

Corequisite: to PHY 142: MAT 132 or 142 or 127 or AMS 161

4 credits per course

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
1 credit per course

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 are discussed. Not for major credit. Crosslisted with ATM 237.

Prerequisites: One D.E.C. category E course; satisfaction of entry skill in mathematics requirement
3 credits

PHY 251 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 and one recitation hour per week.

Prerequisite: PHY 126 and 127 or PHY 132 or PHY 142

Pre- or Corequisite: MAT 203 or 205 or AMS 261

Corequisite: for physics majors: PHY 252

3 credits

PHY 252 Modern Physics Laboratory

Laboratory component of PHY 251. Two hours of laboratory per week.

Corequisite: for physics majors: PHY 251

1 credit

PHY 262 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 lectures are studied in the laboratory with emphasis on understanding bulk properties of solids in terms of their underlying microstructure. Three lecture hours per week.

Prerequisite: PHY 251

Corequisite: for physics majors: PHY 263

3 credits

PHY 263 Introduction to Solid-State Physics Laboratory

Laboratory component of PHY 262. Three hours of laboratory per week.

Prerequisite: PHY 251/252

Corequisite: for physics majors: PHY 262

1 credit

PHY 287 Introduction to Research

The course provides an opportunity for students, early in their studies, to obtain a research experience that matches their level of preparation. Students work, together with faculty, graduate students, and post-doctoral fellows, on an ongoing research project.

Prerequisites: U1 or U2 standing; completion of two semesters of physics with a grade of B or higher

0-6 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

1 credit

PHY 301 Electromagnetic Theory I

The course reviews vector calculus and develops Maxwell's equations relating electric and magnetic fields to their sources. Applications for time-independent fields are developed for solving boundary value problems and the interactions of fields in bulk matter.

Prerequisite: PHY 251 or permission of department

Corequisite: MAT 341

3 credits

PHY 302 Electromagnetic Theory II

Topics include the interrelations of time-dependent electric and magnetic fields and their potentials; the energy and momentum associated with electromagnetic fields and the Maxwell vacuum and matter; waveguides and transmission lines; special relativity for electromagnetism and mechanics; the retarded potentials for time varying sources; and the radiation of electromagnetic waves.

Prerequisite: PHY 301

3 credits

PHY 303 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 or permission of department; MAT 303 or 305 or AMS 361

3 credits

PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics

The course is in two parts. Those relations among the properties of systems at thermal equilibrium 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

3 credits

PHY 308 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 301 and 303

3 credits

PHY 311 Connections in Science

Investigation of the application of physics to other scientific fields including medicine, biophysics, chemistry, engineering, and applied mathematics. The course is taught as a seminar and includes guest lectures, tours of laboratories, and discussion of classic and current research projects. Appropriate for non-physics majors and physics majors.

Prerequisites: PHY 122/124 or 127 or 132 or 142; permission of instructor

1 credit

PHY 313-H Mystery of Matter

Exploration of our understanding of the fundamental particles that are the constituents of all matter; how our understanding of them and the tools developed to study them affect aspects of contemporary society. Historical discoveries and their place in social and political institutions of the time are considered, along with issues of government funding and the cost to society. Includes discussion of developments at Brookhaven National Laboratory and their social as well as scientific impact.

Prerequisites: U3 or U4 standing; one D.E.C. category E course

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 tech-

niques, and interfacing to computer 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
3 credits

PHY 352 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
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
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
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
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
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
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
Prerequisite: to PHY 446: PHY 445
3 credits per course

PHY 447 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
1-6 credits

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; both with grades of C or higher
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: Grade of C or higher in PHY 352
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
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.

Prerequisite: Permission of director of undergraduate program
3 credits, S/U grading

PHY 487 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
0-6 credits

POL

Political Science

POL 101-F World Politics

Analysis of the basic concepts and issues of international relations in the contemporary international sys-

tem. 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.

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.

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.

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 students in the University's honors programs
3 credits

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, or SOC 202.

Prerequisites: Satisfaction of entry skill in mathematics requirement; POL 101 or 102 or 103 or 105
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.

Advisory Prerequisite: LAC 200
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.

Advisory Prerequisite: One HIS course
3 credits

POL 287 Introductory Research in Political Science

May be repeated up to a limit of 12 credits, but only six credits may count for major or minor requirements in political science.

Prerequisite: Permission of departmental research coordinator
0-3 credits

POL 302 Graphical Analysis in Political Science

Training in the use of graphical analysis to study politics, including research design, data collection and organization, methodology, and interpretation. Additional attention to the politics of measurement and the political impact of data. Formal analytical techniques are applied to substantive policy areas such as health, unemployment, and national security.

Prerequisites: U3 or U4 standing; POL 201 or any other course satisfying the major's methodology requirement
3 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; U3 or U4 standing
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: U3 or U4 standing
Advisory Prerequisite: POL 103
3 credits

POL 309-I Politics in the European Union

Why the European Union was created, how its institutions have evolved over time, and where the union is going.

Prerequisites: POL 101 and 103; U3 or U4 standing
3 credits

POL 311 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.

Prerequisites: POL 101; U3 or U4 standing
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.

Prerequisite: POL 101
Advisory Prerequisite: POL 201 or any other course satisfying the major's methodology requirement
3 credits

POL 316-F Federalism and Intergovernmental Relations

Examination of the primary structure of American politics. The historical foundation and evolution of American federalism and the effects of a federal structure on civil rights and liberties, economic development, political representation, and public policy. Discussion of current topics in federalism and intergovernmental relations.

Prerequisite: POL 102 or 105
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 par-

ties, candidates, and issues; and the interpretation of electoral outcomes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105
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.

Prerequisite: U3 or U4 standing
Advisory Prerequisites: POL 102 or 105; POL 201 or any other course satisfying the major's methodology requirement
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.

Prerequisite: U3 or U4 standing
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
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.

Prerequisite: POL 102 or 105
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: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105
3 credits

POL 323-F U.S. Congress

An examination of the most powerful legislative institution in America. The historical background of Congress is examined along with its internal organization, rules, and relationship to the rest of government and to the world outside Washington.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105
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: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105
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: U3 or U4 standing
Advisory Prerequisite: POL 320
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: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105
3 credits

POL 327-K Urban Politics

Covering the development of urban settlements from the early 19th century to the contemporary period, the course 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. Among the topics examined is the historical development of urban settlements in the United States, studying both the growth of cities and suburbs and the ever-changing relationship between these types of settlements evident at different times in our history.

Prerequisite: POL 102 or 105
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: U3 or U4 standing
Advisory Prerequisite: POL 320
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: U3 or U4 standing
Advisory Prerequisite: POL 320
3 credits

POL 330-K Gender Issues in the Law

A critical exploration of American law that specifically addresses the issues of (in)equality of women and men in the United States. The course surveys and analyzes cases from the pre-Civil War era to the end of the 20th century dealing with various manifestations of sex discrimination, decided in the federal court system, typically by the Supreme Court, and the state court system. The course also considers how the political nature of the adjudicative process has ramifications for the decisions rendered by a court. Crosslisted with WST 330.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105 or SSL/WST 102
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: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

POL 332-F Politics of Criminal Due Process

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: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

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 constitutional 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.

Prerequisites: U3 or U4 standing

Advisory Prerequisite: POL 101 or 102 or 103 or 105

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

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

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

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.

Prerequisite: U3 or U4 standing

3 credits

POL 347-K Women and Politics

Analysis of the role of women in current American politics—their electoral participation, office seeking, and political beliefs—and policy issues that have special relevance to women. The course traces the history of American women's political involvement and the historical trajectory of gender-related policy from the mid-19th century to today. Crosslisted with WST 347.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: POL 102 or 105

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: U3 or U4 standing

Advisory Prerequisite: POL 201 or any other course satisfying the major's methodology requirement

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: U3 or U4 standing

Advisory Prerequisite: POL 201 or any other course satisfying the major's methodology requirement

3 credits

POL 350-I Contemporary European Political Theory

Analysis of major writings in European political thought throughout the 20th century, focusing on four important ideological groupings: liberalism, socialism, fascism, and conservatism, with consideration of their historical antecedents.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. category F

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.

Prerequisite: POL 201 or any other course satisfying the major's methodology requirement.

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

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.

Prerequisite: U3 or U4 standing

3 credits

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.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: POL 102 or 105; POL 201 or any other course satisfying the major's methodology requirement

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 of 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.

Prerequisite: POL 102 or 105

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.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

POL 368-F American Political Development

The development and evolution of the American political system. Consideration of the evolution of institutions such as the party system, Congress, and the bureaucracy and how they explain policy developments and shape our political life. Attention to how historical approaches to American politics help explain current dilemmas in the American political system.

Prerequisite: POL 102 or 105

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: U3 or U4 standing

Advisory Prerequisite: POL 101 or 103

3 credits

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 legitimization 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

Advisory Prerequisites: PHI 105 or 277 or 375; one upper-division political science course

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: U3 or U4 standing

Advisory Prerequisite: HIS 213 or HIS/POL 214 or HIS/POL 216 or LAC 200

3 credits

POL 390, 391 Special Topics in Political Science

Semester supplements to this *Bulletin* contain descriptions when the course is offered.
Prerequisites: U3 or U4 standing; one POL course announced with topic
 3 credits

POL 401, 402, 403, 404 Seminars in Advanced Topics

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as topic changes.
Prerequisite: Permission of instructor
 3 credits per course

POL 405 Colloquium in Comparative Politics and Political Theory

Close reading and discussions of selected classic and modern texts in the area of comparative politics and political theory.
Prerequisites: U4 standing; permission of instructor
 3 credits

POL 406 Strategic Models of Politics

A survey of the political science literature on strategic interaction and an analysis of different forms of strategic behavior in a variety of political contexts. Topics include strategic voting in elections and legislatures, principal-agent relationships, advocacy and protest tactics, agenda-setting, and international conflict.
Prerequisite: U3 or U4 standing
Advisory Prerequisites: ECO 107 and 109
 3 credits

POL 411-H Science, Technology, and Arms Control

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: U3 or U4 standing; one D.E.C. category E course
 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.
Prerequisites: U3 or U4 standing; POL 101 and 102; one D.E.C. category E course
 3 credits

POL 413-J Asian Security and Technology Issues

An examination of international security issues, such as technology transfer and arms sales, arms control, environmental stress, and emerging regional conflicts among Asian nations. A case study approach is used. Recent cases have included China and Nuclear Weapons Tests; The Japanese Constitution and Japan's Self Defense Forces; The Three Gorges Dam; Development, Democracy, and Human Rights.
Prerequisite: POL 311 or 313 or 336
 3 credits

POL 418 Legal Processes and Social Structures

A critical and historical study of the role of the American legal order in constructing and deconstructing social dominion and subordination in the United States since the founding of the nation. Particular attention is paid to the legal and social construction of the "white" race juxtaposed with other races, specifically the "yellow," "brown," and "black" races. Contemporary legal debates regarding the con-

cepts of the social contract, property, and objectivity are considered. Crosslisted with AFS 418.
Prerequisites: U3 or U4 standing; POL/WST 330
Advisory Prerequisite: One of the following: AFS 277, AFS 310, POL 321, POL 325, POL 343, or PHI/POL 377
 3 credits

POL 434-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.
Prerequisite: POL 201 or any other course satisfying the major's methodology requirement
Advisory Prerequisite: POL 320
 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
 1-6 credits

POL 475, 476 Undergraduate Teaching Practicum I, II

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. In POL 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. Not for major credit.
Prerequisites: to POL 475: Political science major; U4 standing; permission of instructor
Prerequisites: to POL 476: POL 475; permission of instructor and department
 3 credits per course, S/U grading

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 credits may not exceed six credits.
Prerequisites: Political science major; 15 credits in political science; permission of instructor and department; permission of departmental research coordinator may be substituted.
 0-6 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. May be repeated up to a limit of 12 credits.
Prerequisites: Political science major or minor with 3.00 g.p.a.; 15 credits in political science; permission of instructor and department
 0-6 credits, S/U grading

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 may be applied to major requirements.

