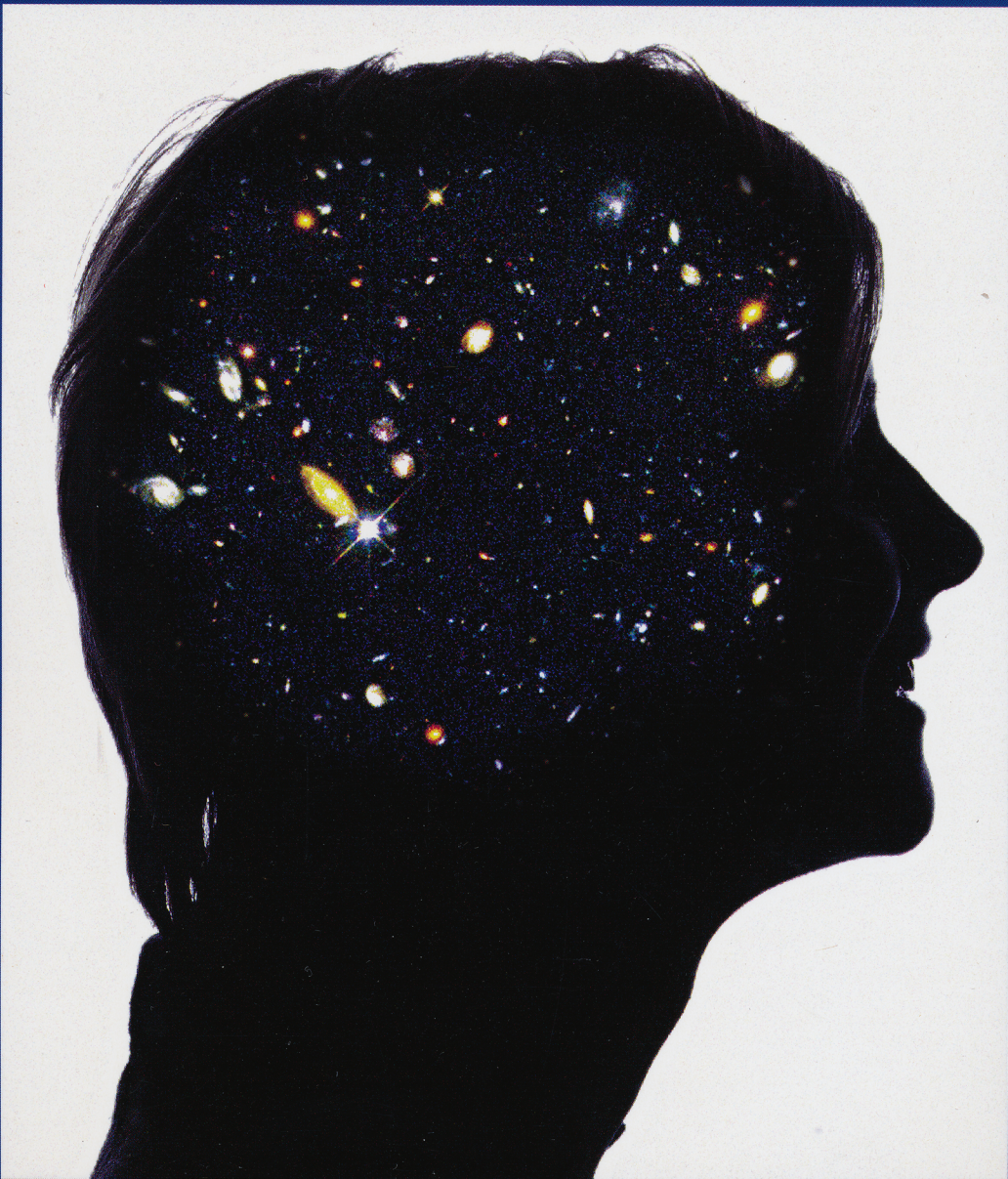


1997-99 Undergraduate Bulletin

Expand your universe.







1997-99 Undergraduate Bulletin

Shirley Strum Kenny, President

Undergraduate Bulletin Volume XXV

The University represents that the information in this publication, which pertains to academic years 1997-98 and 1998-99, is accurate as of Spring 1997.

Circumstances may require that a given course be withdrawn or that alternate offerings be made.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

The 1997-99 Undergraduate Bulletin was produced by the Office of the Assistant Vice President for Communications.

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

On the Cover: Jennifer Jacob, class of '97, and a photograph of some of the most distant objects yet observed in the universe, which were discovered by Stony Brook professors Kenneth Lanzetta and Amos Yahil.

Cover Design: Milton Glaser, Inc.

Cover Photography: Matthew Klein

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Any questions concerning this policy or allegations of noncompliance should be directed to:

Affirmative Action Officer
294 Administration Building
State University at Stony Brook
Stony Brook, NY 11794-0251
Telephone 516-632-6280

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

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

Additional Information

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

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

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



Table of Contents

An Introduction to Stony Brook	5
Student Services	15
Admissions	25
Financial Information	31
Scholarships and Awards	43
Academic Policies and Regulations	49
University Studies	65

APPROVED PROGRAMS

College of Arts and Sciences	81
AFH Africana Studies	84
ANT Anthropology	86
ART Art	89
AST Astronomy	92
BCP Pharmacology	161
BIO Biological Sciences	94
CHE Chemistry	100
CFS Child and Family Studies	104
CNS Chinese Studies	105
CLS Classical Civilization	106
CSL Comparative Studies	107
DAN Dance	110
ESS/GEO Earth and Space Sciences	111
ECO Economics	115
ECM Engineering Chemistry	118
EGL English	120
FRN/ITL French and Italian	123
GER/RUS Germanic and Slavic Languages and Literatures	128
SPN Hispanic Language and Literature	132
HIS History	135
HUM Humanities	138
JNH Japanese Studies	141
JRN Journalism	142
JDS/JDH Judaic Studies	143
KRH Korean Studies	144
LAC Latin American and Caribbean Studies	145
LIN Linguistics	146
MAT Mathematics	148
MDA Media Arts	152
MVL Medieval Studies	153
MES Middle Eastern Studies	154
MTD Multidisciplinary Studies	155
MUS Music	157
OPT Optics	160
PHI Philosophy	164

PEC Physical Education	167
PHY Physics	169
POL Political Science	173
PSY Psychology	176
QRS Quantitative Research in Social and Behavioral Sciences	180
RLS Religious Studies	181
SSI Social Sciences	183
SOC Sociology	185
THR Theatre Arts	188
WNS Women's Studies	190

College of Engineering and Applied Sciences 193

AMS Applied Mathematics and Statistics	199
BUS W. Averell Harriman School for Management and Policy	202
CSE Computer Science	205
ESE Electrical Engineering	209
ESG/ESM Materials Science and Engineering	212
EST Technology and Society	216
ISE Information Systems	217
MEC Mechanical Engineering	219

Health Sciences Center 221

Marine Science Research Center 227

APPROVED COURSE LISTINGS

College of Arts and Sciences 231

AFH Africana Studies/Humanities	232
AFS Africana Studies/Social and Behavioral Sciences	232
AIM Advancement on Individual Merit Program	233
ANP Physical Anthropology	233
ANT Social and Cultural Anthropology	234
ARH Art History	236
ARS Studio Art	237
AST Astronomy	239
ATM Atmospheric and Oceanic Sciences	239
BCP Pharmacology	240
BIO Biology	240
CBN Center for Behavioral Neurobiology	243
CHE Chemistry	243
CHI, CNH, CNS Chinese Studies	245
CLS Classics	245
CSL Comparative Studies	245
ECO Economics	246
EEL East European Languages	247
EGC English Composition	247
EGL English	247
ENS Environmental Studies	249

ESL English as a Second Language	250
FLA Foreign Language Secondary Education	250
FRN French	250
GEO Geology	251
GER German	252
GRK Greek	253
HBW Hebrew	253
HIS History	253
HON Honors College	257
HUE European Literature in English	257
HUF French Literature and Culture in English	257
HUG German Literature and Culture in English	258
HUI Italian Literature and Culture in English	258
HUL Romance Language Courses in English	258
HUM Humanities	258
HUR Russian Literature and Culture in English	259
HUS Spanish Literature and Culture in English	259
ITL Italian	259
JDH Judaic Studies/Humanities	260
JDS Judaic Studies/Social and Behavioral Sciences	260
JNH, JNS, JPN Japanese Studies	261
JRN Journalism	261
KOR, KRH, KRS Korean Studies	261
LAC Latin American and Caribbean Studies	262
LAT Latin	262
LBR Library	262
LES Living/Learning Center in Environmental Studies	262
LHD Living/Learning Center in Human Sexual and Gender Development	263
LIA Living/Learning Center in Interdisciplinary Arts	263
LIN Linguistics	263
LIS Living/Learning Center in International Studies	264
LSE Living/Learning Center in Science and Engineering	264
MAE Mathematics Secondary Education	264
MAP Mathematics Proficiency Courses	265
MAR Marine Sciences	265
MAT Mathematics	266
MUS Music	268
MVL Medieval Studies	270
PEC Physical Education	270
PHI Philosophy	272
PHY Physics	274
POL Political Science	276
POR Portuguese Language and Literature	278
PSY Psychology	278
QRS Quantitative Research in Social and Behavioral Sciences	280
RLS Religious Studies	280
RUS Russian	281
SAS South Asian Studies	281
SCI Science Teaching Secondary Education	281
SGE Scholarly Activities and General Education	282
SKT Sanskrit	282
SLN Sign Language	282
SOC Sociology	282
SPN Spanish Language and Literature	284
SSI Social Sciences	285
THR Theatre Arts	286
URE Undergraduate Research and Creative Activities	289
USB University at Stony Brook	289
WNH Women's Studies/Humanities	289
WNS Women's Studies/Social Sciences	290
WSE Women in Science and Engineering	291

College of Engineering and Applied Sciences 293

AMS Applied Mathematics and Statistics	294
BUS W. Averell Harriman School for Management and Policy	295
CSE Computer Science	295
EAS Engineering and Applied Sciences	297
ESE Electrical Engineering	297
ESG/ESM Materials Science and Engineering	300
EST Technology and Society	301
ISE Information Systems	302
MEC Mechanical Engineering	303

Health Sciences Center 307

HAD Clinical Laboratory Sciences	308
HAT Respiratory Care	308
HBA Anatomical Sciences	308
HBP Pathology	308
HBV Physiology and Biophysics	308
HDH Dental Health	308
HDO Oral Biology and Pathology	308
HDP Periodontics	308
HBH Pharmacological Sciences	308
HBM Microbiology	309
HMC Health and Society	309
HNI Nursing	309
HWC Social Welfare	309

University Information 310

Program Index (with HEGIS codes) 312

Index 314

Academic Calendar 320

Campus Map Inside Back Cover



An Introduction to Stony Brook



How We Began

The State University at Stony Brook was originally established in 1957 as a college for the preparation of secondary school teachers of mathematics and science; our first campus was located at Oyster Bay, Long Island, on the grounds of a former Gold Coast estate. In 1962 a new campus was built in Stony Brook, on land donated by local philanthropist Ward Melville. In the forty years since its founding, the University has grown tremendously, and is now recognized as one of the nation's important centers of learning and scholarship—carrying out the mandate given by the State Board of Regents in 1960 to become a university that would “stand with the finest in the country.”

The State University at Stony Brook has become New York's comprehensive university center for the downstate metropolitan region. Starting with 9 buildings on a 480-acre site, Stony Brook has expanded to encompass 123 buildings on nearly 1,200 acres. The faculty has grown from about 175 to 1,580, the student body from 1,000 to 17,316, and the annual budget from about \$3 million to more than \$600 million.

The Carnegie Foundation has identified Stony Brook as one of the nation's 70 leading research institutions; a more recent study (*The Rise of American Research Universities*, by Hugh Davis Graham and Nancy Diamond, Johns Hopkins University Press, 1997) placed Stony Brook right after the University of California at Berkeley as one of the best public institutions of higher learning in the United States. Funding for Stony Brook's research programs has grown faster than at almost any other university, making it the major research campus in SUNY—itsself the largest public university system in the country. In addition to its leading position as a research center, Stony Brook offers excellent instructional programs in a broad spectrum of academic subjects. Internationally renowned faculty members teach courses from the undergraduate to the doctoral level to more than 17,000 students 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 by 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 Stony Brook Campus

Stony Brook's bustling academic community is set among fields and woodlands. 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 \$25 million 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 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 buildings. 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 new 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 such an important part of life on campus.

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 architecturally striking 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 the inside back cover of this bulletin.)

Stony Brook Students

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

The University's enrollment for 1996 was 17,316. Currently there are 11,528 undergraduate and 6,049 graduate students at Stony Brook; of these, approximately 13,300 are full-time. Many students are also enrolled part-time in late afternoon and evening courses offered by several departments and the School of Professional Development and Continuing Studies (formerly the School of Continuing Education).

The majority of Stony Brook's undergraduates—95 percent—come from New York State; 59 percent of these are from Nassau and Suffolk counties and 30 percent from New York City. At any one time more than 100 Stony Brook students are studying abroad in approved exchange programs 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.

Of first-time, full-time Stony Brook students who entered in fall 1993, 80 percent were still in attendance after the 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 1,580 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-winners poet Louis Simpson in English and Robert W. Greene in Journalism, 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 Elling 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 Zimbardo 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 Collier 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 eleven members of the American Academy of Arts and Sciences, twelve 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 1995-96 Stony Brook faculty members attracted \$98.9 million from the federal government, private foundations, and individuals to support research, the largest dollar amount in the SUNY system. Nearly 1,700 sponsored projects are actively 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 to 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 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. Three accredited major programs in engineering 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 202-204 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, State University of New York at Stony Brook, Stony Brook, NY 11794-8400; (516) 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. The Center 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 two 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, our campus has one of the most rapidly growing research funding volumes of all universi-

ties 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 and Continuing Studies. For a full listing of graduate programs of study consult the 1996-1998 Graduate Bulletin, available from the Graduate School, State University of New York at Stony Brook, Stony Brook, NY 11794-4433; (516) 632-7040, or on our web page at www.grad.sunysb.edu.

The *School of Professional Development and Continuing Studies (SPD)*, formerly the *School of Continuing Education*, offers several options for part-time graduate study. Degree programs include an interdisciplinary program, the Master of Arts in Liberal Studies (M.A./L.S.), which is designed for persons seeking a broader postbaccalaureate education than is ordinarily found in programs that focus on a single discipline, and is especially attractive to teachers who may use this degree to satisfy the master's degree requirement for permanent teacher certification. Also offered are the Master of Arts in Teaching (M.A.T.) for persons seeking provisional teacher certification in English, French, Italian, German, Russian, chemistry, earth science, physics, or social studies, and the Master of Professional Studies (M.P.S.) with a concentration in educational computing, human resource management, public affairs, software engineering, or waste management. In addition, SPD offers advanced graduate certificate programs in Long Island regional studies, waste management, environmental and occupational health and safety, coaching, school administration and supervision, and school district administration. Also available is the graduate special student (GSP) option, which provides an opportunity for graduate study to postbaccalaureates

not yet enrolled in a degree program, or to 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 and Continuing Studies, call or write the SPD Office, N201 Ward Melville Social and Behavioral Sciences Building, University at Stony Brook, Stony Brook, NY 11794-4310; telephone (516) 632-7050; fax (516) 632-9046; email spd@sunysb.edu.

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.

For the 1996-97 academic year the full assistantship carries a ten-month stipend of \$9,572, 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, twenty 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 a 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 facilities by tapping them as resources for academic work. Among these organizations are the AIDS Education and

Resource Center; Alzheimer's Disease Assistance Center; Applied Behavioral Medicine Research Institute; Arms Control and Peace Studies Center; Bach Aria Festival and Institute; Cancer Center; Center for the Analysis and Synthesis of Macromolecules; Center for Behavioral Neuroscience; Center for Biotechnology; Center for Corporate Continuing Education and Training; Center for Education on Substance Abuse; Center for Excellence and Innovation in Education; Center for Health Policy and Management; Center for Industrial Cooperation; Center for Italian Studies; Center for Regional Policy Studies; Center for Religious Studies; Center for Science, Mathematics, and Technology Education; Center for Womyn's Concerns; Educational Communications Center; Empire State College; and the Executive Management Center.

Other campus-based institutes and laboratories include the High Energy Physics Group, Howard Hughes Medical Institute in Neurobiology, Humanities Institute, Institute for 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.

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*; *Gradiva*; *Heat Transfer—Japanese Research*; *Humanities Series in Contemporary Studies in Philosophy*; *Humanities Series in Philosophy and Literary Theory*; *Indiana Series in Philosophy of Technology*; *International Association of Philosophy and Literature*; *Journal of College Science Teaching*; *Journal of Educational Technology Systems*; *Journal of Histotechnology*; *Journal of Urban Analysis and Public Management*; *Long Island Historical Journal*; *Materials Science and Engineering*; *minnesota review*; *Philosopher's Annual*; *The Physics Teacher*; *Previews of Heat and Mass Transfer*; *Quarterly Review of Biology*; *Romantic Movement Bibliography*; *Slavic and Eastern European Arts*; *Stony Brook Bulletin for Theory and Criticism*; *SUNY Series in Aesthetics*; *SUNY Series in Contemporary Studies in Philosophy*; *SUNY Series in Political Thought*; *Taproot*; *Thermal Spray Technology*; *Transplantation Proceedings*; and *Victorian Literature and Culture*.

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 9,590 people on the campus payroll. It is the largest single-site employer in Suffolk County. The University generates an estimated billion dollars 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 the 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, the development needs of a highly skilled work force, 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 collaboration, 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 development initiatives in the industrial sector. The region's extraordinary profusion of coastal environments is a living laboratory for the Marine Sciences Research Center, one of the world's leading centers for coastal oceanography. Senior public and private sector managers are trained by the Harriman School for Management and Policy, while the Center for Corporate Continuing Education and Training serves all segments of business and industry with noncredit instruction. In 1994 the Center for Regional Policy Studies completed the wide-ranging Long Island Strategic Economic Development Plan, which provides recommendations for a sound regional economy through the year 2010.

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 the State University at 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 electrophysiological studies, complete renal services, endoscopy, hematology studies, detailed analysis of allergic and immune disorders, and diagnostic and interventional radiology. Advanced services such as lithotripsy, laser surgery, ophthalmic

laser treatment, and nuclear medicine are provided. Multidisciplinary teams care for adults and children with chronic conditions such as diabetes, cystic fibrosis, multiple sclerosis, and the physical and psychosocial effects of headache and pain. A full array of psychiatric services for children and adults is available. Psychiatric emergency care is provided 24 hours a day.

University Hospital's clinical laboratories offer extensive services to patients. They include diagnostic radiology imaging, magnetic resonance imaging, stereotactic core breast biopsy, special procedures, interventional radiology, and nuclear medicine. In addition, University Hospital provides clinical neurophysiology monitoring and testing, endoscopy and gastroenterological services, pulmonary function studies, renal care, respiratory care, vascular diagnostic services, and the full range of physical and occupational therapies.

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

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

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

experience while exploring careers in health care.

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

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

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

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 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 the Martha

Graham Dance Company, MOMIX, the Vienna Choir Boys, Rita Moreno, Midori, the Tchaikovsky Chamber Orchestra, and the Peking Aerobats, 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 presently 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 Jewish newspaper.

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

Stony Brook currently offers 20 intercollegiate varsity sports, 11 for men and 9 for women, competing in the National Collegiate Athletic Association (NCAA), the Eastern Collegiate Athletic Conference (ECAC), the New York State Women's Collegiate Athletic Association (NYSWCAA), and the National Intercollegiate Squash Racquets Association (NISRA), along with local conferences for various sports.

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

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

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 63 for more information regarding this law.

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

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

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: (516) 632-6280

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

For more information contact:

Assistant ADA Coordinator
Disabled Student Services
133 Humanities Building
University at Stony Brook
Stony Brook, NY 11794-5328
(516) 632-6748/9, V/TDD

Maintenance of Public Order

The university wishes to maintain public order appropriate to a university campus without unduly limiting or restricting the freedom of speech or peaceful assembly of the students, faculty, or administration. First Amendment rights shall 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 (516) 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. The hourly rate is \$1.50, up to a maximum of \$7.50 for the day.

After 4 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., at \$3 a day, or at the special evening student rate of \$7 (plus tax) per month. A commuter permit is required to purchase a monthly garage pass.

Commuter buses leave the South P Lot every five minutes between 7:30 a.m. and 6:10 p.m. After 6:15 p.m., there is one bus every 15 minutes until 9 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.

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

Public Safety

The University Police is staffed by 100 employees of whom 60 are sworn peace officers. The University Police have jurisdiction over the 1,100 acre campus and its 123 buildings. While officers are not specifically assigned to residence

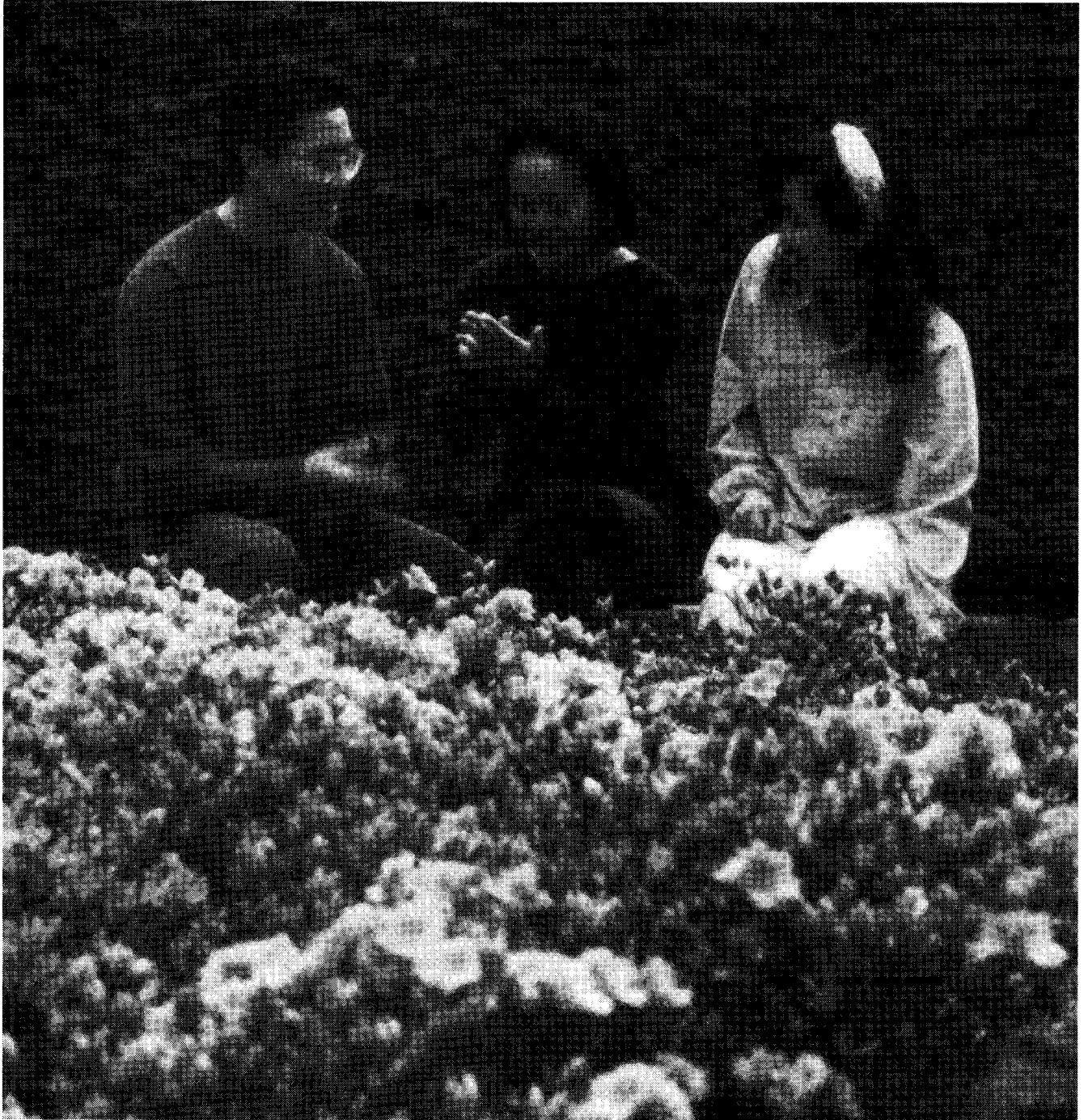
halls, those halls are part of regular campus patrols. Trained officers are available to respond and assist around the clock throughout the year.

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 the event of an emergency call 632-3333.



Student Services



Academic Services

Calculus Resource Room

Instructors of calculus courses staff the Calculus Resource Room, located in Physics A-125. Students who need assistance with coursework in any of the 100-level calculus courses can find someone in the room most of the time between 10 a.m. and 4 p.m., Monday through Friday, and during several weekday evenings. Call the Undergraduate Mathematics Office at 632-8250 for evening hours.

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

Center for Academic Advising

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

fessional advising for lower-division students also takes place in the center.

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 HSC Library, Life Sciences Library, SBS, Computer Science, Engineering, Math Tower, Chemistry, Humanities, and the Main Library, room S-1460. These sites have a variety of computers.

Central computing provides a UNIX environment. This system affords the campus programming, news, e-mail, Internet, and World Wide Web services for students.

Point to Point Protocol (PPP) accounts are available through the UNIX system to all registered students. Accounts can be opened in the Main Library, room S-1460 or in the Computing Center. Students can access their account from public labs, campus offices, dormitories, and students' off-campus residences. PPP accounts allow students to run graphical browser software such as Netscape. Students residing in dormitories access the UNIX system through their ROLM telephone via a data control module that can be rented for a monthly fee.

Consulting services are provided by various offices within the Division of Information Technology. Refer to the campus phone directory for specific services or refer to <http://www.sinc.sunysb.edu> on the WWW.

Pentium and Apple Macintosh personal computers are available to all full-time students of the University through the Computer Store. Instructional Computing has site licenses for PC Solve, True Basic, Lotus Notes, and Lotus Suite. Information needed to obtain copies of this software can be obtained in the Main Library SINC site.

For more information, contact Instructional Computing in the Main Library SINC site, room S-1460, at 632-8050 or the student consultants at 632-9602.

Libraries

The Stony Brook campus is endowed with a number of libraries to meet the

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

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

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

Library Hours

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

Note: Library hours are subject to change. Students are urged to check the posted hours of operation at the various branch libraries, as well as at the main library.

Mathematics Learning Center

The Mathematics Learning Center offers help to students who are having trouble in basic math or applied math courses and non-math courses that require math skills. Assistance is provided individually and in small groups on a first-come, first-served basis or by appointment. The center is located in Physics A-127 (632-9845), and is open during the day and some evenings. Please call for 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 afforded students who are academically talented as well as those who need academic support.

Pre-law and pre-graduate health profession advising, the Honors College, the Advancement through Individual Merit (AIM) Program, living/learning centers, the Undergraduate Research and Creative Activities Program (URECA), and internship opportunities are among the diverse activities administered through this office. The Office of Undergraduate Academic Affairs is also responsible for the coordination and administration of the College of Arts and Sciences Academic Judiciary Committee, the Committee on Academic Standing and Appeals, and the University Summer Session Office.

Undergraduate Adult and Evening Studies Office

The Undergraduate Adult and Evening Studies Office provides preliminary transfer credit evaluations and academic advice to both prospective and enrolled adult and evening graduates. Advisors, available by appointment, phone, email, and fax, help adult and evening students plan their academic programs, select appropriate courses, and understand academic regulations. The office also publishes *The Juggler*, a quarterly newsletter designed to keep enrolled adult and evening undergraduates informed on a variety of academic and non-academic issues, and the Adult and Evening Undergraduate Program brochure, which provides potential students with information about the

University's academic programs, transfer credit policies, admission procedures, and financial aid.

Undergraduate Transfer and Evening Studies Office

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

In addition, the office also assists students in selecting summer school courses to be taken at other institutions (sending students to major departments for approval when necessary). The office also has a SOAR terminal enabling students to print their degree audits. Academic advising is available on a walk-in basis, as well as by email and telephone.

Writing Center

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

The Writing Center is open from 9 a.m. to 5 p.m., Monday through Friday and selected evenings that change from semester to semester. Appointments are recommended since last-minute requests cannot always be accommodated. Please call 632-7405 for information or to schedule an appointment.

Special Area Services

Child Care Services

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

There are extensive waiting lists for these centers; therefore, it is wise to call for an application well before you will need the service, since placement cannot be guaranteed. Call 632-6930 for more information.

Commuter Student Affairs

The Office of Commuter Student Affairs is located in Suite 131 in the Student Activities Center and is open weekdays from 8:30 a.m. to 5:00 p.m. Its goal is to support commuter students, directly and indirectly, so that their educational experiences at Stony Brook will be satisfying and enriching. To achieve this goal, it offers services, programs, advocacy, research, and outreach on the students' behalf. Among the programs the Office of Commuter Student Affairs sponsors or cosponsors are workshops such as Stress Management, Car Maintenance, and Job Searches on the Internet, as well as various activities and receptions designed to promote faculty, staff, and commuter student interaction and communication.

This office represents commuters and their needs, 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 both reactive and proactive for commuter students. It also facilitates the recommendations of the Commuter Student Affairs Advisory Board whose membership con-

sists 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 Affairs 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 632-7353 or by e-mail at comstudaff@ccmail.sunysb.edu.

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.

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

Students receive assistance with admission and orientation; registration information and referrals; special housing and transportation; recruitment of readers, interpreters, note-takers, aides, and attendants; University procedures and requirements; test accommodations; and counseling. A learning 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.

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

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

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

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

English as a Second Language

The ESL program offers intensive (beginning level) as well as 3 credit (intermediate and advanced level) courses 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 additional information contact the Linguistics Department at 632-7777 or 632-7031.

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 wish to improve their English for personal or professional reasons.

An applicant who meets the academic criteria for admission can be given conditional admission into the University with the provision that he or she successfully complete one of the advanced IEC levels and is recommended by the director. The program consists 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, can register for one course with the permission of the IEC director.

In the summer, the IEC offers two four-week programs. Students attend English classes and join excursions to places of cultural and historic interest. The second summer session offers a three-day trip to Washington, D.C. that gives students the opportunity to visit our nation's capital. Admission is open to all foreign students who have completed the equivalent of a secondary school education. Participants are eligible to receive a student (F-1) visa, may live on campus, and may use all university facilities.

For additional information or brochures, prospective students may visit the IEC office in E5320 Melville Library, call at 632-7032, fax to 632-6544, or e-mail JMARTIN@ccmail.sunysb.edu. Office hours are Monday through Friday from 9:00 a.m. to 4:00 p.m.

International Student Services

International Student Services counsels students from other countries concerning finances, housing, U.S. government regulations (including immigration and tax concerns), and cross-cultural issues relating to study in the United States. The International Student and Scholar Advisors are the Designated School Officials (DSO) and Alternate Responsible Officers (ARO) on campus who are responsible for assisting students in obtaining and maintaining F-1 and J-1 status in the United States. Questions relating to academics are usually handled by academic advisors in the Center for Academic Advising or in the academic department.

International Services supervises the SUNY Health Insurance Plan for Foreign Students and Scholars. In addition, International Services works with community groups and student organizations to provide access to a varied program of activities, including tours and trips, discussion groups, home hospitality, speaking engagements, and other events. International Services also provides a liaison for students with the community host family group.

An F-1 or J-1 foreign student must take a full course of study of 12 credits, must attend a mandatory orientation program, and must consult with an

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

International Students transferring from other schools in the United States must have their Certificates of Eligibility, Form I-20 or IAP-66 processed for transfer to Stony Brook by the International Student Advisor at Stony Brook in order to maintain F-1 or J-1 status in the United States. All international students are required to attend a mandatory orientation program and must meet with an International Student Advisor within the first two weeks of classes to complete the transfer.

The International Student Services office is located in the Graduate School, 2401 Computer Science Building. The telephone number is (516) 632-7040.

Study Abroad

Through the Study Abroad Office, undergraduate students can add an international component to their Stony Brook education. The University offers low cost overseas opportunities to all Stony Brook students through special arrangements with universities around the world. Programs are conducted in a variety of languages, including English, and offer courses relevant to most Stony Brook majors, including science and technology. For each program there is an on-site coordinator in the host institution who provides guidance and assistance with housing, cultural adaptation, and curriculum selection. To maximize the benefits, students are encouraged to investigate these exciting possibilities early in their undergraduate careers. Information is available from the Study Abroad Office at Melville Library, Room E5340, or by calling 632-7030.

Veterans Affairs

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

The office is located in Room 348 of the Administration Building. Please call 632-6815 to make an appointment.

Student Life

Bookstores

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

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

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

Campus Community Advocate (Ombuds Office)

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

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

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

Campus Residences

The Division of Campus Residences is committed to providing quality housing and educational service to its resident students. The residence halls on campus house 60 percent of all undergraduate students. Forty professional Campus Residence staff members, assisted by approximately 300 student staff members, help students structure their experience within the framework of the overall Campus Residences program. The emphasis on developing student responsibility is intended to promote standards that encourage personal growth and a rewarding living experience.

The residence halls are organized as small residential colleges in order to foster social, intellectual, and cultural interaction. The residential colleges, each housing approximately 220 students, are arranged in quadrangles. Each quadrangle has a unique atmosphere and personality.

Each residence hall is supervised by a residence hall director (RHD). The RHD tries to establish an environment that fosters the academic and personal growth of the resident students. He or she serves as an advisor to the college legislature (student council), provides personal counseling, supervises the student staff, and promotes educational programs (i.e., study skills workshops, guest lecturers, resumé writing workshops). 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 is currently in the midst of a multi-year revitalization project to upgrade all of its facilities. Scheduled for completion by the year 2000, the revitalization project includes new furniture in bedrooms and public areas, enhancements to social and recreational facilities, modernization of the HVAC systems, and more. Residents of renovated buildings are charged an additional rent premium each semester.

Each residential college has public lounges, laundry rooms, kitchen facilities, and recreational facilities. Every residence hall room is equipped with a telephone and cable television hookup, which provides quality television reception as well as access to more than 40 cable stations. There are also state-of-the-art Fitness and Computing centers located in every Quad available free of charge to all residents. The Fitness Centers feature CYCEX 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 Internet access. 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 enrollment. 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. These options have become increasingly popular with the residence hall population.

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

The Residence Hall Association, representing all students who live on campus, addresses important issues of concern to quad residents, including an annual review of the 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 Center students in four-bedroom apartments and married couples in one-bedroom apartments.

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

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, they become financially responsible for the full housing charge for that semester. Should a student wish to cancel their housing at the end of the Fall semester, they must complete a proper checkout (which includes signing out of their room and returning their room key to their 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 Placement Center

The Career Placement 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 while periodic critical self-examination assists students in relating academic expertise to aspirations for future professional involvement and advancement. Two computerized

guidance services, FOCUS II and SIGI Plus, are also available for students to utilize as part of 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 partners with JOBTRACK, Inc. which offers job vacancies on-line and a computerized job matching system giving students access to employers across the country. A credentials service supports students in their application for jobs or advanced study by maintaining letters of recommendation that can be copied and sent directly to employers and schools.

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

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

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

Other services include information and applications for examinations required by various graduate and professional programs (i.e., the GRE, LSAT, GMAT, DAT, NTE, Actuarial Exam, MCAT, TOEFL, OAT, AHPAT, and Pharmacy Test). Many of these examinations are administered on campus by the office for the convenience of Stony Brook students. There is also a growing collection of videotapes on a variety of career topics. In addition, the Career Advisor's Network (CAN) enables students to contact Stony Brook alumni for information on specific career areas (e.g., social work,

business management, etc.). Finally, the Self-Service Career Center has a variety of information sheets on career planning topics that are available for students to pick up.

It is suggested that students visit the Career Placement 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. The telephone number is 632-6810 (Voice/TDD).

Commuter Student Association

The Commuter Student Association (CSA) located in the Commuter Commons, Room 144 of the Student Activities Center, is the central activities facility for commuting students. Commuters as well as other members of the University community can enjoy a comfortable environment in which to relax, study, or meet with friends. The bi-level facility also includes pool and tennis tables in the lower level, as well as a lounge with a 50" television. In addition to providing an annual Spring Fest-Commuter Student Day for the enjoyment of the campus community, the CSA sponsors campus events such as films, holiday parties, and outings to amusement parks. It also cosponsors many university events with other clubs and organizations. Often, special events are offered at reduced rates for commuters. Commuters will often find the Commuter Student Association to be a wonderful source for information, support, social life, the development of study groups, access to student government and organizations, and the enrichment of the experience of being an active Stony Brook commuting student.

Computer Corner

The Computer Corner is operated on a not-for-profit basis availing deep educational discounts on brand name hardware, software, and accessories. Sales and service are available for IBM and Apple products at tremendous savings. The Computer Corner is located in the Educational Communication Center near the Javits Center. For more information, call 632-7630.

Counseling Center

The University Counseling Center pro-

vides consultation, crisis intervention, brief psychotherapy, and group and couple's therapy for full-time students, including matriculated SPD students. Part-time students may request referrals for the campus Psychological Center or counseling services elsewhere. Counseling services are available year-round. All information about counseling at the Center is strictly confidential, except that needed in situations where there is an imminent threat or danger.

A student does not have to be confronting desperate or overwhelming difficulties in order to benefit from a visit to the Center. Understanding a situation before it reaches the crisis stage often allows for greater freedom when making choices. The Center encourages students to come in and discuss problems, even if they are not sure that counseling is what they need. With a counselor's help, one can discuss alternatives and decide the best way to proceed. For many students, dealing effectively with emotional and social issues increases their success with academic work. Some have an unrealistic image of college life, which minimizes or overlooks the significant life changes required. Even those students who are flexible and resilient can feel the stress associated with being a University student. For example, the transition from home to college is sometimes difficult. Residents must cope with the pressures of residence hall life. Commuting students may need help 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 issues such as these and for help with growth and development.

The Counseling Center also has mental health and outreach programs designed to enhance personal growth and skill development, including programs such as stress management, assertiveness training, and study skills. 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 Studies, academic departments, the International Student Services, and the Disabled Students Services.

The Center is open from 8:00 a.m. to 5:00 p.m. on Monday, Wednesday, Thursday, and Friday, and from 8:00 a.m. to 7:00 p.m. on Tuesday during the school year, and from 8:00 a.m. to 4:00 p.m. during intersession, summer, and spring break. Appointments for an initial visit are made on a same day or next day basis by calling 632-6720. 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 disability related accommodation should call the Counseling Center at 632-6720.

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

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, locker rooms, six team rooms, and a training room equipped for hydro- and electrotherapy. Attractive lobbies, offices, and two concession stands complete the facility.

The Pritchard Gymnasium, which is now the east wing of the Indoor Sports Complex, opened in 1964. The gymnasium features seating for 1,800 for basketball and volleyball; a six-lane, 25-yard pool; eight racquetball courts; two Universal weight rooms; a dance studio and exercise room; and three multipurpose courts for volleyball, badminton, or

indoor soccer, available when not in use for competition. The gymnasium, along with the new structure, provides an expansive, self-contained athletic complex, constituting Long Island's premier college sports facility, second in size only to Nassau Coliseum.

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

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

Most facilities may be used for recreational purposes when they are not scheduled for classes, intramural or intercollegiate events, or special events. Current schedules of recreation hours may be obtained in the Indoor Sports Complex. Hours are subject to change depending on availability of staff. The Indoor Sports Complex is open Monday through Sunday from 8 a.m. to 11 p.m. It is closed on all major holidays. Hours are adjusted for winter and spring breaks.

Living/Learning Centers

Six living/learning centers—Human Sexual and Gender Development, in Schick College (Kelly Quad); Science and Engineering, in Keller College (Roosevelt Quad); International Studies, in Stimson College (Roosevelt Quad); Wellness, in Mount College (Roth Quad); Environmental Studies, in Gershwin College (Roth Quad); and Interdisciplinary Arts, in Greeley College (Roosevelt Quad)—integrate the student's residence hall experience with academic concerns, and enrich both aspects of the college education. Langmuir, Gershwin, and Stimson colleges allow resident students to earn academic minors in the areas of human sexual and gender development, environmental studies, and international studies; Keller College provides courses

for students with an interest in the sciences and engineering, while Mount College focuses on a wellness model that concentrates on living well, making health decisions, and developing positive behaviors. Classes are held within the residential buildings and building activities are centered around the living/learning center topic. Students in these programs benefit from an exciting social atmosphere with convenient classrooms, study areas, multimedia rooms, computer rooms, and social/recreational facilities. For information on other living/learning centers anticipated for the future, contact the Division of Campus Residences.

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

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

Off-Campus Housing Service

An off-campus housing service, located in 104 Administration Building, is available to assist students in finding off-campus living arrangements. This service includes computer-generated and bulletin-board listings of available facilities, tenant information, tips for renters, listings of short-term and interim housing, bed and breakfast, hotel, and motel information, and local transportation information and maps. Call 632-6770 for further information or visit our Web site with on-line, interactive database at <http://och.vpsa.sunysb.edu>.

Stony Brook Union

The Union has space for many different kinds of events. There are 10 meeting and conference rooms, as well as a 365-seat auditorium, a large two-level, multi-purpose room, and a ballroom that accommodates 600. The art gallery displays the works of campus and community artists and is open weekdays.

Students flock to the Union in between classes to meet friends, play in the arcade, rent videos, watch TV, read, and relax. Another reason to come to the Union is to eat. One can find quick snacks or whole meals. There is a pizzeria, cafeteria, deli, restaurant, and bakery, where the aroma alone will entice students.

The Union also has vital campus services, such as check cashing and an information center, which is a great resource for campus maps, train and bus schedules, campus phone number directories, and information about events on campus like concerts and movies. The Information Center phone number is 632-6830.

The Union Crafts Center, on the lower level, offers workshops in ceramics, photography, silkscreening, leatherwork, bartending, cooking, car maintenance, weaving and many other craft skills. These are non-credit classes and are open to all. A nominal fee is charged. For Crafts Center information, call 632-6822.

Radio station WUSB-FM (90.1) is run by students and volunteers inside the Union. There are student newspapers, student run audio-visual services, and student retail enterprises here, too. Campus auxiliary services are handled by the Faculty Student Association (FSA), located in room 282. They can provide for the publishing of course materials, test preparation services, flea markets, food services, vending machines, and many other services.

Weekends at Stony Brook are filled with concerts, plays, movies, speakers, sports events, and parties. Past concerts have included Eddie Murphy, George Carlin, Phish, Linda Kim, Busta Rhymes, Bob Dylan, to name but a few. Funk Master Flex and Red Alert D.J.s have provided good times too. Craft fairs, club fairs and special cross cultural exhibits are also popular activities on campus.

Generally, the hours of operation for the fall and spring semesters are: Monday through Wednesday, 8:00 a.m. to 1:00 a.m.; Thursday and Friday, 8:00 a.m. to 2:00 a.m.; Saturday, 10:00 a.m. to 2 a.m.; and Sunday, 10:00 a.m. to 1:00 a.m. During recess and intersession, it is open Monday through Friday, 8:30 a.m. to 5:00 p.m. and is closed New Year's Day, Easter Sunday, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. For more specific building hours, and to check for any changes in the normal schedule, call 632-6830.

Student Activities Center

Just opened in 1997, the Student Activities Center also hosts many student clubs and organizations. The undergraduate student government, Student

Polity Association, has a suite of offices on the second floor. The Commuter Commons has a bi-level lounge, complete with computer carrels, billiard and ping pong tables, and the office of the Commuter Student Association. The Administrative Office of Commuter Student Affairs is right across the hall, within the dean of student's suite.

All the student program activities and room reservations for both the Stony Brook Union and the Student Activities Center are planned through the Department of Student Activities, on the second floor, across from many of the club and organization offices.

There are nine meeting and conference rooms available, which seat from 35 to 85 people. There is a state-of-the-art auditorium, which is really a multi-purpose room seating 586, and can be used for dances, movies, concerts, speakers, and other special events. The auditorium lobby looks out onto the lovely sculpture garden and courtyard. With its benches and pergola, this area is an ideal spot for relaxing and enjoying art amidst the seasonal beauties of nature.

The magnificently arched windows of the Main Dining Hall give students a full 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. There are upper and lower dining lounges and Starbucks Coffee Kiosk in the main lobby.

A convenience store is just beyond the lobby, carrying items from greeting cards and school supplies, to flowers, food, and University logo items. On the lower level, there is a full service bank, post office, and a student-run print shop. The Wellness Center has a dance floor, heart strengthening machines, a juice bar, and a seminar series encompassing the full range of human needs, physical, spiritual, cultural, philosophical, emotional, and mental. For information on the hours of operation, call 632-9392.

Student Affairs Vice Presidential Executive Area

The Student Affairs Vice Presidential Executive Area comprises the Office of the Vice President, which serves as a referral and information center for campus resources, Veterans Affairs and the Student Judiciary (which are both locat-

ed in the vice president's office), the Office of the Dean of Students, the Division of Campus Residences, and the following student services: the Stony Brook Union and Student Activities Center, the University Counseling Center, the Student Health Services, and the Office of Disabled Student Services.

The Division of Campus Residences includes an administrative central office, six residential quads, the Chapin Apartment Complex and the Shomburg Apartment Complex. Residential facilities are situated in various location across the campus.

Student Health Service

The Student Health Service, located in the Infirmary Building, provides health care to all registered students, and to faculty and staff on an emergency basis only. There is a mandatory fee of \$70 for full-time students and \$7 per credit for part-time students. The health service is open Monday through Friday, 8 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's 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, and social worker.

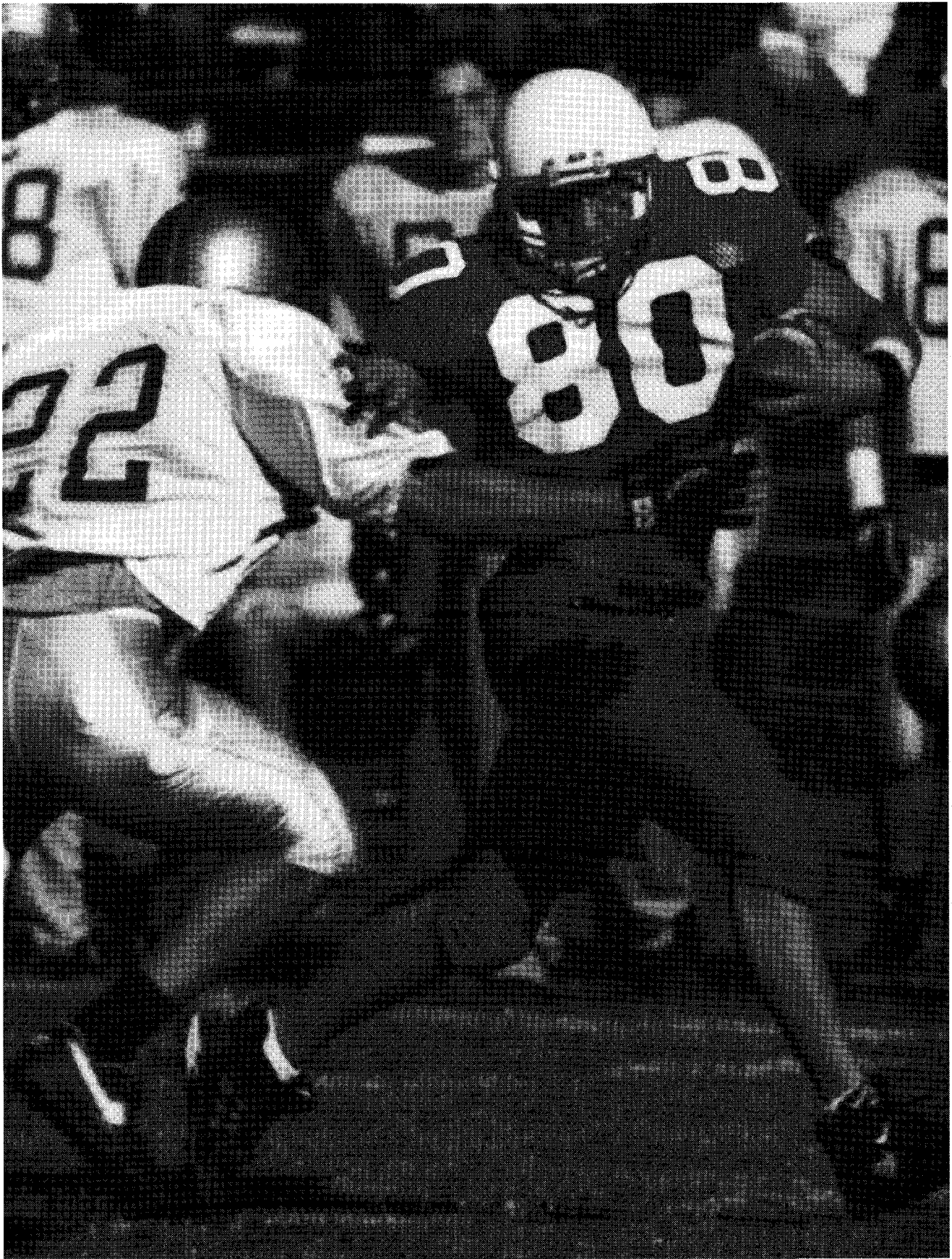
The University strongly recommends a voluntary health insurance plan because extensive medical assistance not available at the Health Service may cause financial difficulty. Information about insurance is available in the Infirmary Building. For further information call 632-6054.

Office of the Student Judiciary

The Office of the Student Judiciary is responsible for investigating and adjudicating cases of alleged student misconduct (in nonacademic matters) in violation of the University Student Conduct Code. In addition, the judiciary educates

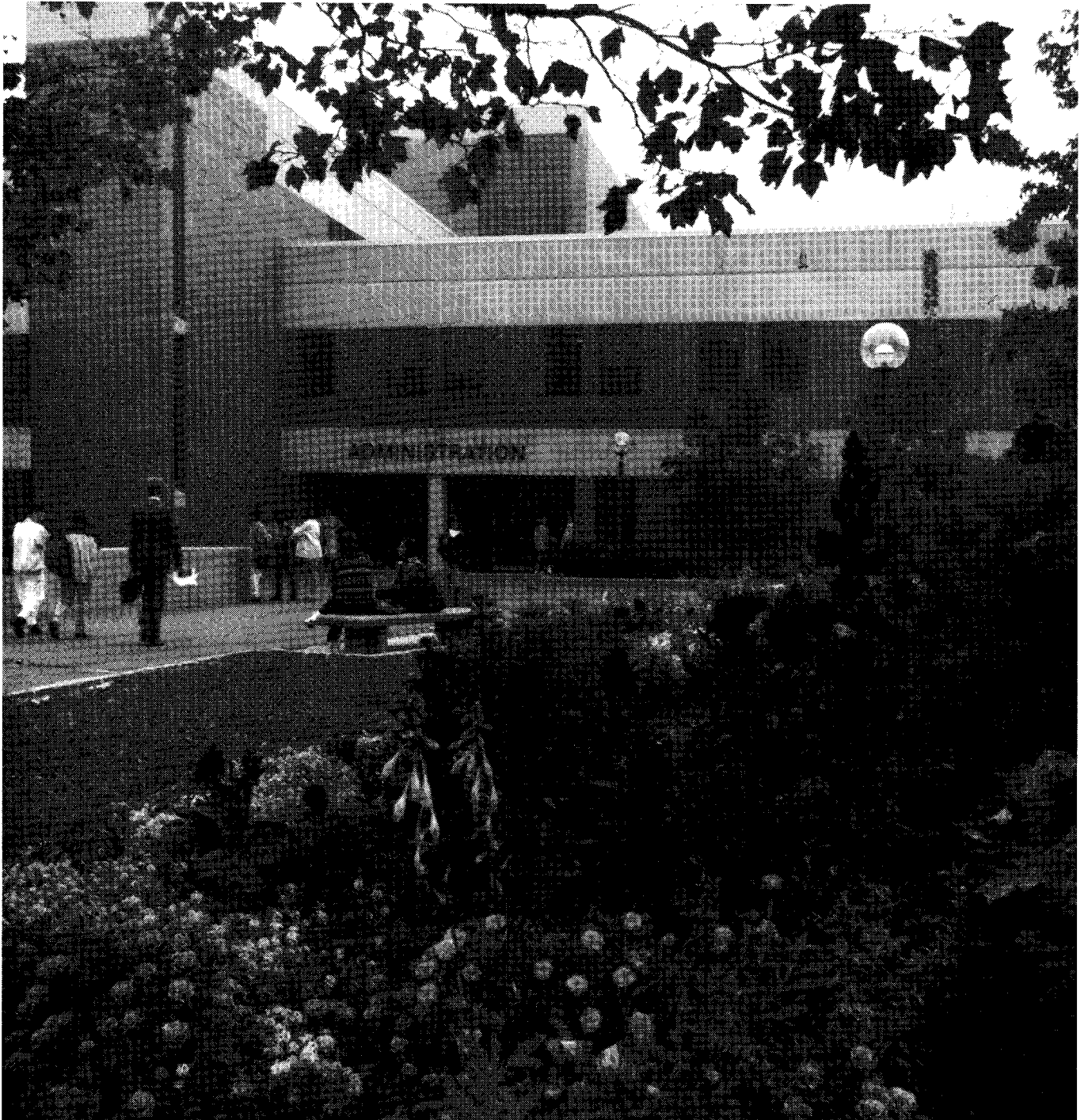
the campus community about the code and provides a learning experience for students who volunteer to become student hearing board members.

Any questions regarding the Conduct Code, the judiciary process, or procedures for filing a complaint should be directed to the Director of Judicial Affairs, 347 Administration Building, 632-6705.





Admissions



The information in this chapter refers only to undergraduate admission to the College of Arts and Sciences, the College of Engineering and Applied Sciences, the W. Averell Harriman School for Management and Policy, and the Marine Sciences Research Center (MSRC). (A section of particular importance to students interested in the Harriman School appears on page 202. A section of particular importance to students interested in the School of Health Technology and Management appears on page 222.) Transfer students and current Stony Brook students who seek admission directly to any of the undergraduate programs in the Health Sciences Center should consult the Health Sciences Center section in this bulletin and the separate Health Sciences Center Bulletin.

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

Freshman Admission

Entrance Requirements

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

- a high school diploma (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 recommended;
- SAT or ACT scores that indicate the promise of success in a rigorous undergraduate course of study;
- SAT II scores in writing, mathematics, and a third area of the student's choice are recommended; and
- two letters of recommendation from counselors and teachers, if requested by Stony Brook's Admissions Office.

Entry Skill in Mathematics

Students admitted to the University should have reached a minimum level of mathematics achievement so that they

are able to use basic mathematics to formulate and solve problems arising in their University work. Students may satisfy the entry skill in mathematics requirement in any one of the following ways:

1. By having passed, while in high school, the New York State Regents Examination in Sequential Mathematics III or Mathematics Eleven with a score of at least 75.
2. By having achieved a score of 525 or higher on the SAT II in mathematics; or a score of 560 or higher on the mathematics portion of the Scholastic Aptitude Test (SAT I); or a score of 56 or higher on the mathematics portion of the Preliminary Scholastic Aptitude Test (PSAT); or a score of 23 or higher on the American College Testing (ACT) Test in Mathematics. In some cases students who are otherwise qualified will be admitted to the University with the understanding that they will satisfy the entry skill in mathematics requirement as soon as possible on campus. See University Studies chapter, pages 66-67, for ways of satisfying the requirement after admission.

Entry Skill in Foreign Language

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

Special Admissions Programs

Stony Brook offers special admissions programs for freshmen and transfer students; these are described on page 28. They include the Educational Opportunity Program/Advancement on Individual Merit (EOP/AIM) and Returning Students (for applicants who are 25 years of age or older).

Scholarships

For information regarding scholarships see the Scholarship and Awards section on page 44.

Early Decision for Freshmen

Early decision is an early application, early notification program for fall freshmen at their first college choice. Students who apply to Stony Brook under early decision are permitted to apply to other colleges for regular admission while awaiting a decision. Students accepted at Stony Brook are expected to make a tuition deposit at Stony Brook and to withdraw their applications at all other institutions.

The deadline for filing early decision applications is November 1. The Office of Admissions notifies early decision applicants by December 15. Students accepted in the early decision program are expected to make their tuition deposit by January 15.

Early Admission from High School

While the University does not actively seek students who expect to leave high school before completing all requirements for either a Regents or high school diploma before they matriculate at college, such applicants are routinely reviewed and offered admission when other admission requirements are met. Applicants for early admission must submit a letter of support from their high school principal with their applications.

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

Application Procedures for New Freshmen

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

interest on the admission application. For information about acceptance to major programs within the College of Engineering and Applied Sciences, see page 28.

All applicants must submit a completed application for undergraduate admission available either through the Office of Undergraduate Admissions or in their high school guidance office. To receive an application form, contact the Office of Admissions at (516) 632-6868. You may also request an application via e-mail (admiss@mail.vpsa.sunysb.edu) or by visiting the Office of Undergraduate Admissions Web site (www.sunysb.edu/admissions).

Notification of Freshman Admission

Students are notified of their admission for the fall semester on January 15 and on a rolling basis thereafter. Notification for spring admission begins on November 1 and continues on a rolling basis thereafter. Applications will be accepted only through July 10 for admission for the fall semester. Deadlines for housing and financial aid may differ. Admission to the University is determined approximately two weeks after all credentials are received and evaluated.

Deferred Enrollment

Stony Brook permits admitted freshmen to defer enrollment for a maximum of two semesters. Requests for deferred enrollment must be put in writing and sent to the 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 previously 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.

Application Procedures for Transfer Students

All applicants must submit a completed application for undergraduate admission, available through the Office of Undergraduate Admissions. To receive an application form, contact the Office of Admissions at (516) 632-6868. You may also request an application via e-mail (admiss@mail.vpsa.sunysb.edu) or by visiting the Office of Undergraduate Admissions Web site (www.sunysb.edu/admissions).

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

It is the student's responsibility to see that a final college transcript is sent to the Undergraduate Admissions Office prior to final registration. Community college applicants who expect to be degree recipients (A.A. or A.S.) must present evidence of receipt of the degree prior to enrollment.

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

Dual Degree/Joint Admissions

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

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

Second Bachelor's Degree Program

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

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

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

Two-Year College Graduates

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

In order to prepare for a smooth transition to Stony Brook after completing the associate's degree, students should choose their courses with some knowledge of the requirements of the bachelor's-level program they plan to complete after transfer. Associate degree candidates who wish to plan their studies as the first half of a continuous four-year program should discuss this with their academic advisors. To assist in this planning Stony Brook routinely prepares tables of course equivalents for several SUNY and CUNY two-year institutions. Graduates of career-oriented programs (A.A.S. and A.O.S.) will be considered for admission on an individual basis and in competition with other transfer applicants.

To facilitate students' transfers to Stony Brook and to maximize the University's service to applicants, Stony Brook strongly encourages students to file applications in the fall of their sophomore year for the following fall semester. Such early application makes possible an early decision, enabling transfer students to participate in orientation and advance registration. It also increases the likelihood of their receiving the financial aid for which they are eligible.

Special Admissions Programs

Educational Opportunity Program/ Advancement on Individual Merit (AIM)

EOP/AIM is responsible for providing access to the University for New York State residents who are economically and educationally disadvantaged, and who have a potential to succeed aca-

demically at Stony Brook. Program services are designed to promote each student's individual academic development.

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

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

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

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

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

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

1. High school average below minimum for regular admission to the University (usually 80.0 to 84.9);
2. Three-year sequence of mathematics and science; and
3. Combined SAT score of 850 (minimal verbal score of 430 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 must have a minimum grade point average of 2.3 with at least 18 credits completed at their previous college.

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

Returning Students

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

The Adult and Evening Program offers special orientation sessions, advising sessions, and other services to help students 25 years of age and older cope with the responsibilities of work, family, and school. Many key offices on campus have designated a special advisor to offer information and assistance to returning students.

Acceptance to the College of Engineering and Applied Sciences Programs

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

Pre-Enrollment Deposit and Refund Policy

Each new student is required to pay an advance tuition deposit of \$100 and an additional \$200 deposit when housing is requested. Fall deposits, which are applied against charges incurred by the student in the first semester, are due either May 1 or 30 days after admission is offered, whichever is later. Housing deposits are fully refundable until July 1; thereafter, they are refundable according to a prorated schedule. Tuition deposits paid before April 1 are refundable until May 1. Spring deposits are due 30 days after admission is offered. Requests for refunds should be sent to Student Services Center, State University of New York at Stony Brook, Stony Brook, NY 11794-1351, and must be received by the University not later than the due date. To ensure timeliness and receipt of the deposit refund request, the University suggests letters be sent by certified mail, return receipt requested.

Part-Time Matriculation

Students who are unable to attend Stony Brook full time may wish to apply for study as part-time matriculated students. Part-time students may enroll for up to 11 credits per semester and are subject to all academic rules and regulations appropriate to that status. First-time matriculants at Stony Brook should follow the application procedures described elsewhere in this chapter. (Freshmen see page 26, transfer students see page 27.)

Undergraduate Evening Study

The University offers evening classes for students whose work, child-care, or other responsibilities make attendance during the day difficult. Evening classes are available in a wide range of subjects and are taught by the same distinguished faculty who teach day classes. Students interested in completing their degree requirements in the evening should contact the appropriate department's director of undergraduate studies to discuss their academic background and the feasibility of completing the requirements in the evening.

Students with a Disability

The academic admission procedures for students with a disability are the same

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

Foreign Students

Foreign students interested in applying to the University should contact the Undergraduate Admissions Office directly for appropriate application materials and information, as these differ from forms filed by United States citizens and permanent residents. Completed applications must be returned to the Stony Brook campus.

Original certified transcripts, records, certificates, etc. of secondary school and college courses and grades (in English translation with an explanation of rank in class and the marking system) must accompany the application. Secondary school records must reflect academic achievement equivalent to the minimum for admission when converted to the American grading scale. A 2.5 index is required of foreign students who wish to transfer from other colleges in the United States. A minimum of one full year of study in a parallel program reflecting an index of 2.5 or higher is required of transfer applicants whose secondary school achievement fell below the standard required for freshman admission. (For transfer credit policies, see page 53.)

All persons whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) and achieve a minimum score of 550, or to demonstrate English proficiency by one of the following methods: SAT verbal score of 430 or higher or proof of attendance at an Intensive English Language Institute at an advanced level in the United States with completion of a program at the high-intermediate or advanced level.

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

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

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

Advanced Standing by Examination

Stony Brook accepts up to 30 credits by examination in partial fulfillment of the bachelor's degree. Included in this total may be credit based on standardized external examinations such as AP, CLEP, CPE, and Stony Brook's own Challenge Program. (See below for details about these programs.) Credit by examination may not be used to satisfy most Diversified Education Curriculum requirements; however, they may be used to satisfy one course in each of categories E, F, and G, and AP credit may satisfy category C. Credit by examination does not count as part of the semester credit required for good academic standing, nor may it be used to fulfill the Stony Brook residence requirement.

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

Second Baccalaureate Candidates

Students who hold a bachelor's degree from the University at Stony Brook or another institution may be eligible to apply for undergraduate study toward a second baccalaureate. Some majors have special admission requirements and/or restrictions. For details regarding second baccalaureates, see page 61.

Advanced Placement Credit

Advanced placement credit may be extended to freshmen who have completed advanced placement courses in secondary school and who have taken the appropriate CEEB advanced placement examination. Students must request that their test scores be forwarded to Stony

Brook. While each academic department determines the minimum test score required for academic credit in a particular subject, three general elective credits are guaranteed with a score of 3.

College-Level Examination Programs

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

Challenge Program for Advanced Credit

The University's Challenge Program permits undergraduates to earn advanced placement and academic credit by taking examinations in place of regular courses. (For further information about the Challenge Program, see page 62.)

Summer Session Admission

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

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

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

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

Office of the Summer Session
 W3520 Melville Library
 State University of New York
 at Stony Brook
 Stony Brook, NY 11794-3370
 (516) 632-7070

Non-Degree Study

General Information

Non-matriculated study is available at Stony Brook for individuals who are not ready to study for a degree 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. 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 G.P.A. of 2.5 for a minimum of 15 credit hours at their previous institutions. Applicants for part-time non-matriculated study (PTNM) must have achieved a minimum grade point average of 2.3 for a minimum of 15 credit hours. Adults returning to school after an absence of five or more years may request special consideration if they do not meet these standards.

Non-matriculated students' academic performance will be reviewed at the con-

clusion of each semester. Students earning less than a 2.0 semester grade point average are not permitted to continue. Generally, students who did not initially qualify for matriculation and who wish to do so must successfully complete either 15 credits at Stony Brook with a cumulative grade point average of at least 2.5, or 12 credits with a cumulative grade point average of 3.0 or higher.