Prerequisites: Completion of pre-application orientation; admission to Washington Center or New York State Assembly or Senate Program; political science major or minor with 3.00 g.p.a.; 15 credits in political science; sponsorship of a political science faculty member
Corequisite: POL 490
 12 credits, S/U grading

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.
Prerequisites: Completion of pre-application orientation; admission to Washington Center or New York State Assembly or Senate Program; political science major or minor with 3.00 g.p.a.; 15 credits in political science; sponsorship of a political science faculty member
Corequisite: POL 489
 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 close supervision of a faculty member. Students enrolled in POL 495 are obliged to complete POL 496. Students receive only one grade upon completion of the sequence.
Prerequisite: Admission to the political science honors program
 3 credits per course

POR

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. POR 111 is designed for students with no prior knowledge of the language. A student who has had two or more years of Portuguese in high school (or who has otherwise acquired an equivalent proficiency) may not take POR 111 without written permission from the supervisor of the course.
Prerequisite: to POR 112: POR 111
 4 credits per course

POR 447 Directed Individual Study

Individually supervised studies in selected topics of Luso-Brazilian language, literature, and culture. May be repeated.
Prerequisites: Permission of instructor and department
 1-3 credits

PSY

Psychology**PSY 103-F Introduction to Psychology**

An introduction to research and theory in psychology in such areas as learning, perception, cognition, biopsychology, development, personality, and abnormal and social psychology. As part of the course, students must participate in experiments and/or a library research project.
 3 credits

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, or SOC 202.

Prerequisites: PSY 103; satisfaction of entry skill in mathematics requirement
3 credits

PSY 220-F Survey in 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
3 credits

PSY 230-F Survey in Abnormal and Clinical 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
3 credits

PSY 240-F Survey in 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
3 credits

PSY 250-F Survey in Biopsychology

Introduction to the neural basis of sensory processes, motor control, attention, emotion, and learning.

Prerequisite: PSY 103 or BIO 101 or 150
3 credits

PSY 260-F Survey in Cognition and Perception

A survey of theoretical and empirical work on human cognition and perception including pattern recognition, memory, attention, language comprehension, decision making, and problem solving.

Prerequisite: PSY 103
3 credits

PSY 273 Supervised Research in Psychology

Initial training and participation in techniques or duties related to a specific laboratory or field research experience under the direct supervision of a faculty member or advanced graduate student in the Department of Psychology. Students 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
0-6 credits, S/U grading

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 Psychology Undergraduate Office. May be repeated up to a limit of six credits.

Prerequisite: Permission of instructor
1-3 credits, S/U grading

PSY 300-F Research Methodology

Basic principles in design and executions of research in psychology. Not for credit in addition to PSY 310.

Prerequisites: PSY 103; PSY 201 or any other course satisfying the department's methodology requirement

3 credits

PSY 301 Advanced Statistics

Survey of probability and sampling theory, descriptive and inferential statistics, and introduction to experimental design.

Prerequisite: PSY 300 or 310
3 credits

PSY 310-F Research and Writing in Psychology

An introduction to and critical analysis of the methodology of psychological research. Not for credit in addition to PSY 300.

Prerequisites: PSY 103; PSY 201 or any other course satisfying the department's methodology requirement
4 credits

PSY 325 Children's Cognitive Development

A survey of the basic principles of cognition from experimental research with children. Topics include perceptual development, language development, memory development, conceptual development, and the development of academic skills.

Prerequisites: PSY 220; PSY 300 or 310
3 credits

PSY 326 Children's Social and Emotional Development

Current theories, models, research methods, and findings in the study of children's socioemotional development. The course emphasizes the interaction of the individual with his or her social environment in developmental processes and outcomes. Eras covered include infancy, toddler/preschool, mid-late childhood, and adolescence.

Prerequisites: PSY 220; PSY 300 or 310
3 credits

PSY 329 Special Topics in Developmental Psychology

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: PSY 220; PSY 300 or 310
3 credits

PSY 335 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 230; PSY 300 or 310
3 credits

PSY 336 Schizophrenia

An overview of research concerning the description, etiology, and treatment of schizophrenia. Topics include the history of the concepts, diagnosis, genetics, neurochemistry, psychosocial variables, and both biological and psychological approaches to treatment.

Prerequisites: PSY 230; PSY 300 or 310
3 credits

PSY 338 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 220; PSY 300 or 310
3 credits

PSY 339 Special Topics in Clinical Psychology

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: PSY 230; PSY 300 or 310
3 credits

PSY 345 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.

Prerequisites: PSY 240; PSY 300 or 310
3 credits

PSY 346 Health Psychology

The role of psychological factors in the maintenance of good health or in coping with illness. Topics include the modification of specific health behavior, such as alcoholism, obesity, lack of exercise, and smoking; the relationship of stress and illness; and coping with terminal illnesses.

Prerequisites: PSY 240; PSY 300 or 310
3 credits

PSY 347-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 WST 377.

Prerequisites: SSI/WST 102 or WST 103; ANT 367 or PSY 103 or SOC/WST 247
3 credits

PSY 349 Special Topics in Social Psychology

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: PSY 240; PSY 300 or 310
3 credits

PSY 355 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 250
3 credits

PSY 356 Physiological Psychology

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.

Prerequisite: PSY 250 or BIO 202 or BIO 203
3 credits

PSY 357 Animal Learning

Principles of adaptation and behavioral change with emphasis on techniques of reward and punishment and of stimulus control.

Prerequisite: PSY 300 or 310
3 credits

PSY 359 Special Topics in Biopsychology

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: PSY 250
3 credits

PSY 365 The Psychology of Language

Examination of language acquisition and a consideration of its implication for cognitive psychology.

Prerequisites: PSY 260; PSY 300 or 310
3 credits

PSY 366 Human Problem Solving

An exploration of human problem solving and critical thinking. Topics include memory strategies, the role of language in thinking, inductive and deductive reasoning, creativity, and the development of problem solving skills.

Prerequisites: PSY 260; PSY 300 or 310
3 credits

PSY 367 Memory

A review of classic and current theories of memory and empirical research on memory in memory-intact and memory-impaired populations.

Prerequisites: PSY 260; PSY 300 or 310
3 credits

PSY 368 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 260; PSY 300 or 310
3 credits

PSY 369 Special Topics in Cognition and Perception

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: PSY 260; PSY 300 or 310
3 credits

PSY 375 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.

Prerequisites: Nine credits of psychology
3 credits

PSY 380 Research Lab: Human 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 or 310; permission of instructor
4 credits

PSY 381 Research Lab: Cognition/Computers/Learning

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 or 310; permission of instructor
4 credits

PSY 382 Research Lab: 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 240; PSY 300 or 310; one 300-level social psychology course
4 credits

PSY 383 Research Lab: Physiological 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 behav-

ior, and recordings of human brain activity. One hour of lecture and four hours of laboratory per week.

Prerequisites: PSY 300 or 310; PSY 356; permission of instructor
4 credits

PSY 384 Research Lab: 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.

Prerequisites: PSY 260; PSY 300 or 310
4 credits

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 or 310; admission to psychology honors program
1 credit

PSY 447 Readings in Psychology

Directed readings under the guidance of a faculty member. May be repeated once.

Prerequisites: PSY 300 or 310; permission of department
1-6 credits

PSY 475, 476 Undergraduate Teaching Practicum I, II

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 assigned times to discuss the intellectual and pedagogical matters relating to the course. In PSY 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites: to PSY 475: PSY 300 or 310; U4 standing in psychology major; permission of instructor and department

Prerequisites: to PSY 476: PSY 475; permission of instructor and department
3 credits per course; S/U grading

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 Psychology Office. These become part of the student's departmental file. May be repeated up to a limit of 12 credits.

Prerequisites: U3 or U4 standing; PSY 300 or 310; permission of department
0-6 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 department. May be repeated up to a limit of 12 credits.

Prerequisites: 12 credits in psychology including PSY 300 or 310; permission of instructor, obtained in the semester prior to the start of the internship; permission of director of undergraduate studies
Corequisite: PSY 447 or 491 or 492
0-6 credits, S/U grading

PSY 491, 492 Advanced Seminars in Psychology

Special seminars covering current research 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 or 310; permission of instructor
3 credit per course

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. Students receive only one grade upon completion of the sequence.

Prerequisite: to PSY 495: PSY 399
Prerequisite: to PSY 496: PSY 495
Corequisite: to PSY 495, 496: PSY 487
1 credit per course

RLS

Religious Studies**RLS 101-B Western Religions**

An historical introduction to Judaism, Christianity, and Islam. Attention is given to the cultural background, art, literature, philosophy, and institutional development of each tradition.

3 credits

RLS 102-B Eastern Religions

An historical introduction to Hinduism, Buddhism, Confucianism, and Taoism. Attention is given to the cultural background, art, literature, philosophy, and institutional development of each tradition.

3 credits

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.

3 credits

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 changes.

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.

3 credits

RLS 240-J Confucianism and Taoism

An introduction to the basic philosophies and doctrines of Confucianism and Taoism, such as the concept of Tao, non-action, benevolence, and propriety. The course explores both the similarities and the differences between these two traditions.

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.

3 credits

RLS 250-J Hinduism

Survey of the principal religious and philosophical currents of Hindu civilization in India from the time of the Vedas and Upanishads through the development of the major devotional ways and schools of thought current in India today. These include the polytheism of Hindu mythology, the theism of various forms of devotional practice, and the monotheism and nondualism of Hindu philosophy.

Advisory Prerequisite: Completion of D.E.C. category B
3 credits

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.

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.

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.

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.

Prerequisite: One 200-level RLS course
3 credits

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 changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: Varies according to topic
3 credits

RLS 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 JDH 320.

Prerequisite: HIS/JDS 225 or 226 or RLS/ JDH 230
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 102 or 260
3 credits

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
3 credits

RLS 406 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
3 credits

RLS 408 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 as the topic changes.

Prerequisite: RLS 280
3 credits

RLS 415-G Judaic Response 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 JDH 415.

Prerequisite: RLS/JDH 230 or HIS/JDS 225 or 226
3 credits

RLS 426-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
3 credits

RLS 430-G, 431-G Special Topics

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: Completion of D.E.C. category B
3 credits per course

RLS 447 Readings in Religious Studies

Directed readings with religious studies faculty, limited to religious studies majors or upper-division students working on advanced problems in religious studies. May be repeated.

Prerequisite: Permission of program coordinator
1-6 credits

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.

Prerequisites: U4 standing in religious studies major; permission of instructor and program director
3 credits, S/U grading

RLS 495-496 Senior Honors Project

A two-semester project for RLS majors who are candidates for the degree with honors. Arranged with the program during the student's junior year, 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. Students receive only one grade upon completion of the sequence.

Prerequisites: Permission of instructor and program director

3 credits per course

RUS

Russian Language and Literature

RUS 111, 112 Elementary Russian I, II

An introduction to Russian. Class work is supplemented by practice in the language laboratory. RUS 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Russian in high school (or who has otherwise acquired an equivalent proficiency) may not take RUS 111 without written permission from the supervisor of the course.

Prerequisite to RUS 112: RUS 111
4 credits per course

RUS 211, 212 Intermediate Russian I, II

Intermediate courses in Russian stressing an active command of the language. May not be taken for credit in addition to RUS 213.

Prerequisite to RUS 211: RUS 112
Prerequisite to RUS 212: RUS 211

3 credits per course

RUS 213 Intermediate Russian for Students of Russian-Speaking Background

A course intended for students who already speak Russian and who need training in writing, reading, and grammar. May not be taken for credit in addition to RUS 211 or 212. The course is not intended for students who have the equivalent of a Russian high school education.

Prerequisite: Native-speaking proficiency in Russian
3 credits

RUS 311, 312 Russian Conversation and Composition

A course in the active use of spoken and written Russian. Particular emphasis is placed on contemporary idiom.

Prerequisites: RUS 212 or 213; permission of instructor required for students of Russian-speaking background
3 credits per course

RUS 423 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 are in Russian.

Prerequisite: RUS 312 or equivalent proficiency in Russian
3 credits

RUS 439 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 212 or equivalent proficiency in Russian
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 311, 312 or equivalent proficiency in Russian; a 300- or 400-level course in Russian literature; permission of instructor and department
1-3 credits

RUS 491 Special Author

A detailed study of the works of a major 19th- or 20th-century author, such as Pushkin, Gogol, Turgenyev, or Blok. Readings are in Russian, and classes are conducted largely in Russian. May be repeated as the topic changes.

Prerequisites: HUR 141, 142; RUS 312 or equivalent proficiency in Russian
3 credits

RUS 492 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 changes.

Prerequisites: HUR 141, 142; RUS 312 or equivalent proficiency in Russian
3 credits

RUS 495 Senior Honors Project in Russian

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
3 credits

SAS

South Asian Studies**SAS 240-J Introduction to the Civilization of the Indian Subcontinent**

Key concepts in South Asian civilization in art, architecture, religion, philosophy, science, society, literature, and politics from the Indus Valley to the present. Topics include evolution of Hinduism, Buddhism, yoga, classical and modern languages, the caste system and reform movements, Ashoka, Akbar and great emperors, impact of Islam and Western colonization, and Gandhi and the impact of South Asia on the world.

3 credits

SAS 320-G Literature of India

Introduction to selected classics of Indian literature in English translation. Classical and modern works are discussed, representing Sanskrit (the *Vedas*, the *Upanishads*, the epics *Ramayana* and *Mahabharata*, classical drama of Kalidasa and Bhasa), Tamil, Kannada, Hindi-Urdu, and Indian English. Western and Indian literary theories and critical approaches are compared and evaluated.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: SAS 240
3 credits

SAS 381-G Special Topics in South Asian Literature and Philosophy

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
3 credits

SAS 401, 402 Special Topics in South Asian Studies

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as

the topic changes.

Prerequisites: U3 or U4 standing
3 credits

SAS 447 Directed Readings in South Asian Studies

Independent readings in advanced topic in South Asian studies. May be repeated.

Prerequisites: U3 or U4 standing; permission of instructor
1-6 credits

SAS 475 Undergraduate Teaching Practicum

Students assist instructors in South Asian studies courses with large enrollments. Under the supervision of the course instructor, they are responsible for conducting discussion and review sections and helping students with course readings and assignments.

Prerequisites: South Asian studies minor; U3 or U4 standing; permission of instructor
3 credits

SAS 487 Supervised Research in South Asian Studies

Independent research under the supervision of a faculty member.

Prerequisites: U3 or U4 standing; permission of instructor
0-3 credits

SCI

Science Teaching Secondary Education**SCI 410 Pedagogy and Methods for Science Education I**

This course introduces the pre-service teacher to the requisite skills, culture, and demands of the profession with emphasis on curriculum design, lesson planning, use of materials and student assessment within the context of a pedagogy that promotes an inquiry approach to teaching and learning. Experiences in SCI 441 are incorporated into SCI 410.

Prerequisites: Acceptance to science education program; four laboratory science courses; 6 credits of science in the last 5 years; 2.75 cumulative and science g.p.a.; writing sample; permission of the science education program
Corequisite: SCI 441
3 credits

SCI 420 Pedagogy and Methods for Science Education II

In this course, the pre-service teacher builds on the pedagogical foundation set in SCI 410. SCI 420 emphasizes clinical practice sessions, integration of theory and practice, extensions of scientific inquiry for diverse learners and assessment of student progress. Experiences in SCI 442 are incorporated into SCI 420.

Prerequisites: SCI 410; 2.75 cumulative and science g.p.a.; permission of the science education program
Corequisite: SCI 442
3 credits

SCI 441 Clinical Experience and Action Research I

Students beginning the science education program register for SCI 441 and SCI 410. In this course, students engage in weekly clinical practice experiences in campus teaching labs, outreach programs, and/or regional school settings. Due to public school schedules, the majority of these experiences occur during morning hours. In addition, for the research component of this class, students design an action research project. This course carries a letter grade and encompasses half of the required clinical experience prior to student teaching.

Prerequisite: Permission of the science education program

Corequisite: SCI 410
1 credit

SCI 442 Clinical Experience and Action Research II

Students continuing the science education program register for SCI 442 and SCI 420. In this course, students engage in weekly clinical practice experiences in campus teaching labs, outreach programs, and/or regional school settings. Due to public school schedules, the majority of these experiences occur during morning hours. In addition, students complete and present their action research projects begun in SCI 441. This course carries a letter grade and encompasses half of the required clinical experience prior to student teaching.

Prerequisite: Permission of the science education program
Corequisite: SCI 420
2 credits

SCI 447 Directed Readings in Science Education

Advanced study in science education under the supervision of a science education faculty member.

Prerequisite: Permission of the science education program
1-6 credits

SCI 451, 452 Supervised Teaching—Science; Middle Level Grades 7-9, High School Grades 10-12

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 help the student teacher interpret and evaluate the teaching experience. Applications for student teaching must be filed with the science education program one semester prior to student teaching.

Prerequisites: SCI 420 and 442; SSI 327; submission of portfolio; permission of the science education program
Corequisite: SCI 454
12 credits, S/U grading

SCI 454 Science Student Teaching Seminar

This seminar provides an opportunity to discuss problems encountered by student teachers and public school teachers at the secondary level. Topics include study and analysis of many aspects of science teaching such as classroom management, school culture, and social issues affecting schools and student performance.

Prerequisites: SCI 420 and 442; SSI 327 and 350; submission of portfolio; permission of the science education program
Corequisite: SCI 451 and 452
3 credits

SCI 475 Undergraduate Teaching Practicum

Study of the literature, resources, and teaching strategies in science education with a supervised clinical experience in undergraduate instruction.

Prerequisites: Permission of instructor and science education program
3 credits, S/U grading

SCI 487 Applied Research

Repeatable to a maximum of 6 credits.

Prerequisite: Permission of science education program
0-3 credits

SKT

Sanskrit

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.

Prerequisite to SKT 112: SKT 111

3 credits per course

SLN

Sign Language

SLN 111, 112 Elementary American Sign Language I, II

An introduction to American Sign Language, the visual-gestural language of the deaf. It incorporates non-verbal communication techniques, basic vocabulary, basic grammar principles, and basic conversational skills. SLN 111 is designed for students who have no prior knowledge of the language. A student who has acquired an equivalent proficiency may not take SLN 111 without written permission from the supervisor of the course.

Prerequisite to SLN 112: SLN 111

3 credits per course

SOC

Sociology

SOC 105-F Introduction to Sociology

A general introduction to the science of sociology, emphasizing 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.

3 credits

SOC 150 Topics in Introductory Sociology

A supplementary seminar for students enrolled in SOC 105, providing a small-group setting to discuss key concepts and topics in introductory sociology.

Corequisite: SOC 105

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.

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.

Prerequisite: SOC 105

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, or PSY 201

Prerequisites: SOC 105; satisfaction of entry skill in mathematics requirement

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 WST 204.

3 credits

SOC 243-F Sociology of Youth

Adolescent socialization; age structures and intergenerational conflict; peer groups and youth subcultures.

3 credits

SOC 247-K Sociology of Gender

The historical and contemporary roles of women and men in American society; changing relations between the sexes; women's liberation and related movements. Themes are situated within the context of historical developments in the U.S. Crosslisted with WST 247.

Advisory Prerequisites: Completion of D.E.C. categories I and J

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.

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

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. Sociological issues are considered within the context of the developments of society throughout U.S. history.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

SOC 303 Social Stratification

Theories of social stratification; patterns of differentiation in wealth, prestige, and power; social mobility; power structures and elites.

Prerequisites: SOC 105; two other courses in the social sciences

3 credits

SOC 304 Sociology of the Family

An historical and cross-cultural analysis of the family as a major social institution in society; the demogra-

phy of contemporary American families; selected policy issues involving the family. Crosslisted with WST 304.

Prerequisites: SOC 105; two other courses in the social sciences

3 credits

SOC 309 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; two other courses in the social sciences

3 credits

SOC 310-K Ethnic and Race 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. Consideration of the developments of U.S. society from the colonial period to the present provide the context for consideration of the changing experiences of ethnic groups.

Prerequisites: SOC 105; two other courses in the social sciences

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

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; two other courses in the social sciences; one D.E.C. category E course

3 credits

SOC 320 Population and Society

Sources and consequences of changes in population size and composition; the "demographic explosion."

Prerequisites: SOC 105; two other courses in the social sciences

3 credits

SOC 323 Urban Society

The emergence of cities and the process of urbanization; an examination of urban structure; the consequences of the urban milieu for interpersonal relations and institutions.