High School Students: Young Scholars Program

The Young Scholars Program offers academically talented high school students who live within commuting distance of Stony Brook the opportunity to complement their high school study with part-time coursework at Stony Brook. The courses are scheduled in the late afternoon, early evening, and on Saturday. In past semesters, course offerings have included Calculus III: Differential Equations, Spanish Composition and Conversation, Structure and Methods in Sociology, Introduction to Psychology, and Logical and Critical Reasoning, to name only a few.

For each course the title, credits, and grade will be recorded on an official Stony Brook transcript. The student may later use these courses toward a degree at Stony Brook or offer them as transfer credit at another college or university.

Applicants should have junior or senior standing with an average of 90 or above, should have taken honors and advanced placement courses when available, and have Regents scores in the high 80s or 90s. 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
 State University of New York
 at Stony Brook
 Stony Brook, NY 11794-1901
 (516) 632-6867

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 for the schedule when planning a visit to the campus.

Orientation/Academic Advising Program

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

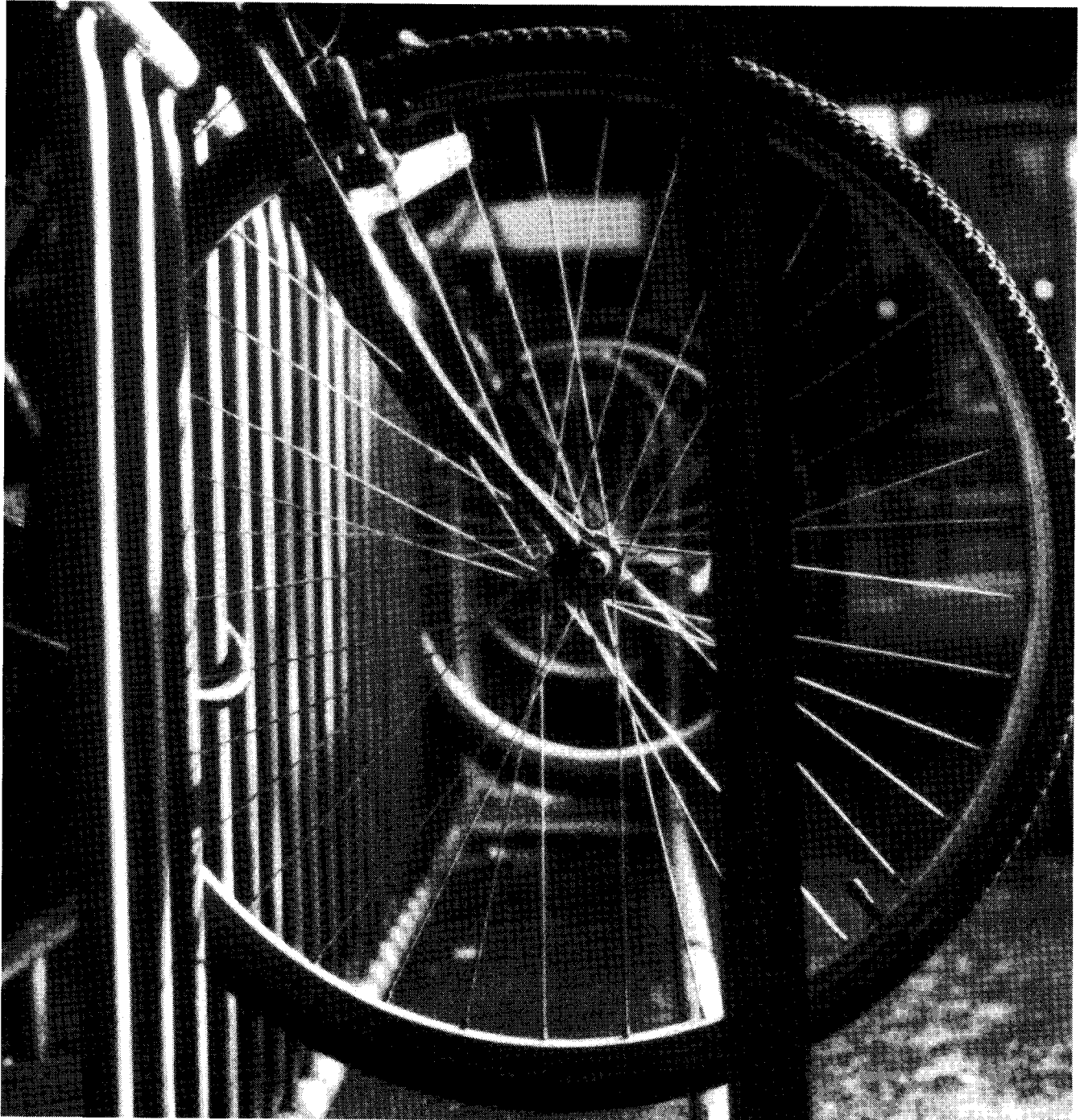
Separate freshman and transfer student orientation programs are conducted during the summer for fall entrants, and in January for spring entrants. Detailed information concerning the content, costs, and dates of orientation is sent shortly after the offer of admission.

Withdrawal, Readmission, and Leave of Absence

Information concerning withdrawal, readmission, and leave of absence from the University appears on pages 52 and 61.



Financial Information



Registration is not complete until all tuition, fees, and charges, which are due and payable prior to the first day of classes, have been paid or properly deferred. Failure to satisfy this financial obligation will prevent students from receiving academic credit, transcripts, diplomas, and certifications, as well as from being permitted to register for future semesters. Nonpayment does not constitute official withdrawal, which must be done through the Office of Records/Registrar. Failure to attend classes will not relieve students of their financial obligation or entitle students to a refund. The date of official withdrawal determines eligibility for any refunds in accordance with the schedule found on pages 33-34 under "Refund of Tuition." All fees and charges 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 occupancy	\$1729.00
Double occupancy (premium)	\$1829.00
Single occupancy	\$1989.00
Single occupancy (premium)	\$2089.00
Sole occupancy	\$2594.00
Sole occupancy (premium)	\$2744.00
Cooking fee (on-campus resident not on meal plan)	
Hall	\$208.00
Suite	\$134.00

Meal Plan

Ultra Advantage	\$1200.00
Standard Advantage	\$1050.00
Basic Advantage	\$900.00

Fees

College Fee	
Full-time student (12 credits or more)	\$12.50/semester
Part-time student (per credit hour up to 11 credits)	\$.85/credit
Athletic Fee	
Full-time student (12 credits or more)	\$40.00/semester
Part-time student (per credit hour up to 11 credits)	3.50/credit
Late Payment Fee¹	
All students	\$30.00
Late Registration Fee	
All students	\$30.00
Lost Identification Card Fee	
All students	\$10.00
Orientation²	
Two part program	\$125.00
Returned Check Fee	
All students	\$20.00
Student Activity Fee³	
Undergraduate, full time	\$78.50/semester
Technology Fee	
Student with 10 credits or more	\$30.00/semester
Part-time student (less than 10 credits)	\$3.00/credit
Transcript Fee	
All students	\$5.00/each
Transportation Fee	
Student with 10 credits or more	\$30.00/semester
Part-time student (less than 10 credits)	\$3.00/credit

Student Health Insurance

	To be announced
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Deposits

Advance Tuition Deposit⁴	
Freshmen and Transfers	\$100.00
Advance Housing Deposit	
All students	\$200.00

- ¹Cumulative up to \$90.00/semester.
- ²Prices are approximate and subject to change.
- ³This fee is set by Student Polity (Undergraduate Student Government).
- ⁴Applies toward first-semester charges.

Summer Session

Tuition

New York State Resident Tuition:	
Part-time student (per credit hour up to 11 credits)	\$137.00/credit
Out-of-State Resident Tuition:	
Part-time student (per credit hour up to 11 credits)	\$346.00/credit

Housing

Single room single occupancy	\$114.00/week
Double room double occupancy	\$85.00/week

Fees

College fee	\$.85/cr. hr.
Student activity fee	Varies
Late registration fee	\$30.00

Payment of Fees and Charges

All fees and charges for a given academic session must be paid in full or properly deferred prior to the first day of classes. All checks must be payable to "SUNY at Stony Brook." All payments are to be sent to P.O. Box 619, Stony Brook, N.Y. 11790. Postdated checks are not accepted.

Payment may also be made with Visa, MasterCard, or Discover. Payment with a credit card can be accomplished by using the Stony Brook automated telephone system available at (516) 444-6272. Listen to the recorded directions and choose Option #4. The birthdate of the

student is the PIN number required to complete this transaction.

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. The only cost is a \$30.00 per student annual processing fee to help defray the administrative expenses of the program. For further information please contact the Business Office.

Students making payment on or after the first day of classes or during the late registration period, or preregistered students making payment after the pre-billing due date, shall be required to pay a late registration fee of \$30.00. Payments postmarked after the due date printed on the bill are subject to a \$30.00 late payment fee. Late payment fees are cumulative up to \$90.00 per semester. Fees may not be waived and are nondeferrable. The late registration period ends at the close of the second week of classes.

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

Deferment

Students receiving awards provided by the State of New York, managed by the University, or payable to the University, may utilize deferment equal to the amount of the award. Documented proof of the amount of the award must be presented at the time of payment for the deferment to be applied to the account (only current awards are deferrable).

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 reminded that failure to file an application in a timely manner can preclude their receiving award credit or deferment.
2. Federal Perkins Loan, Federal Supplemental Educational Opportunity Grant (SEOG), 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 by 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 Business Office, University at Stony Brook, Stony Brook, NY 11794-1301.

Refund of Preenrollment Tuition Deposits

Each new student is required to pay an advance tuition deposit of \$100. Deposits for the fall semester are due by the date indicated on the deposit card's preprinted label. Deposits are applied to charges incurred by the student in the first semester. Requests for refunds will be granted under the following conditions:

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

Refund of Housing Deposits

Each student is required to pay a \$200 advance room deposit when requesting a future room assignment; this deposit will be applied to the housing charges for the first semester. A request for refund of room deposit must be made in writing to the Division of Campus Residences by June 30 (for the fall semester) or within 30 days of the date of deposit. Students not receiving an assignment within 30 days of deposit will have until notification of assignment to request a refund.

Refund of Tuition

Students who withdraw from the University or decrease their academic load shall be liable for payment of tuition in accordance with the following schedule:

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

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

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

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

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

Exception

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

Refund of Room Fee

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

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

Refund of Meal Plan Fee

Students wishing to cancel their meal plan contract must do so through the Campus ID/Meal Plan Office. On notification from this office, the Office of Student Services will credit the account and prepare a refund if appropriate.

Refund of Student Activity Fee

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

Refund of Cooking Fee

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

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

These fees are not refundable.

Refunds Caused by Overpayment or Processing Errors

Refunds of amounts paid will be made when a student overpays University fees.

Other Expenses

Food

All Resident Students will be enrolled on 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 on a Resident Meal Plan regardless of class status or tenure at Stony Brook.

Meal Plan Options

There are three Advantage Meal Plans offered to resident students. The Advantage plans have operating costs deducted up front and the balance is given to purchase meals at product cost. All three Advantage Plans provide total flexibility to dine in any of the various eateries on campus that accept meal plan. All three plans require the student to monitor and budget their spending in order to last the entire semester. Keep in mind that depending on what you eat and which services you utilize you may need to supplement your meal plan

account with additional dollars. Most students will not be able to stretch their budget on the Basic Advantage Plan. Basic Advantage is designed as a supplemental plan for those students residing in buildings with cooking facilities.

At the time of publication the prices of the meal plans and cooking fees are as follows:

Ultra Advantage	
(518 Advantage Points)	\$1200.00
Standard Advantage	
(368 Advantage Points)	\$1050.00
Basic Advantage	
(218 Advantage Points)	\$900.00
Cook Fee (Hall)	\$208.00
Cook Fee (Suite)	\$134.00

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), 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 TacoBell Express and a 24-hour deli. In addition to the dining halls, USB Dining offers several other eateries. 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 New 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 Study Abroad programs (in such countries as England, France, Germany, Italy, Bolivia, Poland, etc.) pay the normal SUNY tuition. They must also pay round-trip transportation and housing costs. Programs in some countries also carry a program fee to cover exceptional administrative expenses. As a rule the costs of studying abroad do not substantially exceed those of studying as a resident student at Stony Brook.

Off-Campus Housing 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. 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 \$250-\$450 per month plus a percentage of the utility costs.

Apartment listings cover those available in standard apartment building complexes and in private homes. The usual rental rate of a studio apartment (one large room, bathroom, closets, kitchenette) in a house is approximately \$450-\$600 per month. A studio apartment in one of the apartment facilities is usually \$500-\$600. Apartments in housing complexes usually provide more space and privacy. A conventional one-bedroom apartment, including living room, dining room, kitchenette, bathroom, and closet space, usually ranges in price from \$550-\$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 \$700-\$1,800 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 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 Tuition Assistance Program (TAP) application, 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, (516) 632-6840.

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 by filing a Free Application for Federal Student Aid (FAFSA). The completed application should be mailed to the federal process or in the envelope provided. 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 also 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 completes and signs the letter and returns 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 previ-

ously 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 2.0 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 24 credits per year in order to complete his or her program in a maximum of five 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:

1. 24 years of age or older by December 31 of the award year.
2. a veteran of the U.S. armed forces.
3. enrolled in a graduate or professional program (beyond a bachelor's degree).
4. married.
5. a ward of the court.
6. 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 \$2,700. 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 \$3,000 for undergraduate students and \$5,000 for graduate students. The maximum amounts that may be borrowed are \$15,000 as an undergraduate and \$30,000 for graduate 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 5 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 including Public Health Service officers, the temporarily disabled, those on internships required before entering a profession, and full-time Peace Corps, VISTA, or similar national program volunteers. Forms, as well as specialized information on loan cancellation provisions for borrowers who go into certain fields of teaching or specified military duty, are available 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 with the greatest financial need. In addition, students must apply by the priority deadline in order to be considered. (Contact the Office of Financial Aid and Student Employment for further details.)

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

Award Schedule

The Office of Financial Aid and Student Employment provides recipients of a 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 \$8.00 per hour for undergraduate students.

Factors considered by the Office of Financial Aid and Student Employment in determining who receives a FWS allocation and the amount are financial need, class schedule, and academic progress.

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 accumulate, 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 \$8,500 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 3.1 percent with a cap of 8.25 percent) with no repayment as long as he or she remains enrolled at least half time, and for six months after he or she ceases to be at least a half-time student. Interest does not accrue on this loan during periods of enrollment or the grace period. The federal government pays the interest for the student during this time period. Payment of principal may be deferred for up to three years for certain categories of borrowers.

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 maximum 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.

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

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

Tuition Assistance Program (TAP)

Application Procedures

Applicants may apply for TAP using the Tuition Assistance Program application and the Free Application for Federal Student Aid (FAFSA). Both forms are available at any high school guidance office or financial aid office. Students who are planning to enroll at the University at Stony Brook should include the following New York State school code on the TAP application: 0875 (for undergraduates). The Title IV School Code for the FAFSA is 002838.

The NYS Higher Education Services Corporation 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. enrolled full time and matriculated in an approved New York State postsecondary institution and program; and 3. be charged a tuition of at least \$200 per 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 at right 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 whether or not a student is required to report parental income and is contingent upon the following criteria:

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 your family, resulting in relinquishment of your parents' responsibility and control, or

- e. married on or before December 31 of the year preceding the academic year for which application is made, or
- f. enrolled as a graduate student, or
- g. received a TAP award as a financially independent student in the academic year preceding that for which application is made.

Note: Independent status under the state definition for the Tuition Assistance Program does not necessarily ensure independent status for federal aid programs. See "Emancipated' or 'Independent' Student Status," page 36.

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.

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	18	30	45	60	75	90	105
With at Least This Grade Point Average	0	.5	.75	1.2	2.0	2.0	2.0	2.0	2.0	2.0

Currently, awards at Stony Brook for undergraduate study range from a minimum of \$100 to a maximum of \$3,085.

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 first day of classes 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: 1996 tax returns for the 1997-98 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; 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.

A student who is admitted to the University through the AIM program is offered financial and personal counseling and is eligible to receive a range of academic support services. These services include tutoring, special academic advising, skills improvement activities, and special development classes and programs. At the same time, these students participate fully in all campus academic and social activities. Many students who enter complete a bachelor's degree program, and many continue their education in graduate and professional schools throughout the country.

For further information on EOP/AIM, contact:

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

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 telephone 632-6700 or 632-6701 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.

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 for applications, information, and assistance. Telephone 632-6700 or 632-6701 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.

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

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 St. Louis, MO.

Post-Vietnam-Era Veterans Educational Assistance Program (VEAP)

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

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

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

This program provides benefits to individuals enlisting, reenlisting, or extend-

ing 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 Office of Financial Aid provides a job locator service for off-campus jobs available during a student's tenure at Stony Brook. Postings are on a bulletin board outside of the 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 (516) 632-6840. For further information on any of the merit scholarship programs listed below, contact the Office of Undergraduate Admissions at (516) 632-6868 or the Office of Enrollment and Retention Management at (516) 632-6857.

Honors Programs

Provost's Honors Scholarships

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

Honors College Scholarships

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

Honors Program Scholarships

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

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

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

Presidential Achievement Scholarships

This is a merit-based scholarship program designed to recognize academic and leadership accomplishments of first-year undergraduate students at Stony Brook. Qualitative and quantitative criteria are equally considered in awarding Presidential Achievement Scholarships, which range from partial to full New York State tuition awards and may be renewed based on academic performance at Stony Brook.

For additional information and specific criteria for these scholarships, contact Robert Pertusati in the Office of Undergraduate Admissions at (516) 632-6868.

Project WISE—Women in Science and Engineering

Awards in the amount of \$2,000 are available for the first year of study. WISE participants who plan to major in one of the College of Engineering and Applied Sciences (CEAS) majors will be considered for supplementary support in the second year. For further information, students may contact Wendy Katkin, Project WISE director, at (516) 632-6947 or (516) 632-6998, or they may contact the program through e-mail at wise@data-lab2.sbs.sunysb.edu or through the Web site at <http://dol1.eng.sunysb.edu/wise/>

College of Engineering and Applied Sciences Scholarships

The College of Engineering and Applied Sciences (CEAS) administers a number of scholarships. For more information, call the CEAS Undergraduate Student Office at (516) 632-8381.

Northrop Grumman Scholarships in the College of Engineering and Applied Sciences

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

Society of American Military Engineers Scholarship

The Society of American Military Engineers Scholarship is presented annually by the New York City S.A.M.E. Post to an engineering student who has demonstrated by scholastic performance a potential for further engineering study and practice and who may be in financial need. Students interested in this scholarship should contact the Engineering and Applied Sciences Undergraduate Student Office at (516) 632-8381.

Research Careers for Minority Scholars Scholarships

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

Howard Hughes Medical Institute Undergraduate Research Fellow Scholarships

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

Pope Foundation Scholarships

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

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 information and application materials, contact the Director of Undergraduate Studies, Department of Music, State University at Stony Brook, Stony Brook, NY 11794-5475; (516) 632-7330.

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 (516) 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.

Awards

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

Alpha Kappa Alpha Sorority Achievement Award

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

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.

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.

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.

Delta Sigma Theta Sorority Merit of Excellence Award

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

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 filmmaker, 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.

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 Atlonito, Esq. Pre-Law Award

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

H. Lee Dennison Award

The H. Lee Dennison Award, named in honor of Suffolk County's first chief executive, is presented by the University to the graduating senior who entered Stony Brook as a transfer student, completed at least 60 credits of letter grade work at Stony Brook, and attained the highest academic average in that work.

Health Sciences Undergraduate Award

This award is presented annually by the University Association of the University at Stony Brook to a Health Sciences Center junior for academic excellence and

outstanding nonacademic service activities on campus and in the community.

Hugh J.B. Cassidy Memorial Award

This award is presented to a current or former School of Professional Development student who can demonstrate that an SPD degree or certificate program has made a significant impact on his or her professional life and/or 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.

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 or off campus and has pursued entrepreneurial and innovative activities.

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.

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.

Nominations for State, National, and International Awards

The University nominates candidates for awards such as the Rhodes Scholarships, Mellon Fellowships in the Humanities, the Luce Scholars Program, Herbert H. Lehman Graduate Fellowships, Fulbright Grants for Graduate Study Abroad, the Harry S. Truman Scholarship Program, Rotary Foundation Scholarships, the Benjamin and David Scharps Prize, National Science Foundation Graduate Fellowships, National Collegiate Athletic Association 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 see Donna DiDonato in the Office of Undergraduate Studies.

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 the this award to Educational Opportunity Program (EOP) seniors who grad-

uate with a cumulative grade point average of 3.0 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.

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.

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 stu-

dent 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.

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 underrepresented 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, phys-

ical 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 the outstanding upper-division African-American, Latino, or Native American student who has demonstrated 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.

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.

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.

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.

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.

William J. Sullivan Award

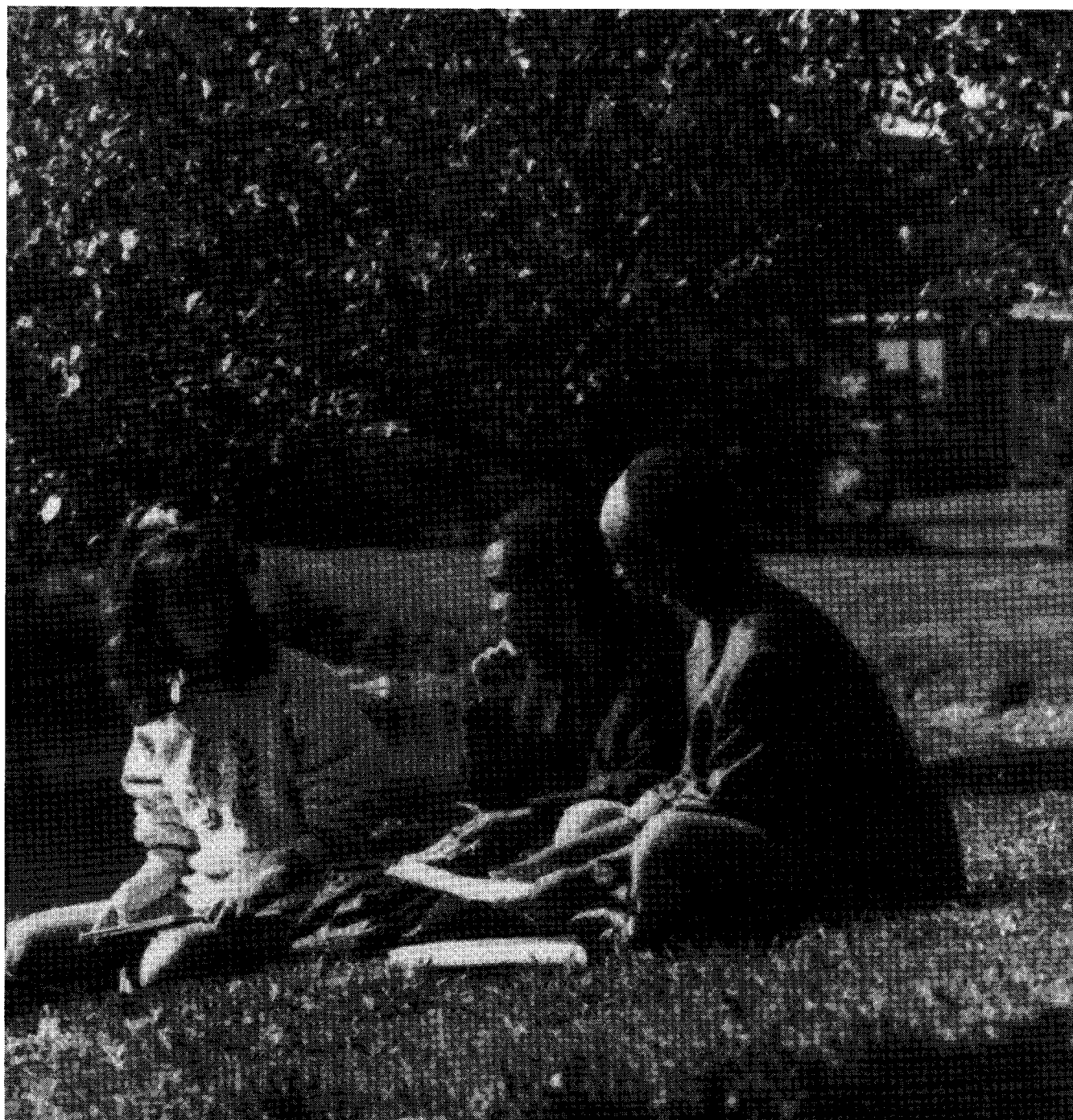
This award is presented annually by the University in honor of Justice William J. Sullivan, late chairperson of the Stony Brook Council. The award is the most prestigious service award the University presents to a graduating senior. It represents the University's recognition of particularly outstanding service contributions to the development of academic and student life on the campus.

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.



Academic Policies and Regulations



The information in this chapter is for students on the West Campus (College of Arts and Sciences, College of Engineering and Applied Sciences, Marine Sciences Research Center) in undergraduate programs and for those planning to apply for programs in the Health Sciences Center. West Campus students who are interested in taking Health Sciences Center courses should also consult the special Health Sciences Center section of this Bulletin.

Registration for Classes

Completion of registration each semester in accordance with instructions issued by Student Services/Registrar and published in the Undergraduate and Graduate Class Schedules booklet is a prerequisite to class attendance. With the assistance of an academic advisor, each student selects a group of courses. It is the student's responsibility to see that the program conforms with academic regulations and meets degree requirements.

Before their first registration 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 eligibility of their previous coursework for Stony Brook's graduation requirements including their planned major department. All orientations end with registration for the coming semester.

Registration for continuing students is conducted each semester either via telephone through the University's automated telephone system or in person at Student Services/Registrar. Advance registration begins in November for the following spring and in April for the following fall. 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 Undergraduate and Graduate Class Schedules booklet each semester and confirmation of students' course programs is available by telephone, at on-campus SOAR (Student On-Line Access to Records) sites, or the World Wide Web (www.sunysb.edu/www/studinfo.html).

Students will be billed and payment is due on the date indicated in 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. Nonpayment of tuition by registered students does not constitute official withdrawal from the University, which must be accomplished in person through the Academic Advising Center or in writing through Student Services/Registrar to avoid financial liability.

Change in Course Registration and Late Registration

During the first ten class days of the semester a student may add or drop courses by telephone or by submitting an add/drop form to Student Services/Registrar. After the tenth day of classes, registration that entails adding a class may be initiated only if a student successfully petitions to add a course following procedures established by the appropriate faculty committee on Academic Standing and Appeals (CASA), described later in this chapter. Students may drop a course by telephone or in person after the first ten class days if as full-time students they maintain the requisite 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 a class for which they registered during the first week of the semester risk losing their right to remain in the course, for a faculty member may exercise the prerogative of deregistering students not in attendance, particularly if others are seeking to add the course. To be certain to avoid

an NR (No Record) on the transcript, students must take responsibility for dropping a course by telephone or by submitting an add/drop form during the first ten days 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 will be 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 Withdrawal

From the eleventh class day in the semester through the fourteenth day prior to the last day of class, 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."

A student who wishes to withdraw from a course during the last two weeks of classes may do so only by withdrawing from the University.

Course Load and Course Withdrawal

A normal course load for full-time matriculated students—that is, those students who seek to earn a degree from the University—is a program totaling 12 to 19 credit hours. Requests for permission to register for more than 19 credits should be submitted to the appropriate Committee on Academic Standing and Appeals.

After the first ten class days, requests to drop a class and to carry fewer than 12 credits (an "underload") should be submitted directly to 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 a student should determine the consequences 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 consider changing to part-time status.

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

Final Examinations

The academic calendar provides six days each semester for a final examination period. No final examinations may be given during the last week of classes unless permission is granted to do so by the Office of the Provost to an instructor for compelling academic reasons.

University Graduation Requirements

All candidates for any of the bachelor's degrees conferred must satisfy all University graduation requirements as well as the college and departmental requirements for the specific degree. All students must:

1. Complete a major, which must be declared by the end of the freshman year. The major department determines when requirements have been completed.
2. Complete a minimum of 39 credits in courses numbered 300 or higher. Transfer credits must be evaluated by the appropriate department; students should check with the Undergraduate Transfer Office concerning procedures.
3. Successfully complete 36 credits at Stony Brook after achieving U3 standing (57 credits)

Note: Students participating in the National Student Exchange Program or in Study Abroad programs—except those sponsored by Stony Brook—may not count credits earned toward residency. Both programs are described in the University Studies chapter.

4. Attain a cumulative grade point average of "C" (2.00 on a 4.00 scale) for all academic work taken at Stony Brook. ((Note: Grades from other institutions are not included in the Stony Brook GPA.)
5. Complete the general education requirements. General education requirements are given in the "University Studies" chapter.
6. Complete a total of 120 earned credits for either a B.A. or B.S., and 128 for the B.E. degree.

Grading System

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

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)

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

Final grades appearing on a student's academic record cannot be changed after one calendar year from the start of the term in which the grade was incurred. Exceptions may be made if the instructor is on leave in the term following the one in which the grade is assigned or if the student is on leave because of 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 because of circumstances beyond control, a student is unable to complete the work for a course on time, the student is responsible for informing the instructor of the circumstance 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 no later than November 1 for courses in the preceding spring semester or summer session and no later than March 15 for courses in the preceding fall semester. (These deadlines do not apply to students who have been dismissed because of Incompletes and wish to have the dismissal rescinded. See the Academic Standing chapter.)

An Incomplete may not be made up 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. Any extension will be limited to the last day of classes of the semester following that in which the course was taken. Longer extensions for extraordinary reasons must be approved by the appropriate dean. If the instructor does not report the final grade by the applicable or extended deadline, the final grade of I/F, U, or NC, as appropriate, will be assigned. The grade of I/F will be averaged as F when computing the grade point average (GPA) or determining other measures of the student's academic standing.

Pass/No Credit Academic Record 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 grade is A, A-, B+, B, B-, C+, C, C-, D+, or D, or as NC (No Credit) if the reported grade is F. Neither P nor NC is calculated into the grade point average (GPA). Students may accomplish this by telephone through the ninth week of

classes or in person at Student Services/Registrar through the twelfth week of classes.

The following provisions reflect the intent of this option, which is to encourage exploration of less familiar areas of study without weakening standards of evaluation or masking a record of poor performance.

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.
3. Election of the P/NC option is limited to the fourteenth day before the last day of class as stated in the academic calendar of 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 Registrar does not communicate to the instructor in a course the names of students who elect the P/NC option.
5. Students in the College of Arts and Sciences may elect the P/NC option for no more than one of the courses required for the major provided the department has not further restricted the number of credits or specific courses that may be taken P/NC for the major or minor.
Students in the College of Engineering and Applied Sciences may not take any courses in the major, including technical electives, P/NC.
See the appropriate description of major or minor requirements in the Bulletin or consult the department or other program that supervises the field of study.
6. 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.
7. A student may not retake a course with a grade recorded as P unless the assigned grade was C- or below.

8. Certain courses may not be taken with the P/NC option, such as remedial courses, including MAP 101, 102, 103 and AIM 102, 103, and are so noted in the Bulletin course descriptions.

See also Course Credit and Grading Option Limits 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. NR grades are not computed in the GPA.

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 GPA 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)

Instructors of year-long courses for which the final grade and credits are assigned only after completion of two semesters submit a report of R (Registered) at the end of the first semester. A final grade and credits for the combined semesters' work are recorded at the end of the second term. An R will also be given in certain courses where the final grade will be delayed because the coursework was done at a location remote from the campus. For the purposes of academic standing an R is treated as if it were a P.

Satisfactory/Unsatisfactory (S/U)

Some courses are designated only as S/U grading and students may not take these classes for a letter grade. S/U grading is not calculated into the grade point average (GPA). Students may not elect to take such courses P/NC. Courses with S/U grading are counted among the 100 credits required for the degree that must be taken for a letter grade. They also apply to the criteria for Dean's List.

Withdrawal (W)

A student receives a W if withdrawal from a course or a semester took place after the first two weeks of classes. A "W" is not calculated into the grade point average (GPA).

Mid-Semester Advisory Grades

All students are sent advisory grade reports between the ninth and tenth week of classes for enrolled courses numbered through 399. Grades of A through F, S/U, or an NR is assigned. The advisory grades are not recorded on students' records; they indicate progress in the course approximately midway through the semester. Advice for seeking additional help in mastering the material is available from the instructor or the Academic Advising Center.

Grade Point Average (GPA)

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 GPA:

P
NC
NR
R
S
U
W

Grades for courses transferred from other institutions do not affect the grade point average.

Below is an example of a grade point average calculated for one semester:

Grade Assigned, GA			
Point Value of Grade, PV			
Course Credits, CC			
Quality Points, QP = PV X CC			
GA	PV	CC	QP
A	4.0	3	12
B	3.0	4	12
C+	2.33	3	6.99
D	1.0	3	3
F	0.0	3	0
Total		16	33.99
TOTAL Credits Attempted = 16			
Total Quality Points = 33.99			
GPA (QP/Credits Attempted) = 2.12			

Academic Standing for All West Campus Undergraduates

The credits a student earns in a semester and the corresponding semester GPA are the bases for determining academic standing. Failure (F), Unsatisfactory (U), No Credit (NC), or Academic Dishonesty (Q) grades or Incomplete (I) or No Record (NR) reports do not count as earned credit. (See the section on Grade Point Average above and the sample computation.) Academic progress is reviewed at the end of each semester and students may be placed on notice or dismissed if they do not meet the standards which follow.

Quantity Standard

Minimum credits to be earned in any one semester based on class standing as outlined below*

Freshmen (0-23 credits)	
in CEAS programs	12
Freshmen (0-23 credits)	
all others	9
Sophomores (24-56 credits)	12
Juniors (57-84 credits)	12
Seniors (85 or more credits)	12

Note: Class standing is based on the total credits earned prior to the beginning of each semester.

Quality Standard**

Minimum required GPA for all credit earned at the University

	CEAS	A&S
Freshmen	2.00	1.60
Sophomores	2.00	1.80
Juniors	2.00	1.99
Seniors	2.00	2.00

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

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

Academic Dismissal

Dismissal notices are issued in writing at the end of each spring semester. Students placed On Notice for a second successive semester or for a third time will be dismissed at the end of the spring semester. Letters notifying students of their eligibility for dismissal are sent mid-year.

Any student who in a semester fails to meet either the minimum earned credits OR the minimum grade point average outlined above for class status will be placed On Notice. A student who is On Notice solely because of Incomplete (I) reports will have the Notice rescinded

through successful completion of minimal credit and grade point average requirements before the published deadline given in the academic calendar of the Class Schedule each semester (typically November 1 for spring courses and March 1 for fall courses).

Students dismissed because of Incomplete reports must complete minimal credits and satisfy the grade point average for their class status by the date specified in the letter of dismissal.

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

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 coursework completed as part of their associate degree requirements. Official proof of an A.A. or A.S. degree must be submitted by October 1 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 recognized by the Program on Noncollegiate Sponsored Instruction of the State University of New York and recorded on official transcripts are accepted for transfer credit and evaluated for applicability to specific Stony Brook 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 and technical colleges are considered 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 Office of Admissions.
6. Courses satisfactorily completed elsewhere in 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 transfer course with a grade lower than C may be counted among the 120 credits required for a B.A. or B.S. or the 128 credits required for a B.E. degree with the exception noted in item #2. 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. Credit may be given for courses taken in foreign secondary schools having a thirteenth year equivalent to the first year of college. Students who have studied in such schools should consult the Undergraduate Admissions Office before seeking a departmental course evaluation.

Students wishing additional information should consult an admissions counselor.

Application of Transfer Credits to General Education Requirements

Diversified Education Curriculum (D.E.C.)

Because D.E.C. requirements for students in the College of Engineering and Applied Sciences (CEAS) differ from those for students in the College of Arts and Sciences, the W. Averell Harriman School for Management and Policy, and the Marine Sciences Research Center,

application of transfer credits also differs. Where these variations occur in the regulations below, the CEAS application is shown in brackets.

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 who have earned an A.A. or A.S. degree in a university-parallel program at a SUNY or CUNY two-year college prior to matriculation at Stony Brook will automatically have met categories A through H [CEAS: A through G] by completion of the liberal arts requirement of their previous college.
3. All other transfer students will have their previous courses evaluated for applicability to the D.E.C. as follows:
 - a. Students who, at matriculation, provide official transcripts showing all of the following will be considered to have met the D.E.C. requirements in categories A through H [CEAS: A through G]. NOTE: Individual transfer courses cannot be used to satisfy more than one category, and a total of eleven [CEAS: seven] courses must be used):
 - One college English composition course with a grade of C or higher
 - One mathematics or statistical reasoning course with a grade of C or higher
 - Three [CEAS: two] courses in the humanities and fine arts
 - Three [CEAS: two] courses in the natural sciences and mathematics (including no more than one in mathematics in addition to that used for mathematical or statistical reasoning)
 - Three [CEAS: one] course(s) in the social and behavioral sciences
 - b. Entering students whose transcripts at matriculation lack any of the eleven [CEAS: seven] required courses listed above will have their courses evaluated for each category using a broad interpretation of D.E.C. principles.
 - c. All students may satisfy categories A through H [CEAS: A through G]

by transfer from accredited colleges and universities, except that category A may not be fulfilled through transfer credit after matriculation at Stony Brook.

- d. Relevant courses completed under the auspices of an accredited college while the student was in high school may be substituted for one of the courses required in categories E, F, and G only if taken on the college campus and taught by members of the college faculty. Such courses may not be used in any other category.
- e. [All College of Engineering and Applied Sciences students must satisfy category H at Stony Brook.]
- f. Students must fulfill categories I and J at Stony Brook, with two exceptions: 1. They may fulfill these categories through transfer either before or after matriculation only by transferring an intermediate or higher foreign language course, as appropriate to the category. An intermediate or higher foreign language transferred course used to fulfill one of the three [CEAS: two] required humanities distribution courses (see 3.a above) may not be used also to fulfill category I or J; 2. Six credits of college-level study abroad (with no more than three of these credits at the elementary level of the appropriate foreign language) in an appropriate geographic area may also be used to satisfy category I or J.
- g. All students must fulfill category K at Stony Brook.

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, earn a grade of 'C' or higher in any course taken, and, for those schools for which printed equivalencies are not available, secure prior formal approval from the University. The Undergraduate Transfer Office maintains printed guides to selected schools with course equivalencies to Stony Brook offerings. Forms for securing prior approval are available in the Undergraduate Transfer Office. Students must arrange to forward official

transcripts to the University upon completion of courses taken.

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 100") 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.

Multiple Registrations for the Same Course

Repeatable Courses

Only certain courses may be taken again and credit applied each time; they are noted with any restrictions in their Undergraduate Bulletin description. All grades for such repeatable courses are computed in the student's grade point average.

Retaking Courses

A student may register again in a course for which C- or lower or a non-passing

grade 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 repeat-credit will not count toward satisfaction of graduation requirements, whether the course was originally taken at Stony Brook or elsewhere.

A student who registers again in a course for which a grade of C or higher has been previously recorded should note that the credits for the course will not count toward the semester credit load, the semester GPA, or the cumulative GPA. 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 those with sufficient overlap in academic content to preclude registration for more than one of them; they are noted with their course description in the Undergraduate Bulletin. 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 jointly offered by two or more departments and are identified by a dual designator in the Bulletin and the Class Schedule, such as AFS/ANT 223. The title, course description, prerequisite(s), and credit hours for crosslisted courses are identical. Students may register under either designator but may not repeat the course by enrolling a second time under the other designator. Those students wishing to use a crosslisted course for major requirements should verify with the department which designator is acceptable.

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 of the instructor. Senior citizens must arrange to audit courses through the School of Professional Development and Continuing Studies. No credit is granted for auditing a course, nor does the

University maintain any record of the student's attendance in the course.

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

Course Credit and Grading Option Limits

Listed below are the maximum number of credits that can be applied toward the 120 needed for the B.A. or B.S. degree or the 128 required for the B.E. degree:

Credits earned with a P Grade

No courses may be taken P/NC for general education requirements.

A&S (Note: Only 3 of the 20 credits may be taken under the student's major designator)	20 credits
CEAS (open electives only)	20 credits

Independent study

273, 267, 444-449, 484-489	30 credits
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PEC (physical education)

100 level (A&S)	4 credits
All PEC including 100 level (A&S)	10 credits
All PEC including 100 level (CEAS)	3 credits

Activity-related courses

AFS, PSY, SSI 283, LHD 309, 310, PEC 100-199	9 credits
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Note: CEAS students are restricted to 3 PEC credits total)

Undergraduate teaching practica

A&S	6 credits
CEAS	7 credits

Studio and performance courses

A&S	30 credits
CEAS	0 credits

Credits by approved examinations

A&S	30 credits
CEAS	Consult Undergraduate Student Office

Graduate courses

A&S	6 credits
CEAS	Consult Undergraduate Student Office

Note: Graduate courses may not be used to fulfill general education requirements.

Remedial courses

MAP, AIM 0 credits

Repeated courses

Unless noted as repeatable in Bulletin course description 0 credits

Note: A course passed with a C- or lower may be taken again, but the credits count only once. A course passed with a C or higher may not be repeated.

Minimal Undergraduate Student Responsibilities

Students' acceptance of academic responsibility will 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. These guidelines were endorsed by the University Senate on May 6, 1996.

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.

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 course work 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 Supplement(s);
- 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, Undergraduate Transfer, and Undergraduate Adult and Evening Studies) 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. These updated guidelines were endorsed by the University Senate on May 6, 1996.

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 course.

Course Definition and Requirements

- Instructors must adhere to the Bulletin course descriptions.
- Prerequisites that are not stated in the Bulletin or Bulletin Supplement of the Graduate and Undergraduate 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 evalua-

tions 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.
- 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 not give an exam in class during the last week of the semester in lieu of a final examination.
- Mid-semester advisory grades must be submitted to the Academic Advising Center for all courses through the 300-level and final grades to Student Services/Registrar by the deadlines announced each semester.

Professional Conduct and Interaction with Students

- Instructors must report all suspected occurrences of academic dishonesty to the Academic Judiciary.
- 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 applied mathematics and statistics, business management, computer science, electrical engineering, engineering science, information systems, or mechanical engineering should make requests in matters outlined below to the Committee on Academic Standing of the College of Engineering and Applied Sciences. Information about academic regulations and advice about individual requests may be obtained from the Engineering and Applied Sciences Undergraduate Student Office where petitions are filed for CEAS students.

All other West Campus undergraduate students should make their requests to the Committee on Academic Standing and Appeals of the College of Arts and Sciences. Written information on guidelines and procedures may be obtained from the Academic Advising Center or, for AIM/EOP students, the Office of Special Programs. Arts & Sciences students file petitions with the Office of Undergraduate Academic Affairs.

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 published deadline stated 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. 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 granted permission to withdraw from all courses because of extraordinary situations beyond their control and who will not be in attendance during the semester are not charged a fee.

A student who has been dismissed for academic reasons and who can present documentation of unusual circumstances that affected academic performance may apply to the appropriate Committee on Academic Standing for a waiver of dis-

missal, which applies only to the semester immediately following notification of dismissal. All of the circumstances in the case will be considered and a timely decision made.

A student who has been dismissed also may apply for termination of dismissal after a minimum of one semester's absence from the University, again providing appropriate explanation and documentation of the circumstances that led to such dismissal. The appropriate Committee on Academic Standing is the one serving the college from which the student wishes to receive the degree. The student may not apply to more than one academic standing committee for a given semester.

Academic Dishonesty

Intellectual honesty 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 the college in which the course concerned is given has jurisdiction in every case. Either committee may inform preprofessional committees about any findings of academic dishonesty which, in 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.

Scientific Misconduct

While most cases of academic dishonesty may be under the jurisdiction of the Academic Judiciary Committee, students involved in allegations of scholarly 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 misconduct is 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 will consider grievances involving any member of the academic community on the West Campus. The committees, however, cannot intervene in matters covered by the procedures set forth in the Policies of the Board of Trustees, the Rules for the Maintenance of Public Order, or the collective bargaining agreements between New York State and United University Professions (the faculty-staff union) 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 other avenues of redress (e.g., discussion with the instructor and department chairperson) have been pursued without success. Grievances should be put in writing, including 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.

Academic Advising

Academic advising encompasses the exploration of life goals and vocational aims to determine each student's program choice. Advisors begin with these broader issues to help entering and continuing students select courses and plan appropriate schedules. Speaking with an academic advisor can help to clarify values and to relate interests and abilities to educational and career plans. More important, discussion with an advisor can help the student adjust to new learning styles required at a large university, such as lecture classes, team teaching, and laboratory instruction. In addition, advisors can help students understand the University's academic structure and their responsibilities to understand degree requirements and fulfill them successfully. While an advisor can assist in exploring these important issues, the academic judgments and decisions concerning the student's college career rest with the student.

The Academic Advising Center is responsible for advising all College of Arts and Sciences continuing students prior to a formal declaration of major, and for coordinating the orientation of new students. Advisors in the Academic Advising Center 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. Advising questions also are answered via electronic mail (*Advising@sunysb.edu*), or students can view the Center's Web page, accessed through the University's home page. The Undergraduate Transfer Office advises new transfer students through their first semester at Stony Brook and evaluates transferred credits for application to the University's general education requirements. Students planning to take courses elsewhere after matriculation at the University should review their course selection with the Undergraduate Transfer Office prior to enrollment. Students in the Undergraduate Evening Studies Program are advised through the Undergraduate Adult and Evening Studies Office. This office helps evening as well as adult (25 years or older) students select courses that satisfy the general education requirements and advises them about majors offered during the evening. The Engineering and Applied

Sciences Undergraduate Student Office provides specialized advising for students interested in College of Engineering and Applied Sciences professional programs. A designated faculty member for each academic department and program in both the College of Arts and Sciences and the College of Engineering and Applied Sciences directs the undergraduate program and coordinates the advising of students regarding the discipline or program. All students are expected to consult an appropriate advisor before each registration.

Student On-Line 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 (called ARTIS), their degree audit report (DARTS), current registered courses, and advance registered courses, if any. Additionally students can 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, AIM/EOP, Undergraduate Transfer, Undergraduate Adult and Evening Studies offices, and the Health Sciences Center Student Services Office. Many web applications are available under the SOAR designation of the University home page, such as registration information, transcript request status, and degree audit information.

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 graduation in university, college, and major requirements. The report is designed to be a helpful advisory tool and is not an official evaluation of a student's progress.

Prime Time for Students

Each November and April, for a period approximately coinciding with advance registration for the next semester, academic departments provide extra advis-

ing hours and schedule special events pertaining to their programs. These Prime Time for Students activities allow students to talk with faculty members about individual courses, major and minor requirements, and the appropriateness of the academic field for certain career choices.

Semester Grade Reports

Grade reports are prepared shortly after the conclusion of each semester and are accessible by telephone. Information on other services available by telephone is published in the Undergraduate and Graduate Class Schedules booklet. Although credit for repeated courses is included in the total semester credits, only credit for approved repeated courses will ultimately count toward graduation.

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 Student Services 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 WWW site (see above). The charge for transcripts is \$5 per copy; payment should be made to the Bursar's Office. If applying by mail, the request and check payable to SUNY at Stony Brook should be sent to the Bursar's Office, P.O. Box 619, Stony Brook, NY 11790-1351. Partial transcripts of a student's record are not 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 transcript using the SOAR system on campus or the World Wide 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 section, 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 GPA 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 in due course 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 3.3 GPA at Stony Brook. The campus chapter endeavors to add to the vitality of the University's intellectual and social life through sponsorship of extracurricular events.

Various disciplines have their own honor societies. Those with chapters at Stony Brook include Sigma Gamma Epsilon (Earth Science), Omicron Delta Epsilon (Economics), Eta Kappa Nu (Electrical Engineering), Phi Sigma Iota (Foreign Languages), Delta Phi Alpha (German), Alpha Eta (Health Technology and Management), Phi Alpha Theta (History), 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 letter grade (including S) and have no I's, U's, NR's, NC's, F's, or Q's. P grades are not considered to be letter grades. Part-time students must have earned at least six credits in a semester of letter-graded work (not including S or P grades).

Degrees with Distinction

Degrees with distinction are conferred on candidates for the Bachelor of Arts, Bachelor of Science, or Bachelor of Engineering degree who have completed at least 55 credits at Stony Brook (excluding Challenge credit) and attain the requisite percentile standing in the class. The levels of distinction include summa cum laude, magna cum laude, and cum laude, and constitute respectively the 98th or above percentile, the 93rd percentile, and the 85th percentile of all students. Attainment of a degree with distinction is indicated on the student's diploma and permanent academic record.

Departmental Honors Programs

Students must declare their intention to seek departmental honors and must carry out prescribed academic activities to earn this distinction. The honors programs of those departments offering them are described in the alphabetical listing in the College of Arts and

Sciences chapter. For those students who qualify, this honor is indicated on their diploma and on their permanent academic record.

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 they are encouraged (but are not required) to declare one of several areas of interest for which an advisor's signature is not required. The various areas of interest are listed on the Declaration of Major form which also is used for declaration of 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 Student Services, the Registrar 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 until the end of the freshman year.

Students who have declared an area of interest may change to another area of interest.

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

Selection and Change of Major

Declaration of a major is an eligibility requirement for most forms of financial aid.

College of Arts and Sciences Majors

The Declaration of Major form (described above) available in the Registrar/Student Services Center is used officially to designate 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 or upper-division students must declare a major when they register for their first semester at Stony Brook.

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

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

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. In order to do this they should discuss the change with an advisor in the desired program, secure the appropriate signature on the Declaration of Major form, and return it to Student Services/Registrar.

College of Engineering and Applied Sciences Majors

All majors in the College of Engineering and Applied Sciences are limited admission and qualified freshmen or transfer students are accepted directly into such majors when admitted to the University. Students not accepted upon admission may apply after completion of prescribed courses listed with the department's major requirements in the Undergraduate Bulletin; they should consult the College's Undergraduate Student Office for application procedures

Health Sciences Center Majors

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.

Admission is not accomplished through the Declaration of Major form mechanism nor does declaration of an area of interest related to one of the majors

guarantee later acceptance. Continuing and transfer students who wish to enter one of the upper-division programs in the Health Sciences Center must apply for admission to that program after completion of course and credit requirements described in the Health Sciences Center section of this Undergraduate Bulletin and be formally accepted.

Declaration of Minor

Although students are not required to pursue a minor in order to graduate, a number are available for those wishing to select them. An academic minor is a specified sequence of courses totaling between 18 and 24 credits, including at least nine credits of upper-division work. It does not lead to a degree. An alphabetical list of minors appears in the table of contents and each appears in the index, since several are interdisciplinary and include subject matter that cuts across several departments. The coordinator or director's name and department affiliation is given in the Bulletin description of each minor. The Declaration of Major form, available from Student Services/Registrar and the Academic Advising Center, is used to designate a minor officially; the signature of the minor coordinator or director is required. Students may have up to three declared minors recorded on the transcript.

Double Majors

Only one baccalaureate degree is awarded with a double major. The student must fulfill the desired degree-granting college's set of graduation requirements 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. The

Declaration of Major form is employed for adding a second major in all cases in the College of Arts and Sciences. This form is not used if the second major is in the College of Engineering and Applied Sciences or in the School of Health Technology and Management. Students must have been formally accepted to these majors through direct admission or application. Certain restrictions apply within the College of Engineering and Applied Sciences concerning double majors and students should consult the Undergraduate Student Office of the College.

Two Concurrent Bachelor's Degrees

Under certain circumstances major programs pursued in two of the three colleges offering bachelor's degrees (Arts and Sciences, Engineering and Applied Sciences, and the Health Sciences Center) can result in the awarding of two degrees to a student. Certain restrictions apply, and students should consult the Academic Advising Center for specific information. In all cases students must have been admitted to each major or program prior to application for concurrent degrees. For all concurrent degrees, students must secure written approval from the appropriate major department or college dean as well as final authorization from the Associate Provost in the Office of Undergraduate Academic Affairs. Degree combinations include: Bachelor of Engineering (CEAS) and Bachelor of Arts or Bachelor of Science (A&S); Bachelor of Science (HSC School of Health Technology and Management or School of Nursing or School of Social Welfare) and Bachelor of Arts or Bachelor of Sciences (A&S) or Bachelor of Science (HSC) and Bachelor of Science (CEAS). 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.

Sequential Bachelor's Degrees

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 and above), primarily from courses chosen for the major. Students matriculating before fall 1998 also are required to fulfill the "Expanding Perspectives and Cultural Awareness" portion of the Diversified Education Curriculum described in the University Studies chapter. Coursework completed for the first bachelor's degree, whether taken at Stony Brook or elsewhere, does not count toward completing these requirements. All sequential bachelor's degree candidates must have been completed with a C or higher courses judged equivalent to Stony Brook's general education requirements in English composition and mathematics or repeat these courses at Stony Brook. For purposes of registration and academic standing, matriculated candidates for a second baccalaureate will be treated as seniors.

Application for Graduation

In order to become a candidate for graduation, a student must file an "Application for Degree" form with the Registrar/Student Services Center. Exact deadlines appear in the academic calendars printed in the Undergraduate and Graduate Class Schedule during the academic year and in the Summer Session Bulletin. May, July, and August candidates who wish to be included in the May Commencement Program must file 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.

Withdrawal from the University

Official withdrawal will be recorded when a "Withdrawal from the University" form, available from Student Services/Registrar or the Academic Advising Center, has been submitted to the Academic Advising Center. The date on which the form is

filed, not the date of last class attendance, is considered the official date of withdrawal. Nonattendance or notification to the student's instructors does not constitute formal withdrawal nor does non-payment by registered students.

Students who submit withdrawal forms after the first ten class days but not later than the final day of classes in a semester will be assigned a withdrawal (W) for each course. Withdrawal after the last day of classes will not preclude academic dismissal nor does it relieve students of financial obligation.

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

Leave of Absence and Returning to the University

Students at the time of withdrawal from the University have the option of indicating whether they intend to return. This "leave of absence" may be canceled for a student who attends another college while on leave from Stony Brook and who fails to maintain a C average at that institution. A student in that situation should consult an 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. withdrawal occurs prior to October 31 in the fall or March 15 in the spring semester;
 - b. there has been no previous withdrawal;
 - c. the student has never been dismissed; and
 - d. the student has no disciplinary action pending.
2. Students who withdraw after the dates given above may return after one full semester has elapsed.
3. College of Arts and Sciences students who have withdrawn for four consecutive semesters and have not earned any Stony Brook credits (including summer terms, which are not counted as semesters) will be assigned a new matriculation date and will be responsible for the academic requirements in effect at the time of their return.

Those rematriculated students will be required to meet with an academic advisor prior to registering for classes.

4. College of Engineering and Applied Sciences students will be assigned a new matriculation date after one semester of absence from the University and will be responsible for the academic requirements in effect at the time of their return. They will be required to meet with a faculty advisor prior to registering for classes.
5. Educational Opportunity Program students must obtain clearance for readmission from the A.I.M./E.O.P. Office and meet with their A.I.M. counselor.
6. 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 who, after rematriculation, complete at least 12 credit hours (but no more than 24) in good academic standing, may be eligible for academic renewal. Under this policy, the student's cumulative grade point average will be calculated based on course grades earned as of the date of rematriculation, although the original grades and grade point average remain on the transcript. For advice about eligibility, see a counselor in the Undergraduate Adult and Evening Studies Office.

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 alone in no

more than five courses, although up to 30 credits may be earned through Challenge and approved external examinations combined.

3. Challenge credit:

- a. may not be used to fulfill the residence requirement (36 credits earned at the University after achieving U3 standing);
- b. does not count as part of the semester credit required for good academic standing;
- c. may not be used to satisfy the 55 credits in residence required of candidates for degrees with distinction;
- d. may not be used to fulfill current general education 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 Student Services/Registrar. See also the description of the National Student Exchange and Study Abroad programs in the University Studies 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. Instructors are required to make arrangements for West Campus undergraduates participating in University-related activities to complete examinations, quizzes, or class assignments early or late.

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. Some events occur by invitation only during the semester, and this policy should not exclude those events.

Student Educational Records

The Family Educational Rights and Privacy Act permits current or former students to inspect and review their educational records. Students are also accorded the right to a hearing in order to question the contents of their educational records. Unless otherwise legally mandated, written consent of students will be required before personally identifiable information about them will be released from their educational records subject to certain legal exceptions. Specific guidelines and procedures are available from the Office of the Vice President for Administration.

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 Student Services/Registrar either in person by showing appropriate identification or through the WWW. On-campus housing address changes should be reported to the appropriate Campus Residences quad office rather than to Student Services/Registrar. Foreign students must also report any change of address to International Services. Candidates for the degree need to inform the graduation office of Student Services/Registrar of any address changes.

Campus Telephone Directory

The University at Stony Brook normally publishes a campus telephone directory including students' names, addresses, and telephone numbers. If a student does not wish to have a home address or

phone number listed in the directory, or in the case of a minor student if a parent does not wish such a listing, the student must so indicate at the time of registration for each fall semester by filing SUSB Form 503-B at the Office of Records/Registrar.

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 ses-

sion given by the director of the DLAR in order to satisfy requirements indicated in Stony Brook's assurance filed with the NIH.

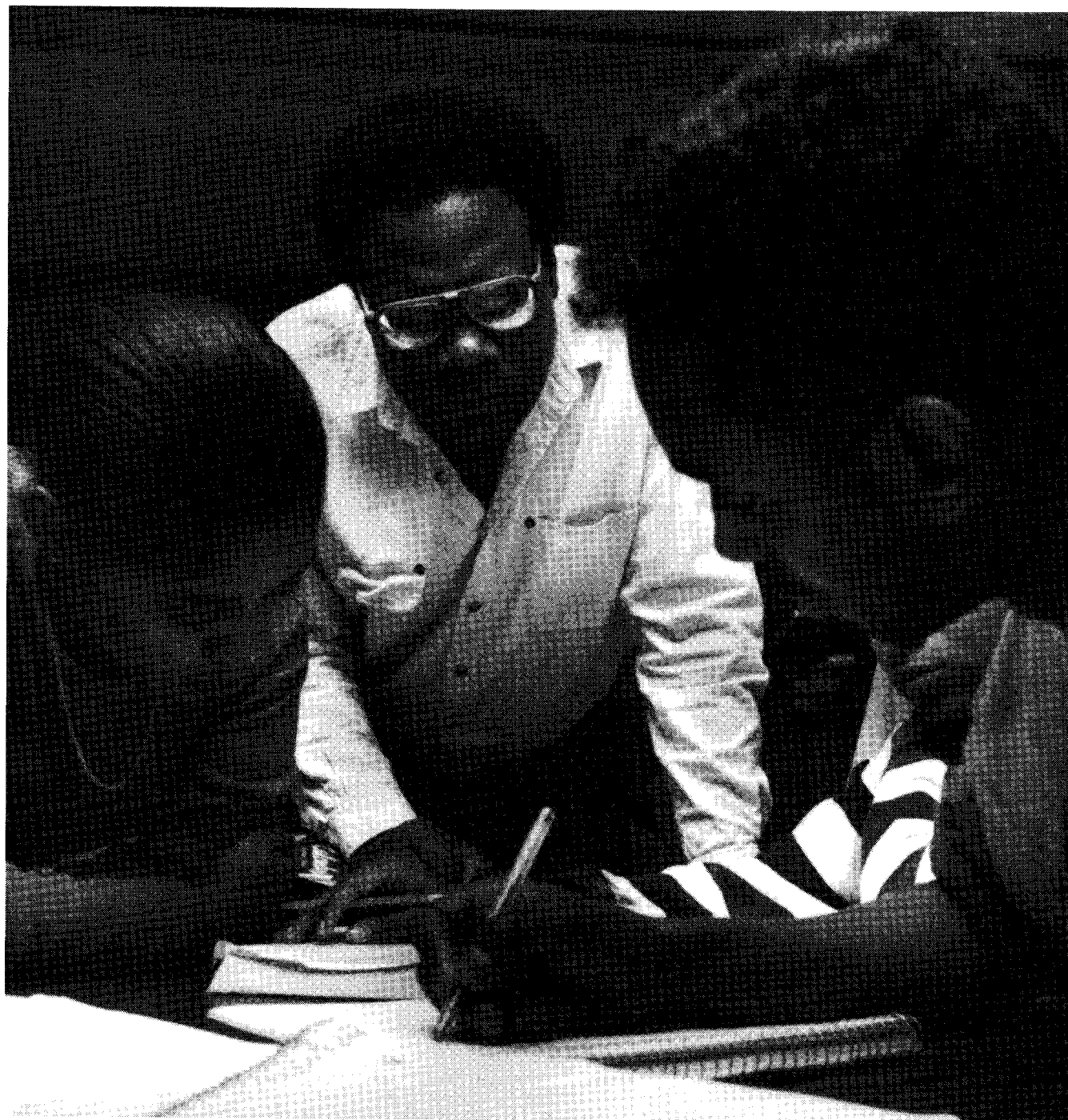
7. IACUC approval is required in cases where members of the University propose to engage in collaborative work that involves the use of animals in facilities other than those under the auspices of the University at Stony Brook.

Changes in Regulations and Course Offerings

The courses of study, academic 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 regulations or to cancel any course for whatever reason it may deem appropriate. New courses, revised courses and requirements, new and revised majors and minors, and changes in academic regulations are reported in the Undergraduate Bulletin Supplement, published each semester in the Undergraduate and Graduate Class Schedules booklet.



University Studies



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

University Degree Requirements

Credit Hour Requirement*

At least 120 credit hours of passing work must have been completed for the Bachelor of Arts and Bachelor of Science degrees and 128 credit hours for the Bachelor of Engineering degree.

Residence Requirement*

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

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

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

Major Requirement

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

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, pages 53-54.

Upper-Division Writing Requirement

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

* Restrictions on the number of credits that may be counted toward the residence and credit hour requirements are stated in "Course Credit and Grading Option Limits," in the Academic Policies and Regulations chapter. Among the kinds of courses with restrictions are independent study, activity-related courses, those for undergraduate teaching assistants, graduate, studio and performance courses, remedial, and repeated courses.

The Academic Minor

An academic minor, a voluntary option, 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 voluntary and includes not only completing the required sequence, but also consulting the minor coordinator initially and as work in the minor proceeds. Although minors are administered by regular departments or interdisciplinary programs, some include subject matter that cuts across several departments, programs, and colleges. Minor requirements are described under the department or program descriptions within each college. Minors that are interdisciplinary and use courses from different departments appear in the College of Arts and Sciences chapter under the heading "Interdisciplinary Minors." In addition, five minors are described in the College of Engineering and Applied Sciences and

one in the Marine Sciences Research Center chapters. These are offered primarily for Arts and Sciences students. For further information consult the relevant minor coordinator or the Academic Advising Center.

Entry Skills

All students admitted to the College of Arts and Sciences are expected to show basic competence in mathematics, writing, and a foreign language. Students directly admitted to majors in the College of Engineering and Applied Sciences must show basic competence in mathematics and writing.

Basic Mathematics Competence

Students should be able to formulate and solve mathematical problems arising in their university work. All entering students who have not achieved this entry-level mathematics proficiency by passing with the required score one of the standardized tests listed in the Admissions chapter (see page 26) must satisfy the entry skill in mathematics in one of the following ways:

- By scoring at the appropriate level on a university placement test during their first year at Stony Brook. (This examination is offered during freshman and transfer academic advising and registration sessions, in the first week of each semester, and at the end of each semester.) Students who do not attain the proficiency-level score must enroll in an appropriate course (MAP 102 or 103 or another class that will satisfy proficiency) during their first year on this campus.
- By earning a grade of C or higher in the remedial classes MAP 102, 103, or a transferred course of at least three credits evaluated by Stony Brook as equivalent to MAP 102 or 103. Credit toward graduation will not be given for such courses taken after matriculation.
- By obtaining at least three transfer credits or Challenge credit for any MAT course numbered 123 or higher or any AMS course. 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 a 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 in mathematics counting toward graduation.
- By passing a Stony Brook course that meets the general education requirement in mathematics with a grade of C or higher.

Transfer students entering with an A.A. or A.S. degree from a SUNY or CUNY school will have satisfied basic mathematics and writing competence.

Basic Writing Competence

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

Transfer students entering with an A.A. or A.S. degree from a SUNY or CUNY school will have satisfied basic mathematics and writing competence.

Elementary Foreign Language

The language requirement is set at one year of elementary college work in a foreign language. All entering students who have not achieved this entry skill in a foreign language by passing, with the required score, one of the standardized tests listed in the Admissions chapter (see page 26) may satisfy the entry skill in a foreign language in one of the following ways:

- Enrolling in and passing with a grade of C or higher a foreign language course numbered 101 or 112 or higher with one of the following designators: ARB, CHI, EEL FRN, GER, GRK,

HBW, ITL, JPN, KOR, LAN, LAT, POR, RUS, SKT, SLN, or SPN.

- Obtaining equivalent transfer credit in a foreign language course with a grade of C or higher.
- Passing a Stony Brook Challenge examination in a foreign language course numbered 101, 112, 191, 211, or higher.

Notes:

1. Literature and culture courses taught in English translation under the auspices of the foreign language departments do not satisfy the elementary foreign language requirement.
2. 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 described in the Admissions chapter (see page 26) unless the course was taken on the campus of an accredited college and taught by a member of the college faculty.
3. No credit is awarded for Stony Brook Challenge examinations taken to fulfill the elementary foreign language requirement unless the student meets the requirements outlined in "Guidelines for the Stony Brook Challenge Program," available in the Academic Advising Center.
4. Students who know a language not offered at Stony Brook may satisfy the elementary foreign language through the Challenge Examination Program by meeting the "Guidelines for the Stony Brook Challenge Program," although no credit will be awarded.

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

D.E.C. courses are shown in departmental course listings at the back of this Bulletin; the D.E.C. category letter (A through K) is tagged to the course number (e.g., EGC 101-A). Courses added later to the D.E.C. categories will be listed in the Bulletin Supplement, published each semester in the Undergraduate and Graduate Class Schedules booklet. The category letter for all D.E.C. courses appears in the Class Schedule in the third column, headed "DEC." Courses with a D.E.C. category tag that are taken for the major can also be used for the appropriate D.E.C. category.

Certain restrictions apply:

- No course may be used to satisfy a D.E.C. requirement if taken for Pass/No Credit.
- No single course is assigned to more than one D.E.C. category nor may another course be substituted to satisfy a D.E.C. category.
- If no category tag appears after a course title, that course may not be used to satisfy any D.E.C. requirement.

University Skills

The first group of D.E.C. categories (A-D) focuses on ways of learning essential to the entire academic experience and subject matter intrinsic to liberal learning. The ability to organize and present ideas and information in written English and to understand and employ quantitative reasoning are critical to higher education.

Category A - English Composition (1 course)

Students who have achieved basic writing competence by passing EGC 101, Writing Workshop, will satisfy this category. Others who achieve the appropriate score through placement examination satisfy the requirement by passing EGL 202, Intermediate Writing Workshops. In EGC 101 students learn strategies for drafting and revising papers; in EGL 202, they are assisted in handling different types of nonfiction writing at a more sophisticated level. Different sections of EGL 202 have different emphases, such as argument or research methods.

Notes:

1. Students are placed in the appropriate course after a diagnostic test. Some students as a result will be assigned to remedial work (EGC 100 or ESL courses) prior to enrolling in EGC 101.
2. All transfer and rematriculated students who have already passed, with a grade of C or higher, a composition course judged equivalent to Stony Brook's EGC 101 will have satisfied this requirement.
3. A course taken at another college will not be considered equivalent to EGC 101 unless the student took it while matriculated at that college.

Category B - Interpreting Texts in the Humanities (1 course)

Courses in this category are designed to help students develop skills of interpretation and analysis in the humanities that will enable them to examine subject matter critically, not only in the humanities, but also in all other college courses.

Category C - Mathematical and Statistical Reasoning (1 course)

Courses in this category help students to understand and to practice using mathematical or statistical ideas in applying concepts.

Note: A score of 4 or 5 on the AP mathematics examination satisfies category C.

Category D - Understanding the Fine and Performing Arts (1 course)

Courses in this category acquaint students with the works of creative artists and performers and their artistic medium, such as art, music, or theater. The basic terminology, analytical tools used to interpret one of the arts, and representative works in a particular field are examined.

Disciplinary Diversity

A second grouping of course requirements exposes students to the modes of thinking, methods of study, and subject matter of several major branches of knowledge—natural and physical sciences, social and behavioral sciences, and humanities.

Category E - Natural Sciences (2 courses)

Courses in this category acquaint students with one or more of the disciplines that expand their 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)

Courses in this category 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

Courses in this category provide more advanced study in those fields that express the way people view the human condition.

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

Perspectives and Cultural Awareness

The final group of D.E.C. categories challenges students to confront the world beyond the University as it is and as it may become. Courses in this part build on study in the first two groups of categories.

Category H - Implications of Science and Technology (1 course)

Courses in this category are designed to help students understand the social and global implications of science and technology and to examine significant examples of the impact that science, culture, and society have on one another.

Category I - European Traditions (1 course)

Courses in this category focus on the Western cultural tradition through specialized study of an area or nation in Europe from one or more viewpoints (e.g., historical, artistic, social, political).

Category J - The World Beyond European Traditions (1 course)

Courses in this category increase students' perceptions about a nation or region of the world (including native American culture) that is in at least one respect significantly different from the United States and Europe (e.g., historical, artistic, social, political).

Category K - American Pluralism (1 course)

Courses in this category apply a multicultural approach to study the diverse society of America. 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.

Notes:

1. Students must complete Categories I and J at Stony Brook with two exceptions: a. Transferring either before or after matriculation one semester of an intermediate (191, 195, 201, 211) or higher foreign language course appropriate to the category; or b. Completion of six credits of college-level study abroad (with no more than three of these credits at the elementary level of the appropriate foreign language) in a geographic area applicable to the category.
2. All students must complete Category K at Stony Brook.

Modifications of General Education Requirements for Students in the College of Engineering and Applied Sciences**Entry Skills**

Elementary Foreign Language - Not required.

University Skills

Understanding the Fine and Performing Arts (Category D) - Not required except for BUS majors.

Disciplinary Diversity

Social and Behavioral Sciences (Category F) - One course required; two courses for BUS majors.

Humanities (Category G) - One course required; two courses for BUS majors.

Expanding Perspectives and Cultural Awareness

European Traditions (Category I) and The World Beyond European Traditions (J) - One course in each category, one with a humanities designator and one with a social science designator.

American Pluralism - Required only for B.S. students (majors in AMS, BUS, CSE, ISE).

Education and Teacher Certification

Director:
Eli Seifman, Social Sciences Interdisciplinary Program

Teaching Certification Officer:
Marvin Glockner, School of Professional Development

Affiliated Faculty:

Jacqueline Grennan Brooks Science

Albert D. Carlson	Science
Elsa Emeneheiser	English
Paul Ferrotti	Foreign Languages
Marie Fitzgerald	Social Studies
Georges Fouron	Social Studies
Fred Horstmann	Social Studies
Andrea Mandel	English
Dorit Kaufman	TESOL
Wallace Nelson	Science
Lester Paldy	Science

Adjunct Faculty:

Estimated number: 4

Teaching Assistants:

Estimated number: 1

The Center for Excellence and Innovation in Education offers programs to prepare 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 of either a departmental major or an interdisciplinary major in addition to teacher certification. Students should consult their planned 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
 - Biology and General Science
 - Chemistry and General Science
 - Earth Science and General Science
 - English
 - Foreign Languages: French, German, Italian, Russian, and Spanish
 - Mathematics
 - Physics and General Science
 - 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 qualifying for certification must satisfy the following requirements:

1. Completion of the requirements of the academic major.
2. Completion of 13-15 credits in professional study in education (depending on the specific certification program).
3. Completion of one semester of supervised student teaching.
4. Additional requirements set by the academic department in charge of 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 Center for Excellence and Innovation in Education. This Center 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. The Center 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 interdiscipli-

nary 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 dedicated Teacher Education Committee and a Teacher Education 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 Abuse Recognition and Reporting, and passing the New York State Teacher Certification Examinations (NYSTCE).

The Career Development Office helps students in two 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 office also posts announcements for teaching jobs available locally and in schools around the country.

The following section describes specific requirements for each of the University's Teacher Preparation Programs.

Science, Mathematics, and Technology Education

Directors:

Albert D. Carlson, Neurobiology and Behavior

Lester G. Paldy, Technology and Society

Faculty

Jacqueline Grennon Brooks, *Lecturer, Ed.D., Columbia University*: Science education.

Lester G. Paldy, *Distinguished Service Professor, M.S., Hofstra University*: Arms control verification and negotiation; science education policy.

Wallace Nelson, *Lecturer, M.A., Hofstra University*: School administration.

Affiliated Faculty

David Bynum	Biochemistry and Cell Biology
Bernard S. Dudock	Biochemistry and Cell Biology
Jules Elias	Pathology
Theodore D. Goldfarb	Chemistry
George J. Hechtel	Ecology and Evolution
William Holt	Earth and Space Sciences
Robert C. Kerber	Chemistry
Chirakkal V. Krishnan	Chemistry
Joseph W. Lauher	Chemistry
Thomas T. Liao	Technology and Society
Eli Seifman	Social Sciences Interdisciplinary
Arnold A. Strassenburg	Physics
Clifford E. Swartz	Physics
Alan Tucker	Applied Mathematics and Statistics

The Center for Science, Mathematics, and Technology Education (CSMTE) offers undergraduate science education courses satisfying New York State requirements for provisional certification as a secondary school teacher of biology, chemistry, earth science, physics, and general science.

Students who wish to enter this program are expected to consult with a CSMTE advisor and establish their program prior to the beginning of the junior year. Failure to do so may result in a delay in meeting the certification requirements.

Requirements for the Science Secondary Teacher Preparation Program

In addition to completing major requirements in biology, chemistry, earth and space sciences, geology, astronomy, atmospheric sciences, or physics, prospective science teachers are required

to take the following courses, totaling 27 credits, in order to satisfy all requirements for New York State provisional certification:

SCI 200	Introduction to Science Teaching
SCI 300	Science Instructional Strategies and Techniques
SCI 451	Supervised Teaching—Science
SCI 452	Supervised Teaching—Science
SCI 454	Student Teaching Seminar
SSI 327	Adolescent Growth and Development
SSI 350	Foundations of Education

Note: Courses taken for Pass/No Credit may not be used to satisfy the 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 Center for Science, Mathematics, and Technology Education. Guidelines used by the teacher selection committee include a minimal overall G.P.A. of 2.7 (at Stony Brook and previous institutions). Students in the Biology Teacher Preparation Program must complete a lecture course in each of the five areas of inquiry outlined below:

Area I:	Cell Biology and Biochemistry BIO 310, 314, 315, 317, 361, 362, 366
Area II:	Genetics and Development BIO 320 (required), 321, 322, 323
Area III:	Neurobiology and Physiology BIO 328, 330, 334, 374, 379
Area IV:	Organisms BIO 343, 344, 346, 347, 380
Area V:	Ecology and Evolution BIO 351, 353, 354, 355, 357, 359, 385

Chemistry Secondary Teacher Preparation Program

This program is designed for the student who is preparing to teach chemistry in secondary schools. Professional courses are provided through the Center for Science, Mathematics, and Technology Education. Consult the director of undergraduate studies for further details.

Earth Science Secondary Teacher Preparation Program

Curricula leading to provisional certification in earth sciences for secondary school teachers are available from the Department of Earth and Space Sciences. Professional courses are provided through the Center for Science, Mathematics, and Technology Education.

Mathematics Secondary Teacher Preparation Program

This program prepares students to be teachers of mathematics in the secondary schools. It satisfies all requirements for New York State provisional certification for teaching mathematics, grades 7-12.

Students wishing to enroll in the program should register with the director of mathematics teacher preparation by the end of the freshman year, if possible, and at the latest before registering for the junior year.

Requirements

1. Completion of either the MAT (mathematics) or the AMS (applied mathematics and statistics) major
2. Credit for, or exemption from, the following courses:
 - MAT 313 or 318; MAT 320; MAT 360 or MAT 364
 - AMS 310
 - MAE 301, 302, 311, 312, 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 to observe mathematics classes (MAE 311). In the spring they continue their study of methods (MAE 302) and engage in a supervised program of limited classroom participation (MAE 312). In one semester of the senior year, students carry out supervised student teaching (MAE 451, 452) and participate in an associated student teaching seminar (MAE 454).

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.

Note: Courses taken for Pass/No Credit may not be used to satisfy the prepara-

tion in professional education component of the teacher preparation program.

Sample Program (Required Courses Only)

Freshman: MAT 131, 132 (or 141, 142 or 125, 126, 127)

Sophomore: MAT 203 or 205 or AMS 261; Fall AMS 310; MAT 303 or 305 or AMS 361; Spring MAT 313

Junior: Fall MAE 301 and 311, MAT 320; Spring MAE 302 and 312, MAT 360; SSI 327 and 350 offered Fall and Spring

Mathematics electives required for MAT or AMS major

Senior: MAE 451, 452 and 454

Mathematics electives required for MAT or AMS major

Physics Secondary Teacher Preparation Program

Curricula leading to provisional certification in physics for secondary school teachers are available from the Department of Physics. Professional courses are provided through the Center for Science, Mathematics, and Technology Education.

Social Studies Secondary Teacher Preparation Program

Director:

Eli Seifman, Social Sciences Interdisciplinary

Through this program students may prepare for a teaching career and complete the requirements for a New York State Provisional Certificate as a teacher of secondary school social studies.

Students who wish to enter this program are expected to consult the program director and establish an advising folder prior to the beginning of the junior year. Failure to do so may result in a delay in meeting the certification requirements. The program requires 75 credits, many of which also satisfy major requirements.

Requirements

- A. Preparation in Social Science
A minimum of 48 credits in social science departments or interdisciplinary programs, excluding psychology and linguistics.
1. Included in the social science

credits must be at least 18 credits distributed as follows:

- three credits in economics
- three credits in Asian history
- three credits in African history
- three credits in Latin American history
- three credits in U.S. history
- three credits in European history

2. Completion of one of the following majors: Africana studies, anthropology, economics, history, political science, social sciences interdisciplinary program, sociology. These are the only majors acceptable for the Social Studies Secondary Teacher Preparation Program.

- B. Preparation in Professional Education
27 credits distributed as follows:
- SSI 327 Adolescent Growth and Development
 - SSI 350 Foundations of Education
 - SSI 397 Teaching Social Studies
 - SSI 398 Social Studies Teaching Strategies
 - SSI 451 Supervised Student Teaching, Grades 7-9
 - SSI 452 Supervised Student Teaching, 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. Neither BUS 114 nor BUS 214 can be used to satisfy the requirements of this program.

Foreign Languages Secondary Teacher Preparation Program

Program Coordinator:
Paul Ferrotti, French and Italian

Requirements

In addition to fulfillment of the requirements for the major in French, German, Italian, Russian, or Spanish, prospective student teachers of foreign languages

are required to take the following courses in order to satisfy all requirements for New York State provisional certification:

- A. SSI 327 Adolescent Growth and Development
- B. SSI 350 Foundations of Education
- C. FLA 339 Methods and Materials in the Teaching of Foreign Languages
- D. FLA 340 Curriculum Development and Micro-Teaching
- E. FLA 451 Supervised Student Teaching, Grades 7-9
- F. FLA 452 Supervised Student Teaching, Grades 10-12
- G. FLA 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.

Prospective student teachers are also urged to take as many advanced language courses as possible through the semester prior to student teaching. For further information, students are asked to consult with departmental advisors. All questions concerning application for student teaching and requirements for certification are to be directed to the program coordinator.

French or Italian Secondary Teacher Preparation Program

Students who wish to prepare for certification as secondary school teachers of French or Italian or both should consult appropriate departmental advisors concerning requirements and procedures for the teacher preparation program. All students are required to take FLA 339 and FLA 340 among the four courses in education required by the State Education Department. See the course descriptions for the Foreign Languages Secondary Teacher Preparation Program (FLA).

German or Russian Secondary Teacher Preparation Program

Students who wish to prepare for certification as secondary school teachers of German or Russian should consult appropriate departmental advisors. Those seeking certification in German are urged to take GER 411, 412, and 438 in addition to the courses required for the major and certification. Students of Russian are urged to take RUS 439. 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 or 463 in satisfying major requirement A.5. 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 3.0 grade point average in the major and a 2.5 grade point average overall. See the course descriptions for the Foreign Languages Secondary Teacher Preparation Program (FLA).

Teaching English to Speakers of Other Languages (TESOL) Preparation Program

Director:
Dorit Kaufman, Department of Linguistics

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 3.0 major grade point average and 2.75 grade point average 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, 450, 451, 452.
- E. Language Study: 12 college-level credits of a modern foreign language (e.g., French, German, Italian, Japanese, Chinese) 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.

English Secondary Teacher Preparation 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

- A. All requirements for the major in English.
- B. A 3.0 grade point average.
- C. A writing sample.
- D. Professional educational requirements:
 1. SSI 327 Adolescent Growth and Development
 2. EGL 398 Methods of Instruction in Literature and Composition
 3. EGL 451 Supervised Student Teaching, Grades 7-9
 4. EGL 452 Supervised Student Teaching, Grades 10-12
 5. EGL 454 Student Teaching Seminar
 6. 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.

The Honors College

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 suffi-

cient 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 or greater than 93, 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

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

- A. Interdisciplinary Seminars
Each student will take a year-long seminar in the first year and three one-semester seminars in succeeding years.
Freshman: HON 101, 102 Progress and Its Discontents
Sophomore: HON 201 Brief Lives
Junior: HON 301 Science, Values, and Society
Senior: HON 401 Global Issues in the 20th Century
- B. Honors College Seminars
Each student is required to participate in these informal seminars, designed exclusively for the Honors College, to build an academic and scholarly community:
HON 103, 104 Academic Profiles: Models of Successful Intellectual and Artistic Careers
HON 203, 204 The University as a Cultural Microcosm
- C. Complementary Electives
Each Honors College student will select, with the approval of a College advisor, three additional courses that help to round out a program of honors study.

D. Senior Project

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

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

The Honors Lounge

The Honors Lounge includes meeting space for student honor societies and clubs, a computer facility, a library collection of cultural periodicals, and study areas. Seminars, colloquia, and special events scheduled for honors students are held in the Honors Lounge throughout the year. Honors students also have priority for residence in Cardozo College, the Honors Living Learning Center.

Freshman Honors Courses

Several academic departments offer honors courses for freshmen who want a college experience that provides close intellectual interaction among the students and with the instructor. Descriptions of these courses appear among the sponsoring departments' 100-level courses in the alphabetical listing of course descriptions at the back of this Bulletin. By choosing one of these courses students contribute to the quality of their own academic experience and set challenging educational expectations for themselves that will affect future college work. Freshmen admitted to Stony Brook as members of the Honors College or as Honors Program students, Presidential Scholars, or Freshman Scholars receive preference in enrollment.

Special Programs**Study at Other Institutions**

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

The application of credits earned at other institutions to Diversified Education Curriculum requirements is discussed under the "Transfer Credit Policies" section of the academic Policies and Regulations chapter.

Currently enrolled Arts and Sciences students should consult with the Undergraduate Transfer Office before taking general education or elective credit; courses to be used toward major requirements should be cleared with 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 projected courses will be fully acceptable for transfer credit, students planning to take summer courses elsewhere should discuss plans in advance with both the appropriate departmental academic advisor and the Stony Brook Undergraduate Transfer Office, where they can obtain assistance in filling out a form listing the intended courses and their Stony Brook equivalents. After the University receives an official transcript indicating that the student has completed the courses with grades of C or higher, appropriate transfer credit will be granted.

National Student Exchange

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

Living/Learning Centers

Six Living/Learning Centers, located in Gershwin College—Environmental Studies, Langmuir College—Human Sexual and Gender Development, Greeley College—Interdisciplinary Arts, Keller College—Interdisciplinary Program in Science and Engineering, Stimson College—International Studies, and Mount College—Wellness, integrate the student's residence hall experience with academic concerns, and enrich both aspects of the college education. Gershwin, Langmuir, Greeley, and Stimson allow resident students to earn academic minors in Environmental Studies, Human Sexual and Gender Development, Interdisciplinary Arts and International Studies. Classes are held within the residential buildings and building activities are centered around the living/learning center topic.

Environmental Studies

Minor Coordinator:

James E. Mackin, Marine Sciences Research Center

The Environmental Studies Living/Learning Center, housed in Gershwin College and directed by James E. Mackin, offers an environmental science minor (LES) as well as activities that emphasize both scientific and social issues encompassed by the broad field of environmental studies. Through this program, motivated natural science and social science students are able to apply their majors specifically to the study of the environment. In addition, participation in the program adds an academic component to each student's residential experience.

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

Requirements for the Minor

No more than one three-credit course in the minor may be taken for Pass/No Credit. All upper-division courses in the minor must be passed with a grade of C or higher. The minor requires approximately 19 credits.

1. One introductory course chosen from among:
 - ATM/EST 102 Weather and Climate
 - BIO 213 Applied Ecology
 - BIO 151 Principles of Biology: From Organisms to Ecosystems
 - GEO 101 Environmental Geology
 - MAR 101 Long Island Sound: Science and Use
 - MAR 104 Oceanography
2. LES 101 Prospects for Planet Earth
3. LES 102 Opportunities in Environmental Studies
4. LES 301 Seminar in Environmental Studies
5. Two advanced courses chosen from among:
 - ATM/MEC 397 Air Pollution and Its Control
 - BIO 306 Ecological Risks and Environmental Decisions
 - BIO 351 Ecology
 - BIO/GEO 353 Marine Ecology
 - CHE 310 Chemistry in Technology

and the Environment

- GEO 304 Energy, Mineral Resources, and the Environment
- GEO 315 Groundwater Hydrology
- MAR 333 Coastal Oceanography
- MAR 340 Environmental Problems and Solutions

6. At least three credits of independent study or research in any department, approved by the minor coordinator.

Note: Students participating in the minor are encouraged to take LES 190, Forum in Environmental Issues.

Declaration of the Minor

Students must declare the environmental science minor no later than the middle of their junior year, at which time they must consult with the minor coordinator and plan their course of study for fulfillment of the requirements.

Human Sexual and Gender Development

Director:

Roberta Karant, Sociology

The minor in human sexual and gender development (LHD) is designed primarily for residents of Langmuir College who wish to add an academic dimension to their residential experience. The minor in this living/learning center brings an interdisciplinary perspective to the examination of evolving concepts of a gendered, sexual self. Small group seminars focus on sex, gender, and the human life course, while students broaden their understanding with relevant courses in the arts, sciences, and social sciences.

Requirements for the Minor

The minor consists of 24 credits to be taken in the following manner:

1. Six three-credit courses from the approved list (available from the director of the minor), including:
 - a. at least one three-credit course in one phase of the life cycle and one other in gender studies;
 - b. at least one three-credit course in each of the following areas: Biology, Humanities and Fine Arts, Social and Behavioral Sciences
 - c. any other three-credit courses from the list to achieve a total of 18 credits.

2. Three one-credit courses in human sexual and gender development:
 - a. LHD 101 or 301, to be taken during the first semester of the program;
 - b. any two of the following: LHD 302, 309, 310, 401;
3. One three-credit independent study course, either:
 - a. LHD 487 or 488 under the supervision of the director of the minor; or
 - b. an independent study course in any department approved by the director of the minor.

Note: No more than one three-credit course in the minor may be taken P/NC. At least 12 credits for the minor must be in upper-division courses.

Declaration of the Minor

Students must declare the human sexual and gender development minor no later than the middle of their third year, at which time they consult with the director of the minor and plan their course of study for fulfillment of the requirements

Interdisciplinary Arts

Director:

John Cameron, Theatre Arts

The minor in Interdisciplinary Arts (LIA) is designed primarily for residents of Greeley College who wish to add an academic dimension to their residential experience. The minor in this living/learning center provides an interdisciplinary and collaborative perspective of the fine arts.

Requirements for the Minor

The minor requires 21 credits.

1. LIA 101
2. Nine credits each in two of the following disciplines for a total of 18 credits:
 - Art History and Criticism/Studio Art
 - Music
 - Theatre Arts/Dance

Notes:

1. Nine of the 21 credits required for the minor must be in courses numbered 300 and above.
2. All courses for the minor must be taken for a letter grade.
3. All courses must be passed with a grade of C or higher.
4. Students majoring in art history and criticism, studio art, music, or theatre

arts may not use courses in their major to fulfill requirement #2.

Interdisciplinary Program in Science and Engineering

Director:

Thomas G. Robertazzi, Electrical Engineering

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

Students from all disciplines are invited to apply for admission to the program, but it is expected that most will pursue majors in 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 program curriculum consists of two types of courses. The introductory courses are designed to help entering students to select and pursue a successful course of study in the sciences or engineering. The upper-division courses are designed to broaden the student's exposure to all aspects of science and engineering and to prepare students for the issues and events that they will confront in subsequent careers or graduate study.

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

International Studies

Director:

Olufemi Vaughan, Stimson College

The interdisciplinary minor in international studies (LIS) 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. Stimson, a living/learning center, provides an integrated view of institutions, ideas, historical traditions, and aspirations of peoples of other countries or regions. Completion

of the minor requirements entails 24 credits.

Requirements for the Minor

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 of the following courses:
 - 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 chosen:
 - Three courses dealing with the region's history, sociology, economic or political institutions, or general culture.
 - One course dealing with the region's philosophic ideas, religious institutions, literature, painting, or music.
 - One additional course from either of the above two sets of topics.
4. LIS 301 Introductory Seminar in International Studies
5. LIS 302 Colloquium in International Studies
6. LIS 401 Advanced Seminar in International Studies
7. One LIS 487 Independent Study for three credits or an independent study course in any department approved by the director

Notes:

1. With the approval of the director, up to 15 credits may be taken as part of the Study Abroad program. See the section on Study Abroad later in this chapter.
2. No more than one three-credit course in the minor may be taken P/NC. All other courses must be passed with a grade of C or higher.
3. At least 12 elective credits for the minor must be in upper-division courses.

4. Students are urged to spend at least one semester studying abroad. Upon returning, students are required to present a talk in one of the seminars or colloquia offered in the minor.

Declaration of the Minor

Students should declare the international studies minor during their sophomore year or the beginning of the junior year, at which time they consult the director and plan their course of study.

Wellness

The Wellness Living Learning Center program is housed in Mount College. The focus of this program is to educate students about their personal wellness while living in an environment that encourages healthy behavior and activity. Wellness is the process of moving in the direction of living a balanced, healthy life. Seminars in Wellness concentrate on topics such as nutrition, physical fitness, body composition, stress management, alcohol and drug awareness, and AIDS awareness.

Students interested in participating in this program should register for the introductory Wellness course (PEC 240). This course provided an overview of these seven dimensions of Wellness. Students may also become involved with the Peer Health Education courses cosponsored by the Student Health Service and Campus Residences.

Federated Learning Communities

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

Program Theme

For each year-long program FLC selects an issue of major importance and interest for special attention and study. The 1997-1998 program is Gender and Sexual Diversity. Previous FLC programs have dealt with world hunger, global problems/national priorities, international understanding, and issues in manage-

ment and business. Information on current program themes is available in the FLC Office. FLC staff members will work with students to devise a long-range plan for fitting an FLC program into their schedules.

Program Courses

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

Program Seminar

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

Master Learner

For each year-long program, FLC, on the basis of demonstrated excellence and commitment to teaching, invites one or two members of the Stony Brook faculty to serve as master learners. The master learners become students for the year, enrolling in the program courses, attending all of the classes, writing term papers, and taking examinations. The master learners serve as models and resources for the FLC students; direct the program seminars; and with the help of FLC students provide ongoing criticism to the faculty on the effectiveness of their courses.

The FLC Minor and Program Requirements

Students may choose to enroll in FLC for one or two semesters; however, in order to derive maximum benefit from the FLC experience, it is recommended that students take the full program. Successful completion of the two-semester sequence earns an FLC minor in the program theme. Since participation in an FLC program semester typically

involves 12 credits, students are free to take additional courses related to their main undergraduate program. Many departments accept FLC work, including program seminars, toward satisfaction of major requirements, and students are advised to consult with FLC concerning the relationship between its programs and individual academic plans and needs.

Study Abroad

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 transcript.

Students who have taken advantage of these exciting opportunities report that overseas study is among the most beneficial and important 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 a successful overseas program so that it can be properly fitted to the student's cur-

riculum. 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.

Course Load, Credits, and Grading

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

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

Stony Brook Programs

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: Cambridge

Under this unique program highly qualified students can be directly enrolled as Visiting Students at Cambridge University, with all the rights and privileges of regular, degree-seeking Cambridge students. Participants are housed in a Cambridge college and will

be provided with tutors from the regular Cambridge faculty. This is a full-integration program. Participation is limited to one academic year.

Mandatory Prerequisites: U3 or U4 standing; minimum GPA of 3.3

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.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing

Pharmacology Program in Manchester, England

Fall semester program allowing a pharmacology major to do coursework in England which will equate to courses at Stony Brook.

Mandatory 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 US 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory 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

Two separate programs are offered through Chiba University, near Tokyo. Students who are beginning their study of the Japanese language may enroll in the JPAC Program, which provides language instruction and culture courses in a mix of English and Japanese, depending on the student's language level. This program is available for either one semester or the full academic year. Students with a more advanced knowledge of Japanese may participate in the short-term exchange program, which is a full year program allowing for direct enrollment in the university supplemented with advanced language courses. Limited scholarship funds are available for each of these programs. Inquire early.

Mandatory Prerequisites: Good academic standing; language ability as described

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.

Mandatory 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.

Mandatory Prerequisites: Good academic standing; major in a program-related field

Stony Brook in Spain: Leon

This program is open to students with any level of Spanish-speaking ability. At the University of Leon, participants may take Spanish language and culture courses specially designed for non-native speakers. Participants with sufficient linguistic ability may enroll directly in any of the university's courses for which they meet the prerequisites. Students are accepted for full academic year or semester participation. A summer program is also available which offers Spanish language and culture courses.

Mandatory Prerequisite: Good academic standing

URECA Program

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

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

All matriculated undergraduates, including incoming freshmen and transfer stu-

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

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

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

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

Internship Program

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

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

The University maintains a registry of available internships that includes placement with government agencies, hospitals and clinics, businesses and indus-

tries, and legal and social agencies in New York City, Albany, and Washington, D.C., on Long Island, and elsewhere. The cooperating agencies have agreed to give interns responsibilities that involve them in activities central to the agency's purposes. Routine office chores and clerical work are kept to a minimum.

To qualify, a student must have 1. completed 69 or more credits, of which at least 12 credits must have been taken at Stony Brook; 2. a cumulative grade point average of 2.5 or higher, and 3. the skills and prerequisite coursework required for the particular internship.

Students normally register for an internship through a departmental course established for this activity. Interested students may obtain information and advice about the Internship Program in the Office of Undergraduate Academic Affairs.

Women in Science and Engineering (Project WISE)

Director:
Wendy Katkin, Associate Provost, Office of the Provost

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

Acceptance

In order to qualify for Project WISE, applicants must be women who are moving directly from high school to college and have a demonstrated aptitude and interest in science, mathematics, or engineering as evidenced by such back-

ground 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 chapter on Scholarships and Awards

Brook academic environment. USB 402 offers students the opportunity to explore a focused issue of general interest. See the course descriptions for each of these courses in the Approved Course Section.

Academic Requirements

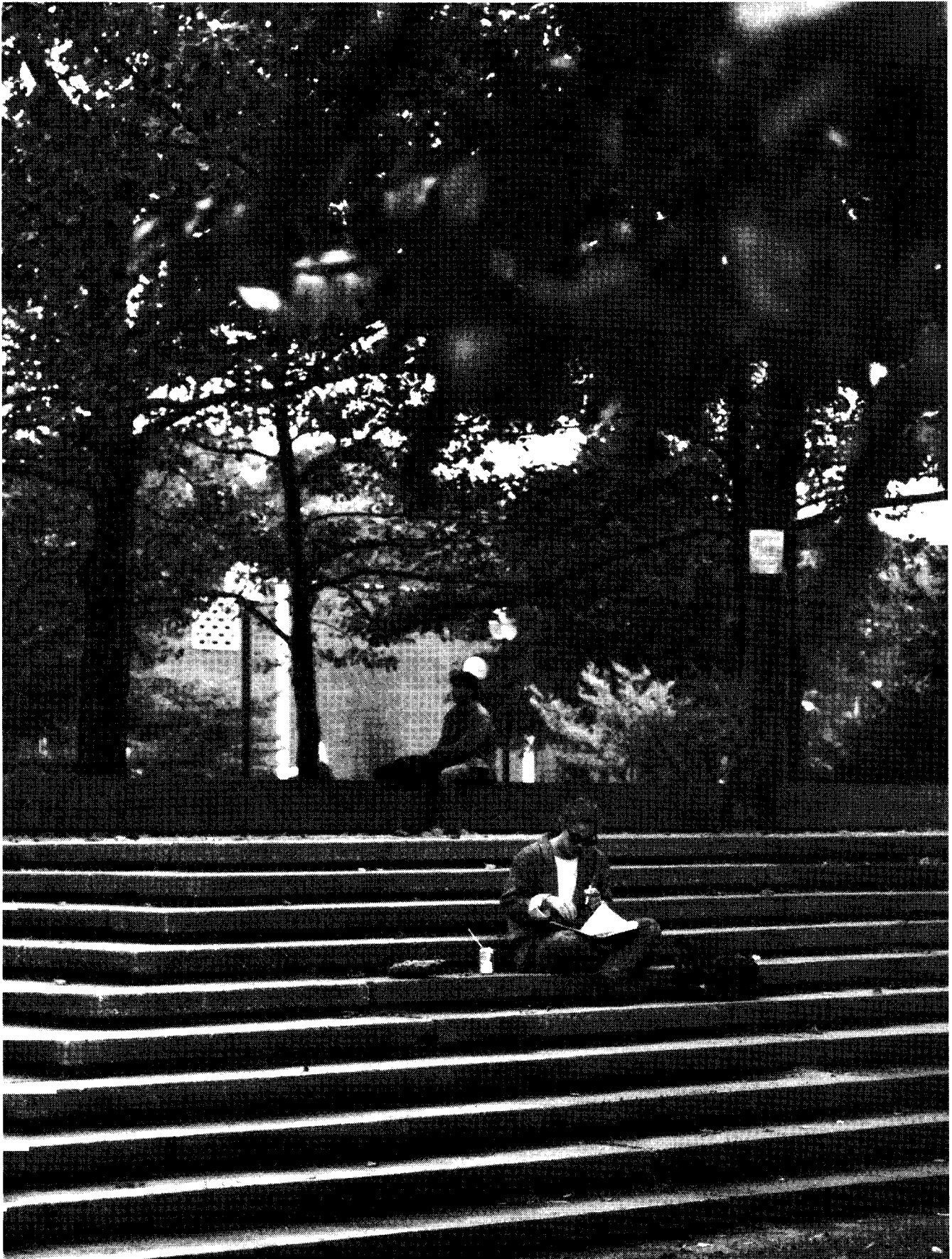
Project WISE participants take classes along with other Stony Brook undergraduates; they must satisfy the undergraduate requirements of both the University and their major department. They are eligible for and encouraged to take honors courses, where appropriate. The project enhances their regular academic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

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

Project WISE students are encouraged to live in the Whitman or Cardozo Residence Halls. Whitman is the site of many Project WISE activities. The Project has a small library in its office in the Physics Building.

Enrichment Courses

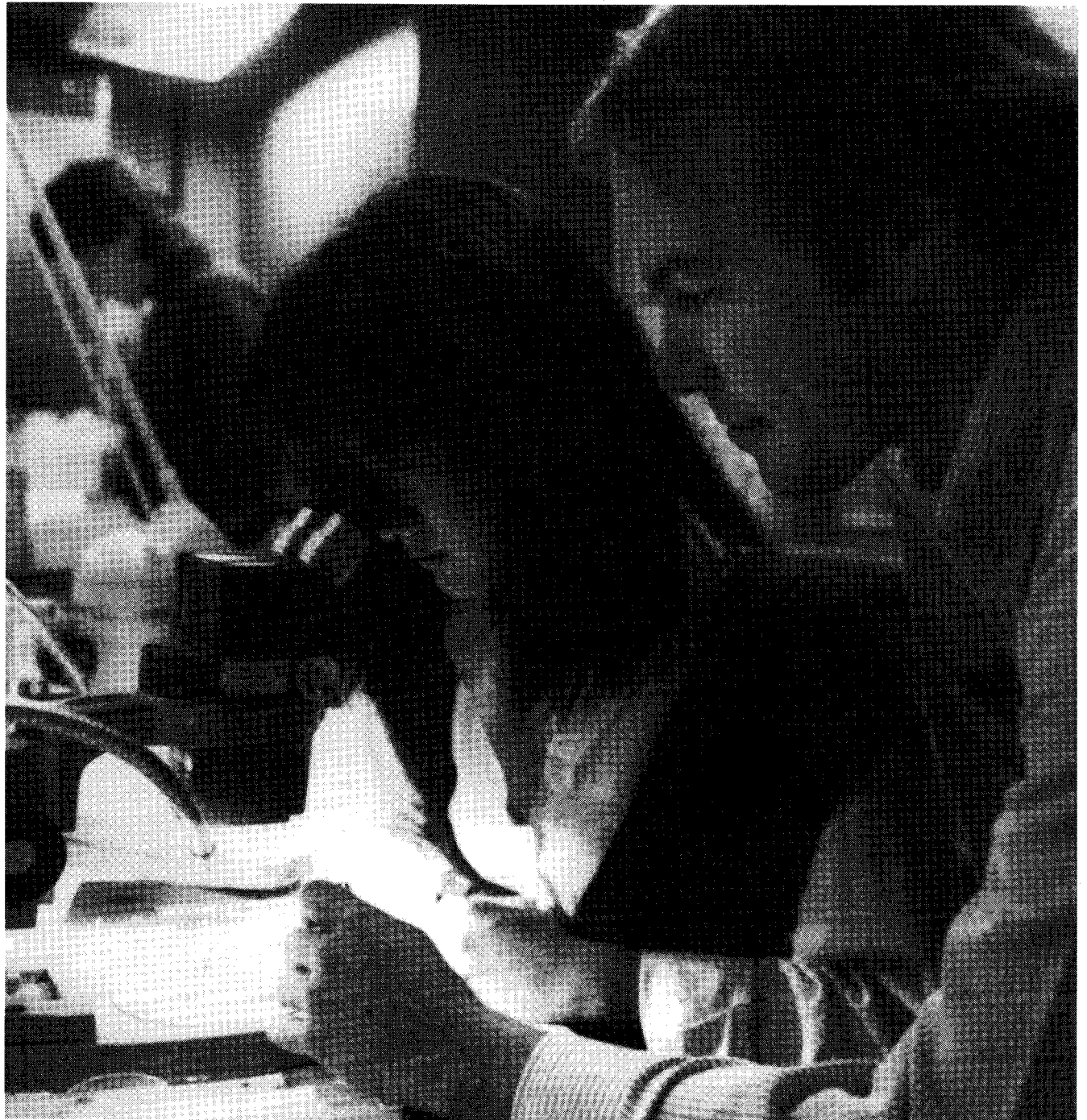
These courses are restricted to specific groups of students. AIM 102 and 103 are open to students in the AIM/EOP program only. LBR 150 is available to freshmen or sophomore or transfer students with fewer than 30 credits, and provides advanced training in using the library. USB 101, a one-credit course for first-semester freshmen and transfer students, introduces students to the Stony





College of Arts and Sciences

Paul Armstrong, Dean



Degree Programs

Students are awarded a Bachelor of Arts (BA) or a Bachelor of Science (BS). Each academic major description states which degree is awarded. Students wishing to explore possible majors should review the requirements and descriptions of the ones they are considering in this Bulletin 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, 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 students who complete the major pursue after graduation. In addition to an outline of the major requirements, a suggested sequence of courses students may take to complete the major over eight semesters is given. "Gen Ed" in the sample sequence indicates general education requirement. "UD" stands for upper division, indicating that a course numbered 300 and above should be taken to fulfill the University's 39 upper-division credit requirement. All course descriptions for the College are listed alphabetically by area of concentration in the back of the Bulletin.

Major departmental programs consist of study concentrated in one of the academic departments of the College of Arts and Sciences, 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 are described in detail with their requirements and appear in alphabetical order in this chapter. Minors entries include the program description, minor coordinator, and departmental affiliation.

Additional Academic Opportunities

Stony Brook's six Living/Learning Centers, described in detail in the University Studies chapter under "Special Programs," incorporate residential living with learning for students interested in a special area. Four of these programs lead to a minor: Environmental Studies (LES), Human Sexual and Gender Development (LHD), Interdisciplinary Arts (LIA), and International Studies (LIS). Students who wish to pursue exploration of topics in health and well being should consider the Living/Learning program on Wellness; those whose career plans are in the sciences should investigate the Science and Engineering (LSE) Living/Learning program.

The Division of Physical Education grants neither a major nor a minor, yet it offers students a wide variety of courses at both the beginning and advanced level and coordinates the University's intramural and varsity sports programs.

Independent Study

Within either the B.A. or B.S. degree program, a student may wish to undertake independent study. This may be done either through directed readings and research courses under departmental auspices or through the URECA Program (described under the Special Programs section of the University Studies chapter).

Through procedures established by departments, a student may enroll for up to six credits of directed readings or research in a single department in a single semester. More than six credits are permissible if they are in more than one department. Interdisciplinary projects and projects entailing more than six credits are carried out under the URECA Program.

If the student wishes to use a URECA project as part of a departmental or interdisciplinary major, written approval must be secured through departmental channels. Independent study projects may be distributed throughout the undergraduate years, although in most cases students should complete the freshman year and several general education courses before proposing independent study. For further information con-

sult the appropriate department's director of undergraduate studies or the URECA Program director.

A total of 30 credits of independent work, including all credits in departmental readings and research, Internship Program, and URECA Program courses, may be offered toward the degree requirement of 120 credits. These include Arts and Sciences courses numbered 273, 287, 444-449, and 484-489, similar courses in other units, and transferred independent study credit. In any given semester during the academic year a student may earn up to six credits for independent work in a single department (except for internships, which may be taken for up to 12 credits) or up to 12 credits in the URECA Program. During the summer a student may earn three credits in a single department in each term or eight credits in the URECA Program for the entire summer.

Undergraduate Teaching Assistantships

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

Undergraduate teaching assistants must have U3 or U4 status. They must have demonstrated mastery of the subject matter by having completed and excelled in the course being taught or in a similar but more advanced version of that course.

Undergraduate teaching assistants must not grade any work that contributes to the final course grade, although they may be assigned to read and criticize drafts of work that has already been graded. All evaluations of student performance that contribute to the final course grade are the exclusive responsibility of faculty and cannot be delegated to undergraduate teaching assistants. Undergraduate teaching assistants must

not see any version of any quiz, test, or examination or proctor in the course in which they are assisting. Exceptions to this rule may be made only by special permission of the 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 out of 120 may be earned through being an undergraduate teaching assistant.

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

the credits will be applicable to their degree requirements.

- A. Courses numbered 500 or higher may be used for certain major requirements. A student may count no more than a total of six graduate (including continuing education) credits toward the bachelor's degree.
- B. Undergraduates may request permission to register for graduate or continuing education courses by completing form SUSB 3065, which is available from the Graduate School or the School of Professional Development and Continuing Studies, and, after obtaining the necessary signatures, submitting that form together with a copy of their unofficial transcript to the same office for final approval. The approved form SUSB 3065 must then be presented to Student Services/Registrar when registering for the appropriate graduate or continuing education course.

Limits on Studio and Performance Courses

The New York State Board of Regents requires that out of the 120 credits required for the bachelor's degree, at least 90 credits must be in liberal arts and sciences courses. Certain studio and performance courses are excluded from those 90 credits; they are identified in the Art, Music, and Theatre Arts sections. (See also the section on "Course Credit and Grading Option Limits" in the Academic Policies and Regulations chapter.)

Fulfillment of Major Requirements

When major requirements are changed, continuing students in the College of Arts and Sciences have the option of fulfilling the new requirements or of fulfilling those specified in the Undergraduate Bulletin and Undergraduate Bulletin Supplement current at the time they completed 45 credits. Students who have completed fewer than 45 credits when the revisions are first published must satisfy the new requirements, unless the major department specifies otherwise.

Transfer students who entered Stony Brook with 45 or more transfer credits have the option of fulfilling the new requirements or of fulfilling the re-

quirements specified in the Undergraduate Bulletin and Undergraduate Bulletin Supplement in effect when they matriculated.

Where course offerings have changed so that the required courses that would apply to particular students are no longer in the curriculum, the department will designate comparable alternatives to enable such students to complete the major without delaying their graduation.

AFH/AFS

Interdisciplinary Program in Africana Studies

Program Director: William McAdoo

Director of Undergraduate Studies: Georges Fournon

Faculty

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

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

Georges Fournon, *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.

E. Anthony Hurley, *Assistant Professor, Ph.D., Rutgers University*: Joint appointment with French and Italian; Francophile literature of the Caribbean and Africa; French poetry; 19th-century French 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.

Adjunct Faculty

Estimated number: 1

Teaching Assistants

Estimated number: 3

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

attention is focused on political concepts, cultural development, legal relations, and social theories.

The major in Africana Studies is designed to provide 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 focus, students majoring in Africana Studies will be exposed to the critical contributions of scholars representing a variety of theoretical approaches and intellectual perspectives, with the objective of enhancing the student's knowledge and understanding of this important field, and at the same time 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: law, medicine, business, engineering, nursing, social welfare, and education. Our course offerings also give our students considerable advantages in graduate schools specializing in history, politics, anthropology, sociology, literature, and other fields.

Requirements for the Major in Africana Studies

The major in Africana studies leads to the Bachelor of Arts degree. All courses for the major must be taken for a letter grade; all courses within the area of the major must be passed with a grade of C or higher. Completion of the major requirements entails 42 credits.

A. Study within the Area of the Major

1. AFS 101, and 102 Themes in the Black Experience
2. AFH 206 Great Books of the Black Experience or AFH 249 African-American Literature and Music in the 19th and 20th Centuries
3. AFS 283 Community Service

4. Two courses selected from AFS 225, 239, 240, 277, 310, and 350 in consultation with a program advisor

5. Four upper-division AFH or AFS courses other than AFH or AFS 447, 475, 476, 487, or 488

6. AFH or AFS 447 Directed Readings or AFH or AFS 487 Directed Research to be taken in the junior or senior year

B. Courses in a Related Discipline

Nine credits in a related discipline (excluding courses crosslisted with an AFH or AFS course)

C. Upper-Division Writing Requirement

Students are required to submit a portfolio of graded essay or term paper assignments completed in two upper-division courses taken for a letter grade in Africana studies.

Students must inform the instructor of the courses in advance of their plan to use the paper (or papers) in fulfillment of the writing requirement for the major. The portfolio must contain writing samples accompanied by an evaluation form submitted by a professor approving the samples as meeting writing proficiency necessary for the major. There is no requirement concerning the number of papers submitted, but the portfolio must consist of at least 15 pages of material.

Note:

No more than 12 of the 33 Africana Studies credits may be taken at another institution (exceptions are made in the case of planned foreign study).

Requirements for the Minor in Africana Studies

The minor in Africana studies is intended to reach students interested in exploring aspects of the Black Experience in ways that relate to their own major field of study. It involves a 24-credit sequence of lower- and upper-division courses to give the student a well-balanced analysis of the varied aspects of the black past. All courses

Sample Course Sequence in the Africana Studies Major

Freshman Fall	Credits
*AFS 101	3
*AFS 200-level course	3
**Course in related discipline	3
EGC 101	3
Gen Ed	3
Total	15

Spring	
*AFS 102	3
*AFS 200-level course	3
**Course in related discipline	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
*AFH 206 or AFH 249	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Gen Ed or elective	3
Total	15

Spring	
*AFS 283	3
**Course in related discipline	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Junior Fall	Credits
*AFH or AFS 447 or 487	3
*AFS or AFS UD elective	3
UD elective	3
UD elective	3
Elective	3
Total	15

Spring	
*AFS or AFH UD elective	3
Gen Ed	3
Gen Ed	3
UD elective	3
UD elective	3
Total	15

Senior Fall	Credits
*AFS or AFH UD elective	3
UD elective	3
UD elective	3
Gen Ed	1-2
Elective	3
Elective	1-2
Total	15-16

Spring	
*AFS or AFH UD elective	3
UD elective	3
UD elective	3
Elective	3
Elective	3
Total	15

for the minor must be taken for a letter grade.

1. AFS 101, and 102 Themes in the Black Experience
2. One course selected from AFS 225, 239, 240, 277, 310 and 350
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

* Required

**Course may not be crosslisted with AFS or AFH

ANT

Department of Anthropology

Chairperson: William Arens

Director of Undergraduate Studies: Curtis Marean

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.

Diane Doran, *Assistant Professor, Ph.D., State University of New York at Stony Brook*: Behavior and ecology of African apes; primatology.

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

Frederick Grine, *Associate Professor, Ph.D., University of Witwatersrand*: Physical anthropology; human evolution.

Margaret Gwynne, *Adjunct Associate Professor, Ph.D., State University of New York at Stony Brook*: Caribbean area; women in development.

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

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

Aisha Khan, *Assistant Professor, Ph.D., City University of New York*: Joint appointment with Africana Studies; Caribbean; Post-Colonial Societies; Diaspora Studies.

Curtis Marean, *Associate Professor, Ph.D., University of California, Berkeley*: African pre-history; 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 Studies; Social organization and gender; theory and methodology; rural industrialization; East Asia, China, Overseas Chinese, Japan.

John J. Shea, *Assistant Professor, Ph.D., Harvard University*: Lithic technology; Old World paleolithic; archaeology of northeastern North America.

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: 2

Teaching Assistants

Estimated number: 4

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 on any specific subdiscipline.

Students with a major 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. Please see the Director of Undergraduate Studies for details.

Requirements for the Major in Anthropology

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 used to meet the major requirements must be taken for a letter grade and passed with a grade of C or higher. No transfer credits with a grade lower than C may be applied toward the major requirements.

Completion of the major requirements entails at least 37 credits.

A. Study within the Area of the Major

1. Two introductory courses chosen from ANT 102, 104, or ANP 120
2. One course in social and cultural anthropology at the 200 level or higher
3. One course in archaeology at the 200 level or higher
4. One course in physical anthropology at the 200 level or higher
5. Six additional anthropology courses (one course from another department may be substituted with the approval of the student's faculty advisor)
6. One 400-level seminar chosen from ANT 401, 402, 418, 419, 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 during the student's junior year and will be assessed by the department's Upper-Division Writing Requirement Committee for advanced writing skills appropriate to anthropology majors. The writing assessment is in addition to the evaluation of the paper for the course.

Subfields of Study

Social and Cultural Anthropology

ANT 102, 160, 201, 203, 219, 230, 255, 310, 333, 350, 351, 352, 354, 356, 361, 367, 381, 390, 391, 392, 401, 440.

Archaeology

ANT 104, 290, 321, 353, 357, 358, 360, 362, 364, 366, 370, 393, 394, 402, 418, 419.

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 (3.0 G.P.A. overall) and a G.P.A. of 3.5 or higher in anthropology courses. Qualified students are eligible to enroll in the anthropology honors program at, but preferably before, the beginning of their senior year.

The student, after asking a faculty member to be a sponsor, must submit a proposal indicating the topic and procedure of the planned research to the departmental honors committee through the director of undergraduate studies. The supervising faculty member must also submit a statement supporting the student's proposal and indicating the merit of the planned research. This must ordinarily be done in the semester prior to the beginning of the student's senior year.

Students register for ANT or ANP 495 in the first semester of their senior year and conduct research for the project. They register for ANT or ANP 496 during the last semester of their final year. These two courses must be taken in addition to the total credits required for the major. Students must submit a draft of their thesis to their faculty sponsor by April 1 for May graduation or November 1 for December graduation. They must submit an honors thesis of 20 pages or more of fully referenced material to the director of undergraduate studies no later than Monday of the penultimate week of classes (excluding final examination week). Each thesis is read by two anthropologists and a member of another department, as arranged by the director of undergraduate studies. If the paper is judged to be of sufficient merit and the

Sample Course Sequence for the Anthropology Major

Freshman Fall	Credits
ANT 102 or 104 or ANP 120	3-4
Gen Ed	3
Gen Ed	3
Gen Ed	3
EGC 101	3
Total	15-16

Spring	Credits
ANT 102 or 104 or ANP 120	3-4
Elective	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15-16

Sophomore Fall	Credits
Elective	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Spring	Credits
ANT 362	3
ANP 325	3
Gen Ed	3
Elective	3
Elective	3
Total	15

Junior Fall	Credits
ANT 418	3
ANP 300	4
ANT 370	3
UD elective	3
Elective	3
Total	15

Spring	Credits
ANT 357	3
ANP 330	3
UD elective	3
ANT 381	3
Elective	3
Total	15

Senior Fall	Credits
Elective	3
UD elective	3
UD elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
Gen Ed	3
UD Elective	3
Elective	3
UD elective	3
Elective	3
Total	15

student's record warrants such a determination, the department recommends honors. The program consists of:

1. Completion of all requirements for the major in anthropology with a G.P.A. of 3.5 or higher in anthropology courses
2. ANT 495 and 496, or ANP 495 and 496
3. The honors thesis

Requirements for the Minor in Anthropology

The minor in anthropology is designed for students majoring in other fields who wish to take anthropology courses relevant to their interests. The student must choose one of the tracks listed below. At least nine credits must be in upper-division courses. All courses used to satisfy minor requirements must be taken for a letter grade and passed with a C or higher. No transfer credits with a grade lower

than C may be applied to the minor requirements. No more than one directed readings or research course may be used. The minor requires 21 or 22 credits.

General Anthropology

1. Two introductory courses chosen from ANT 102, 104, ANP 120
2. Two additional courses chosen from different subfields
3. Three anthropology elective courses

Social and Cultural Anthropology

1. ANT 102
2. Three ethnographic area courses in social and cultural anthropology chosen from ANT 201, 203, 219, 230, 310, 380, 440
3. One topical course in social and cultural anthropology to be selected from ANT 160, 255, 333, 350, 351, 352, 354, 356, 361, 367, 380, 381, and also 391 and 401 when the topic is applicable

4. Two elective courses in social and cultural anthropology

Archaeology and Cultural History

1. ANT 104
2. Six courses in archaeology, at least five of which must be ANT courses; one may be an HIS course with the approval of the director of undergraduate studies

Physical Anthropology

1. ANP 120
2. ANP 210 or 330
3. ANP 321 or 340
4. Three additional ANP courses (except 475 or 476)
5. One course chosen from BIO 321, 344, 351, 354, 359, 385; GEO 302, 403; AMS 110

ART

Department of Art

Chairperson: James H. Rubin

Director of Undergraduate Studies: Jacques Guilmain

Faculty

Ilan Averbuch, *Lecturer, M.F.A., Hunter College*: Sculpture.

James Beatman, *Adjunct Lecturer, M.F.A., University of Massachusetts-Amherst*: Sculpture.

Michele H. Bogart, *Associate Professor, Ph.D., University of Chicago*: Art and architectural history; American and 20th-century art.

Toby Buonagurio, *Professor, M.A., City College of New York*: Ceramics; ceramic sculpture; drawing; painting.

Rhonda Cooper, *Adjunct Lecturer, M.A., University of Hawaii*: Oriental art; museum and gallery administration.

Michael Edelson, *Associate Professor, B.A., State University of New York Empire State College*: Photography; photographic criticism; film and television theory and criticism.

Barbara Frank, *Assistant Professor, Ph.D., Indiana University*: African art history.

Ann Gibson, *Associate Professor, Ph.D., University of Delaware*: 20th-century art history.

Jacques Guilmain, *Professor, Ph.D., Columbia University*: Art and architectural history; medieval art.

Helen Harrison, *Adjunct Lecturer and Director, Pollock-Krasner House and Study Center, M.A., Case Western Reserve University*: American art.

Deborah Johnson, *Adjunct Lecturer, M.A., University of Minnesota-Minneapolis*: History of American art.

Donald B. Kuspit, *Professor, Ph.D., University of Michigan; D.Phil., University of Frankfurt*: Art criticism; 20th-century and northern Renaissance art.

Stephen Larese, *Adjunct Lecturer, M.F.A., University of Cincinnati*: Painting and drawing.

Martin Levine, *Visiting Assistant Professor, M.F.A., California College of Arts and Crafts*: Printmaking.

Nina A. Mallory, *Professor Emeritus, Ph.D., Columbia University*: Art and architectural history; Renaissance, baroque, and 18th-century art.

Daniel Monk, *Assistant Professor, Ph.D., Princeton University*: Architectural history and criticism.

Anita F. Moskowitz, *Professor, Ph.D., New York University*: Art and architectural history; medieval and Renaissance art.

Stephen Nash, *Adjunct Associate Professor, M.A., Royal College of Art, London*: Anatomical and biological illustration.

D. Terence Netter, *Adjunct Associate Professor, M.F.A., George Washington University*: Drawing; painting; art and philosophy.

Melvin H. Pekarsky, *Professor, M.A., Northwestern University*: Drawing; painting; public art.

Howardena Pindell, *Professor, M.F.A., Yale University*: Drawing; painting.

James H. Rubin, *Professor, Ph.D., Harvard University*: Art and architectural history; 18th- and 19th-century European art and criticism.

Thomas Thompson, *Adjunct Lecturer, M.F.A., Ohio University*: Photography and printmaking.

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 20

The Art Department offers two majors, one in studio art (ARS), and one in art history and criticism (ARH).

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 graduate study or preparation for professional work in the field.

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, with tracks also 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 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.

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, 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.

Requirements for the Major in Art History and Criticism

The major in art history and criticism leads to the Bachelor of Arts degree.

Completion of the major requirements entails 39 credits.

1. ARH 101, 102
2. Twenty-one additional credits in art history and criticism, of which at least 12 must be upper division and so distributed as to include at least one course in five of the following areas:
 - a. Ancient art and architecture: ARH 300, 301
 - b. Medieval art and architecture: ARH 303, 304
 - c. Renaissance art and architecture: ARH 306, 307, 310, 337
 - d. Baroque or 18th-century art and architecture: ARH 314, 315, 316, 320
 - e. Modern art and architecture (19th or 20th century): ARH 322, 331, 332, 341, 342
 - f. Asian art and architecture, or African, Oceanic, Native American, and Mesoamerican art and architecture: ARH 201, 203, 318, 326, 327, 328, 329
 - g. Architecture: ARH 205, 324
3. ARS 154 and ARS 255, or— especially for students planning graduate work in art history — a year of French or German in addition to the college entry skill in foreign language requirement

4. In consultation with the departmental advisor, six credits in humanities or social sciences, in addition to the courses taken for general education requirements and the recommended language year under item 3, above, and not including any course cross-listed with an art course
5. Upper-Division Writing Requirement: Students must demonstrate acceptable writing skills before they graduate. Before the end of the second semester of his or her junior year, each student majoring in art history and criticism must submit to the director of undergraduate studies three term papers for art history courses together with each instructor's satisfactory evaluation, confirming that the paper demonstrates advanced writing proficiency suitable for art history majors. At least two of the papers must have been written for upper-division courses and for different instructors. The student must notify the instructor before each paper is turned in that it is intended to satisfy this requirement in addition to the course requirements. A student anticipating or experiencing difficulty in satisfying this requirement should seek the advice of the director of undergraduate studies as soon as possible.
6. The courses in item 5 must be distributed to include at least one course in four of the following areas:
 - a. Painting and drawing: ARS 350, 351, 352, 359, 452
 - b. Printmaking: ARS 274, 374, 375, 471, 472
 - c. Ceramics: ARS 264, 364
 - d. Sculpture: ARS 365, 366, 465, 466
 - e. Design: ARS 230, 330
 - f. Photography: ARS 281, 381, 481, 487
 - g. Computer Imaging: ARS 208, 317, 425
7. At least 12 credits of item 5 must be in studio/theory courses (see note 3, below)
8. Upper-Division Writing Requirement: Students must demonstrate acceptable writing skills before they graduate. Before the end of the second semester of his or her junior year, each student majoring in studio art must submit to the director of undergraduate studies three term papers for art history courses together with each instructor's satisfactory evaluation, confirming that the paper demonstrates advanced writing proficiency suitable for studio art majors. At least two of the papers must have been written for upper-division courses and for different instructors. The student must notify the instructor before each paper is turned in that it is intended to satisfy this requirement in addition to the course requirements. A student anticipating or experiencing difficulty in satisfying this requirement should seek the advice of the director of undergraduate studies as soon as possible

Note:

One course in art may be taken P/NC; all other credits in art must be taken for a letter grade and passed with a C or higher. Two courses in related fields may be taken P/NC; the rest must be taken for a letter grade.

Requirements for the Major in Studio Art

The major in studio art leads to the Bachelor of Arts degree.

Completion of the major requirements entails 57 credits.

1. ARH 101, 102
2. ARS 154, 255, 256
3. ARH 342
4. At least six additional credits in art history/criticism, of which at least three must be in modern (i.e., one course from ARH 322, 324, 331, 332, or 341)
5. Thirty-three additional credits in studio art, of which 12 credits must be in upper-division courses

Honors Program in Art

The honors program is open to seniors majoring in art history/criticism or studio art who have maintained a grade point average of at least 3.0 overall and a 3.0 in the major. Students should apply for the honors program before the beginning of their senior year. The student must find a faculty member of the department to act as sponsor. The student, with the approval of the sponsor, must submit a proposal of a project, in writing, to the department. Acceptance into the honors program depends on the approval of the proposal by the department.

In the art history/criticism area, the student's research project is supervised by the honors advisor. In the studio art area, the student is expected to prepare a small one-person show or similar project (i.e., one large, more ambitious work) in lieu of a thesis, under the supervision of the honors advisor.

The student's project is judged by a jury composed of at least two members of the Art Department and a faculty member from another department. This pertains to students in both the art history/criticism and studio art majors.

If the honors program is completed with distinction, and the student achieves a 3.5 grade point average in all art courses taken in the senior year, honors are conferred.

Minor in Art History

The minor in art history requires 21 credits in art history, of which at least nine credits must be in upper-division courses. With this minor, the student acquires both a broad background in art history and a more thorough knowledge of the art history of one of the following areas of concentration: ancient/medieval, Asian, African/Oceanic/Native American/ Mesoamerican, Renaissance/Baroque, or Modern. Further information is available from the director of undergraduate studies. The distribution of courses for the minor is as follows:

1. ARH 101, 102
2. An ancient, medieval, Asian, African, Oceanic, Native American, or Mesoamerican art course
3. A Renaissance, baroque, or modern art course
4. Six additional credits in the area of concentration

Sample Course Sequence for the Major in Studio Art

Freshman Fall	Credits
ARH 101	3
German or French 111, or ARS 154	3-4
Gen Ed	3
EGC 101	3
Gen Ed	3
Total	15-16

Spring	Credits
ARH 102	3
German or French 112, or ARS 255	3-4
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15-16

Sample Course Sequence for the Major in Art History/Criticism

Freshman Fall	Credits
ARS 154	3
ARH 101	3
Foreign Language, 111 or higher	3-4
EGC 101	3
Gen Ed	3
Total	15-16

Spring	Credits
ARS 255	3
ARS 256	3
ARH 102	3
Foreign language, 112 or higher	3-4
Gen Ed	3
Total	15-16

Sophomore Fall	Credits
ARH 201, or 203 or 205	3
ARH 300 or 301	3
German or French 211, or ARS elective	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
ARH 303 or 304	3
ARH 306, or 307, or 310, or 337	3
German or French 212, or ARS elective	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
ARS 264	3
ARS 284	3
ARS 351	3
ARH 342	3
Gen Ed	3
Total	15

Spring	Credits
ARS 352	3
ARS 365	3
ARS 374	3
ARH 341	3
Gen Ed	3
Total	15

Junior Fall	Credits
ARH 314 or 315 or 316 or 320	3
ARH 322 or 331 or 332 or 341 or 342	3
Gen Ed	3
Elective (PHI or HIS)	3
UD elective in ARH, ARS, PHI, HIS or language	3
Total	15

Spring	Credits
ARH 318 or 324 or 326, or 337	3
Elective	3
ARH 331 or 332	3
UD electives in ARH, ARS, HIS, PHI, or languages	6
Elective	3
Total	15

Junior Fall	Credits
ARS 395	3
ARS 281	3
ARS 230	3
ARH 322	3
ARH 201	3
Total	15

Spring	Credits
ARS 364	3
ARS 366	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Senior Fall	Credits
UD ARH and other fine arts and humanities courses	6
or social studies courses in areas of special interest	6
or UD independent studies or special topics or internship	3
Total	15

Spring	Credits
UD 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

Senior Fall	Credits
Gen Ed	3
ARH 318 or 326 or 327 or 328	3
ARH 331 or 332	3
200-level and UD ARS and ARH courses in areas of special interest	6
Total	15

Spring	Credits
UD 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
Gen Ed	3
Total	15

5. ARH 400, 401, 402, 403, 487, or 488 in the area of concentration

5. ARH 324

6. Any six-credit combination of ARH 485, 487, 488 and ARS 487

Minor in Studio Art

The minor in studio art requires 21 credits.

- Two of the following courses: ARS 154, 255, 256
- Fifteen additional studio credits, of which at least nine must be upper division

Minor in Design

The minor in design requires 21 credits.