Prerequisites: SOC 105; two other courses in the social sciences

3 credits

SOC 336 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; two other courses in the social sciences

3 credits

SOC 337 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; two other courses in the social sciences

3 credits

SOC 338 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
3 credits

SOC 339 Sociology of Alcoholism and Drug Abuse

An examination of the sociological literature on alcoholism and drug abuse. Topics include addictive careers, the epidemiology (spread) of abuse, history of attempts to control alcohol and drugs, treatment approaches, and policy alternatives.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits

SOC 340-H Sociology of Human Reproduction

A study of the links between biological reproduction and the socioeconomic and cultural processes that affect and are affected by it. The history of the transition from high levels of fertility and mortality to low levels of both; different kinship, gender, and family systems around the world and their links to human reproduction; the value of children in different social contexts; and the social implications of new reproductive technologies. Crosslisted with WST 340.

Prerequisites: SOC 105; one D.E.C. category E course in biology
3 credits

SOC 341 Historical Sociology

Sociological theories and methods applied to the study of historical phenomenon such as revolutions, migration, and industrialization.

Prerequisite: SOC 105; two other courses in the social sciences
Advisory Prerequisite: One course in history
3 credits

SOC 344 Environmental Sociology

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; two other courses in the social sciences
3 credits

SOC 348 Global Sociology

The impact of globalization on human societies, cultures, organizations, and identities. Consideration of the roles of institution such as the United Nations, organizations such as media conglomerates and transnational corporations, and religious associations in shaping an emerging global society including a survey of contemporary global issues such as the environment, human rights, and economic development.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits

SOC 351 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; two other courses in the social sciences
3 credits

SOC 352 Sociology of Religion

The ways in which sociocultural processes affect and are affected by religious belief systems and organizations; changing structures and functions of religious institutions.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits

SOC 355-H Social World of Humans and Animals

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; one D.E.C. category E course in biology
3 credits

SOC 356 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; two other courses in the social sciences
3 credits

SOC 361 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; two other courses in the social sciences
3 credits

SOC 362 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
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; two other courses in the social sciences
3 credits

SOC 371-K Gender and Work

Gender differences in workforce participation and occupational attainment as they have changed throughout U.S. history. Covers such topics as historical changes in workforce 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 WST 371.

Prerequisites: SOC 105 or SSI/WST 102 or WST 103; two other courses in the social sciences
Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

SOC 373 Collective Behavior

Major unstructured social phenomena—such as mob violence, panics, fads and fashions, and public opinion—as the outcome of collective problem-solving activity.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits

SOC 378-F War and the Military

The causes and origins of wars, and the impact of war on social change. Topics covered include issues of military organization, recruitment, training, morale, war planning, and the integration of women, gays, and minorities in the military. Crosslisted with HIS 378.

Prerequisite: One HIS course or SOC 105
3 credits

SOC 380 Social Psychology

Individual and social factors in human behavior; the structure of personality; identity development; communication processes; and attitudes.

Prerequisites: SOC 105 or PSY 103; two other courses in the social sciences
3 credits

SOC 381 Sociology of Organizations

Bureaucracy as a form of organization; the structure of relations between and within organizations.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits

SOC 382 Small Groups

The structure and functioning of face-to-face groups in field and laboratory settings.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits

SOC 384 Sociology of the Life Course

Change and stability of individuals through the life course (from childhood to old age) in the context of social structure and interactional processes. 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; two other courses in the social sciences
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; two other courses in the social sciences
3 credits

SOC 387 Sociology of Education

Educational institutions as social systems; social patterns in the life cycles of students and teachers; class and ethnic factors in educational development.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits

SOC 390, 391, 392, 393, 394 Special Topics

Lectures on topics of current sociological interest. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits per course

SOC 395-H Topics in Science, Technology, and Society

Selected topics in sociology that examine significant examples of the impacts of science and technology on culture and society. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: SOC 105; one D.E.C. category E course
3 credits

SOC 401 Honors: Sociology of Global Issues

Honors topics course in the sociology of global issues. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: Permission of instructor and department
3 credits

SOC 447 Independent Readings

Selected readings, usually in a special area, to be arranged by the student and the instructor. May be repeated. A total of no more than six credits of SOC 447, 487, and 488 may be counted toward the major.
Prerequisites: Written permission of instructor and director of undergraduate studies
 1-6 credits

SOC 475, 476 Undergraduate Teaching Practicum I,II

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. In SOC 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.
Prerequisites: to SOC 475: U3 or U4 standing; 12 credits of sociology; permission of instructor and director of undergraduate studies
Prerequisites: to SOC 476: SOC 475; permission of instructor and director of undergraduate studies
 3 credits per course; S/U grading

SOC 487 Independent Research

Designing and carrying out a research project selected by the student and arranged by the student and the instructor. May be repeated. A total of no more than six credits of SOC 447, 487, and 488 may be counted toward the major.
Prerequisites: Written permission of instructor and director of undergraduate studies.
 0-6 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 experiences to the faculty sponsor and the department. A total of no more than six credits of SOC 447, 487, and 488 may be counted toward the major.
Prerequisites: Twelve credits in sociology; permission of instructor and department
 0-6 credits, S/U grading

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. Students receive only one grade upon completion of the sequence.
Prerequisite: to SOC 495: Admission to the sociology honors program
Prerequisite: to SOC 496: SOC 495
 3 credits per course

SPN**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. SPN 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Spanish in high school (or who has otherwise acquired an equivalent proficiency) may not take SPN 111 without written permission from

the supervisor of the course.

Prerequisite: to SPN 112: SPN 111
 4 credits per course

SPN 210 Intermediate Spanish I (Emphasis on Spain) (formerly SPN 190)

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 211 or 213. Not intended for students of Spanish-speaking background.
Prerequisite: SPN 112
 3 credits

SPN 211 Intermediate Spanish I (Emphasis on Latin America) (formerly SPN 191)

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 210 or 213. Not intended for students of Spanish-speaking background.
Prerequisite: SPN 112
 3 credits

SPN 212 Intermediate Spanish II (formerly SPN 192)

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 213.
Prerequisite: to SPN 210 or 211
 3 credits

SPN 213 Intermediate Spanish for Speakers of Spanish (formerly SPN 193)

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 210, 211, or 212.
Prerequisite: Native speaking proficiency in Spanish
 3 credits

SPN 310 Spanish Grammar and Composition for Students of Hispanic-American Background (formerly SPN 220)

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 311.
Prerequisite: to SPN 213 or equivalent fluency in Spanish
 3 credits

SPN 311 Spanish Conversation and Composition (formerly SPN 221)

A thorough review of Spanish grammar and of the active use of spoken and written forms. Not intended for students of Spanish-speaking background. May not be taken for credit in addition to SPN 310.
Prerequisite: SPN 212
 3 credits

SPN 312-G Introduction to Literary Studies (formerly SPN 222)

Reading of selected passages of prose and poetry in class, with special concentration on improving students' written and oral skills, and introducing them to the basic elements of literary analysis of Spanish and Latin American works.
Prerequisite: to SPN 310 or 311
 3 credits

SPN 321 Advanced Spanish Grammar and Composition (formerly SPN 301)

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.
Prerequisites: SPN 312
 3 credits

SPN 322 Practical Spanish (formerly SPN 303)

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 312
 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 312
 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 312
 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 312
 3 credits

SPN 395-J Introduction to Spanish American Literature I

Readings in Spanish-American literature from its native origins through colonial rule.
Prerequisite: SPN 312
 3 credits

SPN 396-J Introduction to Spanish-American Literature II

Readings in Spanish-American literature from the late colonial period to the present.
Prerequisite: SPN 312
 3 credits

SPN 397-I Introduction to Spanish Literature I

Readings in Peninsular literature from its origins through the 17th century.
Prerequisite: SPN 312
 3 credits

SPN 398-I Introduction to Spanish Literature II

Readings in Peninsular literature from the 18th century to the present.
Prerequisite: SPN 312
 3 credits

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 changes.

Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 395 or 396 (for a Latin American topic), or one course from each group (for a cross-cultural topic)
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 changes.

Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 395 or 396 (for a Latin American topic), or one course from each group (for a cross-cultural topic)
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, Amerindian literatures, Latino/Latina literature, Spanish and Latin American cultural contacts. May be repeated as the topic changes.

Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 395 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
3 credits

SPN 420 Topics in Spanish and Latin American Cinema

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 395 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
3 credits

SPN 435 Topics in Latin American Literature from the Colonial Period to the Present

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: SPN 392 or 396
3 credits

SPN 445 Topics in Spanish Literature from the Middle Ages to the Present

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: SPN 391 or 397 or 398
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.

Prerequisites: Permission of instructor and department
1-6 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 321 or LIN 101
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 321 or LIN 101
3 credits

SPN 465 Topics in Hispanic Linguistics

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: SPN 321 or LIN 101
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.

Prerequisites: U3 or U4 Spanish major; preferably U4 standing; permission of director of undergraduate studies

3 credits, S/U grading

SPN 495 Spanish Senior Honors

Prerequisites: 3.50 g.p.a. in major; Spanish courses in major; 3.00 overall g.p.a.; U4 standing; permission of department

3 credits

SSI

Social Sciences Interdisciplinary

SSI 102-F Introduction to Women's Studies in the Social Sciences

An introductory social sciences survey examining the continuities and changes women have made in marriage systems, child-rearing practices, and work patterns inside and outside the home. Within this context, the course considers how women have balanced labor force participation and changing child-care responsibilities in a variety of countries. Using the experimental design and case study methods of anthropology, sociology, economics, psychology, and history, and employing texts drawn from these disciplines, the course shows the changes women's lives have undergone over the past 150 years. Crosslisted with WST 102.

3 credits

SSI 210-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 220.

3 credits

SSI 249-J Chinese Culture and Society: Traditional China

An introduction to "traditional" China, focusing on various aspects of culture and society prior to the Communist revolution. Concerned with the ethnographic details of everyday life, the course covers issues of space and time, gender and social organization, religion and ritual, philosophy and cosmology, political administration, and economic exchange. By considering how traditions are constructed, altered and popularized, the course offers an alternative to the interpretive approaches based on the imperial state system, Confucian elites, orthodoxy, national culture, and conventional history. Crosslisted with CNS 249.

3 credits

SSI 250-J Chinese Culture and Society: Modern China

Exploration of the changes and continuities in Chinese culture and society across a century of economic upheaval and political turmoil. Drawing on interdisciplinary scholarly studies, auto/biographical accounts, government documents, journalist reports, popular fiction, documentary film, and photographs, it surveys major historical developments in 20th-century China, and introduces key concepts and terms employed in the process of creating a modern China. Crosslisted with CNS 250.

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 381. This course requires students to use the knowledge gained in SSI 381 in a closely supervised situation.

Prerequisites: SSI 210 or PSY 220; permission of instructor

Corequisite: SSI 381

3 credits, S/U grading

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. May be repeated up to a limit of six credits.

Prerequisite: Permission of instructor

0-3 credits, S/U grading

SSI 308 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.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Nine credits in the social and behavioral sciences

3 credits

SSI 310 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 WST 310.

Prerequisites: 12 credits in the social and behavioral sciences

3 credits

SSI 311 Interdisciplinary Problems in the Social Sciences

Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Advisory Prerequisites: 18 credits in the social and behavioral sciences

3 credits

SSI 320-F The Special Child

Social, political, philosophical, and educational issues related to the habitation 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 210 or PSY 220

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.

Advisory Prerequisite: SSI 210 or PSY 220 or SOC 304
3 credits

SSI 322-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 conduct periodic systematic observations of infants and young children in a variety of settings.

Advisory Prerequisite: SSI 210 or PSY 220
3 credits

SSI 327 Middle Childhood and Adolescent Growth and Development

The biological and psychological development of middle childhood and adolescence that affects teaching and curriculum development. Additional topics include middle childhood and adolescent psychiatric disorders, secondary special education programs, drug and alcohol use and abuse, and societal issues.

Advisory Prerequisites: U3 or U4 standing; enrollment in a teacher preparation program
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 210 or 322 or PSY 220
3 credits

SSI 345 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.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: SSI 210 or PSY 220 or SOC 304
3 credits

SSI 350 Foundations of Education

An interdisciplinary study of the foundations of education focusing on the findings of the social and behavioral sciences as related to education and teaching. The course is designed to meet the needs of students enrolled in the secondary teacher preparation programs.

Advisory Prerequisites: U3 or U4 standing; enrollment in a teacher preparation program
3 credits

SSI 381-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 child 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 210 or PSY 220; permission of instructor
Corequisite: SSI 283
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
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
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, child care, and child abuse.

Prerequisites: U3 or U4 standing; permission of instructor
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, families and the media, and cross-cultural perspectives on child care and the parent-child relationship.

Prerequisites: U3 or U4 standing; permission of instructor
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 more than six credits.

Prerequisite: Permission of instructor
1-3 credits

SSI 451, 452 Supervised Teaching—Social Studies; Middle Level Grades 7-9, High School Grades 10-12

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 *Class Schedule* published each semester.

Prerequisites: SSI 397 and 398; 3.00 g.p.a. in the major; 2.75 g.p.a. overall; enrollment in the Social Studies Secondary Teacher Preparation Program; approval of social studies director
Corequisite: SSI 454
6 credits per course, S/U grading

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.

Prerequisites: SSI 451 and 452
3 credits

SSI 475, 476 Undergraduate Teaching Practicum I, II

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. In SSI 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites: to SSI 475: SSI major; U4 standing; interview; permission of instructor
Prerequisites: to SSI 476: SSI 475; permission of instructor
3 credits, S/U grading

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
0-6 credits

SSI 488 Internship

Participation in local, state, or national public or private agencies and organizations. Students are required to submit written progress reports and a final report on their experiences to the faculty sponsor and the program. May be repeated up to a limit of 12 credits.

Prerequisites: 15 credits in the social and behavioral sciences; permission of instructor and program
0-6 credits, S/U grading

THR

Theatre Arts

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 theatre arts major credit.

3 credits

THR 102-D Dance Appreciation

An introduction to the properties and elements of dance in order to understand and appreciate it in a variety of contexts. Dance is considered as art, recreation, social interaction, and entertainment through investigation of societal attitudes, cultural norms, and creative styles of individuals.

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 theatre arts major credit.

3 credits

THR 105-D Acting I

The vocabulary and skills of the actor's craft. Workshop sessions explore the uses of basic acting techniques.

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 theatre arts major credit.

3 credits

THR 115 Stagecraft I

An introduction to topics in the areas of theatrical costume and lighting covering practical skills and approaches to design. In addition to class periods and independent projects, lighting and costumes labs are required.

3 credits

THR 116 Stagecraft II

A study of the tools and technology involved in the creation of theatrical scenery and properties.

3 credits

THR 117 Media: Analysis and Culture

This introductory course addresses the cultural production and reception of media that influence public discourse. It involves textual, social, and cultural analysis of film, television, and new media. Debates about mass culture, interpretation, media characteristics, aesthetic choices, and the effect of content choices are explored.

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 present-day expressions. Various traditional styles, individual artists, and current trends are discussed.

3 credits

THR 165-D Modern Dance Technique I

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.

3 credits

THR 166-D Ballet Technique I

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.

3 credits

THR 167-D Jazz Dance Technique I

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.

3 credits

THR 168-D World Dance

An introduction to dance traditions around the globe. Cultural values, religious beliefs, and social systems are investigated for their influence on the dance.

3 credits

THR 205 Acting II

The development of acting skills through improvisation and selected scenes and monologues from the contemporary theatre. Requires significant rehearsal hours outside of class. Designed for students seriously interested in performing.

Prerequisites: THR 105; permission of instructor

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. Additional hours in Laboratory for Technology in the Arts or Fine Arts SINC site required. Crosslisted with ARS 208 and MUS 208.

Prerequisite: One 200-level ARS, MUS or THR course

3 credits

THR 216-D Introduction to Visual Interpretation

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.

3 credits

THR 223-D Stage Costume

Readings of select critical essays, the viewing of film and visual documents toward learning a process of decoding contemporary visual and narrative culture. Projects include the writing of critical essays, development of programs that incorporate live performance, sound design, CAD modeling, video installations, Web design, and music videos.

Advisory Prerequisite: THR 115 or 216

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.

Prerequisite: THR 105

3 credits

THR 232 Improvisation

Drill in both verbal and nonverbal exercises and assorted theatre games leading to the development of improvisational skills.

Prerequisite: THR 105

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 to a maximum of six credits. No more than six credits may be taken in combination with THR 340.

Prerequisite: Permission of instructor

1-6 credits

THR 246 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.

Advisory Prerequisite: THR 115 or 216

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.

Advisory Prerequisite: THR 115 or 216

3 credits

THR 264 Movement Awareness and Analysis

A course covering the fundamentals of movement, linking theory and techniques from the disciplines of dance and theatre. Using anatomical principles to understand effective use of the skeletal and muscular systems, students are guided, through an interplay of theory and practical work, toward efficient posture and movement habits and test the presence, action, and performance necessary for effective communication and the development of a physical language.

Prerequisite: THR 105

3 credits

THR 277 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.

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 changes.

Prerequisite: Permission of instructor

1-3 credits, S/U grading

THR 296 Special Workshop in Design and Technical Theatre

An intensive workshop in a specific skill, including but not limited to: 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 changes.

Prerequisite: Permission of instructor

1-3 credits, S/U grading

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.

Prerequisite: Permission of instructor

1 credit, S/U grading

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

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

1 credit

THR 303 Costume Crafts Laboratory

Development of skills needed for costume and accessory construction. May be repeated once.

Prerequisite: Permission of department

1 credit

THR 304 Marketing Laboratory

Development of skills needed in marketing theatre. May be repeated once.

Prerequisite: Permission of department

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

1 credit

THR 306 Stagecraft Laboratory

Development of skills needed in theatre construction. May be repeated once.

Prerequisite: Permission of department

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
0-1 credit

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 in American society. Original American 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

Advisory Prerequisites: Completion of D.E.C. categories I and J

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, Korea, and Japan.

Prerequisites: Completion of D.E.C. categories A, B, and D

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

3 credits

THR 315-I European History and Drama: The Classical Era

Developments in theatre from its origins to the 17th century. Periods covered include ancient Greek and Roman theatre, the Middle Ages, Italian Renaissance, Commedia dell'Arte, the English Renaissance, the Golden Age of Spain, French neo-classicism, German theatre, the English Restoration, and the early 18th century. Discussions cover the historical and cultural context in which different forms of theatre occurred, changes in theatrical convention, and the drama of the period.

Prerequisites: Completion of D.E.C. categories A, B, and D

3 credits

THR 316-I European History and Drama: The Modern Era

Developments in theatre from the beginnings of the Industrial Revolution to the present. Topics covered include melodrama, romanticism, realism, expressionism, the birth of the avant garde, post-war modernism, and trends at the end of the 20th century. Discussions cover the historical and cultural context in which different forms of theatre occurred, changes in theatrical convention, and the drama of the period.

Prerequisites: Completion of D.E.C. categories A, B, and D

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. Additional hours in Laboratory for Technology in the Arts or Fine Arts SINC site required. Crosslisted with ARS 317 and MUS 317.

Prerequisite: At least one 200- or 300-level ARS, MUS, or THR studio or performance course

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

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

3 credits

THR 322 Acting III

Advanced work in scene study limited to one or two major playwrights.

Prerequisites: THR 205, 230, and 264

3 credits

THR 323 Costume Design

Advanced study in costume design involving play analysis, design, and presentation techniques with special emphasis on historical research.

Prerequisite: THR 216

3 credits

THR 324 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: U3 or U4 standing

Advisory Prerequisite: THR 105

3 credits

THR 325 Scriptwriting for Film and Television

Preparation and construction of scripts for use in media: radio, television, and motion pictures.

Prerequisites: Completion of D.E.C. categories A, B, and D

3 credits

THR 326 Playwriting

A workshop devoted to planning and writing finished scripts for the stage.

Prerequisites: Completion of D.E.C. categories A, B, and D

3 credits

THR 327 Advanced Playwriting

An advanced workshop to develop skills used by playwrights in the craft of structuring action and developing character through action.

Prerequisite: THR 326

3 credits

THR 333 Directing I

The work of the director, including selection of a play for production; problems of style, interpretation, and execution; and the director's approach to the actor.

Prerequisites: THR 205; THR 320 or 321

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

3 credits

THR 337 Advanced Technical Theatre

Advanced study of materials and techniques of problem solving in stagecraft, including drafting theatre sound, technical direction, advanced drafting, budgeting, crew organization, and planning.

Prerequisites: THR 115 and 116

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.

Prerequisite: THR 244

1-6 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: U3 or U4 standing

3 credits

THR 346 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.

Prerequisite: THR 216

3 credits

THR 351, 352 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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated once as the topic changes.

Prerequisite: Permission of instructor

3 credits per course

THR 353 Special Topics in Dance Performance

A concentration in one aspect of dance. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated once as the topic changes.

Prerequisites: THR 105; permission of instructor

3 credits

THR 354 Topics in Dramaturgy

In-depth study of a specific subject in the history, theory, aesthetics, criticism, or dramatic tradition of the theatre. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: Completion of D.E.C. categories A, B, and D

3 credits

THR 356 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.

Prerequisite: THR 256

3 credits

THR 365 Modern Dance Technique II

Further development of modern dance training, devoted to improvement of style, technique, and physical and mental focus.