- ARS 230
- ARS 330
- An additional ARS or ARH lower-division course chosen in consultation with minor advisor
- ARH 205

AST

Program in

Astronomy/Planetary Sciences

Associate Chair for Astronomy/Planetary Sciences: James M. Lattimer

Director of Undergraduate Studies: Michael Simon

Faculty

Kenneth M. Lanzetta, *Assistant Professor, Ph.D., University of Pittsburgh: Astronomy.*

James M. Lattimer, *Professor, Ph.D., University of Texas at Austin: Astronomy.*

Deane M. Peterson, *Associate Professor, Ph.D., Harvard University: Astronomy.*

Michal Simon, *Professor, Ph.D., Cornell University: Astronomy.*

Philip M. Solomon, *Professor, Ph.D., University of Wisconsin: Astronomy.*

Frederick M. Walter, *Associate Professor, Ph.D., University of California, Berkeley: Astronomy.*

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 (AST) prepares a student for graduate and professional work. Our graduates 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. Upon declaring the AST major, the Director of Undergraduate Studies will assign a faculty advisor to the student. This advisor will assist 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.

Requirements for the Major in Astronomy/Planetary Sciences

All courses taken to meet requirements

for the astronomy/planetary sciences major must be taken for a letter grade. In addition, a 2.0 G.P.A. must be achieved in all courses used to meet the astronomy required departmental course.

A. Required Departmental Courses:

AST 203 Astronomy

AST 341, 342 Astrophysics I, II and two more courses chosen from AST 343 (Extragalactic Astronomy), AST 344 (Black Holes, Collapsed Objects, and Quasars), and AST 351 (Introduction to Planetary Physics)

At least six credits from additional AST or GEO courses numbered 200 or higher (except AST 248)

B. Required Physics Courses:

PHY 131, 132 (See note 1 below)

PHY 251

PHY 306

At least 12 credits from approved PHY courses numbered 300 or higher, except PHY 306 (PHY 301, 302, 303, 308, and 352 recommended)

C. Mathematics Requirements:

MAT 131, 132 (See note 2 below)

MAT 203 or 205 or 211 or AMS 261

MAT 303 or 305 or AMS 361

D. Upper-Division Writing Requirement:

All students majoring in astronomy/planetary sciences must submit two papers (term papers, laboratory reports, or independent research papers) to the director of undergraduate studies for department evaluation by the end of the junior year. If this evaluation is satisfactory, the student will have fulfilled the upper-division writing requirement. If it is not, the student must fulfill the requirement before graduation.

Notes:

1. The following physics courses are alternatives to PHY 131, 132: PHY 125, 126, 127 or 141, 142.
2. The following alternate beginning calculus sequences may be substituted

for MAT 131, 132 in major requirements or prerequisites: MAT 124, 126, 127 or 125, 126, 127 or 141, 142. Equivalency for MAT courses achieved by earning the appropriate score on the Mathematics Placement Examination will be accepted as fulfillment of the requirement without the necessity of substituting other credits. For detailed information about the various calculus sequences, see alphabetical listing, Mathematics, especially "Beginning Mathematics Courses" and the course descriptions.

Honors Program in Astronomy/Planetary Sciences

Students in the astronomy/planetary sciences major who have maintained a cumulative grade point average of 3.3 through the junior year in courses required for the major may become candidates for departmental honors in astronomy/planetary sciences, by applying to the department. Candidates for honors in astronomy/planetary sciences must include a sequence of mathematics, physics, or engineering courses approved by the student's advisor following petition by the student.

In addition to the academic program, the student must complete an honors thesis while enrolled in AST 447 or 487. The thesis is evaluated by a committee composed of the student's advisor and two other science faculty members including one from outside of the department. If the honors program is completed with distinction and the student has maintained a minimum 3.3 grade point average in all coursework in natural sciences and mathematics, honors are conferred.

**Sample Course Sequence in the Astronomy/
Planetary Sciences Major**

Freshman Fall	Credits
PHY 131 or 141	4
MAT 131	4
EGC 101	3
Gen Ed	3
Total	14

Spring	
MAT 132	4
AST 203	4
Gen Ed	3
Total	15

Sophomore Fall	Credits
PHY 251	4
MAT 205 or AMS 261	4
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	17

Spring	
PHY 306	3
MAT 305 or AMS 361	4
PHY 262	4
Gen Ed	3
Total	14

Junior Fall	Credits
AST 341*	3
MAT 341	3
PHY 301	3
PHY 303	3
Gen Ed	3
Total	15

Spring	
AST 342*	3
PHY 308	3
PHY 302	3
Gen Ed	3
UD elective	3
Total	15

Senior Fall	Credits
AST 343*	3
AST 351*	3
Gen Ed	3
UD elective	3
Elective	3
Total	15

Spring	
AST 344*	3
AST 443	4
Gen Ed	3
UD elective*	3
Elective	3
Total	16

* AST 341, 342 and AST 343,344 are offered in alternate years. AST 351 is offered in alternate fall semesters and AST 443 is offered in alternate spring semesters.

BIO

Departments of Biochemistry and Cell Biology Ecology and Evolution Neurobiology and Behavior

Department of Biochemistry and Cell Biology

Chairperson: William J. Lennarz
Director of Undergraduate Studies: Raghupathy Sarma

Faculty

Paul M. Bingham, *Associate Professor, Ph.D., Harvard University*: Regulation of transcription in and transposon biology of developing multicellular organisms.

Deborah Brown, *Assistant Professor, Ph.D., Stanford University*: Trafficking of membrane proteins in polarized epithelial cells.

David Bynum, *Adjunct Associate Professor, Ph.D., Dartmouth College*: Cell motility. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1988, and the President's Award for Excellence in Teaching, 1988.

Elof Axel Carlson, *Distinguished Teaching Professor, Ph.D., Indiana University*: Mutation and gene structure; history of genetics; human genetics.

Vitaly Citovsky, *Assistant Professor, Ph.D., Hebrew University*: Nuclear targeting and inter-cellular communication in plants.

Neta Dean, *Assistant Professor, Ph.D., University of California, Los Angeles*: Molecular genetics and protein sorting in yeast.

Dale G. Deutsch, *Associate Professor, Ph.D., Purdue University*: Molecular biology of marijuana action.

Bernard S. Dudock, *Professor, Ph.D., Pennsylvania State University*: Structure and function of cellular and viral tRNA. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974.

Martin Freundlich, *Professor, Ph.D., University of Minnesota*: Regulation of gene expression.

J. Peter Gergen, *Associate Professor, Ph.D., Brandeis University*: Molecular biology; genetics of embryonic development in *Drosophila*.

Robert Haltiwanger, *Assistant Professor, Ph.D., Duke University*: Glycosylation of nuclear and cytoplasmic proteins.

Bernadette Holdner, *Assistant Professor, Ph.D., University of Illinois-Chicago*: Development and genetic regulation of mouse gastrulation; genome organization.

Nancy Hollingsworth, *Assistant Professor, Ph.D., University of Washington, Seattle*:

Analysis of meiotic chromosome recombination, synapsis, and segregation in yeast.

Abraham D. Krikorian, *Professor, Ph.D., Cornell University*: Plant growth and development.

William J. Lennarz, *Professor, Ph.D., University of Illinois*: The role of glycoproteins in cellular and developmental biology.

Erwin London, *Associate Professor, Ph.D., Cornell University*: Membrane biochemistry and biophysics.

Harvard Lyman, *Associate Professor, Ph.D., Brandeis University*: Photoregulation of chloroplast development and replication. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1991, and the President's Award for Excellence in Teaching, 1991.

Kenneth B. Marcu, *Professor, Ph.D., State University of New York at Stony Brook*: Organization, mechanisms of expression, and evolution of eukaryotic multigene systems.

Raghupathy Sarma, *Associate Professor, Ph.D., Madras University*: X-ray crystal structure analysis of molecules of biological interest.

Nisson Schechter, *Professor, Ph.D., Western Michigan University*: Molecular basis of nerve growth and regeneration.

Jakob Schmidt, *Professor, Ph.D., University of California, Riverside; M.D., University of Munich*: Neurochemistry.

Richard B. Setlow, *Adjunct Professor, Ph.D., Yale University*: DNA repair; biological effects of ultraviolet and ionizing radiation.

Sanford R. Simon, *Professor, Ph.D., Rockefeller University*: Structure-function relationships in hemoglobin; membrane biochemistry.

Rolf Sternglanz, *Professor, Ph.D., Harvard University*: DNA replication.

F. William Studier, *Adjunct Professor, Ph.D., California Institute of Technology*: Genetics and physiology of bacterial viruses.

William E. Theurkauf, *Assistant Professor, Ph.D., Brandeis University*: Microtubules and microfilaments in early development.

Gerald H. Thomsen, *Assistant Professor, Ph.D., Rockefeller University*: Vertebrate molecular embryology: cell-cell signaling and group factor function.

James S. Trimmer, *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: James D. Thomson
Director of Undergraduate Studies: George J. Hechtel

Faculty

Edwin H. Battley, *Associate Professor, Ph.D., Stanford University*: Thermodynamics of microbial growth; ecological energetics; microbial ecology; nitrification and denitrification in aquatic systems.

Michael A. Bell, *Associate Professor, Ph.D., University of California, Los Angeles*: Evolutionary biology; ichthyology; paleobiology and geographic variation.

Daniel E. Dykhuizen, *Professor, Ph.D., University of Chicago*: Population genetics and molecular evolution, especially of bacteria.

Walter F. Eanes, *Professor, Ph.D., State University of New York at Stony Brook*: Population and biochemical genetics of *Drosophila*; molecular evolution.

Douglas J. Futuyma, *Professor, 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, *Associate Professor, Ph.D., University of Arizona*: Evolutionary ecology of plant populations and communities; plant physiological ecology.

George J. Hechtel, *Associate Professor, Ph.D., Yale University*: Systematics and zoogeography of marine demospongiae. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1982.

Charles H. Janson, *Associate Professor, Ph.D., University of Washington*: Social ecology of vertebrates; plant dispersal strategies.

Manuel T. Lerdau, *Assistant Professor, Ph.D., Stanford University*: Plant ecology and physiology; global change.

Jeffrey S. Levinton, *Professor, Ph.D., Yale University*: Marine benthic ecology; population genetics of bivalve mollusks; paleoecology.

Axel Meyer, *Associate Professor, Ph.D., University of California, Berkeley*: Ecology, evo-

lution and behavior of cichlid fishes; phylogeny reconstruction via molecular techniques.

Rollin C. Richmond, *Professor and Provost and Executive Vice President for Academic Affairs, Ph.D., Rockefeller University*: Molecular evolutionary genetics.

F. James Rohlf, *Professor, Ph.D., University of Kansas*: Multivariate data analysis techniques applied to problems in taxonomy and ecology; computer modeling; applied ecology.

Lawrence B. Slobodkin, *Professor, Ph.D., Yale University*: Evolutionary strategy and constraints; Hydra; ecotoxicology.

James D. Thomson, *Professor, Ph.D., University of Wisconsin*: Pollination biology; plant reproductive systems; community ecology.

Gregory A. Wray, *Assistant Professor, Ph.D., Duke University*: Evolution of developmental mechanisms; evolution and paleobiology of echinoderm larvae; origin and radiation of echinoderm body plans.

Department of Neurobiology and Behavior

Chairperson: Lorne M. Mendell

Director of Undergraduate Studies: George J. Hechtel

Faculty

Paul R. Adams, *Professor, Ph.D., London University*: Cellular neurobiology; synaptic transmission.

Paul Brehm, *Professor, Ph.D., University of California, Los Angeles*: Cellular neurobiology; synaptic transmission.

John B. Cabot, *Professor, Ph.D., University of Virginia*: Autonomic system.

Albert D. Carlson, *Professor, Ph.D., University of Iowa*: Higher brain function; comparative neurobiology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1983.

William F. Collins III, *Associate Professor, Ph.D., University of Pennsylvania*: Physiology; neurophysiology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1997.

L. Craig Evinger, *Professor, Ph.D., University of Washington*: Sensorimotor integration.

Joseph Fetcho, *Associate Professor, Ph.D., University of Michigan*: Motor systems.

James W. Gnadt, *Assistant Professor, Ph.D., University of Alabama*: Systems neurophysiology; sensorimotor integration.

Simon Halegoua, *Professor, Ph.D., State University of New York at Stony Brook*: Molecular neurobiology.

Maurice Kernan, *Assistant Professor, Ph.D., University of Wisconsin-Madison*: Molecular neurobiology.

Mary Kritzer, *Assistant Professor, Ph.D., Yale University*: Neurobiology of cognition.

Joel M. Levine, *Associate Professor, Ph.D., Washington University*: Developmental neurobiology.

Gail Mandel, *Professor, Ph.D., University of California, Los Angeles*: Molecular neurobiology.

Gary G. Matthews, *Professor, Ph.D., University of Pennsylvania*: Cellular neurobiology; synaptic transmission.

David McKinnon, *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, *Associate Professor, Ph.D., University of Oregon*: Physiology.

Stephen Yazulla, *Professor, Ph.D., University of Delaware*: Physiology.

Affiliated Faculty

Marian Evinger, *Pediatrics*

Edmund LaGamma, *Pediatrics*

Stuart S. McLaughlin, *Physiology and Biophysics*

Teaching Assistants (all areas)

Estimated number: 58

The Biochemistry Program

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.

Note: New initiatives are under discussion within the Biochemistry Department to enhance the experience of majors.

Requirements for the Biochemistry Major

All courses offered for the major must be

taken for a letter grade. A minimum grade of C must be obtained in all courses listed in A, B, and C below.

Completion of the major requirements entails approximately 65 to 67 credits.

A. Courses in Related Fields

- CHE 131, 132 General Chemistry or 141, 142 Honors Chemistry
- CHE 133, 134 General Chemistry Laboratory or 143, 144 Honors Chemistry Laboratory
- CHE 321, 322 Organic Chemistry or 331, 332 Honors Organic Chemistry
- CHE 327 Organic Chemistry Laboratory A or CHE 333 Organic Chemistry Laboratory B
- CHE 301 or 312 Physical Chemistry (required only for students interested in the Graduate School)
- Calculus through MAT 127 or 132 or 142 or calculus through MAT 127 may be used to meet this requirement.
- PHY 121, 122 Physics for the Life Sciences or PHY 125, 126, 127 Classical Physics A, B, C or PHY 131, 132 Classical Physics I, II or PHY 141, 142 Classical Physics I, II: Honors

B. Courses in Biological Sciences

- BIO 151, 152 Principles of Biology or BIO 171, 172 Honors Biology or documented AP biology scores of 4 or 5.
- BIO 320 General Genetics
- BIO 310 Cell Biology
- BIO 361, 362 Biochemistry I, II
- The following two labs will be available for students.
 - BIO 365: Biochemistry laboratory (Fall only)
 - BIO 311: Molecular Biology Laboratory (Fall & Spring)

C. Advanced Electives

Two additional courses, totaling at least five credits, chosen from the list below. Students should choose them after consultation with an advisor. It is highly recommended that students take more than the suggested minimum number of electives.

BIO 315 Microbiology

Sample Course Sequence in the Biochemistry Major

BIO 317	Principles of Cellular Signaling
BIO 323	Plant Cell and Developmental Biology
BIO 325	Animal Development I
BIO 326	Animal Development II
BIO 328	Mammalian Physiology
BIO 334	Principles of Neurobiology
BIO 347	Botany and Biotechnology
BIO 366	Protein Crystallography
BIO 374	Molecular Biology of Learning and Memory
BIO 379	Developmental Neurobiology
BIO 409	Selected Topics in Biochemistry, Cell Biology, and Developmental Biology
BIO 420	Developmental Genetics
BCP 401	Principles of Pharmacology
BCP 402	Advanced Pharmacology
BCP 403	Principles of Pharmacology Laboratory
BCP 404	Advanced Pharmacology Laboratory
CHE 345	Structure and Reactivity in Organic Chemistry
CHE 346	Biomolecular Structure and Reactivity
HBP 390	Basic Mechanisms in Pathology

Freshman Fall	Credits
CHE 131	4
CHE 133	1
MAT 125 or 131	3-4
EGC 101	3
Gen Ed	3
Total	14-15

Spring	Credits
CHE 132	4
CHE 134	1
MAT 126 or 132	3-4
Gen Ed	3
Gen Ed	3
Total	14-15

Sophomore Fall	Credits
BIO 151	4
CHE 321	3
MAT 127 (if MAT 125, 126 sequence taken)	3
Gen Ed	3
Gen Ed	3
Total	16

Spring	Credits
BIO 152	4
CHE 322	3
CHE 327	2
Gen Ed	3
Gen Ed	3
Total	15

Junior Fall	Credits
BIO 320	3
BIO 361 or 315	3
PHY 121	4
Gen Ed	3
Gen Ed	3
Total	16

Spring	Credits
BIO 310	3
BIO 362 or 328	3
PHY 122	4
Gen Ed	3
Elective	3
Total	16

Senior Fall	Credits
BIO 361 or 315	3
BIO 365	2
CHE 312	3
Elective	3
Elective	3
Total	14

Spring	Credits
BIO 362 or 328	3
JD electives selected from the list under Category C (above)	12
Total	15

Additional courses to meet requirement C may be allowed each semester; a complete list is available in the Biochemistry and Cell Biology Department Office. Biochemistry majors are encouraged to do research in biochemistry or molecular biology (BIO 487 or similar course).

D. Upper-Division Writing Requirement

To fulfill the upper-division writing requirement in biochemistry, a sample of writing from an upper-division course in biological sciences must be submitted to the Biochemistry and Cell Biology Department for evaluation by the Biochemistry Writing Committee. This writing sample can be a laboratory report, a term paper, or a report for a readings or research course, and it must contain at least 750 words of text. It is to be accompanied by a form (available in the Biochemistry and Cell Biology Department Office) signed by the student and by the instructor of the course for which the material was written. The deadline for submission of the writing sample is December 1 for students graduating in the following May or August, and May 1 for

students graduating in the following December.

If the writing in this sample is judged satisfactory by the writing committee, the requirement is fulfilled. If the writing is judged unsatisfactory, the student is advised to seek help in writing skills from the Writing Center and must pass a writing examination administered by the Biochemistry and Cell Biology Department at a scheduled time prior to graduation.

Honors Program in Biochemistry

Graduation with honors in biochemistry requires 1. a cumulative grade point average of 3.5 or higher in all courses in items A, B, and C above, and 2. presentation of an acceptable thesis based on a research project performed under BIO 487, written in the format of a paper in a scientific journal. A student interested in

becoming a candidate for honors should submit an outline of the proposed thesis research project to the department's honors coordinator as early as possible, but in any case no later than the second week of classes in the last semester. (Acceptance of a project for BIO 487 registration does not imply automatic acceptance of that project for honors). The honors coordinator and the research sponsor appoint a thesis committee consisting of the research sponsor and two additional faculty members. Two members of the thesis committee must be from the Biochemistry and Cell Biology Department and one must be from outside the department.

The student must present a copy of the finished thesis to each member of the thesis committee and the honors coordinator at least 28 days before the date of graduation.

The Biology Program

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. Principles of Biology, by surveying a significant part of the breadth of biology, provides a foundation for advanced courses, and serves as a basic course for students interested in the graduate health professions. Our area requirements in lecture and laboratory are designed to ensure breadth of study at the advanced level. Students can design their own curriculum, in consultation with an advisor, within the context of area requirements. The sequence of areas depends on level of prerequisites and the particular interests of an individual. 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 majors 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 Biology Major

All courses offered for the major must be taken for a letter grade. Courses taken under the P/NC option may not be applied to the major. Requests for waivers of major requirements must be approved by the Biology Undergraduate Studies Committee. Biology majors must meet the major requirements of their bulletin of matriculation or latest matriculation date.

Completion of the major requirements entails approximately 65 to 67 credits.

A. Study within Biology

Thirty credits in biology, which must include the following:

1. BIO 151, 152 Principles of Biology or BIO 171, 172 Honors Biology, or documented AP biology scores of 4 or 5
2. BIO 320 General Genetics
3. Lecture Courses: At least one lecture course in four of the following five areas of inquiry. Students in the Biology Teacher Preparation Program must take a course in each of the five areas for a letter grade.

Area I: Cell Biology and Biochemistry

BIO 310, 314, 315, 317, 361, 362, 366

Area II: Genetics and Development

BIO 320 (required), 321, 323, 325, 326

Area III: Neurobiology and Physiology

BIO 328, 330, 334, 374, 379

Area IV: Organisms

BIO 241, 343, 344, 346, 347, 380

Area V: Ecology and Evolution

BIO 350, 351, 353, 354, 355, 357, 359, 385, 386

4. Advanced Laboratory Experiences: At least four advanced biology laboratory courses including

- a. Three area laboratory courses or area lecture courses that include a laboratory, chosen from at least two areas of the following list:

Area I BIO 311, 365

Area II BIO 321

Area III BIO 335

Area IV BIO 343, 344, 346, 380

Area V BIO 352

- b. A fourth laboratory experience, to be met by any of the courses listed in 4(a), or BIO 307, or biology internship (BIO 488), or biology research (BIO 486, 487, and 489, but not 484).

5. Study in Depth:

Every biology major must explore one aspect of biology in greater depth, and preferably in a course with extensive faculty-student interaction. The requirement can be met in any one of the following three ways:

- a. a second lecture course in one of the areas of inquiry listed in section A-3
- b. any 400-level BIO course for majors
- c. SCI 454

6. Electives:

Additional courses, as needed, to complete the total of 30 required credits in biology courses offered for the major. Electives may be selected from any of the area courses listed under sections 3 and 4, and from non-area courses for majors (BIO 204, 306, 307, 401-405, 407, 409, 430). A maximum of two credits of readings (BIO 444, 446, 447, 449) and a maximum of four credits from biology internship and research (BIO 484, 486, 487, 488, 489) can be applied to the 30-credit requirement. (Students should note the credit limits imposed on independent study by the College of Arts and Sciences.) Up to six cred-

its of major electives may be chosen from a diverse list of courses offered by other departments. The current list is available from the Biology Undergraduate Studies Office.

7. Quality Requirement:

No more than two courses used to satisfy A (above) may be passed with a C-. All other courses used to satisfy A must be passed with a grade of C or higher; P/NC grades or courses passed with a D are not acceptable. A grade of Satisfactory in readings, internships, and research courses applies to the quality requirement, within the credit limitations listed in requirement A-6.

B. Courses Required in Related Fields

1. One year of general chemistry with laboratory: CHE 131, 132 or 141, 142 and CHE 133, 134 or 143, 144.
2. One year of organic chemistry, with one semester of laboratory: CHE 321, 322 or 331, 332; and CHE 327 or 333.
3. One year of physics with laboratory: PHY 121, 122 or 125, 126, 127 or 131, 132 or 141, 142.
4. Calculus: MAT 125, 126 or 123, 124, 126 or 131, 132 or 141, 142 or level 8 or 9 on the Mathematics Placement Examination.
5. A semester of probability and statistics: AMS 110 or AMS 310.
6. At least one semester of general chemistry lecture, organic chemistry lecture, physics, and calculus must be passed with a grade of C or higher.

C. Upper-Division Writing Requirement

The advanced writing component of the major in biology requires approval by the writing committee of either:

- a. a term paper written for an upper-division course in biological 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 Biology Undergraduate Studies Office. Students who wish to use material from a participating course should obtain the necessary form and

Sample Course Sequence in the Biology Major

Freshman Fall	Credits
CHE 131	4
CHE 133	1
MAT 125	3
EGC 101	3
Gen Ed	3
Total	14

Spring	Credits
CHE 132	4
CHE 134	1
MAT 126	3
Gen Ed	3
Gen Ed	3
Total	14

Sophomore Fall	Credits
CHE 321	3
AMS 110	3
BIO 151	4
Gen Ed	3
Gen Ed	3
Total	16

Spring	Credits
CHE 322	3
CHE 327	2
BIO 152	4
Gen Ed	3
Gen Ed	3
Total	16

Junior Fall	Credits
PHY 121	4
BIO 320	3
BIO Area	3
BIO Lab	1-3
Gen Ed	3
UD elective	3
Total	14-16

Spring	Credits
PHY 122	4
BIO Area	3
BIO Lab	1-3
Gen Ed	3
UD elective	3
Total	14-16

Senior Fall	Credits
BIO Area	3
BIO Lab	1-3
BIO UD Elective	3
Gen Ed	3
Electives	6
Total	16-18

Spring	Credits
BIO Area	3
BIO Lab	1-3
BIO UD Elective	3
Electives	9
Total	16-18

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.

Note: Well-prepared, highly motivated students can do BIO 151 or 152 (or both, or the honors equivalents) in their first year.

Recommended Curricula

Students with an interest in neurobiology should consider the following course choices when planning their curriculum:

- Area I: BIO 317, 361
- Area II: BIO 328, 334 and 335 lab: and at least one specialized neurobiology course
- Area V: BIO 359

Students with a serious interest in ecology and evolution should consider the fol-

lowing course choices when planning their curriculum:

Area I:	BIO 361 (and 362 for students interested in evolution)
Area III:	BIO 330
Area IV:	At least one course, with lab
Area V:	At least one ecology course, BIO 352 lab and BIO 354

Statistics should be taken as early as possible.

The list of substitute electives from MAR should be consulted.

Application of Advanced Placement and Transfer Credits to Biology Requirements

Students with documented AP biology scores of 4 or 5 receive a waiver of BIO 151, 152 Principles of Biology, and six transfer credits are applied to both the total required credits and the quality requirement (Section A-7).

Biology courses taken elsewhere apply to major requirements only if authorized by the biology transfer evaluator or if listed in the "major requirements" column of a Stony Brook transfer booklet. Transfer students must take at least 15 of the 30 required biology credits at Stony Brook in courses for majors at the 200 level or higher. At least 12 of the 15 credits must be in BIO-designator courses. Fifteen of the 30 quality credits (Section A-7) must be earned at Stony Brook. At least two of the advanced laboratory experiences (Section A-4), including one area laboratory, must be taken at Stony Brook. Transfer students may meet Section B requirements with transferred courses, if the courses are approved as being equivalent (even if the number of credits is different).

Biology Teacher Preparation Program

This program is designed for the biology major who is preparing to teach in junior or senior high school. Professional courses are provided through the Center for Science, Mathematics, and Technology Education (see alphabetical listing, Science, Mathematics, and Technology Education). Guidelines used by the teacher selection committee include a minimal overall G.P.A. of 2.7 (at Stony Brook and previous institutions).

Students in the Biology Teacher Preparation Program must complete a lecture course in each of the five areas of inquiry (see Section A-3).

Honors Programs in Biology and in Biology and Society

Biology majors with a G.P.A. of at least 3.0 overall, and 3.5 or higher in courses taken for the major, are eligible to apply for candidacy in the honors program in biology or in biology and society. Students normally apply for honors prior to the beginning of their last semester, using a form available in the Biology Undergraduate Studies Office. The application includes a proposal or interim report, endorsed by the research sponsor. If the proposal is accepted, the Undergraduate Studies Committee appoints an honors thesis committee, consisting of the sponsor and two additional faculty members, one of them from a different department than that of the sponsor. The committee advises the student and evaluates the thesis. Completion of an honors program involves:

- Maintenance of a cumulative G.P.A. of at least 3.0 overall and 3.5 or higher in all courses required for the major.
- Participation in research, normally for two semesters, including enrollment in BIO 486, 487, 488, or 489 (for honors in biology), or in BIO 484 (for honors in biology and society).
- Preparation of a thesis, based on the research, in the format of a paper in a scientific journal. The thesis must be approved by the honors thesis committee, which should receive the thesis no later than two weeks before the end of classes.

Requirements for the Minor in Biology

The biology minor, which is for students in majors other than biology, biochemistry, or pharmacology, requires completion of at least 20 credits in those biology courses designed for the biology major, including:

- BIO 151 Principles of Biology:
From Organisms to Ecosystems or
BIO 171 Honors Biology:
Organisms to Ecosystems
- BIO 152 Principles of Biology:
From Molecules to Organisms or

BIO 172 Honors Biology: Molecules to Organisms

- Nine credits at the 300 level
 - A lecture course in at least two of the five areas of inquiry (I-V) listed under the biology major.
 - All courses for the minor must be taken for a letter grade. At least 20 credits of biology courses intended for the biology major 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 internship and research (BIO 484, 486, 487, 488, 489) and one credit of tutorial readings (BIO 444, 446, 447, 449) may be applied toward the minor. The list of substitute electives for the major does not apply to the minor.

All credits for the minor, except for those in requirements A and B (i.e., BIO 151 and 152) must be in BIO major courses at Stony Brook. Requests for waivers of minor requirements must be approved by the Biology Undergraduate Studies Committee.

CHE

Department of
Chemistry

Chairperson: Iwao Ojima

Director of Undergraduate Studies: Joseph W. Lauher

Faculty

Mohammad J. Akhtar, *Lecturer and Coordinator of General Chemistry Laboratories, Ph.D., University of the Pacific*: Kinetics and mechanisms of inorganic reactions.

John M. Alexander, *Professor, Ph.D., Massachusetts Institute of Technology*: Reactions between complex nuclei.

Benjamin Chu, *Distinguished Professor, Ph.D., Cornell University*: Light-scattering spectroscopy; X-ray scattering; polymer physics; colloid science, DNA electrophoresis.

Frank W. Fowler, *Professor, Ph.D., University of Colorado*: Synthetic chemistry.

Theodore D. Goldfarb, *Professor, Ph.D., University of California, Berkeley*: Environmental chemistry; ethics in science. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1979.

Clare Grey, *Assistant Professor, D.Phil., University of Oxford*: Materials chemistry; solid-state NMR spectroscopy; catalysis.

Albert Haim, *Professor, Ph.D., University of Southern California*: Kinetics and mechanisms of inorganic reactions. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1981. 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.

Takanobu Ishida, *Professor, Ph.D., Massachusetts Institute of Technology*: Chemistry of stable isotopes; isotope separation; electrochemistry.

Philip M. Johnson, *Professor, Ph.D., Cornell University*: Optical molecular spectroscopy.

Marjorie Kandel, *Lecturer and Coordinator of Organic Chemistry Laboratories, M.S., Indiana University*: Organic chemistry; laboratory curriculum development. 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, part time, Ph.D., University of Bombay*: Chemistry education.

Roy Lacey, *Associate Professor, Ph.D., State University of New York at Stony Brook*: Nuclear chemistry.

Joseph W. Lauher, *Professor, Ph.D., Northwestern University*: Structural chemistry; crystallography. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1990, and the President's Award for Excellence in Teaching, 1990.

William J. le Noble, *Professor, Ph.D., University of Chicago*: Chemistry of highly compressed solutions; stereochemistry.

Andreas Mayr, *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.

Richard N. Porter, *Professor, Ph.D., University of Illinois at Urbana-Champaign*: Theoretical chemistry; quantum dynamics.

Daniel P. Raleigh, *Assistant Professor, Ph.D., Massachusetts Institute of Technology*: Biological chemistry; protein structure and protein-ligand interactions using NMR.

Nicole S. Sampson, *Assistant Professor, Ph.D., University of California, Berkeley*: Bioorganic chemistry; mechanistic enzymology and molecular recognition; substrate analogs; protein-protein interactions.

Robert F. Schneider, *Associate Professor, Ph.D., Columbia University*: Nuclear quadrupole resonance.

Stanley Seltzer, *Adjunct Professor, Ph.D., Harvard University*: Elucidation of enzyme and organic reaction mechanisms.

Scott McN. Sieburth, *Associate Professor, Ph.D., Harvard University*: Synthetic and bioorganic chemistry.

Richard Solo, *Adjunct Associate Professor,*

Ph.D., University of California, Berkeley: Gas phase kinetics.

Charles S. Springer, *Professor Emeritus, Ph.D., Ohio State University*: Nuclear magnetic resonance, with emphasis on living systems.

George Stell, *Professor, Ph.D., New York University*: Molecular theory of fluids; transport and thermodynamic properties of fluids.

Hans Thomann, *Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook*: Magnetic resonance in disordered condensed matter.

Peter Tonge, *Assistant 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.

Affiliated Faculty

Patrick J. Herley, *Materials Science and Engineering*

Francis 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, and environmental chemistry, in addition to the traditional chemical science option. The program of the Department of Chemistry is approved by the Committee on Professional Training of the American Chemical Society.

The Bachelor of Arts program allows more flexibility in the choice of electives, accommodating the needs of premedical students and others whose career objectives may call for a substantial introduction to chemistry. It can also accommodate students who wish to obtain a strong undergraduate background in

another science or mathematics while earning a degree in chemistry.

Students interested in combining the study of chemistry with the study of materials science should see also the Interdisciplinary Program in Engineering Chemistry.

Requirements for the Chemistry Major (Bachelor of Science Track)

All required courses must be taken for a letter grade; P/N/C grades are not acceptable. All chemistry 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 requirements entails approximately 64 to 67 credits.

A. Core Requirements

1. CHE 131, 132 or 141, 142 General or Honors Chemistry
2. CHE 133, 134 or 143, 144 General or Honors Chemistry Laboratory
3. CHE 301, 302 Physical Chemistry I, II
4. CHE 303 Solution Chemistry Laboratory
5. CHE 321, 322 or 331, 332 Organic or Honors Organic Chemistry
6. CHE 333 Organic Chemistry Laboratory B
7. CHE 375 Inorganic Chemistry I
8. MAT 131, 132 Calculus I, II (See note 1 for possible substitutions)
9. MAT 211 Linear Algebra
10. PHY 131, 132 Classical Physics I, II (See note 2 for possible substitutions)

B. Area Requirements

One of the following options:

1. Chemical Science Option
CHE 304 Chemical Instrumentation Laboratory
CHE 334 Organic Chemistry Laboratory B
CHE 357 Molecular Structure and Spectroscopy Laboratory
CHE 377 Inorganic Chemistry Laboratory
Two electives chosen from CHE 221, 305, 344, 345, 346, 376, PHY 251, or ESG 281

2. Biological Chemistry Option

CHE 334 Organic Chemistry Laboratory B

One organic or inorganic chemistry elective: CHE 344, 345, 346, 376, or 377

BIO 152 Principles of Biology: From Molecules to Organisms

BIO 361 Biochemistry I

BIO 310 Cell Biology or BIO 362 Biochemistry II

3. Chemical Physics Option

CHE 304 Chemical Instrumentation Laboratory

CHE 305 Physical Chemistry III

CHE 357 Molecular Structure and Spectroscopy Laboratory

MAT 205 Calculus III (See note 1 for possible substitutions)

PHY 251 Modern Physics

One elective chosen from CHE 377, PHY 262, 301, 303, 306

4. Environmental Chemistry Option

CHE 304 Chemical Instrumentation Laboratory

CHE 310 Chemistry in Technology and the Environment

CHE 334 Organic Chemistry Laboratory B

CHE 357 Molecular Structure and Spectroscopy Laboratory

BIO 151 Principles of Biology: From Organisms to Ecosystems or BIO 213 Applied Ecology or BIO 171 Honors Biology: Organisms to Ecosystems

ATM/MEC 397 Air Pollution and Its Control

5. Marine and Atmospheric Chemistry Option

ATM 205 Introduction to Atmospheric Science

MAR 333 Coastal Oceanography

MAR 351 Introduction to Ocean Chemistry

MAR 308 Principles of Instrumental Analysis

One of the following sets of courses: (MAR 413 Marine Biochemistry and MAR 410 Marine Geochemistry) or (ATM 305 Global Atmospheric Change and ATM/MEC 397 Air Pollution)

C. Upper-Division Writing Requirement

Each student majoring in chemistry must submit a portfolio of three to five papers from previous chemistry coursework, at least two of which should be full laboratory reports from chemistry courses. This portfolio is to be submitted to the director of undergraduate studies by the end of the junior year. It must be found acceptable in its clarity and precision of communication before the student can be cleared for graduation.

Notes:

1. Alternate Mathematics Sequences

The following alternate sequences may be substituted for major requirements or prerequisites: MAT 124, 126, 127 or 125, 126, 127 or 141, 142 for 131, 132; MAT 203, or MAT 205 or AMS 261 for 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, 122 or 141, 142 or 125, 126, 127 for PHY 131, 132.

3. Transfer Credit

At least 12 credits of upper-division work in chemistry must be taken at Stony Brook; these must be taken in at least two of the major subdisciplines (inorganic, physical, and organic chemistry).

4. The American Chemical Society's Committee on Professional Training

has set nationally recognized standards for professional preparation in chemistry. The Chemistry faculty recommends that students intending to pursue careers in the chemical sciences secure ACS certification along with their Bachelor of Science degree.

For ACS certification students electing the chemical science option must complete one additional elective in chemistry or a related field. Students electing the biological chemistry option must complete one additional elective in chemistry or a related field and the CHE 304, 357, and 377 laboratories. Students electing the chemical physics option must complete the CHE 334 and 377 laboratories.

Students electing the environmental chemistry option must complete one additional chemistry elective and the CHE 304 and 377 laboratories.

Students electing the marine and atmospheric chemistry option will need to complete the CHE 334 and 377 laboratories.

5. Additional Areas of Study

Because knowledge of computer programming is of great value to all chemists, a course in computer programming is recommended.

For those students who plan to pursue post-college studies in chemistry, it is recommended that they attain a reading knowledge of German and of French or Russian.

Requirements for the Chemistry Major (Bachelor of Arts Track)

All required courses must be taken for a letter grade; P/NC grades are not acceptable. All chemistry 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 requirements entails approximately 52 credits.

A. Study Within the Area of Chemistry

1. CHE 131, 132 or 331, 142 General or Honors Chemistry
2. CHE 133, 134 or 143, 144 General or Honors Chemistry Laboratory
3. CHE 301, 302 Physical Chemistry I, II
4. CHE 303 Solution Chemistry Laboratory and one additional laboratory course (304, 334, or 377)
5. CHE 321, 322 or 331, 332 Organic or Honors Organic Chemistry
6. CHE 327 or 333 Organic Chemistry Laboratory
7. CHE 375 Inorganic Chemistry I

B. Courses in Related Fields

1. MAT 131, 132 Classical Physics I, II and MAT 211 Linear Algebra (See note 1)
2. PHY 131, 132 Classical Physics I, II (See note 2)

C. Upper-Division Writing Requirement

Same as for Bachelor of Science Program, requirement C.

Sample Course Sequence for the Major in Chemistry (Bachelor of Science Track)

Freshman Fall	Credits
MAT 131	4
CHE 141 or 131	4
CHE 143 or 133	1
EGC 101	3
Gen Ed	3
Total	15

Spring	Credits
CHE 142 or 132	4
CHE 144 or 134	1
MAT 132	4
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
CHE 331 or 321	3
CHE 333	2
MAT 211	3
PHY 131	4
Gen Ed	3
Total	15

Spring	Credits
CHE 332 or 322	3
CHE 334	2
PHY 132	4
Gen Ed	3
Elective	3
Total	15

Junior Fall	Credits
CHE 301	4
CHE 303	2
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Spring	Credits
CHE 302	4
CHE 304	2
Gen Ed	3
Elective	3
Elective	3
Total	15

Senior Fall	Credits
CHE 357	2
CHE 375	3
UD CHE elective	3
Gen Ed	3
Electives	6
Total	17

Spring	Credits
CHE 377	2
UD CHE elective	3
UD CHE elective	3
UD elective	3
Elective	3
Total	14

Notes:

1. Alternate Mathematics Sequences

The following alternate sequences may be substituted for major requirements or prerequisites: MAT 124, 126, 127 or 125, 126, 127 or 141, 142 for 131, 132. Equivalency for MAT courses as indicated by earning the appropriate score on 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, 122 or 125, 126, 127, or 141, 142 for PHY 131, 132.

3. Transfer Credit

At least 12 credits of chemistry courses must be taken at Stony Brook; these must be taken in at least two of

the major subdisciplines (inorganic, physical, and organic chemistry).

Honors Program in Chemistry

Students who have maintained a minimum cumulative grade point average of 3.0 in science and mathematics through the junior year are eligible for departmental honors in chemistry. An additional requirement for honors is the submission of a senior thesis based on research performed during the senior year. The student will be given an oral examination in May by his or her research supervisor and the undergraduate research committee. The awarding of honors requires the recommendation of this committee and is a recognition of superior performance in research and scholarly endeavors. If the student has also achieved a 3.4 cumulative grade point average in chemistry courses taken in the senior year, honors will be conferred.

**Sample Course Sequence for the Major in Chemistry
(Bachelor of Arts Track)**

Freshman Fall	Credits
MAT 131	4
CHE 131 or 141	4
CHE 133 or 143	1
EGC 101	3
Gen Ed	3
Total	15

Spring	Credits
CHE 132 or 142	4
CHE 134 or 144	1
MAT 132	4
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
CHE 321 or 331	3
CHE 333	2
MAT 211	3
PHY 131	4
Gen Ed	3
Total	15

Spring	Credits
CHE 322 or 332	3
CHE 334	2
PHY 132	4
Gen Ed	3
Elective	3
Total	15

Junior Fall	Credits
CHE 301	4
*CHE 303	2
Gen Ed	3
Gen Ed	4
Elective	3
Total	16

Spring	Credits
CHE 302	4
*CHE 304	2
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Senior Fall	Credits
CHE 375	3
UD Electives	6
Electives	6
Total	15

Spring	Credits
*CHE 327	2
UD Electives	6
Electives	9
Total	17

**Teacher Preparation
Program in Chemistry**

This program is designed for the student who is preparing to teach chemistry in secondary schools. Professional courses are provided through the Center for Science, Mathematics, and Technology Education. Consult the director of undergraduate studies for further details. See also the section on Education and Teacher Preparation in the University Studies chapter.

*Only one of these three laboratory courses is required.

CFS

Minor in

Child and Family Studies

Acting Director: Joan F. Kuchner, Social Sciences Interdisciplinary

The Child and Family Studies minor (CFS) focuses on the child's development and its role in the family and in the wider society. Theoretical and practical issues are explored from an interdisciplinary perspective. Students complement coursework and observations with directed work in campus day care centers and other approved facilities. In order to fulfill the minor, students complete at least 24 credits of designated SSI courses, including three upper-division courses, one of them at the 400 level.

A. Required Courses

SSI 210 Human Development: The Family Context (PSY 211 or 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 of which must be upper division and one of these at the 400 level):

SSI 287 Supervised Research in Social Science

SSI 308 Abuse of Women and Children

SSI 320 The Special Child

SSI 321 Early Childhood Environments

SSI 327 Adolescent Growth and Development

SSI 339 Children's Play

SSI 345 Parental Roles in a Pluralistic Society

SSI 350 Foundations of Education

SSI 405 Seminar in Children, Law, and Social Policy

SSI 417 Senior Seminar in Child and Family Studies

SSI 447 Directed Readings in Social Science

SSI 487 Independent Project in the Social Sciences

SSI 488 Internship

One of the following courses may be substituted for an SSI course in requirement B (see individual course listings for prerequisites):

AFS 417 The African-American Family

EGL 396 Literature and Psychology of Adolescence

PSY 325 Children's Cognitive Development

PSY 329 Special Topics in Developmental Psychology

SOC/WNS 304 Sociology of the Family

SOC/WNS 340 Sociology of Human Reproduction

SOC 384 Sociology of the Life Course

SOC 387 Sociology of Education

WNS 477/PSY 347 Psychology of Women

Notes:

1. No more than one course may be taken for Pass/No Credit.
2. No more than six credits of independent work may be used toward fulfillment of the minor requirements.
3. SSI 287, 447, 487, and 488 may be used only if the topics concern child and family studies.
4. Students planning to work in the day care centers should make arrangements for an interview at the center of their choice prior to registering. Proof of having had a recent medical examination must be presented upon reporting to work.

CNS

Minor in

Chinese Studies Minor

Director: Shi Ming Hu, Social Sciences Interdisciplinary

Affiliated Faculty

Iona Man-Cheong, *History*

Gregory A. Ruf, *Social Sciences*

Eli Seifman, *Social Sciences Interdisciplinary*

Ban Wang, *Comparative Studies*

The Chinese studies minor (CNS) is designed for students interested in an interdisciplinary study of China that combines coursework in social and behavioral sciences with that in humanities and fine arts. Students design an individualized program of study with the approval of the director of the Chinese studies minor. Consultation with the director is encouraged for those students considering special opportunities for overseas studies programs.

2. No more than one course may be taken for Pass/No Credit.
3. No more than six credits of independent work (CNH/CNS 447, 487, CHI 487) may be used toward fulfillment of the minor.
4. The humanities and fine arts courses, if they are numbered 300 or above, may be used to satisfy the social sciences interdisciplinary program (SSI) major's "related courses" option with permission of the director of the Chinese studies minor.
5. Students who have proficiency in Chinese through the level of CHI 212 must substitute three credits from other courses acceptable for the minor.

Requirements for the Minor in Chinese Studies

The minor requires 18 credits.

A. CHI 212

B. Two social and behavioral science courses of at least three credits each, chosen from among the following:

CNS 249, 250, 447, 487

ECO 339

HIS 219, 341; appropriate topics of HIS 431, 432

C. Two humanities and fine arts courses of at least three credits each, chosen from among the following:

ARH 203, 318

CHI 311, 312, 487

Appropriate topics of CSL 220, 361, 362

CNH 447, 487

PHI 111, 342

RLS 240, 260

D. CNH/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.

CLS

**Minor in
Classical Civilization Minor**

Minor Coordinator: Aaron Godfrey, Comparative Studies

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.

Requirements

The student must fulfill the following minimum requirements by selecting at least two courses from group IA or IB, and one course each from groups II through VI, including nine credits numbered 300 or above, for a total of 21 credits. Substitutions may be permitted for other courses with classical content with permission of the minor coordinator. No more than one of the courses required for the minor may be taken for Pass/No Credit.

Group IA: GRK 111, 112, 447

Group IB: LAT 111, 112, 251, 252, 353,
354, 355, 356, 447

Group II: CLS 113

Group III: CLS 215, EGL 260

Group IV: CLS 320, ARH 300, 301

Group V: HIS/JDS 225

Group VI: PHI 200, 300

CSL

Department of Comparative Studies

Chairperson: Krin Gabbard

Director of Undergraduate Studies: Peter Manchester

Faculty

Thomas J.J. Altizer, *Professor Emeritus, Ph.D., University of Chicago*: Religion and literature; theology.

Ruth S. Bottigheimer, *Adjunct Associate Professor, D.A., State University of New York at Stony Brook*: German literature; fairy tales.

William Chittick, *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; drama.

Aaron W. Godfrey, *Lecturer, M.A., Hunter College*: Latin; medieval studies.

Robert Goldenberg, *Associate Professor, Ph.D., Brown University*: Jewish thought; history of Judaism; Talmudic literature.

Beverly Haviland, *Associate Professor, Ph.D., Princeton University*: 19th- and 20th-century English, American, and French literature; literary theory and psychoanalysis.

Robert Hoberman, *Associate Professor, Ph.D., University of Chicago*: Linguistic theory; Hebrew; Arabic; Aramaic.

Carole Kessner, *Assistant Professor, part time, Ph.D., State University of New York at Stony Brook*: Modern Jewish literature and culture; multicultural literature; Bible as literature.

Peter B. Manchester, *Associate Professor, Ph.D., Graduate Theological Union*: Christian origins; philosophical theology.

Sachiko Murata, *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.

Michael Sprinker, *Professor, Ph.D., Princeton University*: Literary criticism; 19th- and 20th-century British and American literature.

Louise O. Vasvari, *Professor, Ph.D., University of California, Berkeley*: Medieval Spanish literature; Romance philology; linguistics; translation theory. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1976.

Ban Wang, *Assistant Professor, Ph.D., University of California, Los Angeles*: Chinese and English literature; cultural studies; literary theory; aesthetics.

Affiliated Faculty

Russell E. Brown, *German*

Román de la Campa, *Spanish*

Thomas A. Kerth, *German*

Thomas Kranidas, *English*

Mary C. Rawlinson, *Philosophy*

Nicholas Rzhevsky, *Slavic Languages*

Hugh J. Silverman, *Philosophy*

Éléonore Zimmermann, *French*

Adjunct Faculty

Estimated number: 3

Teaching Assistants

Estimated number: 10

The Department of Comparative Studies integrates the efforts of a number of humanities programs centering on comparative studies in literature, language, and culture. In addition to the major in comparative studies in literature, described below, the department offers major programs in humanities and religious studies and minor programs in classical civilization, Japanese studies, Judaic studies, Korean studies, and religious studies. Requirements for these programs appear under each program title elsewhere in the alphabetical listings of Arts and Sciences programs. Further information is available in the Comparative Studies Office.

The Major in Comparative Studies in Literature

The comparative studies in literature major (CSL) brings the historical and intercultural resources of the department together in a broadly based program for the student interested in comparative studies and general literature. It stresses the comparative study of

world literatures from all historical periods, including the ability to read at least one literature in a language other than English, and emphasizes the relationship between literature and other disciplines. Individual programs can be adjusted to the special interests of the student through consultation with the director of undergraduate studies.

Requirements for the Major in Comparative Studies in Literature

The interdisciplinary major in comparative studies in literature leads to the Bachelor of Arts degree. The following courses are required and must be taken for a letter grade. All upper-division courses offered to satisfy major requirements must be passed with a grade of C or higher.

Completion of the major requirements entails 36 credits.

- A. Introduction: Two courses that survey a literary theme historically and cross-culturally, selected from the following: HUM 109, 121, 122, 123, RLS 103, 104
- 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, CSL 211, 212, 220, 266, or one course per designator from EGL 200-level, FRN 395, 396, ITL 395, 396, GER 344, HUR 241, 242, JDH 261, or one of the following classical language courses: GRK 112, LAT 112, SKT 112

Group 2: JDH/RLS 230, JDS/HIS 225, 226, PHI 200, 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: CSL 301 Theory of Literature

E. Advanced Study: Four upper-division courses, at least one from each of groups 1 and 2:

Group 1:

- CSL 331 Literary Genres: Poetry
- CSL 332 Literary Genres: Drama
- CSL 333 Literary Genres: Novel
- CSL 334 Other Literary Genres

Group 2:

- CSL 335 Interdisciplinary Study of Films
- CSL 361 Literature and Society
- CSL 362 Literature and Ideas
- CSL 363 Literature and the Arts

F. Senior Project: A directed study project (CSL 487 or, for students in the honors program, CSL 495) for graduating majors, to be arranged with the major advisor and an instructor of the student's choice no later than the end of the first semester of senior standing.

G. Upper-Division Writing

Requirement: For all majors, the term paper for required course CSL 301 is evaluated by the instructor for its quality of writing. Students whose writing is satisfactory fulfill this requirement with that paper. Students who do not fulfill the requirement in CSL 301 must submit to the major advisor a portfolio of papers written for subsequent upper-division courses taken for the major, no later than the first semester of senior standing, and must achieve an evaluation of S (Satisfactory) on the portfolio. For further details consult the director of undergraduate studies or the major advisor.

Honors Program in Comparative Studies in Literature

Students who have maintained a grade point average of 3.5 in the major and 3.0 overall may attempt the degree in comparative studies in literature with honors.

The honors program requires one of the following options in addition to the requirements of the major:

- A. A second course in literature in the original language used for requirement C.
- B. Study of a language other than that used for requirement C through the 192 level.
- C. Fulfillment of the requirements for the minor in a cognate discipline (to be approved by the major advisor; minors in language or literature recommended).

In addition, students seeking the honors major must use CSL 495 to fulfill major requirement F.

Requirements for the Minor in Comparative Studies in Literature

The minor in comparative studies in literature is designed especially to interest students majoring in a foreign language, English, and other humanities fields. It provides a broad overview of the theory

Sample Course Sequence for the Comparative Studies Major

Freshman Fall	Credits
EGC 101	3
Gen Ed	3
Gen Ed	3
One course from among: HUM 100-level, RLS 103 or 104	3
Elective	3
Total	15

Spring	Credits
Gen Ed	3
Gen Ed	3
Gen Ed	3
One other course from among: HUM 100-level, RLS 103 or 104	3
Elective	3
Total	15

Sophomore Fall	Credits
Group 1 course	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
Group 1 course	3
Group 1 or Group 2 course	3
Gen Ed	3
Foreign Language Literature course	3
Elective	3
Total	15

Junior Fall	Credits
CSL 301	3
UD Advanced Study Group 1 course	3
UD Advanced Study Group 2 course	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
UD Advanced Study Group or Group 2 course	3
Gen Ed	3
UD elective	3
UD elective	3
Elective	3
Total	15

Senior Fall	Credits
UD Advanced Study Group 1 or Group 2 course	3
UD elective	3
CSL 487	3
UD elective	3
Elective	3
Total	15

Spring	Credits
UD elective	3
UD elective	3
UD elective	3
Elective	3
Elective	3
Total	15

and techniques of comparative study, and an opportunity for the student to bring comparative breadth to his or her major field of study. The minor requires 21 credits, in the following categories:

- A. Introduction: One course that surveys a literary theme historically and cross-culturally, selected from the following: HUM 109, 121, 122, 123, RLS 103, 104
- 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, CSL 211, 212, 220, 266, or one course per designator from EGL 200-level, FRN 395, 396, ITL 395, 396, GER 344, HUR 241, 242, JDH 261, or one of the following

classical language courses: GRK
112, LAT 112, SKT 112

Group 2:

JDH/RLS 230, JDS/HIS 225, 226,
PHI 200, 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: CSL 301 Theory of
Literature

E. Advanced Study: Two upper-division
courses, one from group 1, and one
from group 2:

Group 1:

CSL 331 Literary Genres: Poetry
CSL 332 Literary Genres: Drama
CSL 333 Literary Genres: Novel
CSL 334 Other Literary Genres

Group 2:

CSL 335 Interdisciplinary Study of
Film
CSL 361 Literature and Society
CSL 362 Literature and Ideas
CSL 363 Literature and the Arts

DAN

Minor in Dance

Minor Coordinator: Amy Sullivan, Theatre Arts

The minor in dance (DAN) provides an approach to the educational experience of dance that integrates movement, thought, sensation, and feeling. The minor, which requires 21 credits, offers a foundation for further study in choreography, performance, education, and criticism.

Requirements for the Dance Minor

A. Courses required of all students:

1. One of the following:

THR 165 Modern Dance Technique and History

THR 166 Ballet Technique and History

THR 167 Jazz Dance Technique and History

2. One of the following:

THR 365 Modern Dance Technique and Composition

THR 366 Ballet Technique and Composition

THR 367 Jazz Dance Technique and Composition

3. One of the following:

THR 465 Modern Dance Technique and Performance

THR 467 Jazz Dance Technique and Performance

4. THR 468 Choreography

5. THR 400 Performance Dance Ensemble

B. Six credits to be chosen from:

ARH 101 Art in Culture from Prehistoric Times to the Age of the Cathedrals, ca. 1400 A.D.

ARH 102 Art in Culture from the Early Renaissance, ca. 1400 to Postmodernism

MUS 101 Introduction to Music

MUS 119 The Elements of Music

PEC 136 Basic Social Dance

PEC 137 Intermediate Social Dance

PHI 264 Philosophy and the Arts

PHI 381 Aesthetics

THR 105 Acting I

THR 110 Public Speaking

THR 232 Improvisation

THR 246 Stage Lighting

THR 353 Special Topics in Performance

THR 354 Topics in Dramaturgy (appropriate topic only)

THR 487 Projects in Theatre Arts (appropriate topic only)

Notes:

1. All courses for the minor must be taken for a letter grade. No grade lower than a C may be applied to the minor. At least 12 of the 21 credits must be taken at Stony Brook.
2. No more than three credits from THR 354 or 487 may be applied to the minor.

ESS / GEO

Department of

Earth and Space Sciences

Chairperson: Donald H. Lindsley

Director of Undergraduate Studies: Scott McLennan

Faculty

Daniel M. Davis, *Associate Professor, Ph.D., Massachusetts Institute of Technology:* Geophysics.

Robert T. Dodd, Jr., *Professor, Ph.D., Princeton University:* Geochemistry.

Gilbert N. Hanson, *Professor, Ph.D., University of Minnesota:* Geochemistry.

William E. Holt, *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., The Johns Hopkins University:* Geochemistry; petrology.

Scott M. McLennan, *Professor, Ph.D., Australian National University:* Geochemistry.

William J. Meyers, *Professor, Ph.D., Rice University:* Sedimentology.

Hanna Nekvasil, *Associate Professor, Ph.D., Pennsylvania State University:* Geochemistry; petrology.

John B. Parise, *Professor, Ph.D., James Cook University:* Crystallography; mineral physics.

Richard J. Reeder, *Professor, Ph.D., University of California, Berkeley:* Geochemistry; sedimentology.

Martin A. Schoonen, *Associate Professor, Ph.D., Pennsylvania State University:* Geochemistry.

Donald J. Weidner, *Professor, Ph.D., Massachusetts Institute of Technology:* Geophysics.

Teng-fong Wong, *Professor, Ph.D., Massachusetts Institute of Technology:* Geophysics.

Steven C. Englebright, *M.S., Curator, State University of New York at Stony Brook:* Geology.

Affiliated Faculty

Robert C. Aller, *Marine Sciences Research Center*

Henry J. Bokuniewicz, *Marine Sciences Research Center*

J. Kirk Cochran, *Marine Sciences Research Center*

Marvin Geller, *Marine Sciences Research Center*

David W. Krause, *Anatomical Sciences*

Charles Nittrouer, *Marine Sciences Research Center*

Teaching Assistants

Estimated number: 12

The field of earth and space sciences is a broadly based multidisciplinary science combining geology, astronomy, atmospheric science and marine science. The major in earth and space sciences leads to the Bachelor of Arts degree and 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 allows flexible course selection for students who may or may not be planning on graduate studies. 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, or research in private industry and government.

Requirements for the Major in Earth and Space Sciences

Completion of the major requirements entails approximately 58 to 64 credits.

A. Introductory earth and space sciences courses:

GEO 122 Physical Geology or GEO 102 The Earth and GEO 112 Physical Geology Laboratory

AST 101 Introduction to Astronomy and AST 112 Astronomy Laboratory B

ATM 205 Introduction to Atmospheric Sciences

B. Upper-division earth and space sciences courses:

At least four upper-division GEO, AST, ATM courses; at least one should include a laboratory

C. Introductory related science courses:

1. MAT 131, 132 (See note 1 below)
2. PHY 121 or 125 or 131 or 141

3. Any two of the following groups:

- a. PHY 122 or 132 or 142 or 126, 127
- b. CHE 111, 112 or 131, 132 or 141, 142
- c. BIO 151, 152 or 171, 172

D. Specific science concentration:

At least 12 credits in courses acceptable for one of the following concentrations: astronomy, atmospheric sciences, biology, chemistry, geology, environmental geoscience, marine sciences, mathematics, or physics

E. Upper-Division Writing Requirement:

All students majoring in earth and space sciences must submit two papers (term papers, laboratory reports, or independent research papers) to the director of undergraduate studies for department evaluation by the end of the junior year. If this evaluation is satisfactory, the student will have fulfilled the upper-division writing requirement. If it is not, the student must fulfill the requirement before graduation.

Notes:

1. The following alternate beginning calculus sequences may be substituted for MAT 131, 132 in major requirements or prerequisites: MAT 124, 126, 127 or 125, 126, 127 or 141, 142. Equivalency for MAT courses 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.
2. For biology, chemistry, geology, and marine sciences concentrations, MAT 132 may be waived under requirement C.1.

3. Students must obtain departmental approval of courses chosen to satisfy the specific science concentration.
4. For concentration in chemistry, CHE 111, 112 are not acceptable under requirement C.3.
5. For astronomy, atmospheric sciences, mathematics, and physics concentrations, PHY 121, 122 are not acceptable under requirements C.2 and C.3.
6. For concentration in physics, MAT 205 or 203 or AMS 261 and MAT 305 or 303 or AMS 361 are required, and two semesters under requirement C.3 may be waived.

Preparation for Teachers of Earth Science in Secondary Schools

Curricula leading to provisional certification in earth sciences for secondary school teachers are available from the Department of Earth and Space Sciences. Professional courses are provided through the Center for Science, Mathematics, and Technology Education (see the section in the University Studies chapter entitled "Education and Teacher Certification.")

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 (GEO) includes four distinctive tracks in 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., majoring in geology, typically go on to graduate school or obtain professional employment with environmental consulting firms or various government organizations.

The Department of Earth and Space Sciences (Geosciences) offers undergraduate programs leading either to a Bachelor of Science or to a Bachelor of Arts degree. Minimum course requirements for both the B.S. and B.A. programs are listed below. All geology departmental courses taken to meet requirements for the major must be taken for a letter grade and passed with a C or higher. Upon declaring a major, the student will be assigned a faculty advisor in the appropriate area who, along

Sample Course Sequence in the Earth and Space Sciences Major

Freshman Fall	Credits
CHE 131	4
GEO 102	3
GEO 112	1
EGC 101	3
Gen Ed	3
Total	14

Spring	Credits
CHE 132	4
MAT 131	4
AST 101	3
AST 112	1
Gen Ed	3
Total	15

Sophomore Fall	Credits
MAT 132	4
PHY 131	4
BIO 151 or Gen Ed	3 or 4
Gen Ed	3
Total	14-15

Spring	Credits
PHY 132 or BIO 152	4
GEO/AST/ATM Elective	3
Gen Ed	3
Gen Ed	3
UD Elective	3
Total	16

Junior Fall	Credits
ATM 205	3
UD Concentration Elective	3
Gen Ed	3
Gen Ed	3
UD Elective	3
Total	15

Spring	Credits
UD Concentration Elective	3
GEO/AST/ATM Elective	4
Gen Ed	3
UD Elective	3
UD Elective	3
Total	16

Senior Fall	Credits
UD Concentration Elective	3
UD GEO/AST/ATM Elective	3
Gen Ed	3
UD Elective	3
UD Elective	3
Total	15

Spring	Credits
UD Concentration Elective	3
GEO/AST/ATM Elective	3
Gen Ed	3
UD Elective	3
UD Elective	3
Total	15

with the director of undergraduate studies, will assist in the selection of a course sequence leading to the desired degree. Students should consult frequently with their faculty advisors regarding their progress and regarding appropriate science courses. Because the position of the scientist in society is responsible and complex, the student is cautioned to pay careful attention to general education in the arts, humanities, and social sciences.

Requirements for the Major in Geology

Completion of the major requirements entails approximately 65 to 67 credits.

Geology and Environmental Geosciences Tracks

A. Required departmental courses

Geology Track

GEO 103 The Earth Through Time

GEO 113 Historical Geology Laboratory

GEO 122 Physical Geology or GEO 102 The Earth and GEO 112 Physical Geology Laboratory

GEO 305 Field Geology

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/MEC 397, AMS 210, 321

B. Required courses in the related sciences:

MAT 131, 132 (See note 1 below)
 CHE 131, 132 or 141, 142
 PHY 131, 132 (See note 2 below)

C. Related science electives:

A coherent set of science courses, totaling 12 credits, acceptable to the department

D. Upper-Division Writing Requirement

All students majoring in geology must submit two papers (term papers, laboratory reports, or independent research papers) to the director of undergraduate studies for department evaluation by the end of the junior year. If this evaluation is satisfactory, the student will have fulfilled the upper-division writing requirement. If it is not, the student must fulfill the requirement before graduation.

Engineering Geology Track

A. Required courses

GEO 101 Environmental Geology
 GEO 111 Environmental Geology Laboratory
 GEO 122 Physical Geology or GEO 102 The Earth and GEO 112 Physical Geology Laboratory
 GEO 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 (See note 1 below)

MAT 203 or AMS 261
 CHE 131, 132 or 141, 142
 PHY 131, 132 (See note 2 below)

C. Related science and engineering electives:

A coherent set of science and engineering courses, totaling six credits, acceptable to the department

D. Upper-Division Writing Requirement

See D under "Geology and Environmental Geosciences Tracks," above

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 (see Note I below)
 AMS 361
 BIO 151
 BIO 343

CHE 131, 132 or 141, 142
 PHY 131, 132 or 125, 126, 127 or 141, 142

C. Upper Division Writing Requirement

See D under "Geology and Environmental Geosciences Tracks" above.

Notes:

1. All GEO electives must be numbered 300 and higher.
2. The following alternate beginning calculus sequences may be substituted for MAT 131, 132 in major requirements or prerequisites: MAT 124, 126, 127 or 125, 126, 127 or 141, 142. Equivalency for MAT courses achieved by earning the appropriate

score on 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.

3. In the Geology, Environmental Geoscience and Engineering Geology tracks, the following physics courses are alternatives to PHY 131, 132: PHY 121, 122 or 125, 126, 127 or 141, 142.

Honors Program in Geology

Students in the geology major who have maintained a cumulative grade point average of 3.5 in natural sciences and mathematics through the junior year may become candidates for departmental honors in geology by applying to the department.

In addition to the academic program, the student must complete an honors thesis, which is evaluated by a committee composed of the student's advisor and two other science faculty members including one from outside of the department. If the honors program is completed with distinction and the student has maintained a minimum 3.5 grade point average in all coursework in natural sciences and mathematics, honors are conferred.