Prerequisite: THR 165

3 credits

THR 366 Ballet Technique II

Further development of ballet training, devoted to improving style, technique, physical and mental focus.
Prerequisite: THR 166
3 credits

THR 367 Jazz Dance Technique II

Further development of jazz dance training, devoted to improvement of style, technique, and physical and mental focus.
Prerequisite: THR 167
3 credits

THR 368 Dance Improvisation

The practice of dance and movement investigation through discipline, spontaneity, and awareness. Skills in improvisation will be developed through creative projects and experiments in dance.
Prerequisite: THR 165, 166, or 167
3 credits

THR 369-J World Dance Forms

The fundamentals, technique, and history of a specific non-Western dance style. Lectures cover the origins of the dance form, the people who perform the dance, and the place of the dance in society and culture. Studio training includes the physicality of the dance. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.
Prerequisites: Completion of D.E.C. categories A, B, and D
3 credits

THR 372 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 277
3 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.
Prerequisite: THR 277
Advisory Prerequisite: THR 372
4 credits

THR 378 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 277
3 credits

THR 379 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 277
2 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: Audition; permission of instructor
3 credits

THR 401 Senior Seminar

An intensive investigation of theatre theorists with particular emphasis on the application of theory to practice. Crosslisted with LIA 401.
Prerequisites: U4 standing; permission of instructor
3 credits

THR 403 Media: Theory and Criticism

Theoretical approaches and practices are used for a critical analysis of the content, structure, and context of significant media in our society. Background readings and examination of current theories of media are used to develop a practice in media criticism.
Prerequisite: U3 or U4 standing
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. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated once, as the topic changes.
Prerequisite: THR 322
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, noh, 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
3 credits

THR 439 Directing II

Advanced work in interpretation and handling of production complexities. Students mount a production.
Prerequisite: THR 333
3 credits

THR 447 Readings in Theatre Arts

Special 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
3 credits

THR 451 Auditioning for Careers

The development of audition skills requisite for pursuit of advanced degrees in acting or roles/work in professional theatre.
Advisory Prerequisite: THR 205
3 credits

THR 462 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 322
3 credits

THR 465 Modern Dance Technique and Performance

Advanced study in modern dance techniques, combining dance training, compositional skills, and performance technique.
Prerequisite: THR 365
3 credits

THR 467 Jazz Dance Technique and Performance

Advanced study of jazz techniques, combining dance training, compositional skills, and performance techniques.
Prerequisite: THR 367
3 credits

THR 468 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 465 or 467
3 credits

THR 475, 476 Undergraduate Teaching Practicum I, II

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. In THR 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. Not for major credit.
Prerequisites: to THR 475: Theatre arts major; U4 standing; permission of instructor and department
Prerequisites: to THR 476: THR 475; permission of instructor and department
3 credits per course, S/U grading

THR 480 Projects in Media**THR 483 Projects in Theatrical Design****THR 484 Projects in Theatre**

Advanced work on a particular problem in media, theatrical design, or theatre. May be repeated up to a maximum of six credits. Only six credits of THR 480, 483, 484 and 487 may be used to satisfy major requirements.
Prerequisite: Permission of department
0-3 credits per course

THR 487 Independent Research

Designing and developing a research project selected by the student in consultation with a faculty member. May be repeated. Only six credit of THR 480, 483, 484 and 487 may be used to satisfy major requirements.
Prerequisite: Permission of department
0-6 credit

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. May be repeated up to a limit of 12 credits.
Prerequisites: Permission of instructor and department
0-6 credits, S/U grading

USB

University at Stony Brook

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. Not for credit in addition to EAS 101, LHD 101, LSE 101, or ENS 102.

Prerequisite: First-semester freshman or transfer student, according to section

1 credit, S/U grading

WRT

Writing and Rhetoric

WRT 101-A Introductory Writing Workshop

Frequent short papers are designed to help students develop fluency and correctness. The basic requirements of academic writing are introduced. A through C/Unsatisfactory grading only. The Pass/No credit option may not be used. Does not count toward D.E.C. A requirement for students matriculating before fall 1999.

Prerequisite: Placement by examination, transfer evaluation, or ESL instructor

3 credits, A-C/U grading

WRT 102-A Intermediate Writing Workshop A

Writing for academic purposes is emphasized. Students learn strategies for extended writing assignments at the university. At least three major essays, multiple drafts, and short papers are required. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used.

Prerequisite: Placement by examination or transfer evaluation.

3 credits, A-C/U grading

WRT 103-A Intermediate Writing Workshop B

In-depth practice working through specific types of academic writing such as analysis, argument, and the research paper. Different sections have different emphases. See the Program in Writing and Rhetoric for current offerings. May be repeated once with permission of the director. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used.

Prerequisite: Placement by examination, transfer evaluation, or WRT 102

3 credits, A-C/U grading

WRT 201 Writing in the Disciplines: Special Topics

Writing in specified academic disciplines is taught through the analysis of texts in appropriate fields to discover discourse conventions. Students produce extended written projects. Different sections emphasize different disciplines.

Prerequisite: Completion of D.E.C. category A

3 credits

WRT 215-B Argumentative Writing

An intensive course in techniques of argumentation and interpretation. Logical and critical thinking skills are applied in formulating arguments and refutations of the sort required for the standard term paper. The course focuses on imparting interpretative skills necessary for forming critical responses to articles, academic essays and studies as they are found in various disciplines. Crosslisted with PHI 215.

Prerequisite: Completion of D.E.C. category A

3 credits

WRT 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 or various intellectual issues, rhetorical strategies, or compositional problems within or across disciplines. Frequent substantial writing projects are central to every version of the course.

Prerequisite: Completion of D.E.C. category A

3 credits per course

WRT 487 Independent Project

Qualified upper-division students may carry out advanced independent work under the supervision of an instructor in the program. May be repeated.

Prerequisite: Permission of instructor and program director

0-6 credits

WRT 488 Internship

Participation in local, state, and national public and private agencies and organizations. May be repeated to a limit of 12 credits.

Prerequisites: G.p.a. of 2.50 or higher; permission of instructor and program director.

0-6 credits, S/U grading

WSE

Women in Science and Engineering

WSE 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. Enrollment limited to first-year women in the WISE program.

3 credits

WSE 242-H Social Dimensions of Science

A study of social aspects of science in connection with specific projects conducted with professional scientists outside the University. The student research experience is placed in the context of current ideas on philosophical, economic, political, social, and psychological aspects of science. Students not in the WISE program must obtain permission to register for the course.

Prerequisite: One of the following: BIO 201, BIO 202, CHE 131, CHE 141, GEO 102/112, GEO 122, PHY 125, PHY 131, or PHY 141

3 credits

WST

Women's Studies

WST 102-F Introduction to Women's Studies in the Social Sciences

An introductory social sciences survey examining the continuities and changes women have made in marriage systems, child-rearing practices, and work patterns inside and outside the home. Within this context, the course considers how women have balanced labor force participation and changing child-care

responsibilities in a variety of countries. Using the experimental design and case study methods of anthropology, sociology, economics, psychology, and history, and employing texts drawn from these disciplines, the course shows the changes women's lives have undergone over the past 150 years. Crosslisted with SSI 102.

3 credits

WST 103-G Introduction to Women's Studies in the Humanities

An introductory humanities survey focusing on women's traditional association with the home and men's association with public life and how writers, artists, philosophers, and religious thinkers have reflected upon those relationships over the past 150 years. Through lectures and critical analyses of novels, poetry, art, philosophy, and religious texts, the course explores how changing intellectual, artistic, and religious precepts have affected gender identity and different genres in the humanities.

3 credits

WST 121 Library/www Research Skills for Women's Studies

An introduction to basic library skills and bibliographic resources for research in women's studies. Reference and other library materials of special interest to students majoring or minoring in women's studies are covered, with an emphasis on the interdisciplinary nature of the field. Such topics as the efficient use of the online catalog, bibliographies, computerized sources, and specialized reference titles are treated. Workshop sessions are held throughout the semester.

1 credit

WST 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.

3 credits

WST 237-K Images of Italian-American Women

Examination of the wealth of complex images created by Italian-American women from several fields, including literature, film, politics, and music, and the ways in which Italian-American women explore the connection between Italian and American cultures and the ways in which ethnicity informs values and occupational pursuits. Crosslisted with HUI 237.

Advisory Prerequisite: One D.E.C. category B course

3 credits

WST 247-K Sociology of Gender

The historical and contemporary roles of women and men in American society; changing relations between the sexes; women's liberation and related movements. Themes are situated within the context of historical developments in the U.S. Crosslisted with SOC 247.

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

WST 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.

3 credits

WST 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: Completion of D.E.C. category A
3 credits

WST 284-G Introduction to Feminist Theory

The social construction of gender and how this construction affects philosophical thought and practice. 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.

Advisory Prerequisite: U2 standing or one PHI or WST course

3 credits

WST 287 Research in Women's Studies

Supervised research under the sponsorship of a women's studies faculty member. 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 or major.

Prerequisite: Permission of the program research coordinator

0-6 credits, S/U grading

WST 304-F Sociology of the Family

An 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; two other courses in the social sciences

3 credits

WST 305 Feminist Theories in Context

A study of major texts of the feminist tradition in social sciences and humanities, focusing on theories of subjectivity from a feminist point of view. Theoretical debates on gender, feminism, psychoanalysis, discourse, ideology, and representational systems are included.

Prerequisite: WST/PHI 284 or two WST courses including WST/SSI 102 or WST 103

3 credits

WST 310 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 SSI 310.

Prerequisites: 12 credits in the social and behavioral sciences

3 credits

WST 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 or 130

3 credits

WST 316-F The Healer and the Witch in History

Female healers from the Middle Ages to present, their association with "diabolic" powers, and the progressive development of a mechanism for their repression and control and how they related to their societies. The course also treats the development of organized medicine and its impact upon female healers and patients. Crosslisted with HIS 316.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One HIS or WST course

3 credits

WST 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 WST course

3 credits

WST 330-K Gender Issues in the Law

A critical exploration of American law that specifically addresses the issues of (in)equality of women and men in the United States. The course surveys and analyzes cases from the pre-Civil War era to the end of the 20th century dealing with various manifestations of sex discrimination, decided in the federal court system, typically by the Supreme Court, and the state court system. The course also considers how the political nature of the adjudicative process has ramifications for the decisions rendered by a court. Crosslisted with POL 330.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105 or WST/SSI 102

3 credits

WST 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.

Prerequisite: One of the following: HIS 103, HIS 104, WST/SSI 102, or WST 103

Advisory Prerequisite: Completion of D.E.C. categories I and J

3 credits

WST 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 WST/SSI 102 or WST 103

3 credits

WST 340-H Sociology of Human Reproduction

A study of the links between biological reproduction and the socioeconomic and cultural processes that affect and are affected by it. The history of the transition from high levels of fertility and mortality to low levels of both; different kinship, gender, and family systems around the world and their links to human reproduction; the value of children in different social contexts; and the social implications of new reproductive technologies. Crosslisted with SOC 340.

Prerequisites: SOC 105; one D.E.C. category E course in biology

3 credits

WST 345-J Women and Gender in Chinese History

Exploration of traditional cultural practices and values, and the 20th-century changes in Western and Asian relations in China brought about by nationalism, interaction with Western influences, and socialist rule. Crosslisted with HIS 345.

Prerequisite: One of the following: HIS 219, HIS 220, CNS 249, CNS 250, or any WST course

3 credits

WST 347-K Women and Politics

Analysis of the role of women in current American politics—their electoral participation, office seeking, and political beliefs—and policy issues that have special relevance to women. The course traces the history of American women's political involvement and the historical trajectory of gender-related policy from the mid-19th century to today. Crosslisted with POL 347.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: POL 102 or 105

3 credits

WST 350-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 350.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: Completion of D.E.C. category F

3 credits

WST 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: One HIS or WST course

3 credits

WST 361-G Women in the Biblical World

Consideration of how we define, on the basis of biblical and other contemporaneous literature, women's position in the socio-political sphere, including women in professions and institutions, such as goddesses, leaders of the community, queens, "wise women", writers, prophetesses, magicians, and prostitutes; and examination of literary types such as the Wife (and concubine), the Mother, the Daughter, the Tempress, and the Ancestress. Crosslisted with JDH 361.

Prerequisite: One JDH or JDS or WST or literature course at the 200 level or higher

3 credits

WST 365-G Women in the Visual Arts

Survey of biographical information and artistic accomplishments of selected women artists from c. 1200 to the present. In addition to art historical analysis of media, form, color, and style, images of women created by women and men are compared and contrasted within specific time periods. The implications and influences of subjects that artists choose are considered for how, when, why, and if they reflect ideologies of sexuality, gender, or race. Crosslisted with ARH 365.

Prerequisite: ARH 101 or 102 or SSI/WST 102 or WST 103 or 6 credits toward the women's studies major or minor

3 credits

WST 371-K Gender and Work

Gender differences in workforce participation and occupational attainment as they have changed throughout U.S. history. Covers such topics as historical changes in workforce 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: SOC 105 or WST/SSI 102 or WST 103; two other courses in the social sciences

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

WST 372-G Topics in Women and Literature

The study of texts written by and about women and of issues they raise relating to gender and literature. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated for credit as the topic changes. Crosslisted with EGL 372.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher

3 credits

WST 374-F Historical Perspectives on Gender Orientation

An examination of contemporary American gender orientation from an historical perspective. Topics include gay marriage, gay clergy, medical definitions of gender orientation, and gays in the military. Crosslisted with HIS 374.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One HIS or WST course

3 credits

WST 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 PSY 347.

Prerequisites: WST/SSI 102 or WST 103; ANT 367 or PSY 103 or SOC/WST 247

3 credits

WST 383-G Philosophical Issues of Race and Gender

Issues of race and gender and how the notion that racism and sexism are analogous forms of oppression aids and detracts from consideration of these issues. Examination of the dynamics of race and gender in various contexts such as activism, art, law, literature, the media, medicine, and philosophy. Crosslisted with PHI 383.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One PHI or WST course

3 credits

WST 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 traditional areas of philosophy as well as providing a detailed understanding of particular feminist theories. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes. Crosslisted with PHI 384.

Prerequisites: One PHI course; one WST course

Advisory Prerequisites: PHI/WST 284; one other PHI or WST course

3 credits

WST 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 WST course

3 credits

WST 390-G, 391-G Special Topics in Women and the Humanities

Current topics in women's studies in the humanities. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated once as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

WST 392-H Special Topics in Women and Science

Current topics in women's studies such as social issues in science or women in science. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

WST 393-I Special Topics in Women and the European Tradition

Selected topics in women's studies, such as patriarchy and the status and roles of women in early European history. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

WST 394-H Special Topics in Medicine, Reproduction, and Gender

Selected topics in human reproduction. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

WST 395-J Special Topics in Women and the World Beyond European Traditions

Selected topics on women in non-Western cultures, societies, traditions, literatures, etc. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

WST 396-K Special Topics in the History of American Women

The changing roles of women in the family, community and the work force in historical perspective. Semester supplements to this *Bulletin* contain descriptions when the course is offered. Topics may include the suffragette movement, before and after; and women's roles in America's wars. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

WST 397-F, 398-F Social Sciences Topics in Women's Studies

Selected topics such as legal and social aspects of sexual harassment. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

WST 401, 402 Seminar in Women's Studies

Seminars on selected topics in women's studies. Topics may include eating disorders, women in multi ethnic America, literary analysis of the work of a particular author. Semester supplements to this *Bulletin* contain descriptions when the course is offered. May be repeated as the topic changes.

Prerequisites: WST/SSI 102 or WST 103 or six credits from courses satisfying requirements for the women's studies minor; at least one other course specified when the topic is announced

3 credits per course

WST 407 Senior Research Seminar for Women's Studies Minors

An exploration of significant feminist scholarship in various disciplines designed for students who are majoring in disciplines other than women's studies. Seminar participants present and discuss reports on reading and research.

Prerequisites: 15 credits of the women's studies minor

3 credits

WST 408 Senior Research Seminar for Women's Studies Majors

An exploration of significant feminist scholarship in various disciplines, designed for senior women's studies majors. Seminar participants present and discuss reports on their reading and research.

Prerequisites: WST 305; 15 additional credits in the major; U4 standing; women's studies major

3 credits

WST 447 Directed Readings in Women's Studies

Intensive readings in women's studies for qualified juniors and seniors under close supervision of a faculty instructor. Topic to be chosen in consultation with the faculty member. May be repeated once.

Prerequisites: Permission of instructor and program associate director

1-3 credits

WST 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.

Prerequisites: U3 or U4 standing; permission of instructor; WST major or minor

3 credits, S/U grading

WST 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. May be repeated once.

Prerequisites: Permission of instructor and program associate director

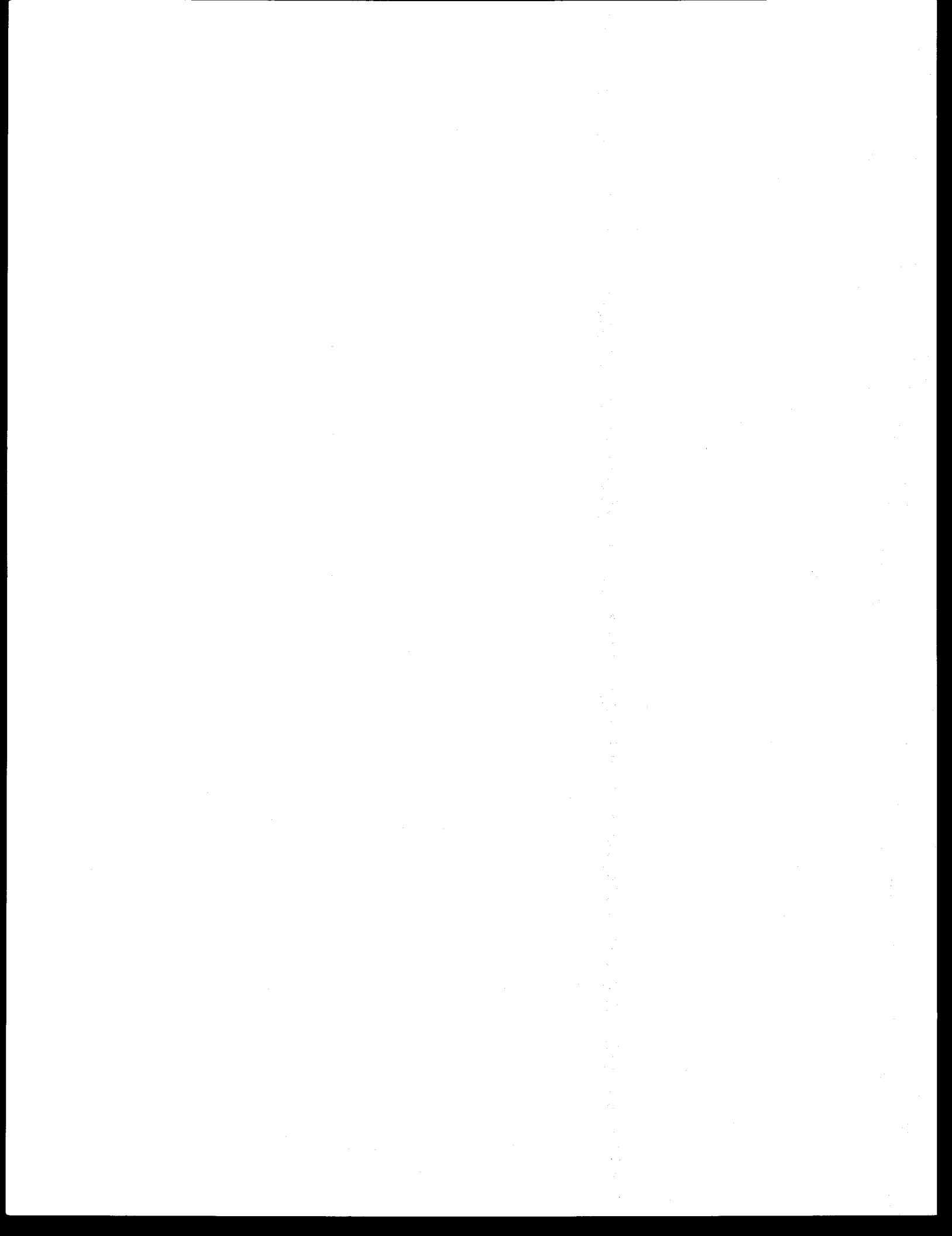
0-6 credits

WST 488 Internship

Participation in public and private agencies and organizations. Students are required to submit written reports on their experiences to the faculty sponsor and the women's studies program. May be repeated up to a limit of six credits.

Prerequisites: Six credits toward the women's studies minor; permission of instructor and program associate director

0-6 credits, S/U grading



STATE UNIVERSITY OF NEW YORK

General Statement

The 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
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

* The Health Sciences Centers at Buffalo and Stony Brook are operated under the administration of their respective university centers.

** 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.

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UNIVERSITY 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 council. The council is appointed by the Governor, with the exception of a student member who has all the rights and responsibilities of the other members, and who is elected by the student body.

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Program Index (with HEGIS codes)

Undergraduates at the University at Stony Brook may take courses in any of the following subject areas. Student majors 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 *Bulletin* are approved unless otherwise indicated.)