Geology Minor

For students majoring in other areas who are interested in obtaining a fundamental understanding of the earth sciences, a minor concentration in geology with two distinct tracks—geology and environmental geoscience—is available. The geology track acquaints students with earth materials, the origin and evolution of life on earth, and physical processes that have shaped the earth through time. The environmental geoscience track acquaints students with the fundamental environmental problems that are dealt with by geoscientists. This program, comprising courses offered yearly by the earth sciences faculty, is administered by the director of undergraduate studies, who also serves as student advisor. The minor requires 20 credits.

Geology Track

GEO 103 The Earth Through Time

GEO 113 Historical Geology
LaboratoryGEO 122 Physical Geology or GEO
102 The Earth and GEO 112 Physical
Geology LaboratoryTwelve additional credits from among
GEO courses numbered 300 or higher**Environmental Geoscience Track**

GEO 101 Environmental Geology

GEO 111 Environmental Geology
LaboratoryGEO 122 Physical Geology or GEO
102 The Earth and GEO 112 Physical
Geology Laboratory

GEO 315 Groundwater Hydrology

Nine additional credits chosen from
304, 306, 307, 309, 310, 311, 316, 318,
401, 403**SAMPLE COURSE SEQUENCES IN THE GEOLOGY MAJOR**

Track	Geology	Environmental Geoscience	Engineering Geology	Geological Oceanography
Freshman				
Fall:	CHE 131(4cr)	CHE 131(4cr)	CHE 131(4cr)	BIO 151(4cr)
	GEO 102(3cr)	GEO 102(3cr)	GEO 102(3cr)	CHE 131(4cr)
	GEO 112(1cr)	GEO 112(1cr)	GEO 112(1cr)	GEO 102(3cr)
	EGC 101(3cr)	EGC 101(3cr)	EGC 101(3cr)	GEO 112(1cr)
	Gen Ed(3cr)	Gen Ed(3cr)	Gen Ed(3cr)	EGC 101(3cr)
Credits	14	14	14	15
Spring:	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)	Gen Ed(3cr)
	Gen Ed(3cr)	Gen Ed(3cr)	Gen Ed(3cr)	Gen Ed(3cr)
Credits	15	15	15	17
Sophomore				
Fall:	GEO Elec(3cr)	GEO Elec(3cr)	MAT 132(4cr)	BIO 343(4cr)
	MAT 132(4cr)	MAT 132(4cr)	PHY 131(4cr)	MAT 132(4cr)
	PHY 131(4cr)	PHY 131(4cr)	Gen Ed(3cr)	PHY 131(4cr)
	Gen Ed(3cr)	Gen Ed(3cr)	Gen Ed(3cr)	Gen Ed(3cr)
	Gen Ed(3cr)	Elective(3cr)		
Credits	14	17	17	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)
	Gen Ed(3cr)	PHY 132(4cr)	GEO 306(4cr)	Gen Ed(3cr)
	Gen Ed(3cr)	Gen Ed(3cr)	PHY 132(4cr)	Gen Ed(3cr)
	Gen Ed(3cr)			
Credits	14	14	15	14
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)
	Gen Ed(3cr)	Gen Ed(3cr)	Gen Ed(3cr)	Gen Ed(3cr)
	Gen Ed(3cr)	Gen Ed(3cr)	UD Elective(3cr)	UD Elective(3cr)
Credits	14	15	14	15
Spring:	GEO 309(4cr)	ATM 397(3cr) or	MEC 363(4cr)	MAR 333(3cr)
	GEO Elec(3cr)	GEO 309(4cr)	GEO 315(3cr)	Gen Ed(3cr)
	Gen Ed(3cr)	GEO 315(3cr)	Gen Ed(3cr)	Gen Ed(3cr)
	UD Gen Ed(3cr)	Gen Ed(3cr)	Gen Ed(3cr)	UD Elective(3cr)
	Gen Ed(3cr)	Gen Ed(3cr)	UD Elective(3cr)	UD Elective(3cr)
	UD Elective(3cr)			
Summer:	GEO305(3cr)			
Credits	19(3 Summer)	15 or 16	16	15
Senior				
Fall:	GEO 310(3cr)	AMS 210(3cr) or	GEO 318(3cr)	MAR 304(3cr)
	GEO Elec(3cr)	GEO 310(3cr)	GEO/MEC Elec(3)	MAR 346(3cr)
	Gen Ed(3cr)	GEO Elec(3cr)	Gen Ed(3cr)	MAR 350(2cr)
	UD Elective(3cr)	Gen Ed(3cr)	UD Elective(3cr)	Gen Ed(3cr)
	UD Elective(3cr)	UD Elective(3cr)	UD Elective(3cr)	UD Elective(3cr)
	UD Elective(3cr)			
Credits	15	15	15	14
Spring:	GEO Elec(3cr)	GEO Elec(3cr)	GEO 309(4cr)	GEO/MAR 353(3cr)
	UD Elective(3cr)	UD Elective(3cr)	GEO/MEC Elec(3)	Gen Ed(3cr)
	UD Elective(3cr)	UD Elective(3cr)	Gen Ed(3cr)	UD Elective(3cr)
	UD Elective(3cr)	Elective(3cr)	UD Elective(3cr)	Elective(3cr)
	Elective(3cr)	Elective(3cr)	UD Elective(3cr)	Elective(3cr)
Credits	15	15	15	15

ECO

Department of Economics

Chairperson: Warren Sanderson

Director of Undergraduate Studies: William Dawes

Faculty

Reiko Aoki, *Assistant Professor, Ph.D., Stanford University*: Industrial organization; game theory.

Robert J. Aumann, *Professor, Ph.D., Massachusetts Institute of Technology*: Game theory; mathematical economics.

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.

John Hause, *Professor, Ph.D., University of Chicago*: Theory of measurement and econometric estimation in human capital; industrial organization; applied microeconomics.

John Hillas, *Assistant Professor, Ph.D., Stanford University*: Game theory; microeconomic theory.

Bryce Hool, *Professor, Ph.D., University of California, Berkeley*: Macroeconomics; general equilibrium theory; monetary theory.

Michael Hurd, *Professor, Ph.D., University of California, Berkeley*: Econometrics; labor; macroeconomics.

Takashi Kamihigashi, *Assistant Professor, Ph.D., University of Wisconsin*: Macroeconomics; international economics; economic theory.

Stefan Mittnik, *Associate Professor, Ph.D., Washington University*: Econometrics; macroeconomics.

Mark Montgomery, *Associate Professor, Ph.D., University of Michigan*: Economic demography; development economics.

Thomas Muench, *Professor, Ph.D., Purdue University*: Mathematical economics; econometrics; urban economics.

Egon Neuberger, *Professor, Ph.D., Harvard University*: Comparative systems; Soviet and East European economics.

Abraham Neyman, *Professor, Ph.D., Hebrew University*: Game theory; mathematical economics.

Sangin Park, *Assistant Professor, Ph.D., Yale University*: Industrial organizations; econometrics; microeconomics.

Warren Sanderson, *Professor, Ph.D., Stanford University*: Joint appointment with History; Economic history; economic demography.

Yair Tauman, *Professor, Ph.D., Hebrew University*: Industrial organization; game theory.

Dieter Zschock, *Professor, Ph.D., Tufts University*: Development economics; labor economics.

Michael Zweig, *Professor, Ph.D., University of Michigan*: Political economy; labor economics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1991, and the President's Award for Excellence in Teaching, 1991.

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 25

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 analyses, 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 are required to acquire a more thorough background in economic theory by taking ECO 303 and ECO 305. The remaining economics courses used to sat-

isfy the major requirements go into 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.

Graduating majors 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 and M.B.A. A small number of graduates have gone to graduate school in economics, receiving Ph.D.'s from schools such as Harvard, Duke, and Berkeley. 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 Office of Undergraduate Academic Affairs. For further information, students should contact the Internship Coordinator in the department.

Requirements for the Major in Economics

The major in economics leads to the Bachelor of Arts degree. Completion of the major requirements entails 39 to 46 credits.

A. A minimum of 12 courses, at least 10 of them in Economics, distributed as follows:

1. ECO 107 Introduction to Economic Reasoning and ECO 109 Introduction to Analytical Economics.
2. ECO 303 Intermediate Microeconomic Theory and ECO 305 Intermediate Macroeconomic Theory. A grade of C or better is required in both courses. (Note that MAT 123 with a grade of C or better is a prerequisite for both courses).
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. One semester of calculus (MAT 123 or higher or equivalent by placement examination or transfer evaluation).

C. Upper-Division Writing Requirement:

Students should meet the upper-division writing requirement before the end of the junior year, demonstrating their competence in writing for the discipline by obtaining a satisfactory evaluation of their writing from the faculty instructor of any upper-division ECO course except ECO 320. Where a term paper or other major writing assignment is a required part of the course, this work will form the basis of evaluation. When the course involves no major writing assignment, the instructor will assign a special paper for those students in the class seeking to satisfy the writing proficiency requirement. In these cases, the number of students who will be permitted to seek evaluation may be limited. Students must request permission from the instructor at the beginning of the semester to use the

Sample Course Sequence for the Economics Major

Freshman Fall	Credits
EGC 101	3
Gen Ed	3-4
ECO 107 or ECO 109 (if possible)	4
MAT 123 or higher	3
USB 101	1
Total	14-15

Spring	Credits
ECO 109 or 107	4
MAT (if appropriate)	3-4
Gen Ed	3
Gen Ed	3
Elective	3
Total	16-17

Sophomore Fall	Credits
ECO 303	4
Gen Ed	3
Gen Ed	3
Elective	3
Elective	3
Total	16

Spring	Credits
ECO 305	4
Gen Ed	3
Gen Ed	3
UD Elective	3
Elective	3
Total	16

Junior Fall	Credits
UD ECO	3
UD ECO	3
Gen Ed	3
Gen Ed	3
UD Elective	3
Total	15

Spring	Credits
UD ECO	3
ECO Elective or other approved course	3
Gen Ed	3
Elective	3
UD Elective	3
Total	15

Senior Fall	Credits
UD ECO	3
UD ECO	3
Gen Ed	3
UD Elective	3
UD Elective	3
Total	15

Spring	Credits
UD ECO	3
ECO Elective or other approved course	3
UD Elective	3
Elective	3
Elective	3
Total	15

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. A maximum of three Economics courses with a letter grade of C- may be counted toward completion of the major requirements. All other grades in Economics courses must be C or higher. Courses taken on a P/NC basis will not count toward fulfillment of major requirements.
2. Economics is a quantitative social science. Although major requirements include only a semester of calculus,

students planning to use their background in economics for graduate studies or in their careers are strongly urged to take additional courses in mathematics and in applied mathematics. The required calculus course must be taken for a letter grade and must be passed with a grade of C or higher.

3. No transfer course with a grade lower than C may be applied toward requirements A3 and A4.

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 Economics Department.

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 3.5 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.

Note:

Students who need to take MAP 103 will be unable to take ECO 107 in the first semester of the Freshman year and will have to adjust their schedule accordingly. The number of 3-credit upper division courses can be reduced by one if at least one of the upper division ECO courses is 4 credits.

ECM

Interdisciplinary Program in Engineering Chemistry

Program Committee: Patrick Herley, Materials Science and Engineering

Joseph W Lauher, Chemistry

The interdisciplinary program in engineering chemistry (ECM), which leads to the Bachelor of Science degree, is designed to provide students with a basic understanding of the chemistry and materials technology underlying modern materials engineering.

This program emphasizes a strong background in physical chemistry infused with an orientation toward the solid-state sciences and materials technology. Its central theme is a chemistry core strengthened by materials science and laboratory courses, the latter with a unique "chemistry of materials" component. The choice of suitable electives helps the student to prepare for work or advanced study in areas such as electronic materials, interfacial phenomena, solid-state science and technology, polymers, ceramics, biomaterials, etc.

Jointly sponsored by the College of Arts and Sciences and the College of Engineering and Applied Sciences, the program is a basic preparation for training chemical and materials professionals who can enter a wide range of industries or proceed to graduate work in either solid-state chemistry or materials science.

B.S./M.S. Program

Engineering chemistry students interested in pursuing graduate study in materials science may wish to apply for the five-year program at the end of their junior year. For further details, see pp. 195-96.

Diversified Education Curriculum Requirements

Students majoring in engineering chemistry must meet the D.E.C. requirements of the College of Arts and Sciences, with the following exceptions:

- A. An elementary foreign language course numbered 101 or 112, if taken to fulfill the entry skill in foreign language requirement, may also be used for one of the two courses needed to fulfill the D.E.C. category G requirement.

- B. Only one course need be taken from D.E.C. category F.

Requirements for the Major

The interdisciplinary major in engineering chemistry leads to the Bachelor of Science degree. The following courses are required and must be taken for a letter grade: 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 requirements entails approximately 65 to 67 credits.

A. Mathematics and Basic Science Requirements

1. MAT 131 Calculus I and MAT 132 Calculus II (see note, below)
2. One of the following pairs of courses: AMS 261 and 361 Engineering Mathematics I and II; or MAT 205 and 305 Calculus III and IV; or MAT 203 and 303 Calculus III and IV with Applications
3. 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; PHY 251 Modern Physics or ESG 281 An Engineering Introduction to the Solid State

Note: The following alternate calculus sequences may be substituted: MAT 141, 142 or 125, 126, 127 or 124, 126, 127 for 131, 132.

B. Core Program

1. CHE/ESM 221 Introduction to Chemistry of Solids
2. CHE 301, 302 Physical Chemistry I, II
3. CHE 303 Solution Chemistry Laboratory
4. CHE 304 Chemical Instrumentation Laboratory
5. CHE 321 or 331 Organic Chemistry
6. ESG 332 Materials Science I: Structure and Properties of Materials
7. ESG 333 Materials Science II: Electronic Properties
8. ESM 302 Introduction to the Crystalline State

C. Upper-Division Writing Requirement

Each student majoring in engineering chemistry must submit a portfolio of three to five papers from previous chemistry coursework, at least two of which should be full laboratory reports from chemistry courses. This portfolio is to be submitted by the end of the junior year. It must be found acceptable in its clarity and precision of communication before the student can be cleared for graduation.

Electives

Selection of technical and open electives to give a total of 120 credits. Students are advised to divide their electives among courses within the College of Engineering and Applied Sciences and the Chemistry Department that strengthen their professional interests, and courses in the social sciences and humanities that help them place the problems of society and industry in perspective.

Students who wish to meet the American Chemistry Society certification requirements must take, in addition to the above, CHE 322, 333, and 334 (organic), and 375 (inorganic).

**Sample Course Sequence for the Major in
Engineering Chemistry**

Freshman Fall	Credits
MAT 131	4
CHE 141 or 131	4
CHE 143 or 133	1
EGC 101	3
Gen Ed	3
Total	15

Spring	Credits
CHE 142 or 132	4
CHE 144 or 134	1
MAT 132	4
PHY 131	4
MEC 111	3
Total	16

Sophomore Fall	Credits
CHE 221 or ESM 221	3
CHE 301	4
CHE 303	2
AMS 261	3
PHY 132	4
Total	16

Spring	Credits
CHE 302	4
CHE 304	2
AMS 361	3
Gen Ed	3
ESG 281 or PHY 251	4
Total	16

Junior Fall	Credits
CHE 331 or 321	3
CHE 333	2
ESG 332	4
ESM 302	3
Gen Ed	3
Total	15

Spring	Credits
CHE 332 or 322	3
CHE 334	2
ESG 333	4
Elective	3
Gen Ed	3
Total	15

Senior Fall	Credits
CHE 375	3
Gen Ed	3
Gen Ed	3
UD Elective	3
Elective	3
Total	15

Spring	Credits
CHE 377	2
Gen Ed	3
Gen Ed	3
Electives	6
Total	14

EGL

Department of English

Acting Chairperson: Paul J. Dolan

Faculty

Ursula Appelt, *Assistant Professor, Ph.D., University of Virginia*: Renaissance.

Paul B. Armstrong, *Professor, Ph.D., Stanford University*: Modern fiction.

Bruce W. Bashford, *Assistant Professor, Ph.D., Northwestern University*: Literary criticism; rhetoric and composition.

Patricia A. Belanoff, *Associate Professor, Ph.D., New York University*: Composition; Old English; Middle English; rhetoric.

Timothy Brennan, *Associate Professor, Ph.D., Columbia University*: Cross-cultural literary studies; history and theory of criticism.

Dennis A. Clarke, *Lecturer and Director of the Writing Center, M.A., Louisiana State University*: Composition; rhetoric.

Helen Cooper, *Associate Professor, Ph.D., Rutgers University*: Victorian literature; creative writing; women's studies.

Paul J. Dolan, *Associate Professor, Ph.D., New York University*: Modern British and American literature; Yeats; literature and politics.

Cornelius Eady, *Associate Professor and Director of the Poetry Center*: Poetry; creative writing.

Elsa Emenheiser, *Lecturer, Ph.D., State University of New York at Stony Brook*: Modern British and American literature; secondary education.

Diane Fortuna, *Associate Professor, Ph.D., The Johns Hopkins University*: 20th-century British and American literature; 19th-century American literature.

Clare A. Frost, *Lecturer, M.A., State University of New York at Stony Brook*: Composition; creative writing.

Eric Haralson, *Assistant Professor, Ph.D., Columbia University*: American studies.

Laura Henigman, *Assistant Professor, Ph.D., Columbia University*: Early American literature.

Clifford C. Huffman, *Professor, Ph.D., Columbia University*: Renaissance literature; Shakespeare. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1993, and the President's Award for Excellence in Teaching, 1993.

E. Ann Kaplan, *Professor and Director of the Humanities Institute, Ph.D., Rutgers University*: 19th- and 20th-century British and American literature; women's studies; film.

Shirley Strum Kenny, *Professor, Ph.D., University of Chicago*: Restoration and 18th-century British drama.

Thomas Kranidas, *Professor, Ph.D., University*

of Washington: 17th-century literature; Milton.

Ira Livingston, *Assistant Professor, Ph.D., Stanford University*: Romanticism; literary theory.

Thomas E. Maresca, *Professor, Ph.D., The 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., State University of New York at Stony Brook*: Creative writing; composition.

Adrienne Munich, *Professor, Ph.D., City University of New York*: Victorian literature; women's studies.

Gerald B. Nelson, *Associate Professor Emeritus, Ph.D., Columbia University*: 20th-century British and American literature; poetry.

Stacey Olster, *Associate Professor, Ph.D., University of Michigan*: 20th-century British and American literature; the novel. Recipient of the President's Award for Excellence in Teaching, 1986, and the Chancellor's Award for Excellence in Teaching, 1987.

Ron Overton, *Lecturer, M.A., State University of New York at Stony Brook*: Composition and rhetoric; contemporary poetry.

Alice B. Robertson, *Assistant Professor and Director of Writing Programs, Ph.D., Arizona State University*: Composition theory and practice; 19th- and 20th-century American literature.

Carol Rosen, *Professor, Ph.D., Columbia University*: Theory; criticism; modern drama.

Walter Scheps, *Associate Professor, Ph.D., University of Oregon*: Old English; Middle English; the history of the English language.

Sallie Sears, *Associate Professor Emeritus, Ph.D., Brandeis University*: The novel; Henry James; literary criticism; women's studies.

David Sheehan, *Associate Professor, Ph.D., University of Wisconsin*: Restoration and 18th-century literature; Native American literature.

Clifford H. Siskin, *Associate Professor, Ph.D., University of Virginia*: British romanticism; critical theory.

Stephen J. Spector, *Professor and Graduate Studies Director, Ph.D., Yale University*: Old English; Middle English; the history of the English language.

Frances Zak, *Lecturer, Ph.D., State University of New York at Stony Brook*: Composition and rhetoric; 20th-century American literature.

Adjunct Faculty

Estimated number: 12

Teaching Assistants

Estimated number: 50

Courses offered by the Department of English seek to develop students' understanding of important works of literature written in English, to provide a historical awareness of the range of thought and experience that has found expression in the English language, and to enlarge students' personal horizons by reflection upon cultural, social, and aesthetic experience. The development of this kind of knowledge also means a development of students' ability to express themselves effectively in speech and in writing. Courses in English instruct students in becoming more observant, thoughtful, and articulate in response to what they read.

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), Journalism (JRN 287, 288, 387, 388, 389, 390, 394, 395; see Journalism elsewhere in the alphabetical listing of Arts and Sciences programs), and Secondary Education leading to provisional New York State certification (EGL 398, 451, 452, 454).

The English Department's Writing Center offers individual tutoring to all members of the Stony Brook community, including undergraduate and graduate students and faculty.

Requirements for the Major in English

The major in English leads to the Bachelor of Arts degree. Completion of the major requirements entails 54 credits.

A. Study within the Area of the Major

1. EGL 204
2. EGL 207
3. Three survey courses from among the following: EGL 205, 206, 217, 218, 224, 226, 235, 243, 274
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 396 and 398); EGL 495 and 496 also apply.

Notes on Section A:

1. No English course below the 200 level may be used to fulfill English major requirements. In addition, the following courses may not be used for the English major: EGL 202, 285, 286, 385, 398, 450, 454, 488, or any JRN course.
2. Appropriate EGL 490 seminars may be used to satisfy the above requirements by permission of the director of undergraduate studies.
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

4. All courses used to fulfill major requirements in within the area of the major must be taken for a letter grade and passed with a C or higher.

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 counted with grades in the D range.

C. Upper-Division Writing Requirement

In the semester preceding the semester in which the student expects to graduate, he or she shall submit to the director of undergraduate studies two papers, each written for a different instructor in an upper-division English course, together with the instructor's written confirmation that the paper demonstrates suitably advanced writing proficiency. The departmental course descriptions for

the forthcoming semester regularly specifies those courses in which students may satisfy this requirement. The student must notify the instructor before the paper is turned in to him or her that it is intended to satisfy this requirement in addition to the course requirements. A student anticipating or experiencing difficulty in satisfying this requirement should seek the advice and assistance of the director of undergraduate studies no later than the beginning of the semester before the one in which the student expects to graduate.

Teacher Preparation

See the section on Education and Teacher Certification in the University Studies chapter.

The Honors Program in English

To be awarded honors a department major must 1. attain an overall G.P.A. of at least 3.0 and a G.P.A. of at least 3.5 in English courses taken for the major; 2. receive a grade of A or A- in EGL 490; 3. write a senior thesis judged worthy of honors. Completion of EGL 490 is a prerequisite for undertaking the senior thesis. Students eligible to write a senior thesis must find a member of the department faculty to act as a thesis advisor and enroll in EGL 496. The thesis topic must be approved by the undergraduate program committee before the last week of the semester prior to taking EGL 496. The thesis will be evaluated by the thesis advisor, a member of the undergraduate program committee, and a third reader from outside the department. For further information consult the director of undergraduate studies.

The Minor in English

The minor, which requires 18 credits, allows students to pursue within a framework of general requirements their specific interests in one of three areas: British literature, American literature, or 20th-century literature. Each student's particular choice of courses within these three options must be determined in consultation with the director of undergraduate studies.

All courses must be taken for a letter grade, i.e., the Pass/No Credit option is excluded.

A. Courses required of all minors:

EGL 204 Literary Analysis and Argumentation

Shakespeare: EGL 243 or 345 or 346

One elective from EGL 300-496, exclusive of 385, 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

Details of staffing and specific course descriptions should be obtained from brochures published by the English Department before registration each semester. Reading lists are also available in advance.

Note: EGC courses may not be used for English minor credit.

Sample Course Sequence for the English Major

Freshman Fall	Credits
EGC 101	3
Gen Ed	3
Gen Ed	3
Elective	3
Gen Ed	3
Total	15

Spring	Credits
Gen Ed	3
Gen Ed	3
Gen Ed	3
Elective	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
EGL 204	3
EGL 200-level survey*	3
Foreign language (intermediate)	3-4
Gen Ed	3
UD Elective	3
Total	15-16

Spring	Credits
EGL 200-level survey*	3
EGL 200-level survey*	3
Foreign language (intermediate)	3-4
UD Elective	3
EGL 200-400 level elective**	3
Total	15-16

Junior Fall	Credits
EGL 207	3
UD Elective	3
Foreign language (if required)	3
History (U.S., British, medieval or Renaissance)	3
Gen Ed	3
Total	15

Spring	Credits
EGL 300-level elective***	3
EGL 300-level elective***	3
Foreign language (if required)	3
Gen Ed	3
UD 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
Gen Ed	3
UD Elective	3
Total	15

Spring	Credits
EGL 300-level elective***	3
EGL 300-level elective***	3
UD Elective	3
UD Elective	3
UD Elective	3
Total	15

* See A.3 above

** See A.5 above

***See A.4 above

FRN / ITL

Department of

French and Italian

Chairperson: Charles Franco

Director of Undergraduate Studies: Charle Franco

Faculty

Harriet Allentuch, *Professor and Undergraduate Coordinator in French, Ph.D., Columbia University*: 17th-century French literature; French women writers. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1990, and the President's Award for Excellence in Teaching, 1990.

Carol Blum, *Research Professor of Humanities, Ph.D., Columbia University*: 18th-century French literature; literature of the French Revolution.

Frederick Brown, *Professor, Ph.D., Yale University*: 19th- and 20th-century French literature.

Andrea Fedi, *Assistant Professor, Dottore in Lettere e Filosofia, University of Florence; Ph.D., University of Toronto*: Italian Renaissance literature; historiography.

Paul Ferrotti, *Lecturer, M.A., Rutgers University*: Pedagogy; teaching certification.

Luigi Fontanella, *Professor, Ph.D., Harvard University*: Modern Italian Literature

Charles Franco, *Associate Professor, Ph.D., Rutgers University*: Medieval Italian literature.

Robert Harvey, *Associate Professor, Ph.D., University of California, Berkeley*: Contemporary French literature; critical theory; film. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1996, and the President's Award for Excellence in Teaching, 1996.

E. Anthony Hurley, *Assistant Professor, Ph.D., Rutgers University*: Francophone literature of the Caribbean and Africa; French poetry; 19th-century French literature.

Mikle Ledgerwood, *Assistant Professor and Director of Language Learning Center, Ph.D., University of North Carolina-Chapel Hill*: Education and technology; semiotics; French civilization; Quebec.

Mario B. Mignone, *Professor, Ph.D., Rutgers University*: Contemporary Italian literature.

Sandy Petrey, *Professor, Ph.D., Yale University*: 19th-century French literature; comparative literature; literary theory.

Jacqueline Reich, *Assistant Professor, Ph.D., University of California, Berkeley*: Italian cinema; film theory; gender studies.

Lori Repetti, *Associate Professor, Ph.D., University of California, Los Angeles*: Romance linguistics; Italian dialectology; history of the Italian language.

Anthony Rizzuto, *Associate Professor, Ph.D., Columbia University*: 19th- and 20th-century French literature.

Ruth Plaut Weinreb, *Associate Professor, Ph.D., Columbia University*: Pedagogy and 18th-century French literature.

Elèonore M. Zimmermann, *Professor Emerita, Ph.D., Yale University*: 17th-, 19th-, and 20th-century French literature; comparative literature.

Affiliated Faculty

Richard Gambino, *Center for Italian Studies*

Adjunct Faculty

Estimated number: 5

Teaching Assistants

Estimated number: 3

The Department of French and Italian offers a diversified program that meets the needs of all students interested in the study of French or Italian. Those wishing to major in either or both languages are offered several possible concentrations, each structured to assist students preparing for future careers or advanced study. The department also offers a minor in each language and a variety of courses of interest to non-majors, some in translation (see Foreign Literature and Culture Courses Offered in English in the alphabetical listing of Arts and Sciences programs), some in the original language.

Placement

Entering students who wish to continue the study of French or Italian started in high school should consult a departmental advisor to help them choose the appropriate course

A student wishing to major in either French language and literature or Italian Studies may choose between two concentrations in each. These concentrations are designed to allow maximum flexibility in the students' programs and to fulfill their varying needs and interests. All require as a basis a solid preparation in the language of the major. Students will choose one of the concentrations according to whether they wish to acquire a general

humanistic background or to prepare for graduate study in literature (Concentration A); whether they wish to prepare for teaching on the secondary school level (Concentration A); or whether they wish to prepare for work in law, government, international relations, business, banking, hotel management, or translation and interpretation (Concentration A or B).

All students should consult with the appropriate departmental advisors. Students opting for Concentration B must obtain departmental approval for their program by submitting it in advance, after consultation with the advisor, to the director of undergraduate studies. In order to complement the major in French or Italian, students are encouraged to take upper-division courses in related fields: English, history, art, music, etc.

French

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.

The principal objectives of the French major are:

1. To achieve a high level of competence in reading, writing, speaking and understanding French

Sample Course Sequence for the French Major: Concentration in Language and Literature (A)

Sample Course Sequence for the French Major: Concentration in French and a Second Discipline (B)

Freshman Fall	Credits
FRN 211 or 221 (depending on placement)	3
EGC 101	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
FRN 212 or FRN 222	3
Gen Ed.	3
Gen ED	3
Gen Ed	3
Elective	3
Total	15

Freshman Fall	Credits
FRN 211	3
EGC 101	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
FRN 212	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Sophomore Fall	Credits
FRN 221 or FRN 395	3
Gen Ed	3
Elective	3
UD Elective	3
UD Elective	3
Total	15

Spring	Credits
FRN 222 or FRN 396	3
UD Elective	3
UD Elective	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
FRN 221	3
Gen Ed	3
Gen Ed	3
Elective	3
Elective	3
Total	15

Spring	Credits
FRN 222	3
UD Elective	3
Second discipline course	3
Gen Ed	3
Gen Ed	3
Total	15

Junior Fall	Credits
FRN 395 (if not taken fall of sophomore year)	3
FRN 321	3
One 300-level literature course	3
Elective	3
Gen Ed	3
Total	15

Spring	Credits
FRN 322	3
FRN 396 (if not taken spring of sophomore year)	3
FRN 441 or one 300-level literature course	3
UD Elective	3
UD Elective	3
Gen Ed	3
Total	18

Junior Fall	Credits
FRN 201	6
FRN 321	3
UD Elective	3
Second discipline course	3
Total	15

Spring	Credits
FRN 396	3
FRN 322	3
Second discipline UD course	3
Elective	3
UD elective	3
Total	15

Senior Fall	Credits
FRN 323 (or 320)	3
One or two 300-level literature courses	3-6
UD 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

Senior Fall	Credits
FRN 320	3
300-level FRN literature course	3
Second discipline UD course	3
UD elective	3
Elective	3
Gen Ed	3
Total	18

Spring	Credits
FRN 441	3
FRN 447	3
Second discipline UD course	3
UD Elective	3
Elective	3
Total	15

- To acquire broad knowledge of French literature and culture in the context of international culture
- To sharpen literary, analytical and expressive skills

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.

Requirements for the Major in French Language and Literature

The major in French language and literature leads to the Bachelor of Arts degree. Completion of the major requirements entails 36 credits (Concentration A) or 42 credits (Concentration B).

A. Concentration in Language and Literature

- Required courses for a total of 18 credits:
 - Language courses:
 - FRN 221 Conversation and Composition
 - FRN 222 Introduction to Stylistics
 - FRN 321 Phonetics and Diction
 - FRN 322 Stylistics
 - Literature courses: FRN 395, 396 Readings in French Literature:

Analysis and Interpretation

- Elective courses:
 - 18 additional credits in FRN courses beyond FRN 395, 396, of which 12 credits must be in literature (HUL 424 is also acceptable)
- Upper-division writing requirement: See C below

B. Concentration in French and a Second Discipline

- Required courses for a total of 30 credits:
 - FRN 221 Conversation and Composition
 - FRN 222 Introduction to Stylistics
 - FRN 395, 396 Readings in French Literature: Analysis and Interpretation

FRN 320 Business French
 FRN 321 Phonetics and Diction
 FRN 322 Stylistics

One course in French literature numbered 300 or above

FRN 441 French Civilization

FRN 447 Directed Readings in French in the student's second discipline (to be undertaken after completion of FRN 322 and 441)

2. Elective courses:

12 additional credits (nine of which must be at the 300 level) to be chosen with the help of the designated advisor and approved by the department. Students normally choose a sequence of four courses in a department or program other than French and Italian.

C. Upper-Division Writing Requirement

In order to demonstrate proficiency in writing English, students majoring in French must present a dossier of a minimum of two papers of at least three to five pages each. The dossier must be submitted before the end of the second semester of the junior year to the designated faculty advisor for French. The dossier consists of papers previously composed for upper-division courses in the department. Since these were originally written in French, they must be rewritten in English. The papers are judged by a faculty committee for clarity, accuracy, and appropriateness of style. If the dossier is found to be unsatisfactory, the student is asked to rewrite and resubmit the work in the senior year.

Notes:

1. All courses for the major in French must be taken for a letter grade (except that S is acceptable for courses completed through Challenge credit). All courses offered for the major must be passed with a grade of C or higher.
2. Students whose language proficiency is such that they can be exempted from FRN 221, 222 may, and are strongly urged to, apply to have courses in art, music, history, or another language count for major credit.
3. Students who wish to offer their native language as the main area of concentration are asked to replace

FRN 221, 222, 320, and 321 by English courses appropriate to their level of proficiency in that language.

4. All students majoring in French are automatically considered to have chosen Concentration A unless they obtain approval from the advisor for French.

5. Transfer students who wish to graduate with a major in French must take at least 12 credits of French in residence at Stony Brook.

Italian Studies

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. A student interested in teaching Italian should concentrate on courses taught in the Italian language, while a student interested in other careers should choose courses in culture, film, studies, and Italian-American social issues.

The objective of the Italian Studies major consists of an intensive study of 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 provides training for secondary language teachers and for graduate studies in Italian. In conjunction with other disciplines, the Italian program is a determinant factor for other careers such as international business, law, and economics.

Requirements for the Major in Italian Studies

The major in Italian Studies leads to the Bachelor of Arts degree. Students can choose either concentration A or B.

Completion of the major requirement entails 36 credits for Concentration A. More credits may be required for Concentration B.

A. Concentration in Language and Literature

1. Required courses

a. Lower division courses

ITL 311 Conversation and Composition

ITL 395 or 396 Readings in Italian Literature, 6 credits

b. Advanced language courses: ITL 411, 412, 6 credits

2. Elective courses

a. Two additional courses chosen among the following: additional ITL courses numbered 200 or above or HUI courses numbered 100 or 200, 6 credits

b. 6 additional courses in ITL or HUI (HUL 424 may also be used) numbered 300 or above, of which at least three courses must be taken with the ITL designator, 18 credits

3. Upper-Division Writing Requirement:

see C below.

B. Concentration in Italian and a Second Discipline

1. Required courses

a. ITL 311 Conversation and Composition

ITL 395 or 396 Readings in Italian Literature, 6 credits

b. Advanced language courses: ITL 411, 412, 6 credits

2. Elective courses

a. 6 additional ITL or HUI courses chosen in consultation with the student's advisor, of which 4 must be numbered 300 or higher, 18 credits

b. 4 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, 12 credits

3. Upper-Division Writing Requirement:

see C below.

C. Upper Division Writing Requirement

In order to demonstrate proficiency in writing English, students majoring in Italian must present a dossier of a minimum of two papers of at least three to five pages each. The dossier must be submitted before the end of the second semester of the junior year to the designated faculty advisor for Italian. The dossier consists of papers previously composed for upper-division courses in the department. Since these papers were originally written in Italian, they must be rewritten in English. The papers are judged by a faculty committee for

clarity, accuracy, and appropriateness of style. If the dossier is found to be unsatisfactory, the student is asked to rewrite and resubmit the work in the senior year.

Notes:

1. All courses for the major in Italian must be taken for a letter grade (except that S is acceptable for courses completed through Challenge credit). All courses offered for the major must be passed with a grade of C or higher.
2. Credits for ITL 411 and 412 cannot be transferred from any other institution without prior permission of the department.
3. 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.
4. 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.
5. Transfer students who wish to graduate with a major in Italian must take at least 12 credits of the major language in residence at Stony Brook.
6. ITL 475 and HUI 475, 476 cannot be applied toward the requirements for the major in Italian.

Teacher Training Program

Students who wish to prepare for certification as secondary school teachers of French or Italian or both should consult appropriate departmental advisors concerning requirements and procedures for the teacher preparation program. All students are required to take FLA 339 and FLA 340 among the four courses in education required by the State Education Department. See the Education and Teacher Certification section in the University Studies chapter.

Honors Program in French and Italian

To be eligible to participate in the honors program, departmental majors must have an overall average of 3.0 and an average of 3.5 in French or Italian through the junior year. An eligible student wishing to write a senior thesis

must find a faculty member of the department to act as thesis advisor. The student, with the approval of this advisor, must submit a proposal of a project in writing to the department. Deadline for submission of the proposal for fall semester is April 30 and for spring semester is November 30. Final selection of candidates and topics is determined by an honors committee of the Department of French and Italian. Students selected for the program must enroll in FRN or ITL 495 for the semester in which the thesis is written. The thesis is evaluated by the thesis advisor, another member of the French or Italian faculty, and a third reader from outside the department. For further information consult the director of undergraduate studies.

Requirements for the Minors

The Department of French and Italian also offers the following minors, each described below.

All courses for the minors must be taken for a letter grade (except that S is acceptable for Challenge credit). All upper-division courses intended to fulfill minor requirements must be passed with a grade of C or higher.

Transfer students who wish to graduate with a minor in French or Italian or Italian-American Studies must take at least six credits of upper-division French or Italian courses in residence at Stony Brook.

Minor in French (24 credits)

A. Emphasis on Language

Required courses: FRN 212, 221, 222, 395 or 396, 320, 321, 322, 441

Note: A French literature course or HUL 424 may be substituted for FRN 320

or

B. Emphasis on Literature (24 credits)

Required courses: FRN 212, 221, 222, 395, 396

Electives: Three literature courses at the 300 level

Minor in Italian (21 credits)

A. Emphasis on Language

Required courses: ITL 311, 395 or 396, 411, 412

Elective courses: Three additional courses with the designator ITL or

HUI, at least one of which must be at the 300 level or higher

or

B. Emphasis on Italian Studies (21 credits)

Required courses ITL 311, 395 or 396

Elective courses:

1. Two HUI courses at the 100 or 200 level
2. 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.

Minor in Italian-American Studies (21 credits)

The minor in Italian-American Studies offers the opportunity to acquire an understanding of the historical and social forces that shapes the Italian-Americans in the United States. Under the direction of an advisor, the student must establish an advisement folder with the minor coordinator who supervises the student in fulfilling the requirements. All courses offered to fulfill the minor must be passed with a grade of C or higher.

Required courses:

1. ITL 311, HUI 239
2. One additional course chosen from among the following:
HUI 131, 216, 231, 235
3. HUI 333, 336, 338, 431, 439

Study Abroad

The Department of French and Italian sponsors Study Abroad programs in Paris, France and Rome, Italy during the academic year and the summer. See the Study Abroad section under Special Programs in the University Studies chapter.

Sample Course Sequence for the Italian Studies Major

Freshman Fall	Credits
EGC 101	3
HUI 131	3
ITL 201	6
Gen Ed	3
Total	15

Spring	Credits
ITL 311	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
ITL 395	3
HUI 239	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Spring	Credits
ITL 396	3
ITL 411	3
UD Elective	3
Elective	3
Elective	3
Elective	1-3
Total	16-18

Junior Fall	Credits
HUI 333	3
ITL 412	3
UD Elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
ITL 373	3
HUI 336	3
UD Elective	3
Elective	3
Elective	3
Total	15

Senior Fall	Credits
ITL 432	3
HUI 338	3
UD Elective	3
UD Elective	3
Gen Ed	3
Total	15

Spring	Credits
ITL 495 (Honors Program)	3
Elective	3
UD Elective	3
Elective	3
Gen Ed	3
Total	15

GER / RUS

Department of

Germanic and Slavic Languages and Literatures

Chairperson: Christina Y. Bethin

Director of Undergraduate Studies: Robert K. Bloomer

Faculty

Christine Anton, *Visiting Assistant Professor, Ph.D., University of North Carolina*: 19th- and 20th-century German literature; German drama; aesthetics; teaching methodology

John F. Bailyn, *Assistant Professor, Ph.D., Cornell University*: Slavic Linguistics; Russian language and linguistics; syntax.

Christina Y. Bethin, *Professor, Ph.D., University of Illinois at Urbana-Champaign*: Slavic linguistics; Russian, Polish, and Ukrainian languages; phonology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1983.

Robert K. Bloomer, *Assistant Professor, Ph.D., University of Michigan*: Germanic linguistics; morphology; etymology.

Russell E. Brown, *Professor Emeritus, Ph.D., Harvard University*: Modern German literature; expressionist poetry; Trakl; Brecht; Jahn.

Stana Dolezal, *Lecturer, D.A., State University of New York at Stony Brook*: Eastern European literature and culture; Czech language.

Kathryn R. Edmunds, *Assistant Professor, Ph.D., Princeton University*: 18th- and early 19th-century German literature; German women writers; autobiography.

Barbara Elling, *SUNY Distinguished Teaching Professor and Graduate Studies Director, Ph.D., New York University*: Romanticism; German cultural studies. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1973.

Birgit Grosse-Middledorf Viola, *Lecturer, D.A., State University of New York at Stony Brook*: Business German.

Thomas A. Kerth, *Associate Professor, 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.

Anita Lekic-Trbojevic, *Lecturer, Ph.D., University of Illinois at Chicago Circle*: Serbo-Croatian language, literature, and culture.

Nicholas Rzhnevsky, *Associate Professor, Ph.D., Princeton University*: Russian and Soviet literature; Russian theatre; Russian intellectual history.

Timothy Westphalen, *Assistant Professor, Ph.D., Harvard University*: Russian poetry; Russian Symbolism; Russian literature of the 19th century; Bakhtin.

Adjunct Faculty

Estimated number: 3

Teaching Assistants

Estimated number: 9

German

This discipline 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. It sets 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. In addition to the courses taught in German, the department offers courses in English on aspects of literature, culture, cinema, economics, and intellectual life in German-speaking countries. Students may combine study in the department with work in other departments that offer courses in politics, history, and economics.

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.

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 feel that the recommended course is inappropriate.

A brochure with extended descriptions of German and Slavic courses is published by the department before registration each semester.

Requirements for the Major in German Language and Literature

The major in German language and literature leads to the Bachelor of Arts degree. No previous knowledge of the language is required. Completion of the major requirements entails 36 credits.

1. HUG 229 Germany Today (in English)
2. GER 343 Introduction to German Studies
3. GER 344 Survey of German Literature
4. GER 311, 312 German Conversation and Composition
5. GER 438 Structure of German
6. 18 additional credits to be chosen from among: GER 401 or higher; HUG 321; HIS 311-312; or POL 307
7. Upper-division writing requirements: In order to demonstrate proficiency in writing in English, German majors must present a dossier consisting of a minimum of two papers of at least five pages each. This dossier must be submitted before the end of the second semester of the junior year to the director of undergraduate studies. The papers 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

Sample Course Sequence for the German Major

Freshman Fall	Credits
GER 111	4
HUG 229*	3
EGC 101	3
Gen Ed	3
Gen Ed	3
Total	16

Spring	Credits
GER 112	4
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	13

Sophomore Fall	Credits
GER 211	3
HIS 311* or HUG course	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Spring	Credits
GER 212	3
HIS 312* or HUG course	3
Gen Ed	3
Gen Ed	3
UD Elective	3
Total	15

Junior Fall	Credits
GER 311*	3
GER 343*	3
UD Elective	3
Gen Ed	3
UD Elective	3
Total	15

Spring	Credits
GER 312*	3
GER 344*	3
UD Elective	3
UD Elective	3
Elective	3
Total	15

Senior Fall	Credits
GER 301*	3
GER 303*	3
UD Elective	3
UD Elective	3
Elective	3
Total	15

Spring	Credits
GER 402*	3
GER 404*	3
GER 438*	3
Elective	3
Elective	3
Total	15

*Fulfills requirement for major

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.

Notes:

All courses offered to fulfill major requirements must be taken for a letter grade. All courses used for the major in German must be passed with a grade of C or higher. Transfer students must complete at least 18 credits toward the major at Stony Brook.

Requirements for the Minor in German

For students majoring in other disciplines, a German minor is available with

three choices of emphasis. In all three cases, all upper-division courses in German offered to fulfill minor requirements must be passed with a grade of C or higher. At least nine of the upper-division credits must be earned at Stony Brook. The minor requires 24 credits.

A. Emphasis on German Language and Literature

1. HUG 229 Germany Today (in English)
2. GER 343 Introduction to Germanic Studies
3. GER 304 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 (in English)
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

C. Emphasis on German for Business

1. HUG 229 Germany Today (in English)
2. GER 311, 312 German Conversation and Composition
3. GER 431, 432 Business German I, II
4. Two courses in business from among:
 - BUS 340 Management Information Systems
 - BUS 348 Principles of Marketing
 - BUS 440 International Management
5. ECO 325 International Economics

Russian Language and Literature

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 multi-disciplinary 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 theater.

The Russian major 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.

Requirements for the Major in Russian Language and Literature

The major in Russian language and literature leads to the Bachelor of Arts degree. No previous knowledge of the language is required. Completion of the major requirements entails 33 credits.

1. HUR 249 Russia Today (in English)
2. HUR 141,142 Introduction to Russian Literature I, II
3. RUS 311, 312 Russian Conversation and Composition
4. Three credits to be chosen from among: 200-level HUR/HUE courses, HIS 209 Imperial Russia, HIS 210 Soviet Russia
5. Twelve credits to be chosen from among: RUS 411, 412, 423, 491, 492; HUR 393. HIS 338 or HIS 339 or one 300-level CSL course may be substituted for a RUS/HUR course, with the approval of the undergraduate advisor.
6. 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 rewritten in English. A faculty committee will judge the

Sample Course Sequence for the Russian Major

Freshman Fall	Credits
RUS 111	4
HUR 141*	3
EGC 101	3
Gen Ed	3
Total	13

Spring	Credits
RUS 112	4
HUR 142*	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
RUS 211	3
HUR 249*	3
D.E.C.	3
D.E.C.	3
Elective	3
Total	15

Spring	Credits
RUS 212	3
HUR 241 or HUR 235 or HIS 210	3
Gen Ed	3
Gen Ed	3
UD Elective	3
Total	15

Junior Fall	Credits
RUS 311*	3
HIS 338 or UD RUS/HUR*	3
Gen Ed	3
Gen Ed	3
UD Elective	3
Elective	1-3
Total	16-18

Spring	Credits
RUS 312*	3
HIS 339 or UD RUS/HUR*	3
Gen Ed	3
UD Elective	3
UD Elective	3
Total	15

Senior Fall	Credits
RUS 411 or UD HUR/RUS UD literature course*	3
UD Elective	3
UD Elective	3
UD Elective	3
Gen Ed	3
Total	15

Spring	Credits
RUS 412 or UD HUR/RUS UD literature course*	3
UD Elective	3
Elective	3
Gen Ed	3
Total	15

* Fulfills major requirements

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.

Notes:

One course offered to fulfill major requirements may be taken P/NC. All other courses used for the major in Russian must be passed with a grade of C or higher

Requirements for the Minor in Russian

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.

Honors Program in German and Russian

To be eligible to participate in the honors program, junior or senior departmental majors must have an overall average of 3.0 and an average of 3.5 in German or Russian. An eligible student wishing to write an honors project must find a faculty member of the department to act as project advisor. The student, with the approval of this advisor, must submit a proposal of a project in writing to the department. The honors project will usually be in the form of a thesis, but may include creative work or other form of research activity. The deadline for submission of the proposal for fall semester

is the preceding April 30 and for spring semester it is the preceding November 30. Final selection of candidates and topics will be determined by an honors committee of the Department of Germanic and Slavic Languages and Literatures. Students selected for the program must enroll in GER 447 or RUS 447 for the semester in which the project is to be written. The project will be evaluated by the project advisor, another member of the German or Russian faculty, and a third qualified reviewer from outside the department. The student earning departmental honors must also maintain a G.P.A. of 3.5 in all courses in his or her major program once the honors program has been commenced. For further information, consult the director of undergraduate studies.

Study Abroad

The department encourages both majors and minors to complete some of their coursework abroad in the junior or senior year. The University maintains exchange programs with Germany at Konstanz, and there are several other programs in Germany, Poland, and Russia sponsored by other SUNY colleges and universities. Consult the Special Programs section in the University Studies chapter and the Study Abroad Office for further details.

Teaching Certification

Students who wish to prepare for certification as secondary school teachers of German or Russian should consult appropriate departmental advisors. Those seeking certification in German are urged to take GER 411 and 412 in addition to the courses required for the major and certification. Students of Russian are urged to take RUS 439. Consult the Education and Teacher Certification section of the University Studies chapter.

SPN

Department of Hispanic Languages and Literature

Chairperson: Román de la Campa

Director of Undergraduate Studies: Victoriano Roncero-López

Faculty

Román de la Campa, *Associate Professor, Ph.D., University of Minnesota*: Latin American and Caribbean literature; contemporary critical theory.

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.

Pedro Lastra, *Professor Emeritus, University of Chile; (University Professor, University of Chile, 1960-1973)*: Colonial, modern, and contemporary Spanish-American literature.

James B. McKenna, *Associate Professor, Ph.D., Harvard University*: 20th-century Hispanic culture and literature.

Elizabeth Monasterios, *Assistant Professor, Ph.D., University of Toronto*: Modern and contemporary Spanish-American literature; Latin American poetry.

Maria Luisa Nunes, *Professor Emerita, Ph.D., City University of New York*: 19th- and 20th-century Luso-Brazilian literatures; women's studies.

Malcolm K. Read, *Professor, Ph.D., University of Wales*: Spanish Golden Age literature and linguistics; Marxist and psychoanalytic literary criticism.

Joan Ramon Resina, *Associate Professor, Ph.D., University of California, Berkeley*: Modern Spanish culture and literature; Catalanian culture and literature.

Elias L. Rivers, *Professor Emeritus, Ph.D., Yale University*: 16th- and 17th-century literature of Spain; sociolinguistic theory of literature.

Victoriano Roncero-López, *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., The Johns Hopkins University*: Spanish Golden Age and Spanish-American colonial literature.

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, *French and Italian*

Louise Vasvari, *Comparative Studies*

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 24

Spanish studies involve language, literature, cultural history and linguistics as applied to Spain, Spanish America, and Latino communities in the United States. They combine the humanities and the social sciences to give the student an understanding of the diverse aspects of Hispanic culture.

Because so many facets of 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, a minor in Spanish, and courses in Portuguese. 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.

Requirements for the Major in Spanish Language and Literature

The major in Spanish language and literature leads to the Bachelor of Arts degree. Completion of the major requirements entails 36 credits.

A. Required Basic Courses

1. a. Either SPN 221 Spanish Conversation and Composition or SPN 220 Spanish Grammar and Composition for Students of Hispanic-American Background

- b. SPN 222 Introduction to Literary Studies

(Note: Challenge examinations are given in SPN 221 and 222, but not in SPN 220. See notes 1 and 2, below)

2. SPN 301 Advanced Spanish Grammar and Composition
3. Either SPN 391 or 392
4. Two courses chosen from SPN 396, 397, 398
5. One course chosen from SPN 462, 463, 465

B. Advanced Courses in Hispanic Linguistics, Literature, and Culture

Fifteen additional credits in upper-division SPN courses chosen in consultation with the departmental advisor. (HUL 424 is also acceptable. A maximum of three credits of SPN 447 is applicable toward this requirement.)

C. Upper-Division Writing Requirement

In order to demonstrate their proficiency in writing English, Spanish majors must present a dossier consisting of a minimum of two papers of at least three to five pages each. This dossier must be submitted before the end of the second semester of their junior year to the director of undergraduate studies. The papers consist of translations of essays submitted as part of the work for upper-division courses. Papers are judged for clarity, accuracy, and appropriateness of style by a faculty committee. Students may resubmit in their senior year.

**Sample Course Sequence for the Spanish Major
(Advanced Language Preparation)**

**Sample Course Sequence for the Spanish Major
(High School Preparation)**

Freshman Fall	Credits
SPN 220 or 221	3
EGC 101	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
SPN 222	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Freshman Fall	Credits
SPN 211 (not accepted for major credit)	3
EGC 101	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
SPN 212 (not accepted for major credit)	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Sophomore Fall	Credits
SPN 301	3
SPN 396 or 397	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	14-15

Spring	Credits
SPN 398	3
SPN 392	3
Elective	3
Gen Ed	3
Elective	3
Total	15

Sophomore Fall	Credits
SPN 220 or 221	3
Gen Ed	3
Gen Ed	3
Elective	3
Elective	3
Total	15

Spring	Credits
SPN 222	3
Gen Ed	3
Gen Ed	3
Elective	3
Elective	3
Total	15

Junior Fall	Credits
SPN 391 or UD elective	3
SPN 400-level elective	3
Elective	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
SPN 462 or 463 or 465	3
SPN UD elective	3
Elective	3
Elective	3
Elective	3
Gen Ed	3
Total	18

Junior Fall	Credits
SPN 301	3
SPN 396 or 397	3
Elective	3
Elective	3
Elective	3
Gen Ed	3
Total	18

Spring	Credits
SPN 398	3
SPN 392	3
SPN UD elective	3
Gen Ed	3
Elective	3
Total	15

Senior Fall	Credits
SPN 400-level elective	3
UD Elective	3
Elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
SPN 400-level elective	3
UD Elective	3
UD Elective	3
Elective	3
Elective	3
Total	15

Senior Fall	Credits
SPN 391 or UD elective	3
SPN 400-level elective	3
SPN 400-level elective	3
UD Elective	3
Elective	3
Total	15

Spring	Credits
SPN 462* or 463* or 465	3
SPN 400-level elective	3
UD Elective	3
UD Elective	3
Elective	3
Total	15

Notes:

1. All courses offered to fulfill major requirements must be taken for a letter grade (except that S is acceptable for SPN 221 and 222 completed through Challenge examinations).
2. Students of Spanish-speaking background may take the Challenge examination for SPN 221.
3. All upper-division courses in Spanish must be passed with a grade of C or higher.
4. The department requires transfer students to take at least 18 credits of Spanish courses in residence at Stony Brook to complete a Spanish major.

The Honors Program in Spanish

To be awarded honors, a department major must 1. maintain an overall grade point average of at least 3.0 and a grade point average of at least 3.5 in Spanish

*Students preparing for secondary education certification in Spanish should choose SPN 462 or 436. See the section entitled "Education and Teacher Certification" in the University Studies chapter.

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.

Minor in Spanish Language, Culture, and Literature

The minor requires 24 credits.

A. Basic Language

1. SPN 221 Spanish Conversation and Composition or SPN 220 Spanish Grammar and Composition for Students of Hispanic-American Background
2. SPN 222 Introduction to Literary Studies

B. Advanced Courses

1. SPN 301 Advanced Spanish Grammar and Composition
2. Five other upper-division SPN courses, two of which must be at

the 400 level and one of which may be HUL 424

All upper-division courses in Spanish offered to fulfill minor requirements must be passed with a grade of C or higher. At least nine credits of upper-division Spanish courses must be earned at Stony Brook to complete the minor.

Study Abroad

Language majors and other interested students who would like to spend a semester or a year studying abroad should consult the director of undergraduate studies prior to going abroad. See also the section entitled "Special Programs." in the University Studies chapter.

HIS

Department of History

Chairperson: Gary Marker

Director of Undergraduate Studies: Joel Rosenthal

Faculty

Michael Barnhart, *Professor, Ph.D., Harvard University*: U.S. foreign policy; 20th-century U.S. and modern Japan. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1985, and the President's Award for Excellence in Teaching, 1985.

Karl S. Bottigheimer, *Professor, Ph.D., University of California, Berkeley*: England and Ireland.

David B. Burner, *Professor, Ph.D., Columbia University*: 20th-century U.S. political and social.

Paul W. Chase, *Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook*: Modern Germany.

Ruth Schwartz Cowan, *Professor, Ph.D., The Johns Hopkins University*: History of biology and technology; women in modern society.

Elizabeth Garber, *Associate Professor, Ph.D., Case Western Reserve University*: History of physics and thermodynamics; European intellectual and social.

Paul Gootenberg, *Associate Professor, Ph.D., University of Chicago*: 19th-century Latin America; Andean; Mexican; economic.

Young Sun Hong, *Assistant Professor, Ph.D., University of Michigan, Ann Arbor*: Modern Germany.

Temma Kaplan, *Professor, Ph.D., Harvard University*: Spain; comparative women's history; popular culture.

Richard F. Kuisel, *Professor, Ph.D., University of California, Berkeley*: Modern Europe; France.

Ned Landsman, *Professor, Ph.D., University of Pennsylvania*: U.S. colonial.

Brooke Larson, *Associate Professor, Ph.D., Columbia University*: Andean history; colonial and modern Latin America.

Herman E. Lebovics, *Professor, Ph.D., Yale University*: Modern European intellectual and social.

Helen Rodnite Lemay, *Professor, Ph.D., Columbia University*: Medieval and Renaissance intellectual; paleography. Recipient of the President's Award for Excellence in Teaching, 1984.

William McAdoo, *Associate Professor, Ph.D., University of Michigan*: Joint appointment with *Interdisciplinary Program in Africana Studies*; U.S. urban, social, and institutional history; immigration historiography; labor history; African-American history.

Iona Man-cheong, *Assistant 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.

Wilbur R. Miller, *Professor, Ph.D., Columbia University*: 19th-century U.S.

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 Schafer, *Professor, Ph.D., University of Bremen*: Social history of the sciences and science policy.

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 *Interdisciplinary Program in Africana Studies*; African politics and history; international relations.

Barbara Weinstein, *Professor, Ph.D., Yale University*: Brazil; colonial and modern Latin America; slave societies

Fred Weinstein, *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.

Judith Wishnia, *Associate Professor, Ph.D., State University of New York 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., State University of New York at Stony Brook*: Long Island history.

Affiliated Faculty

Floris Cash, *Africana Studies*

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, religion and science, 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, a 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, and the history of science. Surveys of these fields are offered at the 100 level for the United States and Europe and the 200 level for other areas. Students interested in the

study of history should take these survey courses first, since they serve as prerequisites for more advanced coursework. American and European courses at the 200 level customarily examine a specific period in these regions' pasts, while 300-level courses typically examine specific topics (such as social or political history) or countries (such as Germany, Brazil, or China). History colloquia at the 400 level are small classes offering intensive reading and discussion on closely focused themes. The study of history emphasizes the mastery of large amounts of information and the ability to demonstrate that mastery through skillful writing.

Each semester the department issues a booklet with detailed descriptions of its offerings. Students interested in history, whether as a major, a minor, a social science course related to their major, or for general liberal arts purposes, are invited to read this booklet and to seek advice from the department's director of undergraduate studies and other faculty members.

Requirements for the Major in History

The major in history leads to the Bachelor of Arts degree. Completion of the major requirements entails 36 credits.

A. Study within the Area of the Major

A minimum of ten courses (30 credits) distributed as follows:

1. Two courses at the 100 level
2. A primary field of five courses to be selected from one of the following: United States, European, Latin American, ancient and medieval, or non-Western history. Primary fields developed along topical or thematic lines may be selected with approval of the department's undergraduate committee. The primary field, to be selected and filed with the department no later than the end of the first full semester after declaring the major, shall be distributed as follows:
 - Two courses at the 200 level
 - Two courses at the 300 level
 - One course at the 400 level, excluding HIS 447, 487, 488
3. Three courses selected from outside the primary field and above

the 100 level, with at least one of these courses at the 300 or 400 level.

B. Courses in a Related Discipline

Two upper-division courses in one discipline, the discipline to be selected with department approval no later than the end of the first semester after declaring the major. Courses that are crosslisted with a history course do not satisfy this requirement.

C. Upper-Division Writing Requirement

Students are required to complete one upper-division course from Group A (study within the area of the major) by the end of their junior year. They must inform the instructor of the course in advance of their plan to use the term paper (or papers) in fulfillment of the writing requirement for the major. In addition to the grade for

Sample Course Sequence in the History Major

Freshman Fall	Credits
HIS 101 or 103	3
EGC 101	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
HIS 102 or 104	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Sophomore Fall	Credits
Primary Field Course #1 (200 level)	3
Gen Ed	3
Gen Ed	3
Elective	3
Gen Ed	3
Total	15

Spring	Credits
Primary Field Course #2 (200 level)	3
Elective	3
Gen Ed	3
Gen Ed	3
UD Elective	3
Total	15

Junior Fall	Credits
Primary Field Course #3 (300 level)	3
HIS 200-level outside Primary Field	3
UD Elective	3
UD 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
UD Elective	3
Gen Ed	1-2
UD Elective	3
Total	16-17

Senior Fall	Credits
Primary Field course #5 (400-level special topics seminar)	3
HIS 300-level outside Primary Field	3
Elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
Related discipline course (300 or 400-level)	3
UD Elective	3
UD Elective	3
Elective	3
Elective	3
Total	15

the course, the instructor makes a second evaluation of writing competency in the field of history. If the second evaluation is favorable, the student will have fulfilled this requirement.

Notes

1. All courses taken to meet requirements A and B must be taken for a letter grade.
2. No grade lower than C may be applied toward requirement A.
3. At least 12 credits in requirement A must be taken within the Department of History at Stony Brook.
4. No transferred course with a grade lower than C may be applied toward requirement A.
5. No more than six credits of HIS 447, 487, 488 may be applied toward requirement A.

The Honors Program in History

Departmental majors with a 3.0 average in history courses and related disciplines as specified in the major requirements are eligible to enroll in the history honors program at the beginning of their senior year.

The student, after asking a faculty member to be a sponsor, must submit a proposal to the department indicating the merit of the planned research. The supervising faculty member must also submit a statement supporting the student's proposal. This must be done in the semester prior to the beginning of the project.

The honors paper resulting from a student's research is read by two historians and a member of another department, as arranged by the director of undergraduate studies. If the paper is judged to be of unusual merit and the student's record warrants such a determination, the department recommends honors.

The Minor in History

The minor, which requires 18 credits, is organized around the student's interest in a particular area of history, defined either by geography (e.g., United States, Latin America) or topic (e.g., imperialism, social change). Courses must be taken for a letter grade. No grades lower than C in upper-division courses may be applied to the history minor. At least nine of the 18 credits must be taken at Stony Brook, with three of the courses at the upper-division level. The specific distribution of the credits should be determined in consultation with the director of undergraduate studies. An example of an acceptable distribution would be the following:

- A. One two-semester survey course in the period of the student's interest (100 or 200 level)
- B. One (additional) course at the 200 level
- C. Three courses at the 300 or 400 level, at least one of which must be at the 400 level

Note: HIS 447, 487, 488 may not be used to satisfy minor requirements.

HUM

Interdisciplinary Program in Humanities

Director of Undergraduate Studies: Peter Manchester, Comparative Studies

The interdisciplinary program in the humanities, which currently is housed in the Department of Comparative Studies, is designed for undergraduates attracted to humanistic study—art, history, languages, literature, music, philosophy, religious studies, theatre—who prefer not to specialize in any single field. It involves introductory and upper-division work in several departments, described in the requirements below. Potential majors are strongly urged to consult the director of undergraduate studies to help them prepare individual programs.

Requirements for the Major in the Humanities

The interdisciplinary major in the humanities leads to the Bachelor of Arts degree. The following courses are required. All must be taken for a letter grade. In choosing courses to satisfy requirements A, B, and D, the student should be careful to consider the relevant prerequisites for the clusters chosen for requirement C. Completion of the major requirements entails 42 to 47 credits.

- A. Two elementary courses in a foreign language not offered for college admission or one course above the elementary level
- B. One course from each group numbered 1-3 below. The student's choice of courses to satisfy this requirement influences the choice of clusters for requirement C below. Those clusters most directly related to the following introductory courses are listed in parentheses following the course number.

Group 1: Literature

HUM 100-level

EGL 204 (All EGL courses, requirement C)

Any survey course on foreign literature in the original language (foreign literature courses in requirement C)

Group 2: The Arts

ARH 101 (ARH courses in clusters 1 and 2, requirement C)

ARH 102 (ARH courses in clusters 3-6, requirement C)

MUS 101 (All MUS courses, requirement C)

Group 3: History and Philosophy

HIS 101 (HIS courses in clusters 2 or 4, requirement C)

HIS 102 (HIS courses in clusters 5 and 6, requirement C)

HIS 103 (HIS courses in cluster 5, requirement C)

HIS 104 (HIS courses in cluster 6, requirement C)

PHI 200 (PHI courses in clusters 1-3, requirement C)

PHI 206 (PHI courses in clusters 4-6, requirement C)

RLS 103 (RLS courses in requirement C)

RLS 104 (RLS courses in requirement C)

- C. From any two of clusters 1-6 below, a minimum of three courses from each cluster chosen. No more than one course with any one designator may count toward the three courses required within a given cluster.

Note that the following list of courses is meant to be representative and does not exclude the possibility of substituting others in consultation with the student's advisor. In particular, a number of additional courses are available that cover the chronological period of two adjacent clusters (especially of clusters 5 and 6).