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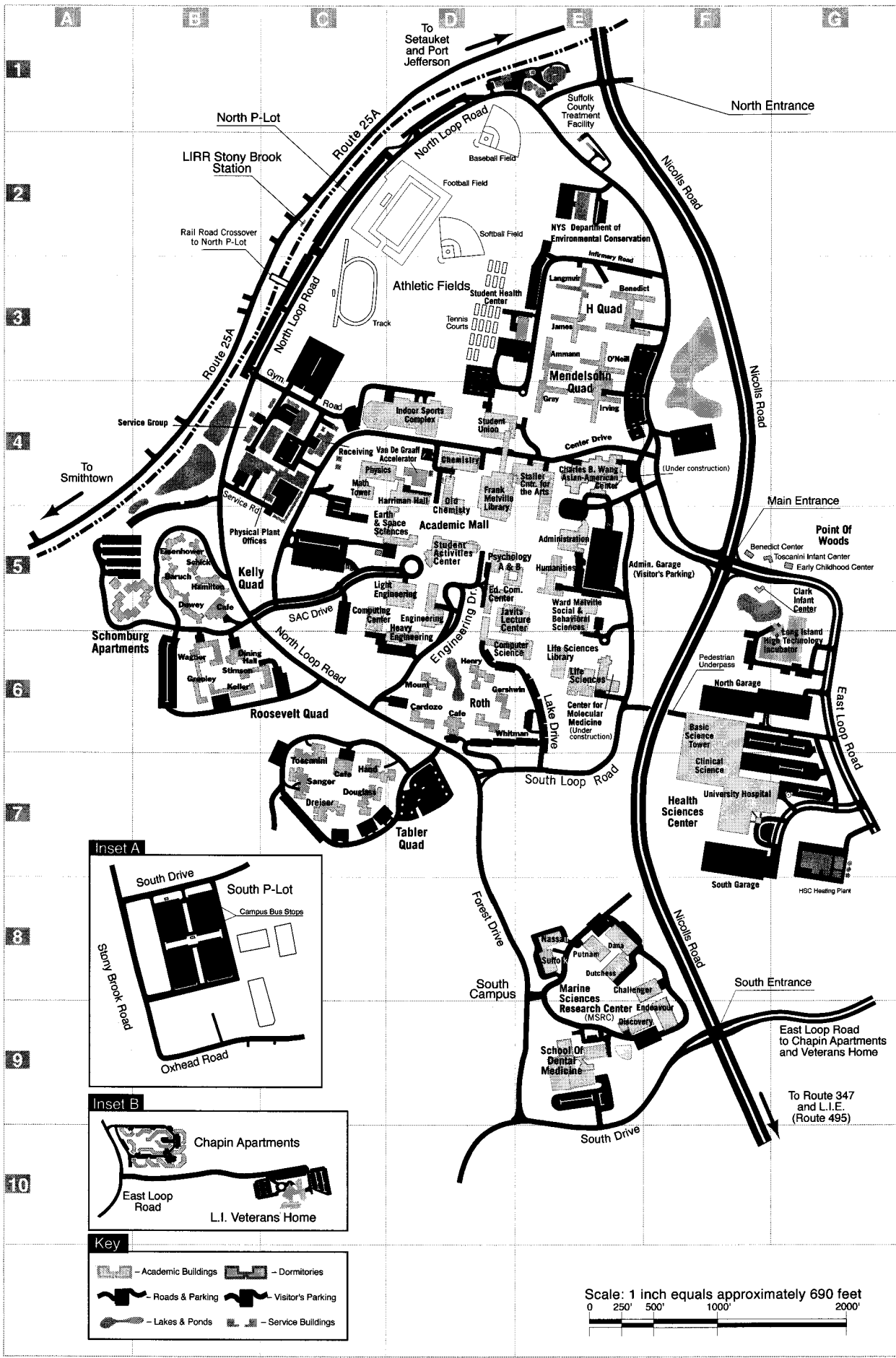
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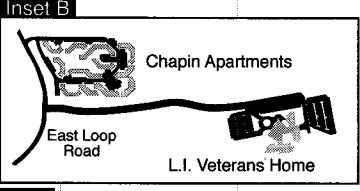
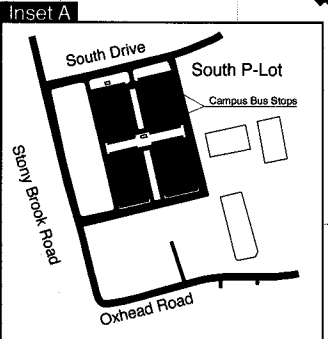
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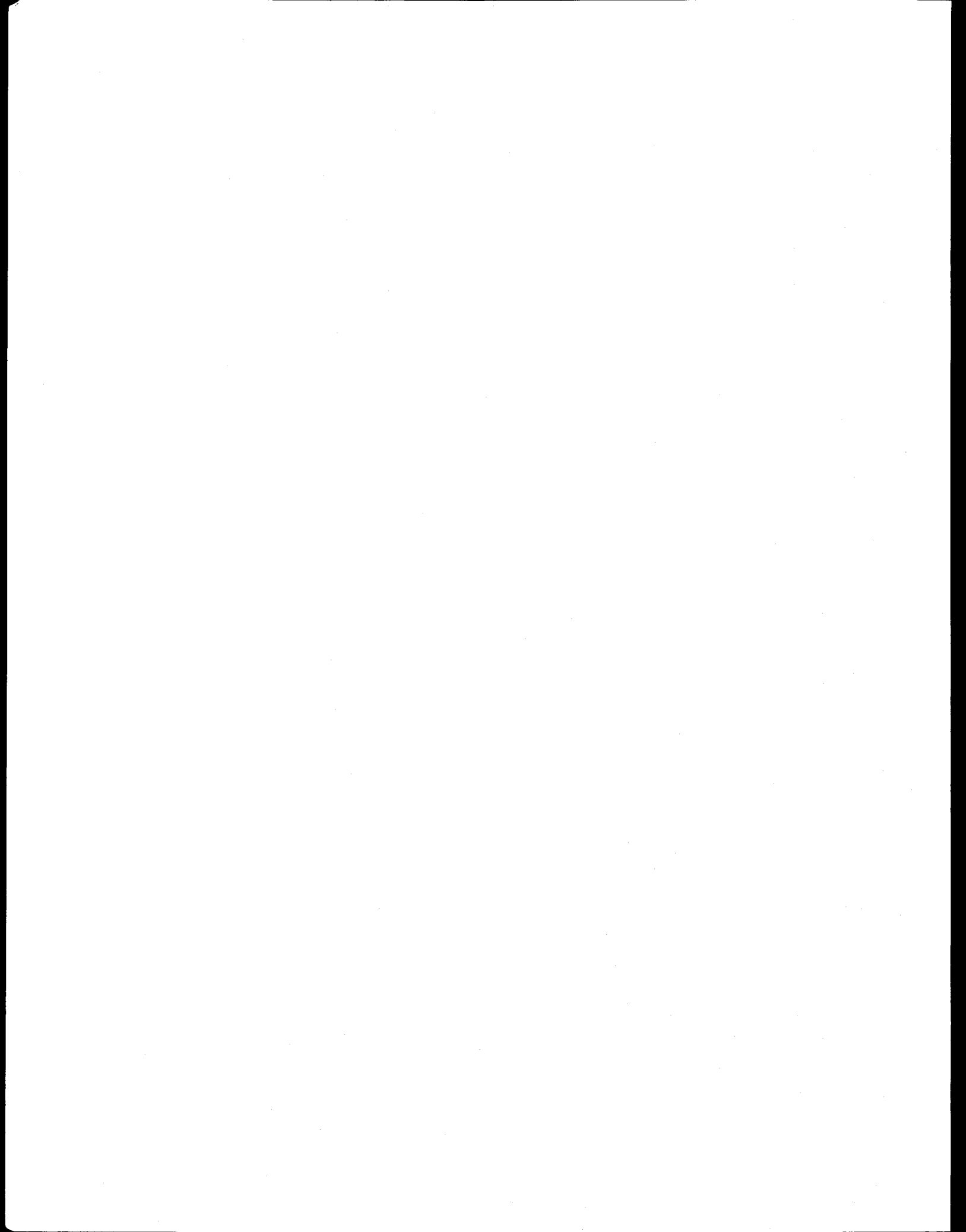
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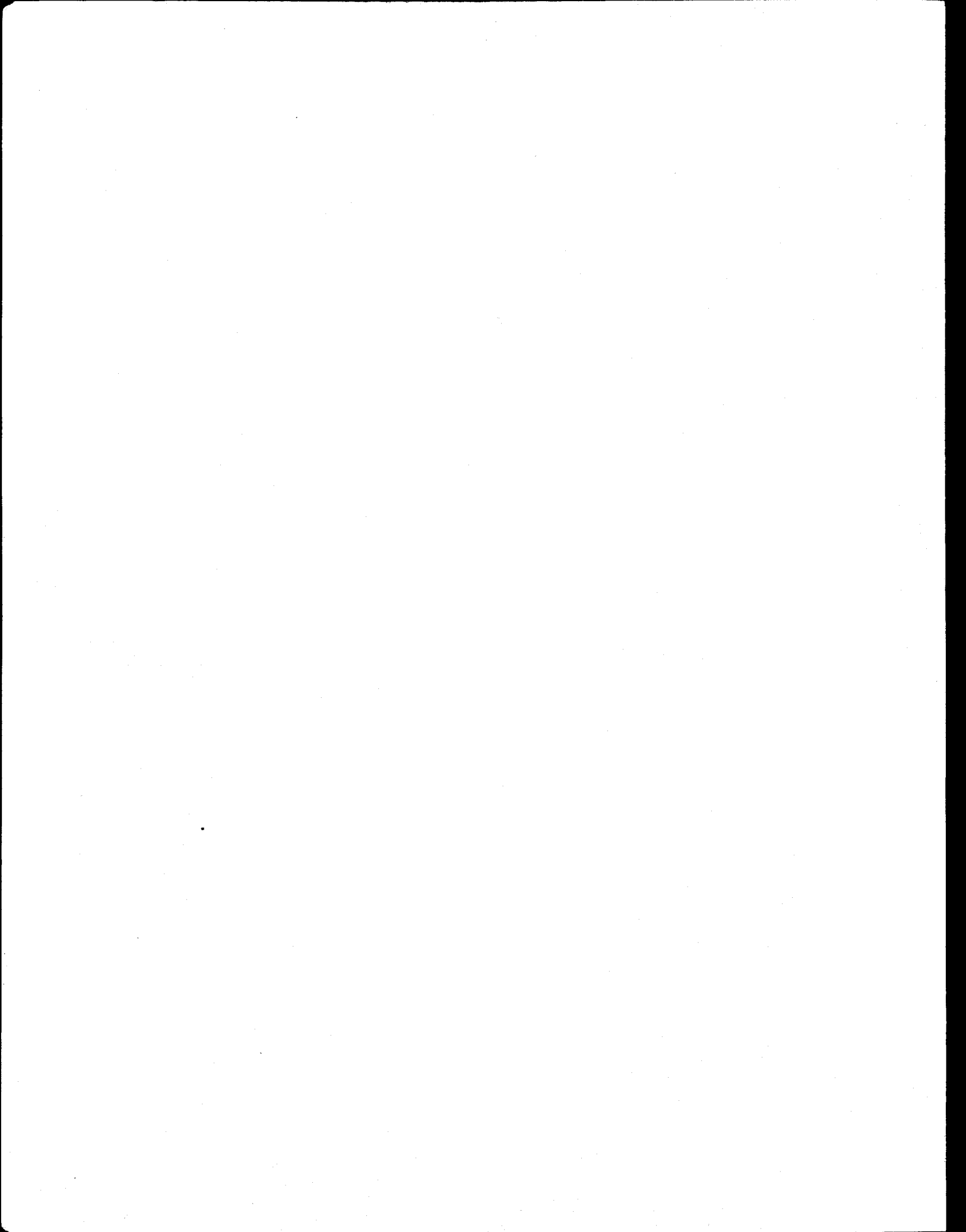
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Scale: 1 inch equals approximately 690 feet
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