Cluster 1: The Ancient World

ARH 300 Greek Art and Architecture

ARH 301 Roman Art and Architecture

CLS 215 Classical Mythology

EGL/JDH 261 The Bible as Literature

JDS/HIS 225 The Formation of the Judaic Heritage

LAT 251, 252 Readings in Latin Literature

PHI 200 Introduction to Ancient Philosophy

PHI 300 Ancient Philosophy

RLS 240 Confucianism and Taoism

RLS 250 Hinduism

RLS 260 Buddhism

RLS 270 Christianity

Cluster 2: The Middle Ages

ARH 303 The Art and Architecture of the Early Middle Ages, ca. 400-1050

ARH 304 The Art and Architecture of the High and Late Middle Ages, ca. 1050-1400

EGL 300 Old English Literature

EGL 302 Medieval Literature in English

EGL 340 Chaucer

HIS 234 Medieval Europe: A Survey

LAT 355 Early Medieval Latin

LAT 356 Late Medieval Latin

PHI 304 Medieval Philosophy

RLS 280 Islam

RLS 421 Christian Classics

Any course on medieval literature in a foreign language

Cluster 3: The Renaissance

ARH 306 The Early Renaissance in Italy

ARH 307 High Renaissance and Mannerism in Central Italy

ARH 310 Renaissance Art in Venice

ARH 337 Northern Renaissance Art

EGL 243 Shakespeare: The Major Works

EGL 304 Renaissance Literature in English

EGL 344 Major Writers of the Renaissance Period in England

EGL 345 Shakespeare I

EGL 346 Shakespeare II
 THR 344 The Shakespearean Tradition
 Any course on Renaissance literature in a foreign language

Cluster 4: Classicism and Enlightenment

ARH 315 Spanish Painting, 1560-1700
 ARH 320 Art of the 18th Century
 CSL 212 Literary Survey: Enlightenment through Modern
 EGL 306 English Literature of the 17th Century
 EGL 308 The Age of Dryden
 EGL 310 Neoclassical Literature in English
 EGL 316 Early American Literature
 EGL 342 Milton
 EGL 347 Major Writers of the Neoclassical Period in England
 HIS 262 American Colonial Society
 HIS 263 Age of the American Revolution
 HIS 305 Early Modern England: Revolution and War, 1603-1714
 MUS 302 The Music of J.S. Bach
 Any course on 17th- or 18th-century literature in a foreign language

Cluster 5: Romanticism and Realism

ARH 331 American Art to 1890
 ARH 341 Art of the 19th Century
 EGL 217 American Literature I
 EGL 312 Romantic Literature in English
 EGL 314 Victorian Literature
 EGL 318 19th-Century American Literature
 EGL 348 Major Writers of the Romantic Period in England
 EGL 349 Major Writers of the Victorian Period in England
 HIS 248 Europe, 1815-1914
 HIS 264 The Birth of Modern America
 HIS 309 Modern France, 1815-1900
 HIS 338 Modern Russian Intellectual History

HIS 369 American Social History to 1860
 MUS 303 The Music of Beethoven
 MUS 305 Music in the Romantic Era
 MUS 307 Music and Drama
 PHI 308 19th-Century Philosophy
 Any course in 19th-century literature in a foreign language

Cluster 6: Modern Society

ARH 322 American Art Since 1947
 ARH 324 Architecture and Design of the 19th and 20th Centuries
 ARH 332 Art of the United States, 1890-1930
 ARH 342 Art of the 20th Century
 CNS 250 Chinese Culture and Society: Modern China
 CSL/EGL 266 The 20th-Century Novel
 EGL 226 Contemporary American Literature: 1945 to the Present
 EGL 352 Major Writers of 20th-Century Literature in English
 EGL 354 Major Writers of Contemporary British and American Literature
 HIS 210 Soviet Russia
 HIS 250 The Second World War, 1939-1945
 HIS 251 Europe Since 1945
 HIS 310 Modern France, 1900 to the Present
 HIS 315 20th-Century Britain
 HIS 339 Russian Social History, 1825-1929
 HIS 341 20th-Century China
 HIS 344 20th-Century Japan
 HIS 361 American History/American Film
 HIS 362 Making Peace With the Sixties
 HIS 386 Modern Brazil
 HIS 389 Modern Mexico
 HUM 201 Film and Television Studies I
 HUM 202 Film and Television Studies II
 JDH/RLS 230 Judaism

JDH/RLS 415 Judaic Responses to Catastrophe
 JDS/HIS 241 The Holocaust: The Destruction of European Jewry: Causes and Consequences
 MUS 109 Rock Music
 MUS 308 History of Jazz
 MUS 309 Music of the 20th Century
 MUS 310 Music and Culture in the 1960s
 PHI 247 Existentialism
 RLS 246 Korean and Japanese Religions
 RLS 301 Sources and Methods
 RLS 341 Meditation and Enlightenment
 RLS 402 Contemporary Theology
 THR 314 Modern Drama on Stage
 Any course in 20th-century literature in a foreign language

D. Any four additional humanities courses, of which at least two must be numbered 300 or above.

E. Upper-Division Writing Requirement

In order to satisfy this requirement, students majoring in humanities must submit a portfolio of their writing for upper-division courses pertaining to the major to the director of undergraduate studies no later than seven weeks after the start of the first semester of their senior year. They must achieve an evaluation of S (Satisfactory) on the portfolio. Further details are available from the department chairperson or from the director of undergraduate studies.

Note: Students must select courses from each of three different departments to satisfy the requirements within each Cluster elective choice.

The Humanities major is often a convenient choice for transfer students needing to complete their degree in two years. Almost invariably, they are able to satisfy introductory requirements B with transfer courses, and to provide two lower-division electives for requirement D. If they have fulfilled language requirement A as well, then only 8 additional courses are needed for the major: the two sets of 3 courses for cluster requirement C, and two upper-division electives for requirement D. In design-

ing a two-year curriculum to complete the degree, they should select these 8 courses carefully, so that the choices help in fulfilling needed general education requirements and contribute to the 39 upper-division credits required by the College. The program advisor should be consulted early for assistance.

Honors Program in Humanities

Humanities majors who have maintained a grade point average of 3.5 in the major and a 3.0 overall through their junior year may attempt the degree in humanities with honors.

The honors program requires an additional three credits above the 42 to 47 required for the major. These three additional credits are earned in a special research project pursued in the final semester of the senior year. The project involves the completion of a senior thesis.

Students who are eligible for the honors program must find an appropriate faculty member to act as thesis advisor. The student, with the approval of the supervising faculty member, must submit a proposal for the project in writing to the director of undergraduate studies by the last day of classes of the first semester of the senior year. Students who have obtained permission from the chairperson to pursue the project must enroll in HUM 495 while writing the thesis.

The thesis is evaluated by the thesis advisor and two members of the humanities faculty chosen by the student with the approval of the thesis advisor.

Sample Course Sequence for the Humanities Major

Freshman Fall	Credits
EGC 101	3
Foreign Language (see Requirement A above)	3-4
Group 1 course	3
Gen Ed	3
Elective	3
Total	15-16

Spring	
Gen Ed	3
Gen Ed	3
Group 2 course (D.E.C. D)	3
Group 3 course	3
Foreign language (if not met)	3-4
Total	15-16

Sophomore Fall	Credits
1st Cluster Elective (Course #1)	3
2nd Cluster Elective (Course #1)	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	
1st Cluster Elective (Course #2)	3
2nd Cluster Elective (Course #2)	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Junior Fall	Credits
1st Cluster Elective (Course #3 - UD)	3
2nd Cluster Elective (Course #3 - UD)	3
Gen Ed	3
Gen Ed	3
Humanities UD course	3
Total	15

Spring	
Humanities UD course	3
Humanities UD course	3
UD Elective	3
UD Elective	3
UD Elective	3
Total	15

Senior Fall	Credits
Humanities UD course	3
UD Elective	3
UD Elective	3
Elective	3
Elective	3
Total	15

Spring	
UD Elective	3
UD Elective	3
Elective	3
Elective	3
Elective	3
Total	15

JNH

**Minor in
Japanese Studies**

Director: Sachiko Murata, Comparative Studies

In the Japanese studies minor (JNH) students take a series of courses centering on the history and civilization of Japan while keeping in view Japan's close ties with China and Korea. Students design their own program with the approval of the director of the minor. The minor requires 18 credits that must be taken for a letter grade and passed with a C or higher.

Requirements

1. JPN 211
2. Five of the following: HIS 220, 343, 344, 431 (appropriate topic only), JNH 240, 251, 351, JNH/JNS 331, 332, 447, JPN 311, 312, KRH 346, PHI 344, RLS 246, 406

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.

JRN

Minor in Journalism

Minor Coordinator: Paul Schreiber, English

The journalism minor (JRN), housed in the Department of English, is staffed by professional, working journalists. Students who have an interest in careers in journalism find that the program is committed to an academically sound background in arts and sciences, develops the writing and editing skills needed in journalism, and fosters understanding of the principles and responsibilities of journalism. The minor requires 18 credits.

Requirements for the Minor in Journalism

A. Courses required of all students:

JRN 287 Basic News Reporting and Writing

JRN 288 Feature Writing

JRN 387 Advanced News Reporting and Writing

JRN 388 Advanced Feature and Magazine Writing

JRN 395 News Editing

B. One course to be chosen from:

JRN 389 Investigative Reporting

JRN 390 Computer-Assisted Reporting

JRN 394 Journalism Practicum

JRN 488 Internship

Note: All courses for the minor must be taken for a letter grade. Students interested in minoring in journalism should consult the minor coordinator.

JDS / JDH

Minor in Judaic Studies

Director: Robert Goldenberg, Comparative Studies

Minor Coordinator: Ilona Rashkow, Comparative Studies

Affiliated Faculty

Stephen Spector, *English*

Adjunct Faculty

Estimated number: 1

The minor in Judaic studies (JDS) offers students an opportunity to acquire background in one or more Jewish languages and to study selected areas of Jewish history, culture, or religion. With the approval of an advisor from the Judaic studies program faculty, the student must construct a program of at least 21 credits fulfilling the requirements listed below. The advisor helps to assure that the student's program has a curricular focus; courses from other departments suiting that focus may be included.

Requirements for the Minor in Judaic Studies

1. One year of a Jewish language (Hebrew or Yiddish) at a level appropriate to the student's previous background
2. Two of the following: JDS/HIS 225, JDS/HIS 226, JDH/RLS 230
3. Three courses numbered 300 or higher approved in advance by the minor advisor.

Requirement 3 may be satisfied by courses in the Judaic studies program itself or by related courses in other 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 Theology

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

No more than one course for the minor may be taken for a grade of P. Students interested in enrolling in the minor must consult with the coordinator of the minor in Judaic studies and select an advisor from the Judaic studies program faculty.

KRH

**Minor in
Korean Studies**Director: Sung Bae Park, Comparative Studies

Teaching Assistants

Estimated number: 2

Students who undertake the Korean studies minor (KRH) design an individual program that combines course work in Korean history, literature, art, religion, and philosophy. The director of the Korean studies program advises and oversees each student's program. For those considering overseas exchange programs with Korean universities, consultation with the director is encouraged. The minor requires 21 credits (18 for those who fulfill requirement 1 by examination).

**Requirements for the Minor in
Korean Studies**

1. KOR 211 or higher (or equivalent by examination)
2. One course chosen from among KRH 240, 251, or RLS 246
3. Three courses chosen from among KRH, KRS 331, 332, 447; KRH 346; KOR 351
4. One course chosen from among the following: ARH 203, 318; HIS 219, 220, 341, 344; PHI 342, 344; RLS 240, 260, 270, 341
5. KRH 400

Appropriate special topics from these or other departments may also be offered to fulfill minor requirements with permission of the program director.

Notes:

1. Students of advanced proficiency in Korean are urged to take courses in an additional Asian language.
2. Only one course counted toward the minor may be taken for Pass/No Credit.

LAC

Minor in

Latin American and Caribbean Studies

Director: Brooke Larson, History

Affiliated Faculty

Timothy Brennan, *English*

Jonathan Cohen, *Surgery*

Helen Cooper, *English*

Román de la Campa, *Hispanic Languages and Literature*

Georges Fouron, *Social Sciences Interdisciplinary*

Barbara Frank, *Art*

Paul Gootenberg, *History*

Anthony E. Hurley, *French*

Temma Kaplan, *Women's Studies and History*

Elizabeth Monasterios, *Hispanic Languages and Literature*

Dolores Newton, *Anthropology*

Malcolm Read, *Hispanic Languages and Literature*

Ian Roxborough, *Sociology*

Antonio Vera-León, *Hispanic Languages and Literature*

Kathleen Vernon, *Hispanic Languages and Literature*

Barbara Weinstein, *History*

Dieter Zschock, *Economics*

The minor in Latin American and Caribbean studies (LAC) allows students to pursue an interdisciplinary course of study that provides them with a broad overview of the region. Students are introduced to the principal historical, social, and cultural themes in the region, and through their electives, they are also able to develop more detailed knowledge of specific subjects in the LAC area, such as the history of a particular country or the literature of a particular period. The minor requires 24 credits.

Requirements

1. LAC 200 Latin American Society and Culture
2. SPN 191 (or SPN 190)
3. One literature or culture course, to be chosen from those listed in Group A
4. Two history or social science courses, to be chosen from those listed in Group B
5. Two additional upper-division courses to be chosen from Groups A and B

6. One 400-level seminar or three-credit upper-division independent study course in any department, approved by the director

7. All eight courses must be taken for a letter grade and passed with a grade of C or higher.

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

ARH 326 Arts of Ancient Mesoamerica

ARH 329 Arts of the African Diaspora

EGL 376 The Literature of Imperialism

HUF/AFH 212 French Caribbean Literature (in Translation)

HUS 254 Latin America Today (in English)

POR 447 Directed Individual Study (appropriate topic only)

SPN 392 The Culture and Civilization of Spanish America

SPN 396 Introduction to Spanish-American Literature

SPN 405 Issues in Hispanic Cultural Studies (appropriate topic only)

SPN 420 Topics in Spanish and Latin American Cinema (appropriate topic only)

SPN 435 Topics in Latin American Literature from the Colonial Period to the Present

Group B: Social Sciences

AFS 223 The African Continuum

AFS 239 Introduction to the Caribbean Experience

AFS 240 Issues in Caribbean Society

AFH 329, 330 Pan-African Literature I, II

AFS 350 Black Women and Social Change

ANT 201 Peoples of South America

ANT 219 Peoples of the Caribbean

ANT 361 Peasants

ECO 315 Economic Development of Latin America

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 History of Aztec and Inca Societies

HIS 386 Modern Brazil

HIS 387 Women, Development, and Revolution in Latin America

HIS 388 Slavery 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

Department of Linguistics

Chairperson: Ellen Broselow

Director of Undergraduate Studies: Mark Aronoff

Faculty

Frank Anshen, *Associate Professor and Graduate Studies Director, Ph.D., New York University*: Sociolinguistics.

Mark Aronoff, *Professor, Ph.D., Massachusetts Institute of Technology*: Morphology, writing systems.

John Bailyn, *Assistant Professor, Ph.D., Cornell University*: Syntax, language acquisition, Slavic linguistics.

Ellen Broselow, *Professor, Ph.D., University of Massachusetts-Amherst*: Phonetics, phonology, applied linguistics.

Aaron S. Carton, *Professor Emeritus, Ph.D., Harvard University*: Psycholinguistics; teaching English to speakers of other languages.

Daniel L. Finer, *Associate Professor, Ph.D., University of Massachusetts-Amherst*: Syntax; semantics; language acquisition.

Marie Huffman, *Assistant Professor, Ph.D., University of California, Los Angeles*: Phonetics; phonology.

Dorit Kaufman, *Research Assistant Professor, Ph.D., State University of New York at Stony Brook*: TESOL; language attrition.

Richard Larson, *Professor, Ph.D., University of Wisconsin-Madison*: Syntax; semantics.

Kamal K. Sridhar, *Associate Professor, Ph.D., University of Illinois at Urbana-Champaign*: Teaching English to speakers of other languages; bilingualism; English around the world.

S. N. Sridhar, *Professor, Ph.D., University of Illinois at Urbana-Champaign*: Psycholinguistics; sociolinguistics; second language acquisition; Indian linguistics.

Affiliated Faculty

Christina Bethin, *Germanic and Slavic*

Robert Hoberman, *Comparative Studies*

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 sets off 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 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 go through 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 our graduates each year elect this track in the major. It is also quite common for our 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 our graduates include professional school in such areas as speech pathology and law, and graduate school in linguistics and other cognitive sciences: philosophy, psychology, and computer science. A few of our 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.

Requirements for the Major in Linguistics

The major in linguistics leads to the Bachelor of Arts degree.

Completion of the major requirements entails 35 credits in linguistics and one year of a foreign language beyond the 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
5. Seven additional linguistics courses, of which at least six must be upper division
6. One year of a modern foreign language beyond the entry skill in foreign language requirement
7. Upper-Division Writing Requirement:

By the end of the junior year, linguistics majors must submit two papers for evaluation by the department. The papers may be any combination of (i) a term paper from any LIN course, (ii) a revision of a term paper from any LIN course, and (iii) an analysis and discussion of a body of linguistic data from a course for which no term papers are assigned. The papers should be submitted to the director of undergraduate studies, who will then distribute each of them to two faculty members for evaluation, according to the topics of the papers and the areas of interest of the faculty. Papers that are rejected must be revised and resubmitted.

Notes:

1. All linguistics courses used to satisfy the major must be taken for a letter grade and passed with a C or higher.
2. LIN 121 may not be counted toward the major.
3. The attention of students majoring in linguistics is directed to the following courses of interest to them in other departments:

ANT 102, 203, 354

CSE 110, 113, 114

EEL 111, 112

EGL 207, 300, 302
 FLA 339
 GER 438
 HBW 415
 HUL 424
 PHI 220, 325
 RUS 339
 PSY 365
 SPN 462, 463, 465

Sample Course Sequence in the Linguistics Major (including TESOL Certification Track)

Freshman Fall	Credits
LIN 101@	3
LIN 201*	4
Foreign language 111*	4
EGC 101	3
Gen Ed	3
Total	17

Spring	Credits
LIN 211*	4
LIN 301*	3
Foreign language 112*	4
Gen Ed	3
Gen Ed	3
Total	17

Students electing to complete only the required major (without TESOL) will need to take 15 additional upper-division credits. Those electing TESOL may not take any courses required for certification P/NC. See the section entitled "Education and Teacher Certification" in the University Studies chapter for further details and requirements.

Sophomore	Credits
LIN 307#@	3
LIN 345@	3
Foreign language 211*	3
Gen Ed	3
Gen Ed	3
Total	15

Spring Fall	Credits
LIN 330@	3
LIN 375#@	3
Foreign language 212*	3
Gen Ed	3
Gen Ed	3
Total	15

Requirements for the Minor in Linguistics

The minor requires 20 credits.

LIN 201 Phonetics

LIN 211 Syntax

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.

Junior Fall	Credits
LIN 345@	3
LIN 340@	3
SSI 327#	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
LIN 346@	3
SSI 350#	3
Gen Ed	3
Gen Ed	3
UD Elective	3
Total	15
Submission of upper division writing requirement (end of semester).	

Senior Fall	Credits
LIN 378#@	3
LIN 431*	3
UD Elective	3
UD Elective	3
Total	12

Spring	Credits
LIN 451#	6
LIN 452#	6
LIN 454#@	3
or UD Elective	3
Electives	12
Total	15

Students enroll in LIN 495 in the first semester of their senior year and in LIN 496 in the following semester, for a total of six credits. These courses must be taken in addition to the total credits required for the major. The student's project paper or research report must be completed and submitted no later than April 1 for May graduation and November 1 for December graduation. The paper or report is read and evaluated by a committee consisting of the student's sponsor, one other Linguistics Department member, and one faculty member from another department.

If the honors program is completed with distinction and the student retains a 3.5 for all linguistics courses taken in the senior year, honors are conferred.

* Course must be taken for the major.

Course must be taken for certification.

@ Course fulfills the major requirement but is not obligatory.

Honors Program

The honors program is open to seniors majoring in linguistics who have maintained a G.P.A. of 3.5 in the major and a 3.0 overall. Students should apply to the honors program before the beginning of their senior year. With the approval of a sponsoring faculty member, the student must submit a written proposal for a major paper or research project to be completed during the senior year. Acceptance into the honors program depends on approval of the proposal by the department.

MAT

Department of Mathematics

Chairperson: H. Blaine Lawson, Jr., and Anthony Phillips

Director of Undergraduate Studies: Paul Kumpel

Faculty

Michael Anderson, *Professor, Ph.D., University of California, Berkeley*: Differential geometry.

William Barcus, *Professor and Director of the Mathematics Learning Center, D. Phil, University of Oxford, England*: Algebraic topology.

Emili Bifet, *Associate Professor, Ph.D., University of Chicago*: Algebraic geometry.

Christopher Bishop, *Associate Professor, Ph.D., University of Chicago*: Complex Analysis.

Ronald Douglas, *Professor, Ph.D., Louisiana State University*: Operator theory; functional analysis; operator algebras and index theory.

David Ebin, *Professor, Ph.D., Massachusetts Institute of Technology*: Global analysis; mathematics of continuum mechanics

Adam Epstein, *Assistant Professor, Ph.D., CUNY Graduate School*: Complex analytic dynamics; Riemann surfaces; Teichmüller spaces.

William Fox, *Associate Professor, Ph.D., University of Michigan*: Complex analysis.

Daryl Geller, *Professor, Ph.D., Princeton University*: Analysis.

James Glimm, *Distinguished Professor, Ph.D., Columbia University*: Applied mathematics; numerical analysis.

Detlef Gromoll, *Professor, Ph.D., University of Bonn, Germany*: Differential geometry.

C. Denson Hill, *Professor, Ph.D., New York University*: Partial differential equations; several complex variables.

Lowell Jones, *Professor, Ph.D., Yale University*: Topology.

Anthony Knapp, *Professor, Ph.D., Princeton University*: Lie groups; representation theory.

Irwin Kra, *Professor, Ph.D., Columbia University*: Complex analysis; Kleinian groups.

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.

Marco Martens, *Assistant Professor, Ph.D., Technical University of Delft, the Netherlands*: Dynamical systems.

Bernard Maskit, *Professor, Ph.D., New York University*: Riemann surfaces; Kleinian groups and deformation spaces.

Dusa McDuff, *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, *Assistant Professor, Ph.D., Princeton University*: Low-dimensional geometry and topology.

Anthony Phillips, *Professor, Ph.D., Princeton University*: Differential topology.

Joel Pincus, *Professor, Ph.D., New York University*: Operator theory; integral equations.

Bradley Plohr, *Professor, Ph.D., Princeton University*: Applied mathematics; partial differential equations.

Chih-Han Sah, *Professor, Ph.D., Princeton University*: Elementary mathematics and applications.

Roberto Silvotti, *Assistant Professor, Ph.D., Universität Zurich*: Mathematical physics; algebraic geometry

Dennis Sullivan, *Distinguished Professor, Ph.D., Princeton University*: Dynamical systems; topology; fluid mechanics.

Scott Sutherland, *Lecturer 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.

Affiliated Faculty

Abraham Neyman, *Applied Mathematics and Statistics*

Michael Taksar, *Applied Mathematics and Statistics*

Teaching Assistants

Estimated number: 56

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 for-

mulation of the laws of nature. In the social and biological sciences it plays an increasingly important role in modeling complicated, large-scale phenomena. In addition, mathematics has an aesthetic side; awareness of the possibility of elegance and beauty in mathematical arguments has been a significant feature of human culture throughout history. Today more mathematics is being done, and more needs to be done, than ever before.

The undergraduate course offerings in mathematics allow students to set up individualized programs of study consistent with their academic interests and career plans. Students should consider majoring in mathematics even if they do not plan to become mathematicians or teachers of mathematics. The training in abstract reasoning and problem solving is an excellent foundation for many different careers, such as law, graduate health professions, and business. Completion of a major in mathematics points to a thinking person.

Students are encouraged to explore the various branches of pure and applied mathematics, as well as other mathematically oriented disciplines, in order to gain both breadth of knowledge and insight into career options. Mathematics majors can use their training as the foundation for advanced professional study, leading to research and teaching in universities or research in industrial research laboratories; they can use it also in secondary school teaching. In industry, undergraduate training in mathematics is excellent preparation for the important task of liaison work between the technological arm of a company and its marketing arm. A major in mathematics is particularly appropriate for work in computer applications, operations research, and actuarial science. Double majors in mathematics and another field, such as physics, computer science, applied mathematics and statistics, or economics, are common and are encouraged.

The secondary teacher preparation option is designed for students planning

a career teaching mathematics in a secondary school. This option is described in detail in the section entitled "Education and Teacher Certification" in the University Studies chapter.

The Department of Mathematics offers tutorial help to all undergraduate students in its 100-level courses. The Mathematics Learning Center focuses on precalculus mathematics, and the Calculus Resource Room focuses on calculus courses.

The department encourages students to seek information and advice on appropriate mathematics courses, programs, and career goals. Professors in mathematics are available as advisors in the Undergraduate Mathematics Office to help with these matters. Advising hours can be obtained by calling the Department of Mathematics.

Requirements for the Major in Mathematics

The major in mathematics leads to the Bachelor of Science degree. Every student majoring in mathematics is expected to complete some form of a one-variable calculus sequence, which is a prerequisite for some of the courses listed below. Appropriate sequences at Stony Brook total 8 to 12 credits.

Completion of the major requirements entails 33 to 37 credits.

A. Mathematics and Mathematics-Related Courses

1. One course in multivariate calculus: MAT 203 or AMS 261 or MAT 205; one course in linear algebra: MAT 211 or AMS 210
2. One course in differential equations: MAT 303 or AMS 361 or MAT 305
3. One course in computer literacy: MAT 331 or MEC 111 or 114. MAT 331 may be used both here and in requirement #6
4. Two courses in algebra: MAT 310 and either MAT 312 or 313 or 318
5. Students must satisfy either a. or b.:
 - a. Two courses in analysis: MAT 320 and either MAT 322, 341 or 342
 - b. for students graduating in the Secondary Teacher Preparation Option): MAT 320

6. Five mathematics-related courses beyond those taken to satisfy requirements 4 and 5 (four will suffice if all of them are MAT courses), to be chosen from the following:

MAE 301

MAT courses numbered 310 or above except 475

AMS courses numbered 301 or above except 475

CSE courses numbered 301 or above except 475

Selected upper-division courses in chemistry, economics, philosophy, and physics from a list of acceptable courses, available in the Undergraduate Mathematics Office

B. Upper-Division Writing Requirement

In order to satisfy the departmental writing requirement, each student majoring in mathematics, including double majors, must submit an acceptable portfolio of three pieces of writing from upper-division MAT or MAE coursework. Students should aim for completion of the portfolio early in their next-to-last semester to allow time to resolve any difficulties. Late completion may delay graduation. Each portfolio must be submitted no later than the beginning of the final semester, and each piece in it must have been approved by a Mathematics faculty member as being mathematically correct and well written.

Notes:

1. Under special circumstances a student may request the director of undergraduate studies to allow substitution of an equivalent program for some or all of these requirements.
2. All courses used to fulfill the requirements for the major must be taken for a letter grade and must be completed with a grade of C or higher.
3. Students whose scores on the College Entrance Examination Board (CEEB) Advanced Placement Examination are documented earn credits as follows:
 - 4 or 5 on BC examination: credit for MAT 131, 132 (8 credits)
 - 4 or 5 on AP examination: credit for MAT 131 (4 credits)
 - 3 on either examination: 3 credits applicable to graduation but not the major.

4. Students who learned some linear algebra or multivariate calculus before entering Stony Brook should see an advisor in the Undergraduate Mathematics Office. For a student who has had some linear algebra, it may be appropriate to skip MAT 211 and to enroll directly in MAT 310.
5. Six credits of the graduate MAT courses may be used in place of undergraduate courses in requirement A.6.

Honors Program in Mathematics

The honors program is open to junior and senior mathematics majors who have completed at least two upper-division MAT courses with grades of B or higher and who have maintained a 3.0 overall grade point average. A prospective honors major must declare to the director of undergraduate studies an intention to participate in the program, sometime 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 316, MAT 322, MAT 401, a course in algebra other than MAT 310 and MAT 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 3.5.
2. Approval for honors by the faculty member or members who supervises MAT 495.

Requirements for the Minor in Mathematics

The minor in mathematics is available for those students who want their formal university records to emphasize a serious amount of upper-division work in mathematics. Although a one-variable calculus sequence is not a requirement, it is a prerequisite for some of the courses listed below. The minor requires 21 to 23 credits.

1. MAT 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 310 or above (excluding 475)

All courses used to fulfill the requirements for the minor must be taken for a letter grade and must be completed with a grade of C or higher.

Beginning Mathematics Courses

The MAT curriculum begins with a choice of calculus sequences, some including preparatory material from 12th-year mathematics in high school and some not. The three first-term calculus courses that assume knowledge of 12th-year mathematics are MAT 125, MAT 131, and MAT 141. A student may start any of these with the same background.

The three-semester sequence of one-variable calculus, MAT 125, 126, 127, is academically equivalent to the two-semester sequence MAT 131, 132. Engineering students normally take the faster-paced MAT 131, 132 rather than MAT 125, 126, 127 because of the many requirements they must meet. MAT 141, 142 is an enriched version of MAT 131, 132.

The sequence of courses MAT 123, 124 combines precalculus and calculus for students who have not had 12th-year mathematics in high school. A student who completes MAT 123 will have learned some precalculus material and will have a good idea of what calculus is and how it is used. For people who are continuing, MAT 124 may be followed by MAT 126. Students with an interest in engineering or physical sciences who begin with MAT 123 may follow that course with MAT 131 and then MAT 132 if they take the one-credit course MAT 130 in the same semester as MAT 131.

For students whose high school preparation is insufficient to begin the MAT curriculum, or to enroll in another course applicable to the D.E.C. category C requirement (Mathematical and Statistical Reasoning), there are three review courses numbered MAP 101, 102, and 103. These courses do not carry graduation credit. MAP 102 and 103 are at the same level and begin with a review of some high school algebra. MAP 102 is for students who have not met the entry skill in mathematics requirement, who will not take calculus, and who plan to finish their mathematics with a noncalcu-

lus mathematics course such as statistics. MAP 103 is a skills course for students who need further work in high school algebra and related topics before continuing with calculus or other mathematics. Students who plan to take both calculus and statistics should take MAP 103, then calculus, and then calculus-based statistics. Some students, upon completing MAP 103, are able to pass the Mathematics Placement Examination at a level that allows them to go directly into MAT 125 or 131.

Placement

The Mathematics Department offers a placement examination which indicates the level of mathematics a student is ready to take. 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.

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 skill requirement (basic mathematics competence).
2. If they have not satisfied D.E.C. category C (mathematical and statistical reasoning).
3. If they have been or wish to be accepted into a major in the College of Engineering and Applied Sciences.
4. If they have chosen or are considering choosing a major in a department that requires mathematics.
5. Before they may take any mathematics course at Stony Brook.

In taking the placement examination, a student chooses whether to take Parts I-II or Parts II-III. Part I deals with high school algebra, Part II with 12th-year high school mathematics, and Part III with calculus. Students who have had at least one semester of calculus should take Parts II-III; others should take Parts I-II. The outcome of the test is one of nine levels:

Outcome	Placement
Level 1	MAP 101
Level 2	MAP 102 or 103
Level 3	MAT 123
Level 4	MAT 125 or 131 or 141, with 125 recommended
Level 5	MAT 125 or 131 or 141, with 131 or 141 recommended
Level 6	MAT 126
Level 7	MAT 132 or 142
Level 8	MAT 127
Level 9	Beyond 100-level calculus

Levels 1-3 can be achieved by a sufficiently high score on Part I, and levels 4-5 can be achieved by a sufficiently high score on Parts I-II. To achieve level 6 or higher, a student must take Parts II-III. The entry skill in mathematics requirement may be satisfied by attaining a score of level 3 or higher. The general education requirement for Mathematics (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 from a particular college or university appears on the Stony Brook transcript with no courses or grades indicated, and the number of transferred credits is unaffected by the student's score on the Mathematics Placement Examination. In addition, transferred mathematics courses are automatically evaluated by title for applicability to the entry skill in mathematics requirement and the D.E.C. category C requirement; this evaluation does not depend on the result of the placement examination.

**Sample Course Sequence in the
Mathematics Major**

Freshman Fall	Credits
MAT 131 or 141 or 125	3-4
EGC 101	3
Gen Ed	3
Gen Ed	3
Open elective	3
Total	15-16

Spring	Credits
MAT 132 or 142 or 126	3-4
Gen Ed	3
Gen Ed	3
Gen Ed	3
Open elective	3
Total	15-16

Sophomore Fall	Credits
MAT 203 or 205 or AMS 261	3
MAT 211 or AMS 210	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Spring	Credits
MAT 303 or 305 or AMS 361	3
MAT 312 or 313 or 318	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Junior Fall	Credits
MAT 310	3
MAT 320	3
Gen Ed	3
Gen Ed	3
Elective	3
Total	15

Spring	Credits
MAT 322 or 341 or 342	3
MAT 331	3
Gen Ed	3
UD Electives	6
Total	15

Senior Fall	Credits
UD MAT electives	9
Open electives	6
Total	15

Spring	Credits
UD MAT electives	9
Open electives	6
Total	15

* Students who take MAT 125, 126 also must complete MAT 127.

MDA

Minor in Media Arts

Minor Coordinator: John Lutterbie, Theatre Arts

Students seeking a coordinated set of courses that examine media technology, theory, and practice may elect the minor in media arts (MDA). The minor should prepare a student for specialized studies in any one of the media. Media skills broaden career options for students majoring in any of the natural sciences, social sciences, or humanities. The media arts minor is also for students who simply want to develop critical standards in order to live intelligently in this media-saturated world. The minor requires 21 credits.

Requirements for the Minor in Media Arts

A. Courses required of all students:

THR 117 Film, Video, and Audio Narrative

THR 277 The Media Industry

THR 369 Introduction to Radio Broadcasting

THR 408 Media Theory and Criticism

One of the following courses:

THR 487 Projects in Theatre Arts (appropriate topic only)

THR 488 Internship (appropriate topic only)

B. Six credits to be chosen from:

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

EST/CSE 100 Societal Impact of Computers

HUF 211 French Cinema (in English)

HIS 361 American History/American Film

HUG 221 German Cinema Since 1945 (in English)

HUI 231 Italian Film (in English)

HUM 201, 202 Film and Television Studies, I, II

HUR 145 Russian Film and History (in English)

POL 367 Mass Media in American Politics

SOC 372 Mass Communications

THR 372 Introduction to Television

THR 295 Special Workshop (appropriate topic only)

THR 298 Student Media Leadership

THR 325 Scriptwriting for Film and Television

THR 370 Radio News

THR 375 Television Production

THR 462 Acting for the Camera

THR 487 Projects in Theatre Arts (appropriate topic only; see note 3)

THR 488 Internship (appropriate topic only; see note 3)

Notes:

1. All courses for the minor must be taken for a letter grade. No grade lower than C may be applied to the minor. At least 12 of the 21 credits must be taken at Stony Brook.
2. No more than six credits required for the media arts minor may be counted toward the theatre arts major.
3. Either THR 487 or 488 may be taken for requirement B when not used to fulfill requirement A.
4. No more than a total of three credits from THR 295, 487, and 488 may be applied to the minor.

MVL

Minor in Medieval Studies

Minor Coordinator: Charles Franco, French and Italian

Affiliated Faculty

Sarah Fuller, *Music*
 Aaron W. Godfrey, *Comparative Studies*
 Jacques Guilmain, *Art*
 Thomas Kerth, *Germanic and Slavic Languages
 and Literatures*
 Helen Rodnite Lemay, *History*
 Joaquin Martinez-Pizarro, *English*
 Clyde Lee Miller, *Philosophy*
 Joel Rosenthal, *History*
 Walter Scheps, *English*
 Stephen Spector, *English*
 Louise Vasvari, *Comparative Studies*

The minor in medieval studies (MVL) offers students the opportunity to acquire an understanding of the historical, cultural, and social forces that shaped Western civilization during the European Middle Ages. Under the direction of an advisor from the medieval studies program faculty, the student must establish an advisement folder with the minor coordinator and construct a program of at least 24 credits fulfilling the requirements listed below.

Requirements for the Minor in Medieval Studies

All courses offered to fulfill the requirements of the minor must be passed with a grade of C or higher.

1. MVL 141
2. HIS 234, HIS 360
3. Three of the following courses in medieval philosophy, art, music, or literature, of which two must be numbered 300 or above and which must include two different designators:
 - ANT 361 Peasants
 - ARH 101 Art in Culture from Prehistoric Times to the Age of the Cathedrals, 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

CSL 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 (in English)
 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
 PHI 304 Medieval Philosophy
 RLS 270 Christianity
 RLS 310 Biblical Theology
 Additional relevant courses may become available. Check with the Medieval Studies Coordinator.

4. HIS 451 Colloquium in Medieval History
5. Completion of intermediate level Latin or a relevant European foreign language (course numbered 192 or 212 or higher).

MES

Minor in Middle Eastern Studies

Minor Coordinator: Robert Hoberman, Comparative Studies

Affiliated Faculty

Said Arjomand, *Sociology*
Ellen Broselow, *Linguistics*
William Chittick, *Comparative Studies*
Robert Goldenberg, *Comparative Studies*
Sachiko Murata, *Comparative Studies*
Elizabeth Stone, *Anthropology*

The interdisciplinary minor in Middle Eastern Studies (MES) allows students interested in the Middle East to design an individual program of study centered around a particular area of concentration in consultation with an advisor. The minor requires 18 credits.

Requirements for the Minor in Middle Eastern Studies

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

Notes: All courses must be taken for a letter grade. Failure to obtain prior approval of the program may result in lack of credit for the minor.

Besides the required courses, it is strongly recommended that students take a year of language related to their minor topic.

Sample Programs

The following programs are suggested as examples only. Consult an advisor for other possibilities, such as Islamic studies, Middle Eastern history, or Semitic languages and linguistics. The courses indicated in parentheses are recommended language courses but are not required.

Near Eastern Religions

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 440 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

Major in Multidisciplinary Studies

Director: William Wiesner, Undergraduate Academic Affairs

Affiliated Faculty:

Judith Wishnia, *Social Sciences*

Interdisciplinary and History

Robert Harvey, *French and Italian*

The Multidisciplinary Studies major (MTD), 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 environmental studies or journalism. Studies may be pursued to suit individual interests in one subject or time period such as international affairs or the colonial era. A minor such as Business Management, Chinese Studies, Women's Studies, Latin American Studies, Child and Family Studies, and the Federated Learning Community program may also fulfill one of the fields.

Aside from careers in journalism and environmental studies, MTD majors frequently enter graduate or professional school or seek careers in business, education, or government agencies. Since the course of study requires careful planning, students choosing this major should see one of the MTD advisors to plan their individual courses of study.

Requirements for the Multidisciplinary Studies Major

Completion of the multidisciplinary studies major, which leads to the Bachelor of Arts degree, entails 45 credits.

A. Course Distribution

Courses from two or three departments or areas distributed as follows:

15 credits in department or area A

15 credits in department or area B

15 credits in department or area C
(or 15 credits in additional courses
from department or area A, B, or
both)

B. Upper-Division Writing Requirement

All students majoring in multidisciplinary studies must satisfy the upper-division writing requirement established in one of the two or three departments chosen for distribution of multidisciplinary studies major credit. Students must report the department in which they will meet the upper-division writing requirement to the director of the multidisciplinary studies major by the start of the final semester of their junior year. Details of the writing requirement for each major are listed among the major requirements in each department. Where there is no clear disciplinary department, the student should consult with the director of the multidisciplinary studies major.

Further Stipulations

1. At least 30 credits offered to fulfill major requirements must be in courses numbered 300 and above. Of these at least nine credits in concentration A and nine credits in concentration B must be in upper-division courses.
2. A maximum of 15 credits may be used in courses from departments outside the College of Arts and Sciences.
3. The 45 credits must include at least 15 upper-division credits taken at Stony Brook.
4. At least 39 of the 45 credits must be taken for a letter grade and passed with a grade of C or higher. No grade lower than C- may be used toward the major.
5. No more than one course may be taken for Pass/No Credit.
6. No more than three credits of activity-related courses, teaching methods courses, student teaching, undergraduate teaching practica, research courses, directed readings, or internships may be used in each

concentration. (Consult the index to this Bulletin for further details about these types of courses.)

7. Students in the Multidisciplinary Studies major may not declare a second major.

**Sample Course Sequence for the
Multidisciplinary Studies Major**

Freshman Fall	Credits
EGC 101	3
LD Area A course	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
LD Area B course	3
LD Area C course	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
LD Area B course	3
LD Area C course	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
UD Area A course	3
Gen Ed	3
Gen Ed	3
Elective	3
Elective	3
Total	15

Junior Fall	Credits
UD Area A course	3
UD Area B course	3
UD Area C course	3
Gen Ed	3
Elective	3
Total	15

Spring	Credits
UD Area A course	3
UD Area B course	3
UD Area C course	3
UD elective	3
Gen Ed	3
Total	15

Senior Fall	Credits
UD Area A course	3
UD Area B course	3
UD Area C course	3
Elective	3
Elective	3
Total	15

Spring	Credits
UD elective	3
UD elective	3
UD Elective	3
Elective	3
Elective	3
Total	15

MUS

Department of Music

Chairperson: David Lawton

Director of Undergraduate Studies: Joseph Auner

Faculty

Joseph Auner, *Assistant Professor, Ph.D., University of Chicago*: 19th- and 20th-century history and theory.

Timothy Eddy, *Professor, M.Mus., Manhattan School of Music*: Cello; chamber music.

Sarah Fuller, *Associate Professor, Ph.D., University of California, Berkeley*: Medieval and Renaissance history and theory. Recipient of the President's Award for Excellence in Teaching, 1984.

Perry Goldstein, *Assistant Professor, D.M.A., Columbia University*: Musicianship.

Lazar Gosman, *Professor, Diploma, Moscow State Conservatory; pupil of David Oistrakh*: Violin; chamber music.

Gilbert Kalish, *Professor and Codirector of Contemporary Chamber Players, B.A., Columbia University*: Piano; chamber music.

Richard Kramer, *Professor, Ph.D., Princeton University*: 18th-century history; Beethoven; Schubert.

David Lawton, *Professor and Graduate Studies Director, Ph.D., University of California, Berkeley*: Orchestral and opera conducting; 19th-century history.

Julius Levine, *Professor Emeritus, B.S., Juilliard School of Music*: String bass; chamber music.

Rebecca Leydon, *Visiting Assistant Professor, Ph.D., McGill University*: 20th-century music theory and history.

Judith Lochhead, *Associate Professor, Ph.D., State University of New York at Stony Brook*: 20th-century theory and history.

Timothy Mount, *Associate 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, *Associate Professor, Ph.D., Brandeis University*: Composition; theory.

Jane Sugarman, *Assistant 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, *Assistant Professor and Director of Computer Music Studio, Ph.D., University of California, Berkeley*: Composition; computer music and technology.

Peter Winkler, *Associate Professor, M.F.A., Princeton University*: Composition; theory; popular music. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1977.

Performing Artists in Residence

Misha Amory, *M.M., Juilliard School of Music*: viola, chamber music.

Ronald Anderson, *M.S., Juilliard School of Music; Ed.D., Columbia University*: Trumpet; chamber music.

Samuel Baron, *Emeritus, B.S., Juilliard School of Music; pupil of George Barrere and Arthur Lora*: Flute; chamber music.

Elaine Bonazzi, *B. Mus., Eastman School of Music*: Voice; opera workshop.

Miriam Burns, *Director of the University Orchestra, M.M., Mannes College of Music*: Conducting.

Todd Coolman, *Director of the Jazz Ensemble, M.M., Manhattan School of Music*: Jazz studies.

Richard Cross, *B.A., Cornell University*: Voice; opera workshop.

Christina Dahl, *M.M. Peabody Conservatory*: Piano, accompaniment, chamber music.

Raymond Des Roches, *Codirector 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.

Arthur Haas, *M.A., University of California, Los Angeles*: Harpsichord; performance of early music.

Gustav Meier, *Director of the Stony Brook Symphony Orchestra, Diploma, Zurich Conservatory of Music*: Conducting

Thomas Muraco, *M.Mus., Eastman School of Music*: Vocal coach.

Charles Neidich, *B.A., Yale University; Diploma, Moscow State Conservatory*: Clarinet; chamber music.

William Purvis, *M.Mus., Hunter College*: Horn; chamber music.

Stephen Taylor, *Diploma, Juilliard School of Music*: Oboe, chamber music.

Jerry Willard, *Cleveland Institute of Music; study with John Williams and Misha Mishakoff*: Guitar; chamber music.

Teaching Assistants

Estimated number: 42

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.

Requirements for the Major in Music

The major in music leads to the Bachelor of Arts degree. Completion of the major requirements entails 63 to 67 credits.

A. Admittance to the Major

Any student wishing to major in music must pass an audition in voice or instrument and a musicianship examination that tests aural skills and musical literacy (elementary theory, interval recognition, simple melodic and rhythmic dictation, and sight singing). The undergraduate musicianship examination is given three times each year: the first or second day of each semester and at the end of April. Auditions are held in the first week of classes. Students should consult the department office to sign

up for the undergraduate musicianship examination and to make an appointment for an audition.

B. Study within the Area of the Major

1. Theory:

- MUS 121 Musicianship I
- MUS 131, 132 Keyboard Harmony I, II
- MUS 220 Musicianship II
- MUS 221 Musicianship III
- MUS 222 Modal Counterpoint
- MUS 231, 232 Keyboard Harmony III, IV
- MUS 321, 322 Tonal Harmony I, II
- MUS 323 Techniques of Late 19th- and 20th-Century Music
- MUS 331 Musicianship IV
- MUS 421 Analysis of Tonal Music
- MUS 422 Analysis of 20th-Century Music

2. History and Literature:

- MUS 101 Introduction to Music
 - MUS 350 Western Music before 1600
 - MUS 351 Western Music from 1600 to the Early 19th Century
 - MUS 352 Western Music of the 19th and 20th Centuries
- 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. Eight credits from courses in the groups MUS 161-187 Performance Study or MUS 361-387 Advanced Performance Study
- b. Study for a minimum of four semesters from the following courses: MUS 261 Stony Brook Chorale or MUS 262 University Orchestra or MUS 263 University Wind Ensemble or MUS 264 Jazz Ensemble or MUS 393 Chamber Chorus. Pianists and guitarists only may fulfill the four semesters with MUS 391 Chamber Music or MUS 388 Fundamentals of Accompanying.

Note: No more than 30 credits of individual instruction in instrument or voice may be included in the 120

credits required for the B.A. degree.

C. Upper-Division Writing Requirement

As evidence of acceptable writing skills in the discipline, students majoring in music must submit to the director of undergraduate studies a portfolio of three papers no later than one month before the end of their junior year. Papers written for music history courses (MUS 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 assessments by the end of the student's junior year. If writing skills are judged deficient, the committee recommends a course of action for the improvement of such skills and reviews examples of writing during the senior year. Students must demonstrate acceptable writing skills before they graduate.

D. Foreign Language

Students who intend to continue their studies beyond the B.A. degree are advised that most graduate music programs require a reading knowledge of French or German, often both. (For this purpose, but not for the entry skill in foreign language requirement, language courses may be taken under the P/NC option.)

Note: All courses used to fulfill the requirements for the major in music must be passed with a grade of C or higher.

Honors Program in Music

Candidates for honors in music must be nominated by a faculty member who agrees to act as sponsor for the honors project. An eligible student may submit a proposal for a project to the proposed sponsor, who forwards the proposal together with a letter of nomination to the Music Department's undergraduate studies committee. To be eligible, a student must have maintained at least a 3.0

grade point average overall, and a 3.0 average in music. After entering the honors program, a student must maintain at least a 3.5 average in music.

The project, which may be in performance, composition, history, or theory, must be carried out under the supervision of the sponsor. The completed project is reviewed by an evaluating committee consisting of the sponsor, another member of the music faculty, and an outside evaluator.

Complete guidelines for the honors program are available from the Director of Undergraduate Studies.

Minor in Music

The music minor, which has a general track and a theory track, is designed to provide students interested in music with a foundation in the theory and history of music and experience in a performing ensemble. Less rigorous than the music major, the minor is not intended to prepare students for advanced study or professional work in music. The general track requires 20 to 22 credits; the theory track requires 24 credits.

General Track

1. Theory:

- MUS 119 Elements of Music
- MUS 315, 316 Structural Principles of Music

2. History:

Three courses chosen from the following: MUS 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 391 Chamber Music
- MUS 393 Chamber Chorus

Theory Track

1. Theory:

- MUS 121 Musicianship I
- MUS 220 Musicianship II
- MUS 221 Musicianship III
- MUS 222 Modal Counterpoint
- MUS 321 Tonal Harmony I
- MUS 322 Tonal Harmony II

Sample Course Sequence in the Music Major

Freshman Fall	Credits
MUS 121	2
MUS 131	1
MUS 222	3
MUS 101	3
Performance Study	2
Ensemble	1-2
EGC 101	3
Total	15-16

Spring	
MUS 220	2
MUS 132	1
MUS 321	3
Performance Study	2
Ensemble	1-2
Gen Ed	3
Gen Ed	3
Total	15-16

Sophomore Fall	
MUS 221	2
MUS 231	1
MUS 322	3
MUS 350	4
Performance Study	2
Ensemble	1-2
Gen Ed	3
Total	16-17

Spring	
MUS 331	2
MUS 232	1
MUS 323	3
MUS 351	4
Performance Study	2
Ensemble	1-2
Gen Ed	3
Total	16-17

Junior Fall	
MUS 421	3
MUS 342	4
Performance Study	2-4
Ensemble	1-2
Gen Ed	3
Gen Ed	3
Total	16-19

Spring	
MUS 422	3
Performance Study	2-4
Ensemble	1-2
Gen Ed	3
Gen Ed	3
Total	12-15

Senior Fall	
MUS 450 or (434 or 432)	3
Performance Study	2-4
Ensemble	1-2
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15-18

Spring	
MUS 450 (or 434 or 432)	3
Performance Study	2-4
Ensemble	1-2
Gen Ed (UD)	3
UD Elective	3
UD Elective	3
Total	12-18

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

MUS 264 Jazz Ensemble

MUS 391 Chamber Music

MUS 393 Chamber Chorus

Note: At least three credits from requirement 2 or 3 in either track must be upper division.

OPT

**Minor in
Optics**

Minor Coordinator: Peter B. Kahn, Physics

The minor in optics (OPT), which is housed in the Department of Physics, is intended for students outside the physics major who wish to obtain a thorough understanding of the nature of light and its interactions with matter. After learning the basic principles of optics in PHY 352, students may pursue their scientific or professional interests by taking further courses in the Department of Physics or the College of Engineering and Applied Sciences. The minor requires 21 credits

A. Basic courses:

PHY 132

PHY 251 or ESG 281

PHY 301 or ESE 319

PHY 352

B. At least two of the following:

MEC 342, 441*, 499*

ESE 321, 362, 441*, 499*

ESG 441*

ESM 499*

PHY 302, 452, 455, 487*, 488*

*These courses may be used if the research project is in optics. Each such course must be taken for three credits and the student must obtain written approval of the Department of Physics for his or her research proposal before starting research.

BCP

Department of Pharmacology

Chairperson: Arthur A. Grollman

Director of Undergraduate Studies: Jean M. Devlin

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.

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, *Assistant Professor, B.S., London University, England*: Physiological and molecular pharmacology.

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 karyokeleton/eukaryotic DNA replication.

Michael Frohman, *Assistant Professor, M.D., Ph.D., University of Pennsylvania*: Control of gene expression during mammalian embryogenesis.

Arthur P. Grollman, *Professor, M.D., The Johns Hopkins University*: Molecular mechanism of carcinogenesis and DNA repair.

Charles R. Iden, *Associate Professor, Ph.D., The Johns Hopkins University*: DNA damage produced by genotoxic substances.

Francis Johnson, *Professor, Ph.D., Glasgow University*: Inhibition of HIV-1 (AIDS) using rationally designed drugs; effects of chemical carcinogens on DNA.

Craig C. Malbon, *Leading Professor, Ph.D., Case Western Reserve University*: Signal transduction during differentiation and development: roles of G-proteins.

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. The 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.

Sidney Strickland, *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. Tsirka, *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.

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 is designed to prepare students for careers in drug research and development and to provide a solid background for those stu-

dents 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 and pharmacy school.

Requirements for the Major

All courses offered for the major must be taken for a letter grade. In requirements A and B below, a minimum grade point average of 3.0 must be obtained for all 100-level and upper-division courses. Courses taken under the P/NC option may not be applied to the major.

Completion of the major requirements entails approximately 66-67 credits.

A. Courses in Related Fields

1. CHE 131, 132 General Chemistry or 141, 142 Honors Chemistry
2. CHE 133, 134 General Chemistry Laboratory or 143, 144 Honors Chemistry Laboratory
3. CHE 321, 322 Organic Chemistry or 331, 332 Honors Organic Chemistry
4. CHE 327 Organic Chemistry Laboratory A or CHE 333 Organic

Chemistry Laboratory B

- 5. MAT 131, 132 Calculus I, II (See note 1)
- 6. PHY 121, 122 Physics for the Life Sciences (See note 1)

B. Courses in Biological Sciences

- 1. BIO 152 Principles of Biology: From Molecules to Organisms or BIO 172 Honors Biology: Molecules to Organisms (See note 2)
- 2. BIO 310 Cell Biology
- 3. HBY 350 Physiology (See note 3)
- 4. BIO 361, 362 Biochemistry I, II
- 5. BIO 365 or BIO 311 Biochemistry Laboratory

C. Pharmacology

- 1. BCP 394 Environmental Toxicology and Public Health (see note #6)
- 2. BCP 400 Writing in Pharmacology
- 3. BCP 401 Principles of Pharmacology
- 4. BCP 402 Advanced Pharmacology
- 5. BCP 403 Principles of Pharmacology Laboratory
- 6. BCP 404 Advanced Pharmacology Laboratory
- 7. BCP 406 Pharmacology Colloquium
- 8. 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.

Sample Course Sequence for the Pharmacology Major

Freshman Fall	Credits
EGC 101	3
Gen Ed	3
MAT 131	4
CHE 131	4
CHE 133	1
Total	15

Spring	Credits
Gen Ed	3
Gen Ed	3
MAT 132	4
CHE 132	4
CHE 134	1
Total	15

Sophomore Fall	Credits
Gen Ed	3
Gen Ed	3
Gen Ed	3
CHE 321	3
Elective	3
Total	15

Spring	Credits
Gen Ed	3
CHE 322	3
CHE 327	2
BIO 152	4
Elective	3
Total	15

Junior Fall	Credits
PHY 121	4
BIO 361	3
BIO 365 or 311	2
BIO 329	3
Gen Ed	3
Total	15

Spring	Credits
PHY 122	4
BIO 362	3
BIO 310	3
Gen Ed	3
Gen Ed	3
Total	16

Senior Fall	Credits
BCP 401	3
BCP 403	2
UD 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

If the writing in this sample is judged satisfactory by the writing committee the requirement is fulfilled. If the writing is judged unsatisfactory, the student is advised to seek help in writing skills from the Writing Center and must pass a writing examination administered by the Department of Pharmacological Sciences at a scheduled time prior to graduation.

Notes

- 1. The following alternate sequences may be substituted for major requirements: MAT 124, 126, 127 or 125, 126, 127 or 141, 142 for 131, 132; PHY 131, 132 or 141, 142 or 125, 126, 127 for PHY 121, 122.
- 2. Students with documented AP biology scores of 4 or higher receive a

waiver of requirement B.1 (BIO 152 or 172).

- 3. BIO 328 is acceptable instead of HBY 350 with permission of program director.
- 4. BCP 488 Internship is not required for the major, but it is suggested as a worthwhile learning experience.
- 5. The attention of students majoring in pharmacology is directed to the following courses of interest to them in other departments: CHE 301, 302, 305, 312, BIO 320.
- 6. BCP 394 Environmental Toxicology and Public Health is not required for the major, but can be taken as an elective.

Honors Program in Pharmacology

Graduation with honors in pharmacology requires 1. a cumulative grade point average of 3.5 or higher in all courses in requirements A, B, and C above, and 2. presentation of an acceptable thesis based on a research project performed under BCP 487, written in the format of a paper in a scientific journal. A student interested in becoming a candidate for honors should submit an outline of the proposed thesis research project to the department's honors coordinator as early as possible, but in any case no later than the second week of classes in the last semester. (Acceptance of a project for BCP 487 registration does not imply automatic acceptance of that project for honors.) The honors coordinator in consultation with the student then appoints a thesis committee consisting of the research sponsor and two additional faculty members. Two members of the thesis committee must be members of the Department of Pharmacological Sciences and one must be a member of another department in a related field.

Three copies of the finished thesis, approved by the research sponsor, must be presented to the honors coordinator at least 21 days before the date of graduation. The honors coordinator then submits the thesis for final approval to the other two members of the thesis committee.

PHI

Department of Philosophy

Chairperson: Edward S. Casey

Director of Undergraduate Studies: Gary Mar

Faculty

David B. Allison, *Associate Professor, Ph.D., Pennsylvania State University*: Contemporary European philosophy.

Kenneth Baynes, *Associate Professor, Ph.D., Boston University*: Social and political philosophy; moral theory; modern and contemporary German philosophy.

Edward S. Casey, *Professor, Ph.D., Northwestern University*: Psychoanalysis; aesthetics; phenomenology; philosophy of mind; philosophy of place and space.

Robert Crease, *Associate Professor, Ph.D., Columbia University*: Philosophy of science; aesthetics; modern philosophy.

David A. Dilworth, *Professor, Ph.D., Fordham University; Ph.D., Columbia University*: History of philosophy; Chinese and Japanese philosophy.

Jeffrey Edwards, *Assistant 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.

Gary Mar, *Associate Professor, Ph.D., University of California, Los Angeles*: Logic; philosophy of mathematics; contemporary analytic philosophy; Asian American studies; philosophy of religion. 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.

Rita D. Nolan, *Professor, Ph.D., University of Pennsylvania*: Theory of knowledge; philosophy of language; foundations of cognitive science; Wittgenstein; feminism.

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.

Marshall Spector, *Professor, Ph.D., The Johns Hopkins University*: Philosophy of science; philosophy of technology, and environmental issues.

Donn Welton, *Associate Professor, Ph.D., Southern Illinois University*: Phenomenology; theories of meaning and truth, philosophical psychology, and 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*

Peter Manchester, *Comparative Studies*

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. Philosophy is first among the liberal arts. It studies the foundations of all forms of knowledge and human activity, and the interconnections between 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 Philosophy Department stresses interdisciplinary studies in emerging fields such as feminism, computation and consciousness, environmentalism, philosophy of technology, and cross-cultural philosophies from a global perspective.

A major in philosophy includes introductory work in one or more areas of philosophy, typically pursued in the first or second year. There are philosophy courses in the history of philosophy and the philosophy of various regions of the world (America, the British Isles, Continental Europe, Asia). Other courses focus on special areas of philosophy such as ethics, logic, metaphysics, religion, political philosophy, aesthetics, and theory of knowledge. Still other courses are at the interface between philosophy and other disciplines such as physics, biology, technology and the environment, psychology and the social sciences, literature, law, and medicine. Advanced students take inten-

sive work in a single philosopher or philosophical text, and senior majors enroll in a Senior Seminar organized around a special topic or set of topics.

Requirements for the Major in Philosophy

The major in philosophy leads to the Bachelor of Arts degree. Philosophy courses are distributed among three categories. A category number (I through III) appears in parentheses after the title of the course.

Completion of the major requirements entails 36 credits.

1. PHI 300 and 306
2. PHI 400 or 401 or 402.
3. Two courses in Category I, Styles and systems of Philosophy in Historical Perspective, exclusive of those required for items 1 and 2 above.
4. Three courses in Category II, Basic Skills and Problem Areas of Philosophy
5. Three courses in Category III, Philosophy in Relation to Other Arts and Sciences. 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 writing skills appropriate to philosophy majors, in addition to their appraisal for the course. A student must achieve an appraisal of S in advanced writing skills in order to register for PHI 435 Senior Seminar.

Notes:

1. Courses used to satisfy major requirements must be taken for a letter grade and must be passed with a grade of C or higher.
2. No more than two 100-level philosophy courses may be used to satisfy major requirements.
Philosophy 200 and 206 may not be counted for the major if taken after 300 and 306, respectively.
3. Students who expect to pursue graduate study should include PHI 220 in their programs.
4. No more than six philosophy courses may be used to satisfy D.E.C. requirements.

Honors Program in Philosophy

To qualify for the honors program, a student must be a junior or a senior major with an overall average of at least 3.0 and an average in philosophy of 3.5. The student must maintain this average throughout participation in the honors program. To seek honors, a student must plan a program not later than the first semester of the senior year with a faculty advisor and the director of undergraduate studies. The program consists of three courses at the 300 level or higher, concentrated on related aspects of a central problem. At least one of the courses should be independent study under the direction of the advisor and lead to a senior paper. This paper is reviewed by the advisor and one other member of the philosophy faculty and by a faculty member from outside the department. The senior paper is then the focus of an oral examination. Honors are awarded upon passage of the examination.

Minor in Philosophy

The minor in philosophy requires 18 credits, 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. Alternatively, a student may design a minor in philosophy tailored to his or her own interest, subject to approval by the Director of Undergraduate Studies. Courses used to satisfy minor requirements must be taken for a letter grade and must be

passed with a grade of C or higher. No more than one 100-level course 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—consisting 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. Some examples are: Research Track in Philosophical Logic; Research Track in Philosophy and Literature.

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. For details of staffing, specific content, and reading lists, the student should consult schedules posted by the Philosophy Department before registration each semester. See also the section on Study Abroad under "Special Programs" in the University Studies chapter.

**Sample Course Sequence for the
Major in Philosophy**

Freshman Fall	Credits
PHI Cat. I course	3
EGC 101	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	
PHI Cat. II course	3
PHI Cat. I course	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	
PHI Cat. II course	3
Gen Ed	3
PHI Cat. II course	3
PHI Cat. III course	3
Gen Ed	3
Total	15

Spring	
PHI 300	3
UD elective	3
PHI Cat. III course	3
Elective	3
Gen Ed	3
Total	15

Junior Fall	
UD elective	3
UD elective	3
UD elective	3
PHI Cat. III course	3
PHI elective course	3
Total	15

Spring	
PHI UD elective	3
PHI 306	3
UD elective	3
UD elective	3
Elective	3
Total	15

Senior Fall	
PHI 400 or 401 or 402	3
Gen Ed	3
Gen Ed	3
UD elective	3
Gen Ed	3
Total	18

Spring	
PHI 435	3
UD elective	3
Elective	3
Elective	3
Elective	3
Total	15

PEC

Department of Physical Education

Chairperson: John DeMarie

Faculty

David B. Alexander, *Instructor, part time, M.S., Adelphi University*: Swimming.

Peter G. Angelo, *Assistant Professor, Ph.D., State University of New York at Stony Brook*: Aquatics; first aid and cardiopulmonary resuscitation.

Norman Berhannan, *Lecturer, M.A.L.S., University at Stony Brook*: General physical education.

David Caldiero, *Instructor, M.S., University of Bridgeport*: Football; general physical education.

John DeMarie, *Associate Professor, M.A., Adelphi University*: General physical education.

Susan DiMonda, *Assistant Professor, M.A., Adelphi University*: General physical education.

Paul J. Dudzick, *Associate Professor, M.A., State University of New York at Stony Brook*: General physical education.

John Espey, *Associate Professor, M.A., University of North Carolina at Chapel Hill*: Lacrosse; general physical education.

Beckie Francis, *Lecturer, M.A., Niagara University*: Women's basketball.

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, 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*: Women's tennis; general physical education.

George Lukemire, *Assistant Professor, part time, B.S., Cornell University*: Horsemanship.

Colin A. Martindale, *Associate Professor and Director of Professional Studies, Ph.D., City University of New York*: General physical education.

James Meegan, *Lecturer, part time, M.A., Adelphi University*: Track and cross country.

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.

Masataka Mori, *Associate Professor, part time, B.A., Takushoku University*: Self-defense; karate.

Susan Ryan, *Assistant Professor, M.A., State University of New York at Stony Brook*: Soccer; general physical education.

Matthew Senk, *Lecturer, part time, B.S., State University College at Cortland*: Baseball.

Mansour Tabibnia, *Lecturer, part time, B.A., St. John's University*: Men's tennis.

Eric Teepe, *Lecturer, B.S., Averett College*: Women's soccer.

Theresa Tiso, *Associate Professor, M.S., State University College at Cortland*: Volleyball; wellness; general physical education.

Bernard Tomlin, *Lecturer, B.A., Hofstra University*: Men's basketball.

David Villano, *Lecturer, part time, Certificate, Dance Educators of America*: 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 principles of "a sound mind in a sound body" into the fabric of the undergraduate experience. We strive to educate and instill in all our 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, two Universal weight rooms, a free 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; 20 tennis courts; a six-lane, 400-meter running track; four single-wall handball/paddleball courts; and fields for varsity soccer, baseball, and softball. Intramural fields are available for softball, touch football, soccer, beach volleyball, and many other sports.

Most facilities may be used for recreational purposes when they are not scheduled for classes, intercollegiate athletics, intramural competitions, or special events. Current schedules of recreation hours may be obtained in the Physical Education Office.

Medical Clearance for Participants

Students having health problems that limit their participation in physical activities must inform the Department of Physical Education of these limitations in writing each school year before participating in any activities. Those students who are unsure whether or not they can safely participate in a particular program

should be evaluated at the University Health Service.

Neither the Department of Physical Education nor the State University of New York maintains liability insurance coverage associated with the activities or events sponsored by the department, the Sports Complex and related sports facilities, or the University. Students assume full and complete responsibility for obtaining proper health and accident insurance coverage.

Students in the College of Arts and Sciences may elect a maximum of ten PEC credits, including no more than four credits of 100-level courses, toward the 120 credits required for the bachelor's degree. Only three credits of physical education may be counted toward degree requirements in the College of Engineering and Applied Sciences.

Areas of Activity

Individual and Team Sports, Self-Defense, Physical Conditioning

PEC 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 113, 133, 134, 136, 137, 145, 146, 147, 148, 151, 152, 153, 159, 164, 240

Swimming and Water Safety

PEC 120, 121, 122, 125, 127, 221, 222, 223, 225, 226, 227, 228, 229

Horsemanship

PEC 180, 181, 282

First Aid and Athletic Training

PEC 270, 271, 272, 310, 311, 312, 313, 314

Participation in Intercollegiate Athletics

PEC 188-199

PHY

Department of Physics

Chairperson: Peter Paul

Director of Undergraduate Studies: Peter B. Kahn

Faculty

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.

Marc Baarmand, *Assistant Professor, Ph.D., University of Wisconsin-Madison*: High-energy 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, Ph.D., University of Maryland at College Park*: Experimental atmospheric sciences: remote sensing, stratospheric dynamics and trace constituent measurements, millimeter-wave spectroscopy.

Roderich Engelmann, *Professor, Ph.D., University of Heidelberg*: Experimental elementary particle physics.

Richard C. Fernow, *Adjunct Professor, Ph.D., Syracuse University*: Experimental accelerator physics.

David B. Fossan, *Professor, Ph.D., University of Wisconsin-Madison*: Experimental nuclear physics; nuclear structure and reactions.

Marvin Geller, *Adjunct Professor, Ph.D., Massachusetts Institute of Technology*: Atmospheric dynamics.

Alfred S. Goldhaber, *Professor, Ph.D., Princeton University*: Theoretical physics; nuclear theory; particle physics. Member, Institute for Theoretical Physics.

Vladimir J. Goldman, *Associate 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, *Professor, Ph.D., University of California, Berkeley*: Experimental high-energy physics; elementary particle reactions.

Michael Gurvitch, *Professor, Ph.D., State University of New York at Stony Brook*: Experimental solid-state physics.

Siyuan Han, *Research Associate Professor, Ph.D., Iowa State University*: Experimental solid-state and X-ray 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. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1996.

Barbara Jacak, *Professor, Ph.D., Michigan State University*: Experimental nuclear physics; relativistic heavy ions.

Andrew D. Jackson, *Professor, Ph.D., Princeton University*: Nuclear theory.

Chris Jacobsen, *Associate Professor, Ph.D., State University of New York at Stony Brook*: X-ray physics.

Jainendra Jain, *Professor, Ph.D., State University of New York at Stony Brook*: Theoretical solid-state physics.

Chang Kee Jung, *Associate Professor, Ph.D., Indiana University*: Experimental high-energy physics.

Peter B. Kahn, *Professor, Ph.D., Northwestern University*: Theoretical physics; nonlinear dynamics.

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.

T.T.S. Kuo, *Professor, Ph.D., University of Pittsburgh*: Nuclear theory.

Linwood L. Lee, Jr., *Professor, Ph.D., Yale University*: Experimental nuclear structure.

Konstantin Likharev, *Professor, Ph.D., Moscow State University*: Solid-state physics.

James Lukens, *Professor, Ph.D., University of California, San Diego*: Experimental solid-state physics.

Robert L. McCarthy, *Professor, Ph.D., University of California, Berkeley*: Experimental elementary particle physics.

Barry M. McCoy, *Professor, Ph.D., Harvard University*: Statistical mechanics. Member, Institute for Theoretical Physics.

Robert L. McGrath, *Professor, Ph.D., University of Iowa*: Experimental physics; nuclear structure.

John H. Marburger, *Professor and former President of the University at Stony Brook, 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, Ph.D., Yale University*: Theoretical physics; general relativity; quantum theory of measurements.

Herbert R. Muether, *Professor Emeritus, Ph.D., Princeton University*: Experimental nuclear physics; neutron physics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1978.

Robert Nathans, *Professor, Ph.D., University of Pennsylvania*: Energy; policy planning.

Hwa-Tung Nieh, *Professor, Ph.D., Harvard University*: Theoretical physics; elementary particles. Member, Institute for Theoretical Physics.

Luis Orozco, *Associate Professor, Ph.D., University of Texas at Austin*: Experimental atomic physics.

Robert Palmer, *Adjunct Professor, Ph.D., Imperial College*: Accelerator physics.

Peter Paul, *Distinguished Service Professor, Ph.D., University of Freiburg*: Experimental nuclear physics.

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.

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.

John Smith, *Professor, Ph.D., University of Edinburgh*: Elementary particle physics. Member, Institute for Theoretical Physics.

Gene D. Sprouse, *Professor, Ph.D., Stanford University*: Experimental nuclear structure.

Peter W. Stephens, *Professor, Ph.D., Massachusetts Institute of Technology*: Experimental solid-state physics.

George Sterman, *Professor, Ph.D., University of Maryland at College Park*: Theoretical physics; elementary particles. Member, Institute for Theoretical Physics.

Arnold A. Strassenburg, *Professor, Ph.D., California Institute of Technology*: Curriculum development; pre-college teacher enhancement.

Clifford E. Swartz, *Professor Emeritus, Ph.D., University of Rochester*: School curriculum revision.

Peter Van Nieuwenhuizen, *Professor, Ph.D., Utrecht University*: Theoretical physics. Member, Institute for Theoretical Physics.

Jacobus Verbaarschot, *Associate Professor, Ph.D., University of Utrecht*: Nuclear theory.

William I. Weisberger, *Professor, Ph.D., Massachusetts Institute of Technology*: Theoretical physics. Member, Institute for Theoretical Physics.

Chiaki Yanigasawa, *Research Assistant Professor, Ph.D., Tokyo University*: High energy physics.

Chen Ning Yang, *Einstein Professor, Director of Institute for Theoretical Physics, D.Sc., Princeton University; Ph.D., University of Chicago*: Theoretical physics; field theory; statistical mechanics; particle physics.

Ismail Zahed, *Associate Professor, Ph.D., Massachusetts Institute of Technology*: Theoretical nuclear physics.

Teaching Assistants

Estimated number: 38

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.

Requirements for the Major in Physics

The major in physics leads to the Bachelor of Science degree. All courses must be taken for a letter grade.

Completion of the major requirements entails approximately 64 credits.

A. Courses in Physics

The following eleven courses are required: PHY 131, 132, 251, 262, 301, 303, 306, 308, 335, 352, 445. Each of these courses numbered above 300 must be completed with a grade of C or higher and 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 or 141, 142 or 124, 126, 127 or 125, 126, 127
2. MAT 205 or 203 or AMS 261
3. MAT 305 or 303 or AMS 361

C. Courses in Related Fields

Twelve credits of acceptable physics-related courses that complement a physics major's education. A list of acceptable courses is posted in the Physics Undergraduate Office.

D. Upper-Division Writing Requirement

Students satisfy this requirement in conjunction with their laboratory work in PHY 262, 335, 352, or 445. The student's proficiency in writing

according to standards of acceptable scientific communication is judged by examination of the student's laboratory reports by the faculty member in charge of the course. Each student must attempt to pass this requirement before the end of the junior year. If the first attempt is judged unsatisfactory, the student must repeat the writing effort until a satisfactory level is achieved. Students must notify the instructor at the beginning of the semester when they intend to use the course's laboratory reports for this requirement. The satisfaction of the writing requirement is certified independently of the course grade.

Notes: Of the courses explicitly mentioned above, MAT 341, MAT 342, PHY 302, and PHY 487 are not required for the B.S. in Physics. Students taking the PHY 125, 126, 127 sequence will need to delay portions of this program by one semester. For the choices of physics electives, see the 400-level physics courses. Students are encouraged to include biology (BIO 151, 152) 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 above, receiving an overall grade point average in these courses of at least 3.3. Two of the ten courses must be chosen from among the following: PHY 445, 446 Senior Laboratory and PHY 487, 488 Research.

The Research Program

A student desiring to prepare for graduate study in physics or for a research-oriented career in physics has considerable flexibility in the choice of courses. The following sample program is suggested:

Freshman Year

- PHY 131 Classical Physics I or 141 Classical Physics I: Honors
- PHY 132 Classical Physics II or 142 Classical Physics II: Honors
- MAT 131 Calculus I
- MAT 132 Calculus II

Sophomore Year

- PHY 251 Modern Physics
- PHY 262 Introduction to Solid-State Physics
- MAT 205 Calculus III

MAT 305 Calculus IV

CHE 131, 132 or 141, 142 General Chemistry or Honors Chemistry

CHE 133, 134 or 143, 144 General Chemistry Laboratory or Honors Chemistry Laboratory

Junior Year

PHY 301, 302 Electromagnetic Theory

PHY 303 Mechanics

PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics

PHY 308 Quantum Physics

PHY 335 Electronics and Instrumentation Laboratory

PHY 352 Optics and Waves

MAT 341 Applied Real Analysis

MAT 342 Applied Complex Analysis

Senior Year

PHY 405 Advanced Quantum Physics

PHY 445 Senior Laboratory I

At least two courses selected from:

PHY 403 Nonlinear Dynamics

PHY 408 Relativity

PHY 431 Nuclear and Particle Physics

PHY 446 Senior Laboratory II

PHY 447, 448 Tutorial in Advanced Topics

PHY 472 Solid-State Physics

PHY 487, 488 Research

The Astrophysics Program

A student wishing to pursue a career in astrophysics must take a program of study that satisfies the minimum requirements for a B.S. in physics. In addition, the student should take a concentration in those courses offered by the Earth and Space Sciences or Physics Department that satisfy his or her educational goals.

The Physics of Materials Program

A student wishing to pursue a career in engineering physics with emphasis on materials science and engineering would, in addition to completing the requirements for the B.S. in physics, take courses during the junior and senior years in the Department of Materials Science and Engineering. After the successful completion of a minimum of five courses in the Department of Materials Science and Engineering (the student should consult with the directors of undergraduate studies in both the Department of Physics and the Department of Materials Science and Engineering), the student would be eligible for admission to the master's degree program in materials science and engineering.

Teacher Preparation Program in Physics

This program is designed for the student who is preparing to teach physics in secondary schools. Professional courses are provided through the Center for Science, Mathematics, and Technology Education described under "Education and Teacher Certification" in the University Studies chapter.

Basic Physics Sequences

The courses PHY 131, 132 (or 141, 142 or 125, 126, 127) and 251 present an intensive introduction to classical and modern physics for those who may major in physics, 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 above that is to be used as a prerequisite for a physics course must be completed with a grade of C or higher.

Sample Course Sequence for the Major in Physics

Freshman, Fall	Credits
PHY 131	4
MAT 131	4
Gen Ed	3
EGC 101	3
Total	14

Spring	Credits
PHY 132	4
MAT 132	4
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	17

Sophomore, Fall	Credits
PHY 251	4
MAT 205	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	16

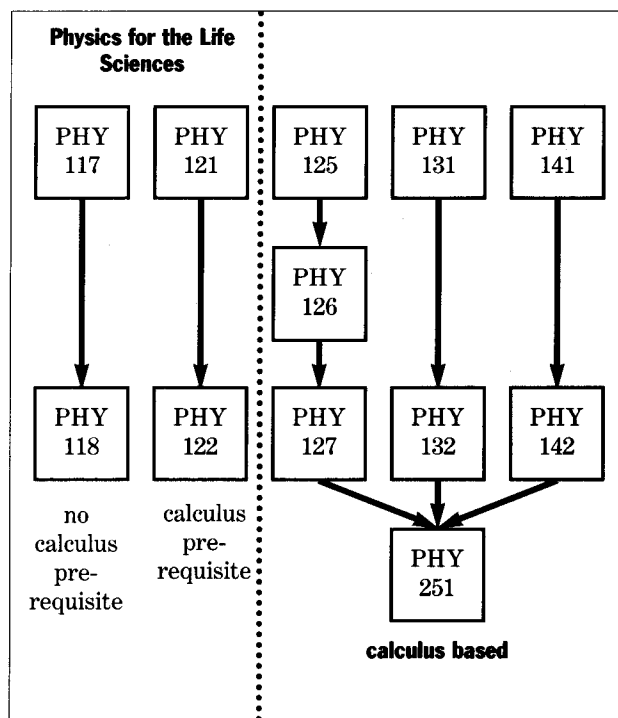
Spring	Credits
PHY 262	4
MAT 305	3
PHY 306	3
Gen Ed	3
Gen Ed	3
Total	16

Junior, Fall	Credits
PHY 301	3
PHY 303	3
PHY 335	3
MAT 341	3
Gen Ed	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
UD PHY elective	3
PHY elective	3
Gen Ed	3
Elective	3
Total	15

Spring	Credits
PHY 445	3
PHY elective	3
PHY elective	3
Gen Ed	3
Elective	3
Total	15



POL

Department of Political Science

Chairperson: Mark Schneider

Director of Undergraduate Studies: Frank Myers

Faculty

Clifford J. Carrubba, *Assistant Professor, Ph.D., Stanford University*: Political economy; comparative politics.

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.

Yassin El-Ayouty, *Lecturer, part time, J.D., Benjamin N. Cardozo School of Law*: International law.

Leonie Huddy, *Associate Professor, Ph.D., University of California, Los Angeles*: Political psychology; public opinion.

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.

Milton Lodge, *Professor, Ph.D., University of Michigan*: Political psychology; political behavior.

Kathleen McGraw, *Professor, Ph.D., Northwestern University*: Social psychology; cognition; research methods; psychology and the law.

Michael Manoussos, *Lecturer, part time, J.D., Detroit College of Law*: Personal injury.

Carla E. Molette-Ogden, *Assistant Professor, Ph.D., Washington University at St. Louis*: American politics; international relations; political economy; comparative politics.

Frank Myers, *Professor, Ph.D., Columbia University*: Comparative politics; political theory.

Helmut Norpoth, *Professor, Ph.D., University of Michigan*: Political behavior; legislative process; research process; research methods.

Myra D. Rochelson, *Lecturer, part time, J.D., Hofstra University School of Law*: Appellate Practice.

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.

Richard J. Timponi, *Assistant Professor, Ph.D., State University of New York at Stony Brook*: American government; political psychology; methodology.

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*

Barbara Weinstein, *History/Latin America*

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.

Requirements for the Major in Political Science

The major in political science leads to the Bachelor of Arts degree. Completion of the major requirements entails 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 above, offered by another department (and not crosslisted with a political science course) in subjects directly related to the chosen program of study. Courses taken at another institution may be used to satisfy this requirement if they were passed with a grade of C or higher.

C. Methodology Requirement

Majors must demonstrate competence in appropriate social science methodology by passing with a grade of C or higher any one of the following courses: AMS 102, ECO 320, POL 201, PSY 201, 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:

Method I: Students may submit to the department's director of undergraduate studies a portfolio of papers on subjects relevant to political science. These papers may include term papers or shorter pieces written for political science courses at Stony Brook or elsewhere. There is no requirement concerning the number of papers submitted, but the portfolio must consist of at least 20 pages of material.

Method II: Students may seek to have their writing evaluated by the instructor of any upper-division political science course in which there is an assigned research paper. Writing evaluation forms are available in the department office for students to give to their instructors along with their papers. Students should check with the undergraduate office if they have any questions about whether they have fulfilled the writing requirement.

Students whose writing is not judged adequate should consult with the director of undergraduate studies on further steps to fulfill the writing requirement.

Notes:

1. All courses numbered 200 and above taken under the political science designator and used toward the major must be taken for a letter grade and passed with a grade of C or higher
2. Students must take four 300-level courses in one of the following programs of study within the major:
 - a. Comparative Politics and International Relations;
 - b. American Government, Law and Public Policy;
3. Political Behavior and Political Psychology.

Programs of Study

Comparative Politics and International Relations

POL 214, 216, 305, 307, 311, 313, 336, 337, 350, 372, 382, 405, 411, 412, 435. 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 317, 318, 323, 343, 344, 346, 347, 348, 349, 350, 351, 352, 364, 367, 377, 434. Also 287, 401, 402, 403, 404, 447, 487, and 495 when the topic is applicable.

B.A./M.A. Program in Public Affairs

The five-year program in public affairs combines advanced training in a student's senior year with a focused program of study in an additional year of graduate work to prepare students for careers in government, not-for-profit institutions, or consulting firms dealing with state and local governments.

In the senior year a student in this program takes four graduate courses: a two-course statistics sequence and a two-course administration/policy analysis sequence. These 12 credits are applied toward the B.A. degree. After admission to the Graduate School, the student takes a variety of advanced electives in policy analysis, management, and the investigation of a substantive area of the student's choice. The student is awarded the M.A. degree after 30 credits of graduate work.

Honors Program

Departmental majors with a 3.5 average in political science courses and a 3.0 average overall may enroll in the political science honors program at the end of their junior year. The student, after asking a faculty member to be a sponsor, must submit a proposal to the department describing the research project that is to be the subject of the honors thesis. The supervising faculty member must also submit a statement supporting the student's proposal. If the project is approved by the department, the student may enroll in POL 495-496 Senior Honors Project in Political Science in the fall and spring semesters of the senior year. The honors paper resulting from the student's research is read by two political science faculty members and a faculty member from another department, as arranged by the director of undergraduate studies. If the paper is judged to be of extraordinary merit and the student's record warrants such a determination, honors are conferred.

Requirements for the Minor in Political Science

The minor in political science, which requires 24 credits, is organized around one of the three programs of study listed for the major and must be approved by the department's director of undergraduate studies. The minor includes two 100-level courses. It also includes six courses from those numbered 200 and

Sample Course Sequence for the Major in Political Science

Freshman Fall	Credits
POL 100-level*	3
POL 100-level*	3
EGC 101	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	
POL 100-level*	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
POL 201**	3
POL 200-level	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	
POL 300-level	3
Intro. related area course	3
Intro. related area course	3
Gen Ed	3
Gen Ed	3
Total	15

Junior Fall	Credits
POL UD course from selected Program of Study	3
POL UD course from selected Program of Study	3
UD related area course	3
Gen Ed	3
Elective	3
Total	15

Spring	
POL UD course from selected Program of Study	3
POL UD course from selected Program of Study	3
UD related area course	3
UD Elective	3
UD Elective	3
Total	15

Senior Fall	Credits
POL UD elective	3
POL UD elective	3
UD Elective	3
UD Elective	3
Gen Ed	3
Total	15

Spring	
Electives, directed research, internship, or honors	15
Total	15

above (excluding POL 201), of which at least three must be chosen from upper-division courses. At least four of the courses must be in one of the programs of study listed above.

No more than six credits of courses with Satisfactory/Unsatisfactory grading may be applied to the minor. All courses except POL 287, 488, and 489 must be taken for a letter grade. No grade less than C in courses numbered 200 and above may be used to fulfill minor requirements. No more than nine credits may be taken at another institution, and of these no more than six credits may be used toward the requirement of 18 credits from courses numbered 200 and above. Only transfer courses graded C or higher are accepted for minor credit.

* 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" above.

PSY

Department of Psychology

Chairperson: Jasper Brener

Director of Undergraduate Studies: Richard Gerring

Faculty

Brenda J. Anderson, *Assistant Professor, Ph.D., University of Illinois*: Physiological mechanisms of learning and memory; human brain mapping.

Arthur Aron, *Associate 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.

Darla Broberg, *Adjunct Assistant Professor, Ph.D., University of Washington*: Clinical psychology; psychiatry.

Edward G. Carr, *Professor, Ph.D., University of California, San Diego*: Behavior modification; developmental disabilities.

David Cross, *Associate Professor, Ph.D., University of Michigan*: Psychophysics; mathematical models.

Thomas J. D'Zurilla, *Associate Professor, Ph.D., University of Illinois at Urbana-Champaign*: Cognitive-behavior therapy; social problem solving; problem-solving therapy.

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, *Associate 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.

Paul S. Kaplan, *Adjunct Assistant Professor, Ph.D., New York University*: Developmental psychology.

Edward S. Katkin, *Professor, Ph.D., Duke University*: Psychophysiological disorders; assessment of emotions.

Daniel N. Klein, *Professor, Ph.D., State University of New York at Buffalo*: Mood disorders; psychopathology.

Lauren Krupp, *Adjunct Associate Professor, M.D., Albert Einstein College of Medicine*: Neurology; headaches; neuroimmunology.

Marvin Levine, *Professor Emeritus, Ph.D., University of Wisconsin-Madison*: Human learning with emphasis on cognitive functions.

Robert M. Liebert, *Professor, Ph.D., Stanford University*: Observational learning; laboratory methodology; statistics.

Marci Lobel, *Associate Professor, Ph.D., University of California, Los Angeles*: Health psychology; stress and coping; women's health.

H. William Morrison, *Associate Professor Emeritus, Ph.D., University of Michigan*: Perception of abstract relations; instructional techniques.

Marc Nathan, *Adjunct Professor, Ph.D., University of Washington*: Stress-induced hypertension; effects of drugs on learning and memory.

John Neale, *Professor, Ph.D., Vanderbilt University*: Schizophrenia; emotion.

K. Daniel O'Leary, *Distinguished Professor, Ph.D., University of Illinois at Urbana-Champaign*: Marital discord; spouse abuse; depression in marriage.

Susan G. O'Leary, *Professor, Ph.D., State University of New York at Stony Brook*: Child and family problems.

David M. Pomeranz, *Associate Professor 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, *Assistant Professor, Ph.D., Rice University*: Human memory.

John Robinson, *Assistant Professor, Ph.D., University of New Hampshire*: Animal behavior; learning and memory; psychobiology.

Arthur G. Samuel, *Professor, Ph.D., University of California, San Diego*: Cognitive psychology; speech perception; psychology of language; perception.

Nancy K. Squires, *Associate Professor, Ph.D., University of California, San Diego*: Human neuropsychology and electrophysiology.

Sarah Hall Sternglanz, *Adjunct Assistant Professor, Ph.D., Stanford University*: Development; gender roles.

Zvi Strassberg, *Assistant Professor, Ph.D., Vanderbilt University*: Behavioral problems in children; abnormal psychology; developmental psychology; aggression.

Stuart Valins, *Professor, Ph.D., Columbia University*: Stress and social interaction.

Dina Vivian, *Research Assistant Professor, Ph.D., State University of New York at Stony Brook*: Spouse abuse; cognitive processes in dyadic communication; marital therapy.

Everett Waters, *Professor, Ph.D., University of Minnesota*: Social and personality development.

Harriet S. Waters, *Associate Professor, Ph.D., University of Minnesota*: Memory and cognitive development.

Gerdi Weidner, *Associate Professor, Ph.D., Kansas State University*: Health psychology; personality.

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.

Affiliated Faculty

Janet Fischel, *Pediatrics*

Richard Friedman, *Psychiatry*

John H. Gagnon, *Sociology*

Manuel London, *Harriman School*

Jan Loney, *Psychiatry*

Kathleen M. McGraw, *Political Science*

Lawrence P. Morin, *Psychiatry*

Joyce Sprafkin, *Psychiatry*

Arthur A. Stone, *Psychiatry*

Robert Strecker, *Psychiatry*

Rex Wang, *Psychiatry*

Gerrit Wolf, *Harriman School*

Teaching Assistants

Estimated number: 20

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 objectives 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.

Requirements for the Majors in Psychology

Completion of the major requirements for either a B.S. or a B.A. in psychology entails 57 to 63 credits.

All courses required for either the B.S. or B.A. degree must be taken for a letter grade. A grade of C or higher must be earned in all courses (within and outside the Psychology Department) required for the major.

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 (3 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 or 13 credits 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 Psychology Undergraduate Office must be submitted to the instructor with the writing sample.

A student who receives an "unsatisfactory" on the writing sample may, with the permission of the instructor, revise and resubmit the sample for evaluation. Alternatively, the student may submit another sample in another course. Since instructors are obligated to accept only a limited number of writing samples for evaluation in a given course, students are strongly advised to attempt to complete the writing requirement in their junior year.

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.

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 123, 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).

- Africana Studies
- Anthropology/Sociology
- Biology
- Computer Science
- Economics
- History of Science

- g. Linguistics
- h. Mathematical Sciences
- i. Philosophy
- j. Political Science

The following may be substituted for category 5 above (see the Psychology Department for details):

- aa. A minor program
- bb. A second major
- cc. Student-designed options if approved by the departmental undergraduate committee

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 124 or 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:
 - a. BIO 151 and 152; or
 - b. BIO 171 and 172

Note: BIO 151 or 171 may be waived if the student elects a 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 Psychology Undergraduate 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 Psychology Undergraduate Office.
 - d. Physics: PHY 117 and 118; or PHY 121 and 122; or PHY 125, 126, and 127; or PHY 131 and 132; or PHY 141 and 142.

- e. Computer Science: CSE 113 and 114.

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 a. a faculty mentor for each honors student, and b. collaborative research with faculty that results in a senior thesis. Students are encouraged to apply for acceptance to the honors program as

Sample Course Sequence for the Psychology Major (B.A. Degree)

Freshman Fall	Credits
EGC 101	3
PSY 103	3
MAT*	3-4
BIO	3-4
Gen Ed	3
Total	15-17

Spring	Credits
PSY Group A (220 or 230 or 240) OR PSY Group B (250 or 260)	3
PHI	3
SOC or ANT or POL course**	3
Statistics course***	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
PSY 300 (fall or spring) PSY Group B (if Group A taken) OR Group A (if Group B taken)	3
Outside concentration (course #1)	3
Gen Ed	3
Gen Ed	3
Gen Ed or PSY 300	3
Total	15

Spring	Credits
PSY Group A or B course	3
PSY 200 and above elective	3
Gen Ed or PSY 300	3
Gen Ed	3
Gen Ed	3
Total	15

Junior Fall	Credits
PSY UD elective (301 to 384)	3
Outside concentration (course #2)	3
UD Elective	3
UD Elective	3
Elective	3
Elective	1-3
Total	16-18

Spring	Credits
PSY UD elective (301-384)	3
UD outside concentration (course #3)	3
PSY UD elective (301-384)	3
Gen Ed	3
Total	14-15

Senior Fall	Credits
UD outside concentration (course #4)	3
PSY UD elective (301-384)	3
UD elective	3
UD elective	3
Gen Ed	3
Total	15

Spring	Credits
UD Elective	3
UD Elective	3
Elective	3
Elective	3
Elective	3
Total	15

Notes:

* One course from among the following: AMS 101, CSE 110, MAT 123 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

soon as Prime Time during the first semester of their sophomore year at Stony Brook. The latest point at which students may enroll is three semesters prior to graduation. Application forms

and information are available in the Psychology Undergraduate Office. For acceptance into the honors program a student must have a cumulative grade point average of 3.2 or higher. A student whose cumulative grade point average falls below 3.0 may be dropped from the honors program. Conferral of honors in psychology requires the following:

1. A grade of B or higher in at least two honors courses in psychology.
2. A cumulative G.P.A. of 3.0 and a 3.5 G.P.A. in psychology.
3. A grade of C or higher in a laboratory course in psychology (PSY 380-384).
4. Successful completion of a senior thesis, as described below.

The senior thesis program in psychology is followed for three semesters. During the spring of their junior year, students enroll in PSY 399 Junior Honors Seminar, and PSY 487 for two credits in both semesters of the senior year as well as PSY 495-496 Senior Honors Seminar. The thesis is judged by the thesis director and two additional faculty members.

Sample Course Sequence for the Psychology Major (B.S. Degree)

Freshman Fall	Credits
PSY 103	3
MAT 124 or 125 or 131 or 141	3-4
EGC 101	3
CHE 111 or 131*	3-4
Gen Ed	3
Total	15-17

Spring	Credits
PSY Group A (220 or 230 or 240) OR PSY Group B (250 or 260)	3
BIO 152 or 172	4
MAT 126 or 132 or 142	3-4
Gen Ed	3
Gen Ed	3
Total	16-17

Sophomore Fall	Credits
PSY 300 (fall or spring)	3
PSY Group B (if Group A taken) OR Group A (if Group B taken)	3
BIO 151	4
PSY 201*	3-4
Gen Ed or PSY 300	3
Gen Ed	3
Total	16-17

Spring	Credits
PSY 300 (fall or spring)	3
PSY Group A or B	3
Gen Ed or PSY 300	3
PSY Elective**	3
Gen Ed	3
Gen Ed	3
Total	18

Junior Fall	Credits
Science sequence elective	3
PSY advanced laboratory (380 or 381 or 381 or 383 or 384)	3-4
Gen Ed	3
PSY UD Elective***	3
UD Elective	3
Total	15-16

Spring	Credits
Science sequence elective	3
PSY 301 or AMS 315	3
Gen Ed	3
Elective	3
UD Elective	3
Total	15

Senior Fall	Credits
PSY UD Elective***	3
UD Elective	3
UD Elective	3
Gen Ed	3
UD Elective	3
Total	15

Spring	Credits
UD Elective	3
Elective	3
Elective	3
PSY UD Elective ***	3
UD Elective	3
Total	15

Notes:

Passing a placement test at the appropriate level also satisfies the mathematics requirement.

- * CHE 111 or 131 is a prerequisite for BIO 152. CHE 111 may not be used for the required science sequence in chemistry.
- ** Other allowed statistics courses 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.

QRS

Minor in

Quantitative Research in Social and Behavioral Sciences

Minor Coordinator: William Dawes, Economics

Affiliated Faculty

David Cross, *Psychology*

Stanley Feldman, *Political Science*

Judith Tanur, *Sociology*

The minor in Quantitative Research in Social and Behavioral Sciences (QRS) enables students to participate in ongoing research projects in the Social and Behavioral Sciences. QRS 130 provides a recommended introduction for qualified freshmen and sophomores to research approaches used in current projects in several disciplines. After completing courses in mathematics and statistical analysis, students learn more advanced research skills in QRS 320 and 321 in the sophomore and junior years. Students then work closely with a research team of selected faculty members for two semesters. The first semester is primarily an apprenticeship, while the second semester involves more independent research initiated by the student with faculty assistance. The small classes, rigorous quantitative training, hands-on computer-based analyses, and practical research experience under the supervision of individual faculty members provide an excellent preparation for graduate and professional schools or for careers requiring sophisticated analytic skills.

Requirements for the Minor in Quantitative Research in Social and Behavioral Sciences

The minor consists of 24 credits to be taken in the following manner:

1. QRS 320
2. QRS 321
3. MAT 125 or 131 or 141
4. AMS 210 or 201
5. One statistics course from among the following:
 - AMS 110 or 310
 - ECO 320
 - POL 201
 - PSY 201
 - SOC 202
6. One three credit upper-division research-based course to be chosen

in consultation with the minor coordinator.

7. One six-credit research apprenticeship and research project arranged in consultation with the minor coordinator. Options are: AFS 487, ANT 487, ECO 487, HIS 487, LIN 447, POL 487, PSY 487, SOC 487, SSI 487.

All courses required for the minor must be passed with a C or higher.

RLS

Program in Religious Studies

Program Coordinator: Peter Manchester, Comparative Studies

Teaching Assistants

Estimated Number: 4

The Program in Religious Studies offers an interdisciplinary approach to the analysis of religion in its many forms and aspects. To the variety of religious traditions, both living and historical, it brings the techniques and questions of philosophy, history, literature, and the human sciences. Designed for flexibility in meeting student interests and needs, the Religious Studies Program offers a major, a minor, an honors program, and a variety of strong electives useful for broadening one's knowledge of religious phenomena, for supplementing the major program in many related fields of humanities and social science, and for meeting 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 coordinator.

Requirements for the Major in Religious Studies

The major in religious studies leads to the Bachelor of Arts degree. It requires

ten courses, all taken for a letter grade and passed with a C or higher.

Completion of the major requirements entails 30 credits.

- A. RLS 301 (ordinarily taken in the fall of the junior year; may be taken in senior year by those who do not meet the prerequisites as juniors) and RLS 400.
- B. Depth requirement: Four courses at the 200, 300, and 400 levels in one of the following areas of emphasis:
 1. Buddhism
 2. East Asian religions (Chinese, Japanese, and Korean religions)
 3. Judaism (in coordination with Judaic studies; ordinarily all four courses in this area emphasis are JDS and JDH, but one may be replaced with a relevant RLS or other course with advisor's approval)
 4. Christianity (to include at least one Judaic studies course; JDH/RLS 230 or JDS/HIS 225, 226 recommended)
 5. Islam (may include one course in Judaism or Christianity; ARB 111, 112 may also count as one course for this area)
 6. Theology, philosophy, and method in religion
 7. Other areas, as available; these must be approved by the major advisor before the first semester of the senior year.
- C. Breadth requirement: Four RLS courses in areas outside the area emphasis.
- D. Upper-Division Writing Requirement: Majors are required to demonstrate a capability for expressing themselves effectively in writing. They should meet this requirement by taking RLS 301 before the end of their junior year and achieving a special overall rating of "satisfactory" on the written work in that course apart from the course grade. An overall rating of "unsatisfactory" necessitates remedial action.

More detailed information about this requirement is available from the program.

Note: The planning of a sound and coherent curriculum is an important dimension of the Religious Studies major. Tailoring electives outside the major to the student's career or professional goals is equally important. 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 college. 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 below. Students wishing to satisfy the requirements with yet other courses may do so with the approval of the major advisor.

Related Courses in Other Programs

Detailed course descriptions appear under appropriate program listings and should be examined there.

ANT 351 Comparative Religion

ANT 358 Ways to Civilization

ARH 303 The Art and Architecture of the Early Middle Ages, ca. 400-1050

ARH 304 The Art and Architecture of the High and Late Middle Ages, ca. 1050-1400

ARH 326 Arts of Ancient Mesoamerica

ARH 327 Arts of Central Africa

ARH 328 Arts of West Africa

CLS 215 Classical Mythology

EGL/JDH 261 The Bible as Literature

EGL 342 Milton

HIS 234 Medieval Europe: A Survey

- JDS/HIS 225 The Formation of the Judaic Heritage
- JDS/HIS 226 The Shaping of Modern Judaism
- JDH 369 Readings in Judaic Studies
- KRH 346 Philosophy of Education in Korea and Japan
- PHI 304 Medieval Philosophy
- PHI 336 Philosophy of Religion
- PHI 342 History of Chinese Philosophy
- PHI 344 Japanese Thought and Philosophy
- SOC 264 Introduction to Middle Eastern Society
- SOC 352 Sociology of Religion

Appropriate special topics from these or other programs may also be offered to fulfill major requirements with permission of the major advisor.

Note: RLS courses at the 100-level may not be used to fulfill the depth requirement in the major.

The Honors Program in Religious Studies

Religious studies majors who have maintained a grade point average of 3.5 in the major and 3.0 overall through their junior year may be invited to attempt the degree in religious studies with honors.

The honors major requires a total of 36 credits, consisting of the 30 credits required for the major and six additional credits in a special research project pursued through both semesters of the senior year under the supervision of a member of the faculty, with registration in RLS 495-496.

When the supervising faculty member judges the student ready, an honors essay based on this special project is presented and defended at a meeting of the Religious Studies Seminar, which consists of the religious studies faculty and participating faculty from related disciplines. Thereafter, the religious studies faculty, together with at least one faculty member from another discipline who attended the seminar, meet to decide whether to recommend conferring the degree with honors. The decision is based on the student's overall record, the recommendation of the special project supervisor, the student's performance in presenting the honors essay, and the judgment of the faculty concerning its intrinsic worth.

Sample Course Sequence for the Religious Studies Major

Freshman Fall	Credits
EGC 101	3
Gen Ed	3
Gen Ed	3
RLS 103 or 104	3
Elective	3
Total	15

Spring	Credits
Selected Area Emphasis course #1 (200 level)	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
Selected Area Emphasis course #2 (200 level or higher)	3
RLS elective outside Area Emphasis	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
Selected Area Emphasis course #3 (300 level or higher)	3
RLS elective outside Area Emphasis	3
Gen Ed	3
UD Elective	3
Elective	3
Total	15

Junior Fall	Credits
RLS 301	3
Selected Area Emphasis course #4 (300 level or higher)	3
RLS UD elective outside area emphasis	3
Gen Ed	3
UD Elective	3
Total	15

Spring	Credits
RLS UD elective outside area emphasis	3
Gen Ed	3
Gen Ed	3
UD Elective	3
UD Elective	3
Total	15

Senior Fall	Credits
RLS 400	3
UD Elective	3
UD Elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
UD Elective	3
UD Elective	3
Elective	3
Elective	3
Elective	3
Total	15

Students who believe they are qualified to become candidates for honors should consult with the program coordinator during their junior year. Faculty supervision of the senior honors project must be agreed upon and arranged before the end of the junior year.

The Minor in Religious Studies

The minor in religious studies consists of six courses (18 credits), at least three of which (nine credits) must be at the upper-division level. At least 12 credits, including RLS 301, must be taken for a letter grade.

In addition to these general requirements, the program is designed to ensure a. an encounter with the variety of world religions, b. a grasp of problems of method and the critical use of sources in the study of religion, and c. sufficient depth in a single area emphasis to read

advanced work in the area with experience and judgment. Requirements to meet these goals are:

- A. RLS 103 or 104 or 150; a 200-level RLS course
- B. RLS 301
- C. At least three courses in one of the area emphases listed for the major

Students desiring to minor in religious studies should consult with the program coordinator by the semester in which they register for RLS 301 for advice on coordinating the religious studies minor with the student's major program. Final approval of courses selected to meet the minor requirements should be obtained prior to registration for the senior year.

SSI

Interdisciplinary Program in Social Sciences

Program Director: Eli Seifman

Director of Undergraduate Studies: Shi Ming Hu

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 Fouron, *Associate Professor, Ed.D., Columbia University*: Social studies education; bilingual education.

Kenneth D. Gadow, *Professor, Ph.D., University of Illinois at Urbana-Champaign*: Special education.

Joan F. Kuchner, *Lecturer, Ph.D., University of Chicago*: Child and family studies; child development; social policy.

Shi Ming Hu, *Distinguished Teaching Professor, Ed.D., Columbia University*: Chinese; Asian studies; social science education. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1989, the President's Award for Excellence in Teaching, 1989, and the Alumni Association Outstanding Professor Award, 1996.

Gregory A. Ruf, *Assistant Professor, Ph.D., Columbia University*: Modern China; cultural anthropology.

Eli Seifman, *Distinguished Service Professor, Ph.D., New York University*: Asian studies; modern China; social science education.

Judith Wishnia, *Associate Professor, Ph.D., State University of New York at Stony Brook*: Women's history; labor history; European history.

Affiliated Faculty

Joel T. Rosenthal, *History*

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 2

This interdisciplinary degree program (SSI) is designed for students with broad interests in the findings, questions, and methods of the social and behavioral sciences. Individual plans of study are created by combining courses from among the offerings of Africana studies, anthropology, economics, history, linguistics, political science, psychology, sociology, women's studies, and the social sciences program courses (e.g., SSI 102). The stu-

dent must complete work in at least four of these fields.

The Social Sciences Interdisciplinary Program is the administrative home of the Social Studies Secondary Teacher Preparation Program and two minors: Chinese studies and child and family studies. Social sciences majors who wish to follow one of these minors as an area of concentration may choose courses in that minor so as to simultaneously fulfill a large number of their social sciences requirements. (Requirements for the two minors appear under each program title elsewhere in the alphabetical listing of Arts and Sciences programs. Further information on the minors is available at the Social Sciences Interdisciplinary Program Office.)

Most alumni of the program have gone on to advanced study in one of the social sciences, social welfare, business administration, and law. Others have found employment as secondary school social studies teachers or in government service, business management, and social welfare agencies.

Requirements for the Major in Social Sciences

The interdisciplinary major in social sciences leads to the Bachelor of Arts degree. Completion of the major requirements entails at least 48 credits.

Courses with at least four of the social science designators (AFS, ANT, CNS, ECO, HIS, LIN, POL, PSY, SOC, SSI, WNS) are required, distributed as follows:

- A. Two courses with each of any two social science designators
- B. Four courses with each of any two other social science designators (at least two of the courses with each designator must be numbered 300 or above)
- C. Four additional courses with any social science designator(s) numbered 300 or above
- D. Upper-Division Writing Requirement

Option 1: Successful completion of the upper-division writing requirement of any one of the following majors: Africana studies, anthropology, economics, history, linguistics, political science, psychology, or sociology.

Option 2: SSI majors must achieve an evaluation of S (Satisfactory) on the written work for one of the following CNS, SSI, or WNS courses: CNS 447, 461, 487, SSI 308, 310, 321, 339, 345, 405, 417, 447, 487, WNS/HIS 333, WNS 334/HIS 336, or WNS 407, which must be taken before the end of the junior year. Students who wish to satisfy this requirement with one of these courses must inform the instructor of their intention to do so no later than the third week of the term so that the student's essays may be given special appraisal for advanced writing skills appropriate to SSI majors in addition to their appraisal for the course.

E. Other requirements:

1. All courses used for the major must be passed with a grade of C or higher.
2. No more than nine credits of independent work (273, 445-449, 481-489) and no more than six credits of such work from any single department or program may be used toward fulfillment of major requirements. Only three credits of SSI 488 or 489 may count toward the major.
3. Up to six credits of related courses numbered 300 or above may be substituted for two of the four courses needed for requirement C. An up-to-date list of allowed related courses is available from the Social Sciences Interdisciplinary Program Office. Social sciences majors who have elected the Chinese studies, child and family studies, or women's studies minor may use upper-division humanities

courses listed for their minor as related courses.

4. The following may not be used to satisfy requirements A and B, but they may be used as related courses in requirement C: SSI 397, 398, 490, upper-division Africana studies courses with the AFH designator, upper-division Chinese studies courses with the CNH designator, and upper-division women's studies courses with the WNH designator.
5. AFS 283, PSY 283, SSI 283, 450, 454, the lower-division language courses taught by the Linguistics Department, and lower-division AFH, CNH, and WNH courses may not be used to fulfill major requirements. Only one teaching practicum (475) may be counted.

Sample Course Sequence for the Social Sciences Interdisciplinary Major

Freshman Fall	Credits
SSI Category A course	3
SSI Category A course	3
EGC 101	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
SSI Category A course	3
SSI Category A course	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
SSI Category B course	3
SSI Category B course	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
SSI Category B course	3
SSI Category B course	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Junior Fall	Credits
SSI Category B UD course	3
SSI Category B UD course	3
Gen Ed	3
UD Elective	3
Elective	3
Total	15

Spring	Credits
SSI Category B UD course	3
SSI Category B UD course	3
UD Elective	3
Elective	3
Elective	3
Total	15

Senior Fall	Credits
SSI Category C UD course	3
SSI Category C UD course	3
UD Elective	3
UD Elective	3
Elective	3
Total	15

Spring	Credits
SSI Category C UD course	3
SSI Category C UD course	3
UD Elective	3
Elective	3
Elective	3
Total	15

SOC

Department of Sociology

Chairperson: Andrea Tyree

Director of Undergraduate Studies: Frank Romo

Faculty

Said Amir Arjomand, *Professor, Ph.D., University of Chicago*: Comparative; historical; political; religion.

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.

Stephen Cole, *Professor, Ph.D., Columbia University*: Science; theory; culture. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1992, and the President's Award for Excellence in Teaching, 1992.

O. Andrew Collver, *Associate Professor, Ph.D., University of California, Berkeley*: Complex organizations; demography; ecology.

Kenneth A. Feldman, *Professor, Ph.D., University of Michigan*: Social psychology; higher education; socialization.

John H. Gagnon, *Professor, Ph.D., University of Chicago*: Deviance; family simulations; sexual conduct; social change.

Erich Goode, *Distinguished Teaching Professor, Ph.D., Columbia University*: Deviance; criminology.

Norman Goodman, *Distinguished Teaching Professor and Distinguished Service Professor, Ph.D., New York University*: Social psychology; family; socialization. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1976.

Morton Hunt, *Adjunct Professor, B.A., Temple University*: Social science writing; sexuality; marriage and family life; methodology.

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, *Visiting Assistant Professor, Ph.D., Freie Universität Berlin*: International migration; national identity.

Mark H. Lazerson, *Assistant Professor, J.D., Ph.D., New York University*: Economic; industrial; law; organizations.

Frank Romo, *Associate Professor, Ph.D., Yale University*: Statistics; methodology; social organizations; economic.

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.

Judith Tanur, *Distinguished Teaching Professor, Ph.D., State University of New York at Stony Brook*: Statistics; methodology; social psychology. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1990, and the President's Award for Excellence in Teaching, 1990.

Andrea Tyree, *Professor, Ph.D., University of Chicago*: Demography; social stratification; statistics; ethnicity.

Robert Zussman, *Associate Professor, Ph.D., Columbia University*: Work; medical; political.

Affiliated Faculty

Richard Howard, *Philosophy*

Joseph Schwartz, *Psychiatry*

H. Barry Waldman, *Dental Health*

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 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, especially if it involves interaction between two or

more people, is the subject matter of sociology.

The Bachelor of Arts program at Stony Brook seeks to develop in students both the 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; 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).

The Department of Sociology collaborates with the Departments of Economics and Political Science to offer a minor in Quantitative Social Research. Both the departmental Bachelor of Arts and the minor in Quantitative Social Research provide basic training for graduates to enter a wide range of work settings where the analysis of social data is essential for the organization's tasks.

Requirements for the Major in Sociology

The major in sociology leads to the Bachelor of Arts degree. Completion of the major requirements entails 40 to 42 credits, of which 31 to 33 are in sociology courses.

A. Study within the Area of the Major

1. Required courses: One introductory course selected from among the following:

SOC 105 Structure and Methods in Sociology or 106 Introduction to Sociology: Honors or 305 Modernity and Identity

SOC 201 Research Methods and
SOC 202 Statistical Methods in
Sociology or another allowed sta-
tistics 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.

If any required course is waived for
any reason, it must be replaced
with an additional elective.

**3. Only six credits of independent
study courses, SOC 287, 447, 487,
and 488, may be used toward the
requirement of 15 elective credits
in sociology.**

B. Study in Related Areas

At least three courses (nine credits)
chosen from one of the following
related social sciences: Africana stud-
ies (only those courses with designa-
tor AFS), anthropology, economics,
history, linguistics, political science,
psychology, social sciences, and
women's studies (WNS only). Credits
from applied social science profes-
sions such as social work, police sci-
ence, education, and management sci-
ence 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 ful-
fill the upper-division writing require-
ment 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 depart-
ment). 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.

Sample Course Sequence in the Sociology Major

Freshman Fall	Credits
MAT 123	3
EGC 101	3
Gen Ed	3
Gen Ed	3
SOC 105 or 106	3
Total	15

Spring	Credits
SOC elective	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Sophomore Fall	Credits
SOC 201	3
SOC elective	3
Social science elective	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
SOC 202 or AMS 102	3
SOC elective	3
Social science elective	3
Gen Ed	3
Gen Ed	3
Total	15

Junior Fall	Credits
SOC 361	3
SOC UD elective	3
Social science elective	3
Elective	3
Elective	3
Total	15

Spring	Credits
SOC 362	3
SOC UD elective	3
SOC UD elective	3
SOC UD elective	3
SOC elective	3
Total	15

Senior Fall	Credits
SOC UD elective	3
SOC UD elective	3
SOC UD elective	3
SOC UD elective	3
SOC elective	3
Total	15

Spring	Credits
UD Elective	3
SOC UD elective	3
UD Elective	3
Elective	3
Elective	3
Total	15

Notes on Group A:

1. SOC 106 is recommended for majors considering graduate study.
2. If any required course is waived for any reason, it must be replaced with an additional elective
3. Only six credits of independent study courses (SOC 287, 447, 487, and 488) may be used toward the requirements of 15 elective credits in sociology.

2. Except for SOC 287, 475, 476, and 488 all sociology courses used toward satisfaction of major requirements must be passed with a grade of C or higher.
3. No transferred sociology course with a grade lower than C is accepted for credit in the major.

Note:

The Sociology Department requires that transfer students take at least 12 credits in sociology in residence at Stony Brook to complete the sociology major.

Grading Policy

1. Except for the five required core sociology courses (SOC 105, 201, 202, 361, and 362), which must be taken for a letter grade, only one other required sociology course may be taken P/NC.

Honors Program

The honors program is open to seniors majoring in sociology who have maintained a G.P.A. of 3.5 in the major and 3.0 overall, and who have completed or are in the process of completing the methods and statistics requirement and the upper-division writing requirement. Students should apply for the honors program before the beginning of their senior year. With the approval of the sponsoring faculty member, the student must submit a written proposal for a major paper or research project to be completed during the senior year. Acceptance into the honors program depends on the approval of the proposal by the department.

During the senior year, the student enrolls in SOC 495 during the first semester and SOC 496 during the second semester, for a total of six credits. The student's major paper or research project must be completed no later than four weeks prior to the end of the second semester, to allow for possible revisions. It is read and evaluated by a committee consisting of the student's sponsor, one other sociology faculty member, and one faculty member from another department.

If the honors program is completed with distinction and the student has achieved a 3.5 G.P.A. in all sociology courses taken in the senior year, honors are conferred.

THR

Department of Theatre Arts

Chairperson: John Lutterbie

Director of Undergraduate Studies: Loyce Arthur

Faculty

Loyce Arthur, *Associate Professor, M.F.A., New York University*: Costume design; folklore.

John Cameron, *Associate Professor, Ph.D., Kent State University*: Acting; directing; American theatre.

Theresa Kim, *Assistant Professor, Ph.D., New York University*: Acting; Asian drama.

Jonathan Levy, *Distinguished Teaching Professor, Ph.D., Columbia University*: Criticism; playwriting. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1991, and the President's Award for Excellence in Teaching, 1991.

John Lutterbie, *Associate Professor and Graduate Studies Director, Ph.D., University of Washington*: Theory; history; criticism.

Deborah Mayo, *Instructor, M.F.A., Yale University*: Acting; youth theatre.

Thomas Neumiller, *Professor Emeritus, M.F.A., Yale University*: Acting; directing. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1993, and the President's Award for Excellence in Teaching, 1993.

Norman Prusslin, *Adjunct Instructor, B.A., State University of New York at Stony Brook*: Radio broadcasting; media leadership.

David Saltz, *Assistant Professor, Ph.D., Stanford University*: Multimedia; theory; criticism.

Amy Sullivan, *Associate Professor, M.F.A., University of North Carolina at Greensboro*: Modern dance with emphasis on performance and choreography.

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 the-

atre. 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 manager.

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.

Requirements for the Major in Theatre Arts

The major in theatre arts leads to the Bachelor of Arts degree. Completion of the major requirements entails 48 credits.

A. Theatre Arts Core Program

- Two of the following courses:
THR 105 Acting I
THR 117 Film, Video and Audio Narrative
- THR 115 Stagecraft I
- THR 116 Stagecraft II
- Play Analysis
- THR 216 Introduction to Visual Interpretation
- 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.

Notes:

- Students majoring in theatre arts may not satisfy D.E.C. categories B and D with THR courses.
- All courses for the major in theatre arts must be taken for a letter grade. No grade lower than C may be applied to the major.

Honors Program in Theatre Arts

The honors program is open to seniors majoring in theatre arts who have maintained a grade point average of 3.0 overall and 3.25 in the major.

Students should apply for the honors program at the end of their junior year. The student must find a faculty member of the department to act as sponsor and, with the approval of the sponsor, submit a written proposal for a project to the department. Acceptance into the honors program depends upon the approval of the proposal by the department. The project may be in history, criticism, directing, media, technology, perfor-

mance, design, or management. The honors project is reviewed by at least two members of the Department of Theatre Arts faculty and one outside evaluator. If the honors project is carried out with distinction and the student has achieved a 3.5 G.P.A. in all theatre arts courses taken during the senior year, honors are conferred.

Course credit for the honors project is given under THR 487. Guidelines are available in the department office.

Minor in Theatre Arts

The minor in theatre arts provides the student with the opportunity to explore several aspects of the dramatic arts. The course of study should lead the student to an understanding of the necessary next steps should his or her interest be sharpened by the experience. Completion of the minor entails 21 credits.

A. Theatre Arts Minor Core Program

1. THR 105 Acting I
2. One of the following courses:
 - THR 115 Stagecraft I
 - THR 116 Stagecraft II
3. One of the following courses:
 - THR 320 Production I
 - THR 321 Production II
4. One of the following courses:
 - THR 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: All courses for the minor in theatre arts must be taken for a letter grade. No grade lower than C may be applied to the minor. At least 12 of the 21 credits must be taken at Stony Brook.

Sample Course Sequence for the Theatre Arts Major

Freshman Fall	Credits	Spring	
EGC 101	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
THR 105	3	THR 116	3
THR 115	3	Gen Ed	3
Elective	3	Elective	3
Total	15	Total	15

Sophomore Fall	Credits	Spring	
THR 230	3	THR 216	3
Gen Ed	3	THR 264	3
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
Elective	3	Elective	3
Total	15	Total	15

Junior Fall	Credits	Spring	
THR 311	3	THR 313	3
THR 320	3	THR 321	3
Gen Ed	3	THR elective	3
UD Elective	3	Gen Ed	3
Elective	3	Elective	3
Total	15	Total	15

Senior Fall	Credits	Spring	
THR 312	3	THR 401	3
THR 354	3	THR elective	3
THR elective	3	UD Elective	3
UD Elective	3	UD Elective	3
UD Elective	3	Elective	3
Total	15	Total	15

Note: Students who choose UD theatre electives for the requisite 9 credits (see B. above) need only take an additional 3 credits of UD elective work to satisfy University requirements.

WNS

Minor in Women's Studies

Director: Temma Kaplan, History

Faculty

Beverly Haviland, *Associate Professor, Ph.D., Princeton University*: 19th and 20th-century American, English, and French literature; feminist theory; psychoanalysis; women's writing.

Temma Kaplan, *Professor, Ph.D., Harvard University*: Comparative history; 20th-century social movements of women.

Carole Kessner, *Assistant Professor, part time, Ph.D., State University of New York at Stony Brook*: Women and Judaism; women and ethnicity.

Connie Koppelman, *Lecturer, part time, Ph.D., State University of New York at Stony Brook*: Women in Long Island history; Long Island women artists.

Adrienne Munich, *Professor, Ph.D., City University of New York*: Victorian studies; feminist theory.

Sarah Hall Sternglanz, *Lecturer, Ph.D., Stanford University*: Psychology of women; sex role development.

Affiliated Faculty

Harriet Allentuch, *French and Italian*

Frank Anshen, *Linguistics*

William Arens, *Anthropology*

Diane Barthel, *Sociology*

Beverly Birns, *(Emerita) Social Sciences Interdisciplinary*

Michele Helene Bogart, *Art*

Ruth S. Bottigheimer, *Comparative Studies*

Barbara Brand, *Library*

Ruth Brandwein, *Social Welfare*

Floris Barnett Cash, *Africana Studies*

Lou Charnon-Deutsch, *Hispanic Languages and Literature*

Helen Cooper, *English*

Ruth Schwartz Cowan, *History*

Barbara Elling, *Germanic and Slavic Languages and Literatures*

Ann Gibson, *Art*

Norman Goodman, *Sociology*

Robert O. Hawkins, *(Emeritus) Allied Health Professions*

Laura Henigman, *English*

Leonie Huddy, *Political Science*

Heidi Hutner, *English*

Don Ihde, *Philosophy*

Nilufer Isvan, *Sociology*

E. Ann Kaplan, *English*

Michael Kimmel, *Sociology*

Eva Feder Kittay, *Philosophy*

Joan Kuchner, *Social Sciences Interdisciplinary*

Brooke Larson, *History*

Helen Lemay, *History*

Ira Livingston, *English*

Marci Lobel, *Psychology*

Judith Lochhead, *Music*

Iona Man-Cheong, *History*

Rita Nolan, *Philosophy*

Lester Paldy, *Technology and Society*

Ilona Rashkow, *Comparative Studies*

Mary Rawlinson, *Philosophy*

Carol Rosen, *English*

Joel Rosenthal, *History*

Jane Sugarman, *Music*

Nancy Tomes, *History*

Gerdi Weidner, *Psychology*

Barbara Weinstein, *History*

Kathleen Wilson, *History*

Judith Wishnia, *Social Sciences Interdisciplinary*

Patricia Wright, *Anthropology*

Adjunct Faculty

Estimated number: 2

Teaching Assistants

Estimated number: 4

Women's studies is a scholarly field that examines its subject—women—from an interdisciplinary perspective. By bringing the questions, methods, and theories of one discipline to focus on the subject matter of others, scholars in this area often discover new approaches to their own fields, through their own insights and through their interactions with faculty and students trained in other disciplines. The Women's Studies Program provides a focus for scholars who are interested in the interdisciplinary study of women.

The women's studies minor (WNS) is designed for students interested in the interdisciplinary study of women's roles and achievements. The minor consists of courses offered by the Women's Studies Program as well as courses in the social and behavioral sciences, the humanities,

and the health sciences. Students wishing to elect this 21-credit minor may major in any discipline; they should consult the Associate Director of Women's Studies and establish an advising folder by the beginning of the junior year.

Many students have found the minor in Women's Studies to be an asset to their professional credentials, either when applying to graduate or professional school or for employment. Students in the Women's Studies minor have included premedical students interested in obstetrics and gynecology or in psychiatry, both fields in which the entirety or majority of patients are female; a nursing student who obtained a job at Planned Parenthood; a pre-law student who was admitted to a law school's civil rights law track; future secondary education teachers determined to become non-sexist teachers; students who went on to graduate work in social work; psychology majors who planned to specialize in areas such as abuse and rape counseling which primarily affect women; students in almost any humanities or social science major who planned to do graduate work in their field, as gender issues are at the forefront in most disciplines today.

Some of the courses accepted for the minor are taught in the home departments of the affiliated faculty, with that department's designator rather than WNS or WNH. The 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.

Requirements for the Minor in Women's Studies

1. WNS/SSI 102 Introduction to Women's Studies in the Social Sciences or WNH 103 Introduction to Women's Studies in the Humanities
2. WNH/WNS 407 Senior Seminar in Women's Studies
3. Five courses chosen from among the list below. At least two of these courses must be numbered 300 and above.

Note: No more than one course may be taken for Pass/No Credit.

AFS 417 The African-American Family (formerly AFS 370)

AFS 345 Culture and Gender: Women in Africa and the Caribbean

ANT 367 Male and Female

BIO 300 Biology of Human Reproduction

HIS 345 Women and Gender in Chinese History

HIS 369 American Social History to 1860

HIS 370 U.S. Social History, 1860-1930

HIS 374 Perspectives on Gender Orientation

HIS 394 History of Human Reproduction in Western Civilization

HUM 122 Images of Women in Literature

HWC 349 Overview of Gay and Lesbian Issues

PSY 240 Survey in Social Psychology (formerly PSY 209)

RLS 426 Feminine Spirituality

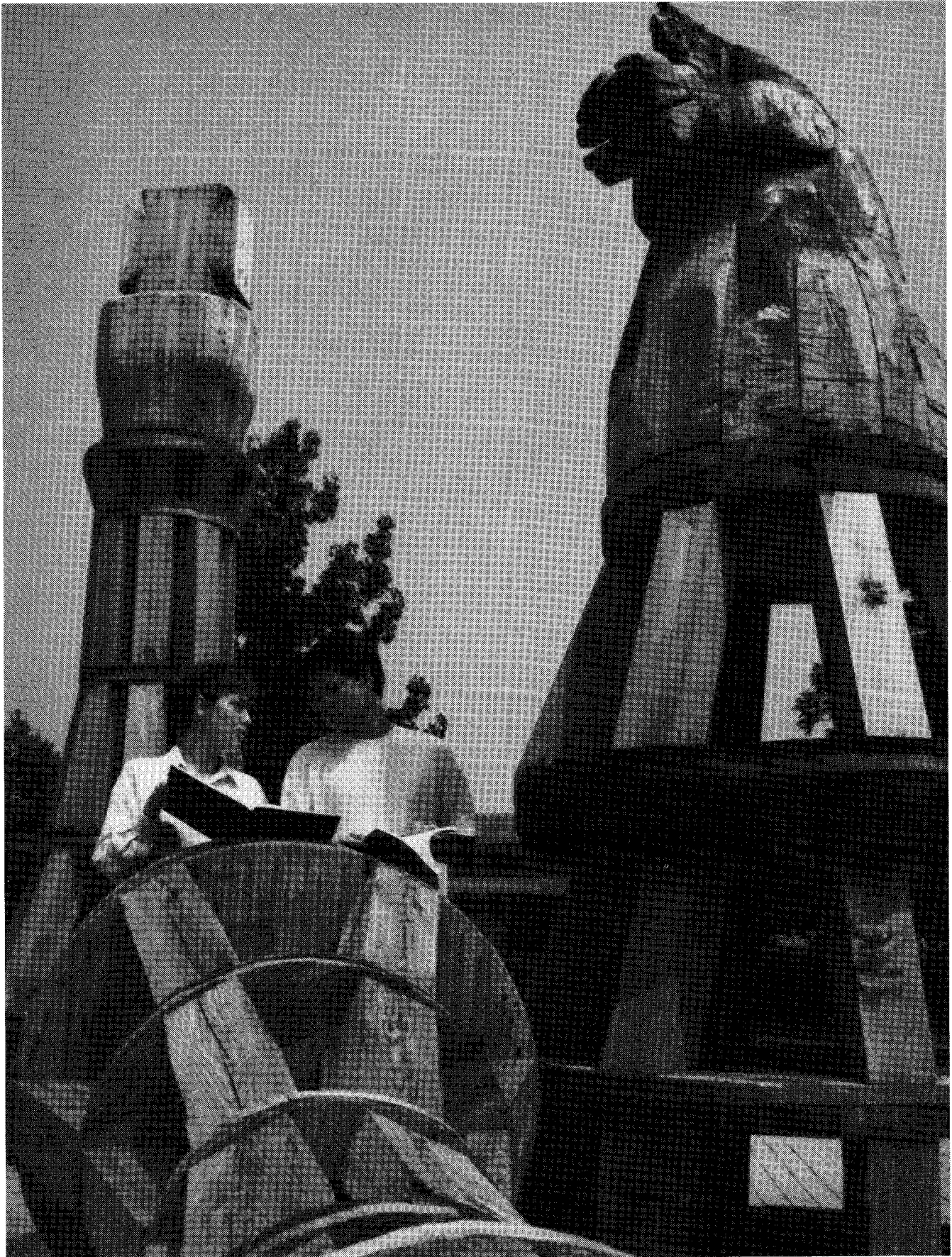
SOC 380 Social Psychology

SSI 210 Human Development: The Family Context

SSI 308 Abuse of Women and Children

SSI 405 Seminar in Children, Law, and Social Policy

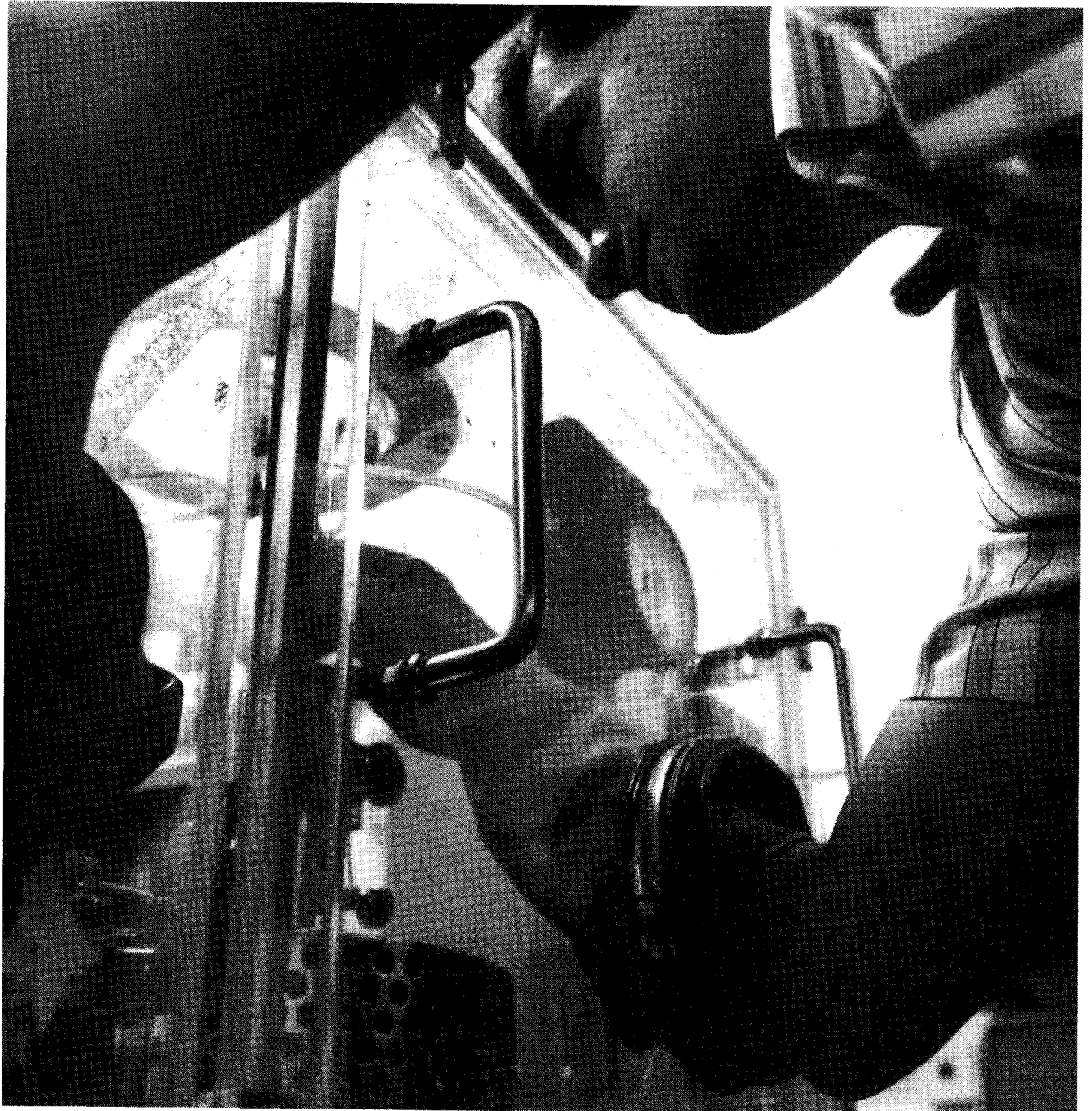
Related special topics courses given in various departments are acceptable for the Women's Studies minor with the approval of the Associate Director of Women's Studies.





College of Engineering and Applied Sciences

Yacov Shamash, Dean



Engineers and applied scientists are concerned with complex practical problems that can be approached only by those with a broad knowledge of mathematics and the physical sciences, supplemented by deeper training in a specific technical discipline. These problems often have social, political, economic, and legal aspects that must be considered in arriving at workable solutions. The understanding and judgment required to balance often conflicting technical and societal needs is acquired in part through study of the humanities and social and behavioral sciences. Consequently, the engineering and applied sciences curricula promote educational development not only in the technical areas, but in the social and behavioral sciences and humanities as well. They also provide a strong foundation of general principles that enables professional engineers and applied scientists to adapt to shifts in technological emphasis. The curricula include courses that examine contemporary technology and problems and courses that examine the technology and problems likely to be contemporary in the future. Graduates are well prepared for successful careers in large part because they are educated to develop with technology.

In order to realize these objectives, the engineering and applied sciences curricula are more flexible than at many other schools. The student who specializes in a particular field such as electrical, mechanical, or materials engineering, as well as applied mathematics, computer science, or information systems, may plan an interdisciplinary program specifically adapted to his or her career goals involving other departments or divisions of the university; he or she may choose a broad program as preparation for later specialization in architecture, business, law, or medicine. In all of these paths there is strong emphasis on individual projects in the junior and senior years, when students are encouraged to work closely with members of the faculty on projects of interest to the students.

Similarly, today's industries and businesses require managers with strong problem-solving abilities that are based on a broad education in the liberal arts and sciences and that encompass applied mathematics, economics, finance, organization theory, and technological systems. The curriculum of the W. Averell Harriman School for Management and

Policy, a branch of the College of Engineering and Applied Sciences, prepares students for business careers by providing them with the skills and knowledge for managing business enterprises as well as non-profit and governmental agencies. The program covers quantitative decision making, computers, and the ways in which organizations work financially, legally, and behaviorally, and the functions and strategies of organizations in society.

The college offers seven different majors, listed below.

Bachelor of Science in:

- Applied Mathematics and Statistics
- Business Management
- Computer Science
- Information Systems

Bachelor of Engineering in:

- Electrical Engineering
- Engineering Science
- Mechanical Engineering

Each student is enrolled in one of these majors. There is, in addition, great flexibility for specialization toward desired careers because of the freedom provided by electives within the majors. In addition, the College of Engineering and Applied Sciences cooperates with the College of Arts and Sciences in interdisciplinary programs in engineering chemistry and physics of materials, both of which lead to the Bachelor of Science degree.

The college also offers five minors: applied mathematics and statistics, business management, computer science, materials science, and technology and society.

Accreditation

The three undergraduate engineering (B.E.) degree programs offered by the college, including the computer engineering option within electrical engineering, are accredited by the Accreditation Board for Engineering and Technology, Inc.

The Undergraduate Student Office

The Undergraduate Student Office, a branch of the College of Engineering and Applied Sciences Deans' Office, provides

numerous services to students who are matriculated in one of the college's undergraduate majors. The services include general academic advising, appropriate referrals for academic advising in a major, advising about the college Diversified Education Curriculum (D.E.C.) requirements, and assistance with the processing of transfer credits. The Undergraduate Student Office receives and processes applications for admission to engineering majors from Stony Brook students in other degree programs, and receives and processes student petitions to the college's Committee on Academic Standing and Appeals. The office also serves as the center for the Internships Program and as a resource center for job opportunities, special scholarships, and the activities of student professional societies, clubs, and honor societies.

Internships Program

The College of Engineering and Applied Sciences (CEAS) is actively involved with many engineering and high-technology companies, both large and small, in the Long Island region. The many collaborative academic and industrial efforts include teaching, research, consultation, and cooperative problem solving to promote the physical and fiscal well-being of the region. Undergraduate students have a place in this working relationship between the college and industry as participants in the CEAS Internships Program, which provides them with real-world 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 50 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 resumés to internship employers, and, when necessary, assists in scheduling interviews on or off campus according to employer needs.

Acceptance into College of Engineering and Applied Sciences Programs

All programs in the College of Engineering and Applied Sciences currently find it necessary to limit the number of students accepted, in accordance with the University policy outlined in the Academic Policies and Procedures chapter under "Selection and Change of Major." While acceptance criteria are based mainly on demonstrated scholastic ability, extraordinary personal circumstances, experiences, and academic background may also be considered in the evaluation process. A new student desiring acceptance into a specific major must clearly indicate the major desired on his or her application to Stony Brook. Admission to the University, however, does not guarantee either immediate or future acceptance into the major for which the student applied.

Applied Mathematics and Statistics

Freshman and transfer applicants to the University may be accepted directly into the major in applied mathematics and statistics. Those who did not apply for the major and those who were not accepted into the major when they entered the University may apply directly to the department only after completion of MAT 132 or 142 or 127; AMS 210 or MAT 211; and CSE 110 or 114 or MEC 111.

Business Management

Qualified freshman and transfer applicants may be accepted directly to the Harriman School's business management major upon admission to the University. Currently enrolled students 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 3.0 (B) or higher. Students seeking admission to the major should contact the Harriman Student Services Office, Harriman Hall, room 109.

Computer Science and Information Systems

Qualified freshman and transfer applicants are accepted directly into the computer science or information systems major upon admission to the University. Students not accepted upon admission or through a joint admission program may apply directly to the Department of Computer Science after completing a prescribed set of courses outlined under each major's entry. All transfer students are urged to contact the appropriate undergraduate program director as early as possible.

Engineering

Freshman and transfer applicants who have specified their interest in an engineering major may be accepted directly into the electrical engineering, mechanical engineering, or engineering science major upon admission to the University. Applicants admitted to the University but not immediately accepted into an engineering major may apply for acceptance twice a year, beginning in the fall and spring semester Prime Time periods until the end of the semester's final examination week. Students in good academic standing may apply in any semester, but priority for admission to an engineering major is given to those students who have 1. completed MAT 132 and PHY 132 or their equivalents, 2. earned a G.P.A. of 3.0 in all mathematics and physics courses with no more than one grade in the C range, and 3. received completed course evaluations for all transferred courses that are to be used to meet requirements of the major. (The program in electrical engineering further specifies that students complete at least two semesters at Stony Brook, including ESE 123 and 124, prior to admission to the major.)

Concurrent Bachelor's Degrees

Qualified students whose special interests and career plans make such study appropriate may be granted permission to earn two degrees at the undergraduate level concurrently by planning a program that leads to a Bachelor of Engineering degree and either a Bachelor of Arts or a Bachelor of Science degree in the College of Arts and Sciences or a Bachelor of Science in the Health Sciences Center. For details see the Academic Policies and Regulations chapter.

Double Majors

Approved combinations of two majors leading to a Bachelor of Engineering degree are an engineering major (electrical engineering, mechanical engineering, or engineering science) with applied mathematics and statistics or business management or computer science or information systems or a major in the College of Arts and Sciences. (It is not possible to have two engineering majors.)

Approved combinations of two majors leading to a Bachelor of Science degree are applied mathematics and statistics with 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.)

Bachelor's/Master's Degree Program

An engineering science student may apply at the end of the junior year for admission to enter this special program, which leads to a Bachelor of Engineering degree at the end of the fourth year and a Master of Science degree in materials science at the end of the fifth year. For the requirements, see the department entry.

An applied mathematics and statistics student may apply at the end of the junior year for admission to a special program that leads to a Bachelor of Science degree at the end of the fourth year and a Master of Science degree at the end of the fifth year. For the requirements see the department entry.

Regulations of the Bachelor's/Master's Degree Program

1. Students must apply and be admitted to the combined degree program. Applicants must have completed a minimum of 60 credits of college work with a G.P.A. of 3.0 or higher in all college work. The application must include approval by both the chairperson of the department offering the bachelor's degree and the graduate studies director of the program offering the master's degree.
2. Students must formally apply and be accepted into the Graduate School. This application and admission process is independent of admission to the combined degree program. Admission to graduate study is provisional upon the awarding of the undergraduate degree.
3. Students must take a minimum of 30 graduate credits, 24 of which must be taken after the student has been enrolled in the graduate program. The remaining six credits may be taken while the student is formally an undergraduate but after his or her admission to the combined degree program. All graduate coursework taken after the student has been accepted into the combined degree program is subject to Graduate School regulations.
4. A course used for undergraduate credit may not be used for graduate credit.

Degree Requirements

All candidates for the Bachelor of Engineering or the Bachelor of Science degree must satisfy the requirements of a particular major, the Diversified Education Curriculum, and other university degree requirements. Candidates for the Bachelor of Engineering degree must also satisfy the college residence requirements.

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 students who complete the major pursue after graduation. In addition to an outline of the major requirements, a suggested sequence of courses students may take to complete the major over eight semesters is given. "Gen Ed" in the sample sequence indicates general education

requirement (currently the Diversified Education Curriculum described in the University Studies chapter). "UD" stands for upper division, indicating that a course numbered 300 or above should be taken to fulfill the University's 39 upper-division credit requirement. All course descriptions for the College are listed alphabetically by area of concentration in the back of the Bulletin.

Diversified Education Curriculum Requirements

The Diversified Education Curriculum (D.E.C.) requirements of the College of Engineering and Applied Sciences provide for broad exposure to the liberal arts and sciences, enabling the engineering or applied science student to better understand the context in which his or her technical discipline has been founded. The student also learns to integrate the historical, social, and humanistic aspects of technical problems and developments.

The college D.E.C. requirements outlined below are a slight modification of the Diversified Education Curriculum set forth in the University Studies chapter where the D.E.C. categories are fully described.

Students are encouraged to visit the Undergraduate Student Office for a formal review of their D.E.C. requirements at least two semesters prior to their expected date of graduation.

University Skills

One course from each category:

- Category A: English Composition
- Category B: Interpreting Texts in the Humanities
- Category C: Mathematical and Statistical Reasoning
- Category D: Understanding the Fine and Performing Arts (required only for BUS majors)

Disciplinary Diversity

- Category E: Natural Sciences (two courses)
- Category F: Social and Behavioral Sciences (one course) (two courses for BUS majors)
- Category G: Humanities (one course) (two courses for BUS majors)

Expanding Perspectives and Cultural Awareness

One course from each category, except for students enrolled in majors leading to the Bachelor of Engineering degree as noted below under category K. In choosing courses for categories I and J, engineering and applied sciences students must select one with a humanities designator and one with a social sciences designator.

- Category H: Implications of Science and Technology
- Category I: European Traditions
- Category J: The World Beyond European Traditions
- Category K: American Pluralism (required only for students enrolled in majors leading to the Bachelor of Science degree)

B.E. degree students may petition the Undergraduate Student Office for permission to substitute a category K course for a category I or J course.

Additional Requirements for the B.E. Degree

Credit Hour Requirement

At least 128 credits must have been completed. Restrictions on credits that may be counted appear below ("Restrictions on Credits") and under the Academic Policies and Regulations chapter.

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 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 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 and in the Undergraduate Student Office.

Open Electives

Open electives are courses offered for credit at Stony Brook and any credits accepted as transfer credits that are not approved to meet specific requirements.

Grading

All courses used to meet Diversified Education Curriculum requirements and the requirements of a particular major, including engineering technical electives (see "Requirements for the Major" in each department's alphabetical listing), must be taken for a letter grade. Pass/No Credit grading is not permitted except for open electives.

Restrictions on Credits

Only courses stating in the description that they may be repeated may be taken more than once for credit. No more than seven credits of undergraduate teaching practica (courses normally numbered 475 and 476), and no more than three credits of physical education may be counted toward degree requirements.

Restrictions on Transfer Credits

Courses taken at other universities and colleges and graded below C (2.00) will not be transferred as meeting major requirements.

Courses taken at other universities and colleges in a technology curriculum will normally not be transferred as equivalents to engineering or applied sciences courses.

Course Prerequisites

Certain courses may be taken only with the permission of the instructor or of the department; this is listed as a prerequisite for the course. For courses with specific course prerequisites, "or permission of instructor" is always understood. That is, a student who thinks he or she has acquired the knowledge necessary for the course through means other than taking the listed prerequisites may ask the instructor's permission to take the course. Instructors have the option of deregistering students who have enrolled without proper prerequisites or permission.

Course Numbers

The three-letter designator for each course offered by the College of Engineering and Applied Sciences indicates its program affiliation as follows:

AMS	offered by the Department of Applied Mathematics and Statistics
BUS	offered by the W. Averell Harriman School for Management and Policy
CSE	offered by the Department of Computer Science
ESE	offered by the Department of Electrical Engineering
ESG	engineering science interdisciplinary; offered by the Department of Materials Science and Engineering
ESM	offered by the Department of Materials Science and Engineering
EST	technology and society; offered by the Department of Materials Science and Engineering
ISE	information systems; offered by the Department of Computer Science
MEC	offered by the Department of Mechanical Engineering

Courses are numbered in accordance with the following general pattern:

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

Permission to Take Graduate Courses

Upper-division students with superior academic records may take graduate courses in meeting requirements for their major with the permission of the dean of the graduate school and the approval of the course instructor and of their department's undergraduate program director. Forms are available from the Graduate School for the dean's approval and in the Undergraduate Student Office for departmental major approval.

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

Laboratory Fees

The following engineering courses have laboratory fees:

ESE 314, 324, 440, and 441; ESG 312, 316, 440, and 441; MEC 316, 317, 417, 440, and 441

Course Load: 12 to 19 Credits

College of Engineering and Applied Sciences majors who are full-time students cannot register for fewer than 12 credits or more than 19 credits without the approval of the Committee on Academic Standing and Appeals.

College Time Limits for B.E. and B.S. Degrees

All degree requirements for either the Bachelor of Engineering degree or the Bachelor of Science degree must be met in 11 semesters by students classified as full time. Full-time transfer students must meet all degree requirements in the number of semesters remaining according to the following formula: the number of transferred degree-related credits is divided by 12 (which is the minimum number of credits a full-time student may take in a semester) to determine the number of semesters already completed. The result is subtracted from 11 (semesters) to indicate the number of remaining semesters permitted for completion of degree requirements. In addition, students who withdraw from the University and return at a later date to complete degree requirements are required to have formally reevaluated all courses more than six years old that were taken (at Stony Brook or elsewhere) to fulfill major requirements.

AMS

Departments of

Applied Mathematics and Statistics

Chairperson: James Glimm

Undergraduate Program Director: Alan C. Tucker

Faculty

Hongshik Ahn, *Assistant 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, Ph.D., Adelphi University*: Optimization; stochastic models.

Yung Ming Chen, *Professor, Ph.D., New York University*: Partial differential equations; inverse problems.

Yuefan Deng, *Associate Professor, Ph.D., Columbia University*: Computational fluid dynamics; parallel computing.

Vaclav Dolezal, *Professor Emeritus, Sc.D., Czechoslovak Academy of Science*: Distribution theory; systems theory.

Pradeep Dubey, *Professor, Ph.D., Cornell University*: Game theory; mathematical economics. Member, Institute for Decision Sciences.

Stephen Finch, *Associate Professor, Ph.D., Princeton University*: Applied statistics.

Robert Frey, *Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook*: Operations research.

James Glimm, *Distinguished Professor, Ph.D., Columbia University*: Mathematical physics; nonlinear physics.

Sheldon Gordon, *Adjunct Professor, Ph.D., McGill University*: Mathematics education.

John Grove, *Associate Professor, Ph.D., Ohio State University*: Conservation laws; computational fluid dynamics.

Woo Jong Kim, *Professor, Ph.D., Carnegie Mellon University*: Ordinary differential equations.

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, *Associate Professor, Ph.D., Stanford University*: Computational geometry, Recipient of the State University Chancellor's Award for Excellence in Teaching, 1996.

Abraham Neyman, *Professor, Ph.D., Hebrew University*: Game theory; mathematical economics. Member, Institute for Decision Sciences.

Bradley Plohr, *Professor, Ph.D., Princeton University*: Conservation laws; computational fluid dynamics.

David Sharp, *Adjunct Professor, Ph.D., California Institute of Technology*: Mathematical physics.

Matthew J. Sobel, *Professor, Ph.D., Stanford University*: Stochastic models; optimization. Member, Institute for Decision Sciences.

Ram P. Srivastav, *Professor, D.Sc., University of Glasgow; Ph.D., University of Lucknow*: Integral equations; numerical solutions.

Michael Taksar, *Professor, Ph.D., Cornell University*: Stochastic processes.

Reginald P. Tewarson, *Professor, Ph.D., Boston University*: Numerical analysis; biomathematics.

Alan C. Tucker, *Distinguished Teaching Professor, Ph.D., Stanford University*: Combinatorics; applied models. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974.

Qiang Zhang, *Associate Professor, Ph.D., New York University*: Scientific computing; computational fluid dynamics.

Affiliated Faculty

Hussein Badr, *Computer Science*

Eugene Feinberg, *Harriman School*

David Ferguson, *Technology and Society*

Roger Grimson, *Preventive Medicine*

Steven Skiena, *Computer Science*

Darko Skorin-Kapov, *Harriman School*

Jadranka Skorin-Kapov, *Harriman School*

Judith Tanur, *Sociology*

Frank Webster, *Chemistry*

Armen Zemanian, *Electrical Engineering*

Adjunct Faculty

Estimated number: 1

Teaching Assistants

Estimated number: 20

The undergraduate program in applied mathematics and statistics (AMS) aims to give mathematically oriented students a liberal education in quantitative problem solving. The courses in this program survey a wide variety of mathematical theories and techniques that are currently used by analysts and researchers in government, industry, and science. Many of the applied mathematics courses give

students the opportunity to develop problem solving techniques using campus computing facilities. 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 go on to graduate or professional schools, largely in statistics, operations research, computer science, and business management. Others go directly into professional careers as actuaries, programmer analysts, management trainees, and secondary school teachers.

While some career oriented course sequences are listed below, students are strongly encouraged to seek faculty advice in coordinating their career plans with their academic programs. In the spring of their junior year, all students contemplating graduate studies, upon graduation or at a later date, should consult with the department's graduate placement advisor, who assists them in choice of schools and provides information about Graduate Record Examinations, etc. Students considering secondary school mathematics teaching can major in applied mathematics and statistics or in mathematics.

Requirements for the Major in Applied Mathematics and Statistics

The major in applied mathematics and statistics leads to the Bachelor of Science degree. The following courses, totaling approximately 60 credits, are required (Note: the applied environmental science track has different requirements, given below):

A. Study Within the Area of the Major

1. MAT 131, 132; AMS 210 or MAT 211; and AMS 261 or MAT 203 or MAT 205

Note: The following alternate calculus course sequences may be substi-

tuted for MAT 131, 132 in major requirements or prerequisites:

MAT 124, 126, 127 or

MAT 125, 126, 127 or

MAT 141, 142

2. CSE 110 or 114, or MEC 111

3. 24 credits of AMS courses numbered 301 and above including AMS 301 and either AMS 310 or 311. (A minimum of 18 of these 24 credits must be designated AMS courses. The remaining six credits may be replaced by an equal number of credits taken from approved upper division mathematically oriented courses. Typically approved substitutions are ECO 321, ECO 348, and all courses designated CSE numbered 301 and above and MAT 310 and above.)

4. Upper Division Writing Requirement

All degree candidates must demonstrate skill in written English at a level acceptable for applied mathematics and statistics majors. The AMS student must register for the writing course AMS 300, and submit a portfolio containing at least four papers on four different topics selected from a list provided by the department. If the standard of writing is judged acceptable, and if the papers are technically correct, the student passes the course, thereby satisfying this requirement. The requirement may also be met by earning a grade of C or higher in a writing course approved by the department or, if the student has a double major, by satisfying the requirement for the other major.

B. Study in Related Areas

To gain a background in fields that generate mathematical applications, a minimum of 14 additional credits are chosen from among the course offerings in appropriate social sciences, the natural sciences, and engineering. Courses taken to satisfy item 3 above may not be used to satisfy this requirement. No more than eight of these credits may come from any one department.

Grading

All courses taken to satisfy requirements A 1, 2, and 3 above must be taken for a letter grade.

Sample Course Sequence in the Applied Mathematics and Statistics Major

Freshman Fall	Credits
MAT 131*	4
EGC 101	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	16

Spring	Credits
MAT 132*	4
Gen Ed	3
Gen Ed	3
CSE 110*	3
Gen Ed	3
Total	16

Sophomore Fall	Credits
AMS 210	3
AMS 261	4
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	16

Spring	Credits
AMS 301	3
AMS 310	3
Elective	3
AMS UD elective	3
AMS UD elective	3
Total	15

Junior Fall	Credits
AMS UD elective	3
UD elective	3
AMS UD elective	3
AMS UD elective or ECO 321	4
AMS UD elective	3
Total	16

Spring	Credits
UD Elective	3
UD Elective	3
Related Area course**	3
Elective	3
Elective	3
Total	15

Senior Fall	Credits
AMS 300	1
UD Elective	3
UD Elective	3
Related Area course**	3
Related Area course**	3
Elective	3
Total	16

Spring	Credits
Related Area course**	3
Related Area course**	3
Elective	3
Elective	3
Total	12

* See A. 1. and 2. above for alternate course selections.

**Consult the department for appropriate courses.

Double Majors

The department urges students in other majors who are considering a double major with AMS first to select individual AMS courses on the basis of their academic interests or vocational needs. Only after a student has taken several AMS courses should he or she decide on this as a second major.

On the other hand, AMS students are strongly encouraged to double major (or to minor) in another discipline. The most frequent choices of AMS double majors are computer science and economics. A student majoring in both AMS and CSE

must satisfy the AMS and CSE major requirements, respectively.

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. The following courses, totaling approximately 74 credits, are required.

1. MAT 131, 132

Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:

MAT 124, 126, 127 or

MAT 125, 126, 127 or

MAT 141, 142

2. CHE 131, 132
3. PHY 131
4. CSE 110 or 114, or MEC 111
5. AMS 210 (or MAT 211), 310, 315, 322, 361
6. MAR 308, 318, 319, 333 (MAR 318 is crosslisted with GEO 318)
7. ATM 305, 397 (ATM 397 is crosslisted with MEC 397)
8. BIO 306
9. 12 credits of course work from the following courses:
 - AMS 261, 326, 331
 - MAR 212, 304, 334, 488
 - GEO 101, 111, 315
 - EST 290, 291
10. Upper-Division Writing Requirement
See note A.4 under Requirements for the Major in Applied Mathematics and Statistics.

Actuarial Science

The AMS major is equivalent to an actuarial science major. That is, the AMS major covers the mathematical sciences topics tested in the first five actuarial examinations. Examination 100 covers calculus and linear algebra (AMS 410 reviews this material); examination 110 covers probability and statistics (AMS 310, 311, and 312; AMS 301 is also helpful); examination 120 covers applied statistics (AMS 315); examination 130 covers operations research (AMS 341 and 342); and examination 135 covers numerical analysis (AMS 326). For more information about actuarial science as well as study materials to help prepare for actuarial examinations, students should see the department's actuarial advisor.

Recommendations for Students Majoring in Applied Mathematics and Statistics

The department encourages students to have a broad exposure to many types of mathematical reasoning and to its diverse roles in the social and natural sciences. During their first two years, students considering an AMS major are encouraged to take, besides the required calculus sequence, two semesters of physics numbered PHY 121 or higher, CSE 110 or 113, 114 or MEC 111; 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 specific 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, 331, 341, and 342; students considering graduate operations research programs should take MAT 310 and 320.

Programmer-Analyst: AMS 301, 310, 311, 321, 326, 341, 361, and CSE 214, 220, and 301.

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 page 70 for details.

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 seniors 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 encour-

aged to speak with the department's Undergraduate Program Director.

B.S./M.S. Program

An applied mathematics and statistics major may apply at the end of the junior year for admission to a special program that leads to the Bachelor of Science degree at the end of the fourth year and the Master of Science degree at the end of the fifth year. In the fourth and fifth years, in addition to completing the 120 credits for the B.S. degree, the student takes 30 graduate credits to fulfill the masters 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

The minor in applied mathematics and statistics is designed for students who take a limited amount of mathematics in their major. The AMS minor must include at least 18 credits in courses that are not used to satisfy the requirements of the student's primary major; therefore, students in majors requiring a substantial amount of mathematics may find that a double major with AMS requires fewer credits.

- A. Calculus: MAT 131, 132 or equivalent (See note under Requirements for the Major, A.1)
- B. Linear algebra: AMS 210 or MAT 211 (Students who took AMS 201 prior to declaring the AMS minor may substitute AMS 201)
- C. Core AMS courses: AMS 301 and 310
- D. AMS electives: two additional 300-level AMS courses

BUS

W. Averell Harriman School for Management and Policy

Director: Thomas R. Sexton

Undergraduate Program Director: Carl J. Allocca

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.

Stanley M. Altman, *Ph.D., Polytechnic Institute of Brooklyn*: Health care management and policy; finance.

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.

Mark Cassano, *Assistant Professor, Ph.D., Yale University*: Financial economics: financial markets; behavioral finance.

Jeff T. Casey, *Associate Professor, Ph.D., University of Wisconsin, Madison*: Organizational behavior; decision making.

Subimal Chatterjee, *Assistant Professor, Ph.D., University of Pittsburgh*: Marketing; consumer behavior, marketing research.

Eugene A. Feinberg, *Professor, Ph.D., Vilnius University*: Operations management; operations research.

Kathy A. Paulson-Gjerde, *Assistant Professor, Ph.D., Purdue University*: Labor economics; industrial organization; total quality management; econometrics.

Thomas J. Gjerde, *Assistant Professor, Ph.D., Purdue University*: Labor economics; econometrics; macro-monetary economics.

Manuel London, *Professor and Director of Labor Management Studies Program, Ph.D., Ohio University*: Personnel; promotion policies; management training; assessment centers.

Anne Preston, *Associate Professor, Ph.D., Harvard University*: Labor economics; nonprofit organizations.

Thomas R. Sexton, *Associate Professor, Ph.D., State University of New York at Stony Brook*: Operations research; statistics; health care management; productivity analysis.

Jadranka Skorin-Kapov, *Associate Professor, Ph.D., University of British Columbia*: Management science; mathematical programming with applications; artificial intelligence.

Susan A. Slotnick, *Assistant Professor, Ph.D., Carnegie-Mellon University*: Operations management; management information systems; applications of expert systems to manufacturing operations.

Matthew J. Sobel, *Professor, Ph.D., Stanford University*: Operations management.

Harry Weiner, *Associate Professor, S.M., Massachusetts Institute of Technology*: Redesign of organizational structure to improve programmatic capabilities.

Gerrit Wolf, *Professor, Ph.D., Cornell University*: Decision and organizational behavior.

Affiliated Faculty

Donald P. Harrington, *Radiology*

Lee E. Koppelman, *Political Science*

Alan Leiken, *Health Technology and Management*

Lorna McBarnette, *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: 15

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 opportuni-

ties include management positions in manufacturing companies, business and management consulting, financial planning and banking, sales management, marketing and personnel administration.

Requirements for the Major in Business Management

The major in business management leads to the Bachelor of Science degree. The following courses, totaling approximately 66 credits, are required:

A. Required Courses

1. Accounting

BUS 114 Financial Accounting

BUS 214 Managerial Accounting

2. Data Management

AMS 102 Elements of Statistics

BUS 340 Management Information Systems

One of the following:

AMS 315 Data Analysis

ECO 320 Mathematical Statistics

3. Human Resources

One of the following:

PSY 103 Introduction to Psychology

SOC 105 or 106 Introduction to Sociology

One of the following:

BUS 347 Business Ethics

BUS 351 Introduction to Personnel Management

SOC 381 Sociology of Organizations

4. Economics and Finance

ECO 107 Introduction to Economic Reasoning

ECO 109 Introduction to Analytical Economics

ECO 303 Intermediate Microeconomic Theory

One of the following:

BUS 355 Investment Analysis

ECO 389 Corporate Finance

5. Modeling and Operations Management
 - MAT 123 Introduction to Calculus
 - AMS 201 Matrix Methods and Models
 - BUS 346 Operations Management
 - BUS 349 Management Science
6. Business Environment
 - BUS 440 International Management
 - POL 319 Business Law
7. Marketing and Business Strategy
 - BUS 348 Principles of Marketing
 - BUS 441 Business Strategy

One or more of the following courses may be substituted for elective courses with the approval of the undergraduate program director: BUS 341, 342 Special Topics in Management, BUS 487 Independent Research and BUS 488 Internship.

B. Electives

Two courses chosen from one of the following groups. Any course taken to fulfill the required courses *cannot* be used to satisfy the elective area.

1. Economics and Finance
 - BUS 339 The Non-Profit Sector: Institutions, Policy, and Practice
 - BUS 353 Entrepreneurship
 - BUS 355 Investment Analysis
 - ECO 305 Intermediate Macroeconomic Theory
 - ECO 321 Econometrics
 - ECO 325 International Economics
 - ECO 326 Industrial Organization
 - ECO 360 Money and Banking
 - ECO 368 Modern Portfolio Theory
 - ECO 383 Public Finance
 - ECO 389 Corporate Finance
2. Organizational Theory and Behavior
 - BUS 339 The Nonprofit Sector: Institutions, Policy, and Practice
 - BUS 347 Business Ethics
 - BUS 351 Introduction to Personnel Management
 - BUS 353 Entrepreneurship
 - POL 364 Organizational Decision Making
 - SOC 317 Decisions, Uncertainty, and Individual Futures

- SOC 381 Sociology of Organizations
 - SOC 383 Sociology of Business
3. Labor Markets and Human Resources
 - BUS 353 Entrepreneurship
 - ECO 318 Labor Economics
 - ECO 337 Advanced Labor Theory
 - SOC 370 Work and the Professions
 - SOC/WNS 371 Gender and Work
 4. Operations and Technology
 - AMS 341 Operations Research I: Deterministic Models
 - AMS 342 Operations Research II: Stochastic Models
 - BUS 343 Expert Systems in Business
 - BUS 353 Entrepreneurship
 - CSE/ISE 305 Principles of Database Systems
 - EST 305 Applications Software for Information Management
 - EST 392 Engineering and Managerial Economics
 5. Language and International Commerce

One of the following groups:

 - France
 - FRN 320 Business French
 - FRN 390 French Civilization
 - Italy
 - ITL 320 Business Italian
 - ITL 390 The Italian Scene
 - Germany
 - GER 300 German Civilization
 - GER 438 The Structure of German
 - Spanish America
 - SPN 303 Practical Spanish
 - SPN 392 The Culture and Civilization of Spanish America

C. 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 which 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 at Basix in the Student Union. The faculty advisor gives a satisfactory (S) evaluation upon successful completion of the portfolio.

Grading

All courses taken to satisfy requirements A and B above must be taken for a letter grade. A grade of C or higher is required in the following courses: AMS 102; BUS 114, 214, 340, 346, 348, 349, 440, and 441; ECO 109; MAT 123; PSY 103; SOC 105 or 106.

The Minor in Business Management

The business management minor (BUS) 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 22 credits provided that the appropriate prerequisite courses have been taken. Including the prerequisites, a total of 39 credits is necessary for completion of the minor. All courses must be taken for a letter grade.

1. BUS 340 Management Information Systems or AMS 102 Elements of Statistics
2. ECO 303 Intermediate Microeconomic Theory
3. BUS 349 Management Science
4. Three of the following courses from below:

- BUS 114 Financial Accounting
- BUS 214 Managerial Accounting
- BUS 346 Operations Management
- BUS 347 Business Ethics or POL 319 Business Law
- BUS 348 Principles of Marketing
- BUS 351 Introduction to Personnel Management or POL 364 Organizational Decision Making or
- SOC 381 Sociology of Organizations

BUS 353 Entrepreneurship
 BUS 355 Investment Analysis or
 ECO 383 Public Finance or ECO
 360 Money and Banking or ECO
 368 Modern Portfolio Theory or
 ECO 389 Corporate Finance

BUS 440 International
 Management

5. BUS 441 Business Policy,
 Formulation, and Administration

2. 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 sopho-
 more year.

3. BUS courses marked with an * are
 offered in both semesters.

6. Students selecting the Foreign
 Language and International
 Commerce electives may use one
 intermediate course to fulfill D.E.C.
 Category I.

**Sample Course Sequence in the Business
 Management Major**

Freshman Fall	Credits*
BUS 114	3
EGC 101	3
MAT 123	3
PSY 103 or SOC 105 or 106	3
Gen Ed	3
Total	15

Spring	
AMS 102	3
ECO 109	4
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	16

Sophomore Fall	
AMS 201	3
*BUS 214	3
ECO 107	4
Gen Ed	3
Gen Ed	3
Total	16

Spring	
Gen Ed	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	15

Junior Fall	
Begin upper division writing requirement	
*BUS 340	3
*BUS 349	3
BUS 347 or BUS 351 or SOC 381	3
AMS 315 or ECO 320	3-4
BUS 355 or ECO 389	3
Total	15-16

Spring	
Complete upper division writing require- ment	
*BUS 346	3
*BUS 348	3
ECO 303	4
BUS elective	3
BUS elective	3

Total Senior Fall	16
*BUS 440	3
POL 319	3
UD BUS elective	3
UD BUS elective	3
UD BUS elective	3

Total Spring	15
*BUS 441	3
UD BUS elective	3
UD BUS elective	3
UD BUS elective	3
UD BUS elective	3

Notes:

1. This is a suggested plan and not a
 required course sequence. Each stu-
 dent should select courses in a
 sequence based on his/her specific cir-
 cumstances. Students seeking addi-
 tional guidance should consult their
 faculty advisor. The list of faculty
 advisors is available in the Harriman
 School's Office of Student Services.

4. 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 com-
 pleted in addition to the courses listed
 in the sample course sequence.

5. It is the student's responsibility to
 ensure that all prerequisites have
 been satisfied prior to registration for
 a specific course.

CSE

Department of Computer Science

Chairperson: David S. Warren

Undergraduate Program Director: Peter B. Henderson

Faculty

Leo Bachmair, *Associate Professor. Ph.D., University of Illinois at Urbana-Champaign*: Computational logic; automated deduction; symbolic computation.

Hussein G. Badr, *Associate Professor. Ph.D., Pennsylvania State University*: Computer communication networks and protocols; stochastic processes and queuing theory; simulation; performance evaluation, modeling, and analysis.

Arthur J. Bernstein, *Professor. Ph.D., Columbia University*: Distributed algorithms; design and correctness of operating systems; concurrent programming.

Tzi-cker Chiueh, *Assistant Professor. Ph.D., University of California, Berkeley*: Experimental computer systems, computer architecture, database systems, VLSI hardware design/CAD.

Herbert L. Gelernter, *Professor. Ph.D., University of Rochester*: Artificial intelligence; knowledge-based, heuristic problem-solving systems; scientific applications.

Barbara J. Golden, *Lecturer. M.S., Polytechnic Institute of Brooklyn; M.S., Adelphi University*: Software development; testing and documentation; software interfaces.

Peter B. Henderson, *Professor. Ph.D., Princeton University*: Software engineering; programming environments; computer science education.

Jieh Hsiang, *Professor. Ph.D., University of Illinois at Urbana-Champaign*: Automated deduction; program correctness; computational logic.

Arie Kaufman, *Professor. Ph.D., Ben-Gurion University, Israel*: Computer graphics; visualization; interactive systems; computer architecture; computer vision.

Michael Kifer, *Associate Professor. Ph.D., Hebrew University of Jerusalem*: Database systems; logic programming; knowledge representation; artificial intelligence.

Ker-I Ko, *Professor. Ph.D., Ohio State University*: Computational complexity; theory of computation; computational learning theory.

Phillip M. Lewis, *Professor. Ph.D., Massachusetts Institute of Technology*: Computational complexity; automata theory; compiler design; concurrent systems.

Prateek Mishra, *Associate Professor. Ph.D., University of Utah*: Functional programming; type inference; programming language semantics, user interfaces, computer applications.

Theo Pavlidis, *Professor. Ph.D., University of California, Berkeley*: Image analysis; document processing including OCR; computer graphics.

I.V. Ramakrishnan, *Professor. Ph.D., University of Texas at Austin*: Declarative programming; rewrite systems.

Steven Skiena, *Professor. Ph.D., University of Illinois at Urbana-Champaign*: Computational geometry; algorithms; discrete mathematics.

David R. Smith, *Professor. Ph.D., University of Wisconsin*: Hardware description languages and synthesis; VLSI design tools, experimental chip architecture.

Scott A. Smolka, *Professor. Ph.D., Brown University*: Semantics of concurrency; design of distributed languages and algorithms; visual environments for concurrent systems.

Eugene W. Stark, *Associate Professor. Ph.D., Massachusetts Institute of Technology*: Programming language semantics; theory of concurrency; formal specifications; verification; distributed algorithms.

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, University of Michigan*: Logic programming; database systems; interactive systems; artificial intelligence; natural language and logic.

Anita Wasilewska, *Associate Professor. Ph.D., University of Warsaw*: Knowledge representation; artificial intelligence.

Larry D. Wittie, *Professor. Ph.D., University of Wisconsin*: Distributed shared memory architectures; distributed operating systems; massively parallel scientific algorithms; computer networks and interconnection topologies, computer architecture, neural networks.

Affiliated Faculty

Esther Arkin, *Applied Mathematics and Statistics*

Joseph Mitchell, *Applied Mathematics and Statistics*

Teaching Assistants

Estimated number: 25

Computer science is the study of computer systems, including the architecture of computers, development of computer software, information processing, computer applications, algorithmic prob-

lem-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 utilize the flexibility of the program to satisfy the requirements of a second major for the bachelor's degree.

Many students prepare for their professional careers through internships at local companies. Computer science graduates are recruited heavily by technology and financial firms, primarily in the New York metropolitan area. Career opportunities include developing software systems for a diverse range of applications such as: user-interfaces; networks; database; forecasting; world wide web support; and medical, communications, satellite, and embedded systems. Many are employed in the telecommunication and financial industries. The explosive growth of the Internet provides numerous jobs for those familiar with Internet technology. A large number of graduates are self-employed, some as heads of software consulting companies. Approximately one third of the program's graduates pursue advanced degrees, some in fields such as law, business, medicine, finance, engineering, and other professions requiring strong technical knowledge and problem-solving skills.

The Department of Computer Science offers two undergraduate majors: Computer Science (CSE) and Information Systems (ISE). Requirements and courses for the latter appear under the program title in the alphabetical listing of Engineering and Applied Sciences

programs. The two programs of study share a number of courses, particularly in the first two years, so that it is possible to follow a program that permits a student to select either major by the start of the junior year. The department also offers a minor in computer science

Computing Facilities

Computing facilities for undergraduates are maintained by both the University Computing Center and the Computer Science Department. The Computing Center operates IBM 3083, VAX 8600, and VAX 8350 systems with approximately 250 terminals available to students. Campus-wide instructional computing sites include both IBM personal computers and Apple Macintoshes, as well as a network of Hewlett Packard workstations.

The department facilities for undergraduates include a network of 16 Hewlett Packard graphics workstations, 40 terminals, and numerous printers. A second network of 18 Hewlett Packard 400 graphics workstations is available for students in graphics courses. A network of 19 Apple Macintoshes serves the course CSE 113, Foundations of Computer Science I, and a laboratory of 12 PCs serves the database and transaction processing courses. A new laboratory of 40 PCs and four servers is also available for general use within the undergraduate computer science program.

The department also has approximately 150 SPARC stations (Sparc/1, Sparc/2, Sparc/IPC, Sparc/IPX, Sparc/SLC, Sparc/ELC, Sparc/LX), a Sun Sparc/1000 (4 cpu, 512MB ram), 12 SPARC/20 (4 cpu, 64MB ram), 23 HP9000 (68040), two SGI 4D/320 (4 R2000 cpu, 128MB ram), one SGI Onyx (4 R5000, 128MB ram), one Challenge (16 R10000 cpu, 3GB ram, Infinite Reality Graphics), and four SGI Personal Iris. The SGI Challenge provides better than CRAY YMP performance and the Infinite Reality graphics engine provides the ability to do realtime virtual reality research. Access to a 32-node iPSC 860 hypercube-based multicomputer and a 64-node Paragon, both housed in the Department of Applied Mathematics and Statistics, is also available. The machines within the department are distributed over 12 sub-networks, on switched ethernet, and there is a 155-MBPS fiber-

optics ATM switch for departmental research use. A fiber-optics network provides links to other campus buildings, including the Computing Center. Stony Brook is an ARPANET host and has two 1.5 MBPS T1-links to the Internet.

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 with a grade of C or higher. (Proficiency examinations covering the syllabi of CSE 113, 114, 213, 214, and 220 are given during the first week of each semester and may be given at the beginning of the first summer session.)

Challenge Examination Credits

Challenge examinations are offered covering the syllabi of CSE 113, 114, 213, 214, and 220 for students who feel they have mastered the material on their own. See also the section entitled "Challenge Program for Credit by Examination" in the University Studies chapter.

Admittance to CSE and ISE Courses

For admittance to undergraduate computer science and information systems courses, students must have successfully completed the necessary prerequisite courses with a grade of C or higher.

Acceptance into the Computer Science Major

Qualified freshman and transfer applicants are accepted directly into the computer science major upon admission to the University. Currently enrolled students may be accepted into the major in one of three ways:

1. After completing CSE 113, 114, and MAT 131 (or MAT 126 or 141), students are guaranteed admission with a grade of B or higher in both CSE 113 and 114, a C or higher in MAT 131 (or MAT 126 or 141), and a G.P.A. of 3.0 or higher over all these courses. No course repetitions are allowed.
2. Students not meeting condition 1 are required to complete CSE 113, 114; any two courses from CSE 213, 214, 220; MAT 131, 132 (or approved

equivalent MAT courses; see Requirements for the Major, 5, below); and MAT 211 or AMS 210 or 326. Admission is guaranteed to those who earn a G.P.A. of 2.6 or higher in these courses with no grade in any of them lower than a C (2.0).

3. Students not meeting conditions 1 or 2 may still be admitted by petitioning the department. Acceptance then depends on the student's individual performance.

Requirements for the Major in Computer Science

The major in computer science leads to the Bachelor of Science degree. The following courses, totaling approximately 80 credits, are required. At least five upper-division courses from items 2, 3, and 4 below must be completed at Stony Brook.

1. CSE 113, 114, 213, 214, and 220
2. CSE 303, 308, 309, and AMS/CSE/MAT 373
3. Three courses from CSE 304, 305, 306, 307, 328, either CSE/ESE 345 or 380 but not both
4. Two additional upper-division CSE or ISE courses (excluding CSE or ISE 475 and ISE 440 and 441)
5. MAT 131, 132

Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites: MAT 124, 126, 127, or MAT 125, 126, 127, or MAT 141, 142 Equivalency for MAT courses achieved through the Mathematics Placement Examination is accepted to meet MAT course requirements.

6. MAT 211 or AMS 210 or 326
7. AMS 301 and AMS 310 or 311 or 312
8. CSE 344 or ESE 318
9. One of the following natural science sequences:
 - BIO 151, 152 or 171, 172
 - CHE 131, 132 or 141, 142
 - GEO 102/112 or 122; and 309
 - PHY 131, 132 or 141, 142 or 125, 126, 127
 - PHY 125 or 131 or 141 and AST 203
10. Six credits from courses in quantitative studies, which can be additional courses from the natural science sequences (see 9 above); or other courses with a strong quantitative

studies component, such as ECO 109, BUS 114, 214, POL 201, PSY 201, 203, SOC 201, 202 or 311, 312. Students wishing to take other courses to fulfill the quantitative studies requirement must obtain the approval of the Computer Science Department.

11. Upper-Division Writing and Oral Skills Requirement

All degree candidates must demonstrate writing skills and oral communication skills in English at a level acceptable for computer science majors. To satisfy the requirement, the CSE student must register for the writing and oral skills course CSE 300 and (1) submit a technical paper on an appropriate computer science topic that illustrates the student's ability to write in a clear, concise, technical, and organized manner and (2) give an oral presentation that demonstrates the student's ability to use the spoken word to communicate effectively with other suitably trained technical persons.

The oral skills portion of the requirement is met by giving a presentation of the technical paper described above, by serving as an undergraduate teaching assistant in a computer science course and leading a recitation lecture, or by some other suitable presentation approved by a Computer Science faculty member. Students whose writing or speaking does not meet the required standards are directed to seek remedial help and resubmit their work or repeat their presentation.

Notes: Students with weak mathematical preparation should take MAT 123, 124, 126, 27 or MAT 125, 126, 127 instead of MAT 131, 132 and should delay taking CSE 113 until successfully completing MAT 124 or 125. All students are encouraged to discuss their program with an undergraduate advisor. In requirement 2 above, CSE/ESE double majors may substitute ESE 440, 441 Electrical Engineering Design I, II for CSE 308, 309 Software Engineering I, II provided that the design project contains a significant software component. Approval of the Computer Science Department is required.

Grading

All courses taken to satisfy requirements 1 through 10 must be taken for a letter grade and completed with a grade

Sample Course Sequence in the Computer Science Major

Freshman Fall	Credits
CSE 113	3
MAT 131	4
Natural science course	4
EGC 101	3
Total	14

Spring	Credits
CSE 114	3
MAT 132	4
Natural science course	4
Gen Ed	3
Gen Ed	3
Total	17

Sophomore Fall	Credits
CSE 213	4
CSE 214	3
MAT 211 or AMS 210	3
Quantitative studies course	3
Gen Ed	3
Total	16

Spring	Credits
CSE 220	4
AMS 301	3
AMS 310	3
Quantitative studies course	3
Gen Ed	3
Total	16

Junior Fall	Credits
ESE 318	3
CSE UD Elective	3
Gen Ed	3
Open Elective	3
Open Elective	3
Total	15

Spring	Credits
CSE 303	3
CSE UD Elective	3
CSE UD Elective	3
Gen Ed	3
Open Elective	3
Total	15

Senior Fall	Credits
CSE 308	3
CSE 300	1
CSE UD Elective	3
Open Elective	3
Gen Ed	3
Total	13

Spring	Credits
CSE 309	3
CSE 373	3
CSE UD Elective	3
Open Elective	3
Open Elective	3
Total	15

of C or higher. A grade of C or higher is also required in prerequisite courses listed for all upper-division CSE and ISE courses.

Suggested Elective Courses

Students are encouraged to pursue a program that provides depth in some area of computer science. The following table lists some typical areas of specialization and relevant electives:

Artificial Intelligence: CSE 304, 307, 352

Database Systems: CSE/ISE 305; CSE 306; ISE 315

Hardware: CSE 306; CSE/ESE 345, 346; ESE 380

Operating Systems: CSE 306, 307; CSE/ESE 345

Programming Languages and Software Engineering: CSE/ISE 302; CSE 304, 307

Theory: CSE 303; CSE/MAT 371; CSE/AMS/MAT 373

Graphics: CSE 328, 332, 333

Multimedia: CSE 325, 333, 334

Computer Networks and Communications: CSE/ESE 346; ISE 310

Other courses in the Departments of Mathematics, Applied Mathematics and Statistics, and Electrical Engineering may also be relevant and can be taken as open electives. Also, a large selection of graduate courses in the department's Master of Science program are available to qualified seniors (see "Permission to Take Graduate Courses" in the College of Engineering and Applied Sciences 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 325 Principles of Computer Supported Cooperative Work
 - CSE/ISE 332 Introduction to Scientific Visualization
 - CSE 334 Introduction to Multimedia Systems
 - PSY 302 Research Methodology in Human Factors
 - ISE 440 Information Systems Design I
 - ISE 441 Information Systems Design II

The Minor in Computer Science

The minor in computer science is open to all students not majoring in either computer science or information systems. The minor requires six CSE or ISE courses, totaling approximately 21 credits, as outlined below.

1. Three courses from the core sequence: CSE 113, 114, 213, 214, and 220.
2. Three upper-division CSE or ISE courses, excluding CSE and ISE 300.

Of these six courses, not more than two may be crosslisted (specifically CSE 326/ESE 357; CSE 327/ESE 358; CSE/ESE 345; CSE/ESE 346; CSE/MAT 371; CSE/AMS/MAT 373). Additional upper-division courses may be substituted for lower-division courses with departmental approval.

ESE

Department of Electrical Engineering

Chairperson: Serge Luryi

Undergraduate Program Director: Petar M. Djuric

Faculty

Bradley Carlson, *Assistant Professor, Ph.D., Syracuse University*: VLSI; circuit design, parallel and distributed computing.

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*: Statistical signal processing; time-series analysis; systems modeling.

Mikhail N. Dorojevets, *Assistant 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.

Ridha Kamoua, *Assistant Professor, Ph.D., University of Michigan*: Solid-state devices and circuits; microwave devices and integrated circuits.

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, 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.

Jayantkumar P. Parekh, *Professor, Ph.D., Polytechnic Institute of Brooklyn*: Microwave acoustics; microwave magnetics; microwave electronics; microcomputer applications.

Nam Phamdo, *Assistant Professor, Ph.D., University of Maryland at College Park*: Data compression and coding.

Stephen S. Rappaport, *Professor, Ph.D., New York University*: Communication theory; systems 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., State University of New York 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, *Associate 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, *Assistant 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.

Armen H. Zemanian, *Professor, Eng.Sc.D., New York University*: Network theory; VLSI modeling.

Affiliated Faculty

Gene R. Gindi, *Radiology*

John H. Marburger, *Physics*

Theo Pavlidis, *Computer Science*

David R. Smith, *Computer Science*

Adjunct Faculty

Estimated number: 3

Teaching Assistants

Estimated number: 30

The Department of Electrical Engineering offers a major leading to the Bachelor of Engineering (B.E.) degree in electrical engineering. Within the major, a computer engineering option is also provided. 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.

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 and industrial machinery. 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.

Requirements for the Major in Electrical Engineering

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 Engineering Department is required.

The core sequence, technical electives, and additional courses may be chosen in consultation with a faculty advisor, taking into consideration the particular interest of the student. The following courses, totaling approximately 100 credits, are required:

1. Mathematics

MAT 131, 132; AMS 261 or MAT 203; AMS 361 or MAT 303

Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:

MAT 124, 126, 127 or

MAT 125, 126, 127 or

MAT 141, 142

2. Natural Sciences

PHY 131, 132; CHE 198 and 199; and PHY 251 or ESG 281

Note: The physics course sequence PHY 125, 126, 127 or 141, 142 is accepted in lieu of PHY 131, 132. (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 and 124

4. Engineering Topics

Engineering topics include engineering science and engineering design. Content of the former category is determined by the creative application of basic science skills, while the content of the latter category focuses on the procedure of devising systems, components, or processes.

a. Engineering Sciences

ESE 211, 271, 305, 318, 319, 372, MEC 259, and one of the following: ESG 302, or 332 or 333

b. Engineering Design

ESE 314, 324, 440, 441 (ESE 440, 441 are courses on engineering design projects that must be carried out at Stony Brook under the supervision of an Electrical Engineering faculty member.)

5. Probability and Statistics

ESE 306

6. Engineering Specialization and Technical Electives

Eight technical elective courses. Of these eight, at least six must be chosen from the technical elective courses offered by the department (see ESE course list).

7. Upper-Division Writing Requirement

All degree candidates must demonstrate skill in written English at a level acceptable for electrical engineering majors. The ESE student must register for the writing course ESE 300 concurrently with ESE 324 and submit approximately three long reports on the experiments performed in ESE 324. Students whose writing does not meet the required standard are referred for remedial help. Detailed guidelines are provided by the department. If the standard of writing is judged acceptable, the student receives an S grade for ESE 300, thereby satisfying this requirement.

Grading

All courses taken to satisfy requirements 1 through 6 must be taken for a letter grade. A grade of C or higher is required in the following courses: ESE 211, 271, 318, 372; MAT 131, 132; PHY 131, 132; and six ESE technical electives.

Specialized Areas in Electrical Engineering

The following is a list of major specialization areas:

Bioengineering

Communications and Signal Processing

Control and Systems

Computer Engineering (details below)

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 Major with Computer Engineering Option

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 electronics and the application of large-scale integrated devices. The following courses, totalling approximately 110 credits, are required.

1. Mathematics

MAT 131, 132; AMS 210 or MAT 211; AMS 361 or MAT 303, AMS 301.

Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:

MAT 124, 126, 127 or

MAT 125, 126, 127 or

MAT 141, 142

2. Natural Sciences

PHY 131, 132; CHE 198 and 199

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 and 124

4. Engineering Topics

Engineering topics include engineering science and engineering design. Content of the former category is determined by the creative application of basic science skills, while the content of the latter category focuses on the procedure of devising systems, components, or processes.

a. Engineering Sciences

ESE 211, 271, 305, 318, 345, 372, and one of the following: MEC 259 or ESG 302 or 332 or 333.

b. Engineering Design

ESE 314, 324, 380, 440, 441 (ESE 440, 441 are courses on engineering design projects that must be carried out at Stony Brook under the supervision of an Electrical Engineering faculty member.)

5. Probability and Statistics

ESE 306

6. Computer Science

CSE 113, 114, 214, 306, 308

Sample Course Sequence in the Electrical Engineering Major

Freshman Fall	Credits
EGC 101	3
MAT 131#	4
PHY 131#	4
ESE 123	4
Total	15

Spring	
MAT 132#	4
PHY 132#	4
ESE 124	3
CHE 198	4
CHE 199	1
Total	16

Freshman Fall	Credits
EGC 101	3
MAT 131#	4
PHY 131#	4
ESE 123	4
Total	15

Spring	
MAT 132#	4
PHY 132#	4
ESE 124	3
CHE 198	4
CHE 199	1
Total	16

Sophomore Fall	
AMS 361	4
ESE 211#	2
ESE 271#	4
ESE 305	3
ESE 318#	4
Total	17

Spring	
AMS 261	4
ESE 306	3
ESE 314	3
ESE 372#	4
Gen Ed	3
Total	17

Sophomore Fall	
AMS 361	4
ESE 211#	2
ESE 271#	4
ESE 318#	4
CSE 113	3
Total	17

Spring	
AMS 210	3
ESE 314	3
ESE 372#	4
CSE 114	3
Gen Ed	3
Total	16

Junior Fall	
ESE 300	1
ESE 319	3
ESE 324	2
ESE technical elective#	3
MEC 259	4
Gen Ed	3
Total	16

Spring	
PHY 251 or ESG 281	4
ESE technical elective#	3
ESE technical elective#	3
ESE technical elective#	3
Gen Ed	3
Total	16

Junior Fall	
ESE 300	1
ESE 324	2
ESE 305	3
ESE 380#	4
AMS 301	3
Gen Ed	3
Total	16

Spring	
ESE 306	3
ESE technical elective#	3
ESE technical elective#	3
CSE 214	4
Gen Ed	3
Total	16

Senior Fall	
ESE 440	3
ESE technical elective#	3
Technical elective	3
ESG 302 or 332 or 333	4
Gen Ed	3
Total	16

Spring	
ESE 441	3
ESE technical elective#	3
Technical elective	3
Gen Ed	3
Gen Ed	3
Total	15

Senior Fall	
ESE 440	3
ESE technical elective#	4
ESE 345#	3
CSE 308	3
Gen Ed	3

Total	16
Spring	
ESE 441	3
ESG 302 or 332 or 333 or MEC 259	4
CSE 306	3
Gen Ed	3

7. Engineering Technical Electives

Three ESE electives chosen from ESE 311, 316, 344, 346, 347, 349, 357, 358, 381, 382

8. Upper-Division Writing Requirement

See Requirements for the Major in Electrical Engineering, item 7.

Grading

All courses taken to satisfy requirements 1 through 7 must be taken for a letter grade. A grade of C or higher is required in the following courses: ESE 211, 271, 318, 345, 372, 380; MAT 131, 132, PHY 131, 132; and three ESE technical electives.

Above left is a sample course sequence for students interested in electrical engineering and undecided about specialization in a particular area. This sequence ensures that prerequisite and corequisite courses are taken in proper order.

Courses with a # must be completed with a grade of C or higher.

Above right is a sample course sequence for students interested in the computer engineering option. This sequence ensures that prerequisites and corequisite courses are taken in proper order.

Courses with a # must be completed with a C or higher.

ESG/ESM

Department of Materials Science and Engineering

Chairperson: Michael Dudley

Undergraduate Program Director: Christopher C. Berndt

Faculty

Christopher C. Berndt, *Professor, Ph.D., Monash University*: Mechanical properties; bio-engineering; biomaterials.

Clive R. Clayton, *Professor, Ph.D., University of Surrey*: Structure and properties of materials; thin film processing.

Michael Dudley, *Professor, Ph.D., University of Warwick*: Synchrotron X-ray topography, defects in single crystals.

Richard J. Gambino, *Professor and Principal Research Scientist, M.S., Polytechnic Institute of New York*: Magnetic thin films; magneto-optical properties.

Allen N. Goland, *Adjunct Professor, Ph.D., Northwestern University*: Solid-state physics.

Gary P. Halada, *Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook*: Surface analysis; engineering design.

Patrick J. Herley, *Professor, Ph.D., Rhodes University; Ph.D., Imperial College*: Crystallography; chemistry of solids.

Herbert Herman, *Professor, Ph.D., Northwestern University*: Materials engineering; surface engineering; physical metallurgy.

Hugh Isaacs, *Adjunct Professor, Ph.D., Imperial College*: Surface defects; surface analysis.

Franco P. Jona, *Professor, Ph.D., Eidgenossische Technische Hochschule*: Solid-state physics; modern materials.

Alexander H. King, *Professor, D.Phil., University of Oxford*: Electron microscopy; crystal defects.

David J. Larson, Jr., *Research Professor and Principal Research Scientist, Ph.D., Northwestern University*: Crystal growth, microgravity materials science.

Miriam Rafailovich, *Professor, Ph.D., State University of New York at Stony Brook*: Polymer sciences and interfaces.

Sanjay Sampath, *Adjunct Assistant Professor, Ph.D., State University of New York at Stony Brook*: Thermal spray technology; tribology.

Jonathan C. Sokolov, *Associate Professor, Ph.D., State University of New York at Stony Brook*: Polymer sciences and interfaces.

Masaki Suenaga, *Adjunct Professor, Ph.D., University of California, Berkeley*: Superconducting alloys; electron microscopy.

John B. Warren, *Adjunct Assistant Professor, Ph.D., University of Florida*: Analytical electron microscopy, X-ray fluorescence; semiconductor defects.

David O. Welch, *Adjunct Professor, Ph.D., University of Pennsylvania*: Kinetics of diffusion; energetics; crystal lattice defects; radiation effects.

Affiliated Faculty

Benjamin Chu, *Chemistry*

Adjunct Faculty

Estimated number: 10

Teaching Assistants

Estimated number: 20

The Department of Materials Science and Engineering offers the Bachelor of Engineering degree program in engineering science, the minor in materials 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.

The major in engineering science (ESG) 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 provides excellent preparation 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 materials 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.

Requirements for the Major in Engineering Science

The major in engineering science leads to the Bachelor of Engineering degree. The following courses, totaling approximately 110 credits, are required:

1. Mathematics

MAT 131, 132; AMS 261 or MAT 203; AMS 361 or MAT 303

Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:

- MAT 124, 126, 127 or
MAT 125, 126, 127 or
MAT 141, 142

2. Natural Sciences

PHY 131, 132; PHY 251 or ESG 281;
CHE 198 and 199

Notes:

- The physics course sequence
PHY 125, 126, 127 or 141, 142 is acceptable in lieu of PHY 131, 132
- The chemistry course sequence
CHE 131, 132, and 133 or CHE 141, 142, and 143 is acceptable in lieu of CHE 198 and 199 only if both courses in the sequence were completed prior to admission to the ESG major.

3. Computer Science

CSE 113, 114 or MEC 111

4. Engineering Science Core Program

ESG 312; ESM 350, 450; and the following nine courses:

Materials Science and Engineering

ESG 302, 332, 333, 339

Electrical Engineering

ESE 271, 372

Mechanical Engineering

MEC 260, 262, 363

5. Engineering Synthesis and Design

ESG 217, 316, 440, 441; ESM 355

6. Engineering Specialization and Technical Electives

The area of specialization, composed of five technical electives including at least two design-oriented courses, must be declared in writing by the end of the junior year. It is selected in consultation with the faculty advisor to ensure a cohesive course sequence with depth at the upper level.

The five areas of specialization are biomedical engineering, electrical engineering, manufacturing engineering, materials science and engineering, and mechanical engineering. (Declaration of the materials science minor is accepted in lieu of the written statement for the Materials Science and Engineering area of specialization.)

7. Upper-Division Writing Requirement

All degree candidates must demon-

Sample Course Sequence in the Engineering Science Major

Freshman Fall	Credits
MAT 131#	4
PHY 131#	4
EGC 101	3
ESG 100	3
Gen Ed	3
Total	17

Spring	Credits
MAT 132#	4
PHY 132#	4
MEC 111	3
CHE 198	4
CHE 199	1
Total	16

Sophomore Fall	Credits
AMS 261 or MAT 203	4
PHY 251 or ESG 281	4
MEC 260	3
ESG 332	4
Gen Ed	3
Total	18

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#	4
Technical elective (design)#	3
Gen Ed	3
Total	17

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
Gen Ed	3
Total	18

Spring	Credits
ESM 355	3
ESG 441	3
Technical elective#	3
Gen Ed	3
Gen Ed	3
ESM 350	3
Total	18

strate skill in written English at a level acceptable for engineering science majors. The ESG student must register for the writing course ESG 300 concurrently with ESG 316. The quality of writing in the technical reports submitted for ESG 316 is evaluated and students whose writing does not meet the required standard are referred for remedial help. Detailed guidelines are provided by the department. If the standard of writing is judged acceptable, the student receives an S grade for ESG 300, thereby satisfying the requirement.

Grading

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:

- MAT 131, 132; PHY 131, 132; ESG 217, 312, 339; and
- Each of the five required technical electives offered by the college.

Courses in the sequence above with a # must be completed with a grade of C or higher.

Areas of Specialization

Each area of specialization requires at least two design and three elective courses. Other technical electives may be substituted only with the approval of the student's faculty advisor.

Biomedical Engineering

- One of the following two-course design sequences must be completed.

- a. ESM 334 Materials Engineering
ESM 335 Mechanical Properties of Materials
- b. MEC 310 Kinematics and Dynamics of Machinery
MEC 410 Design of Machine Elements
- c. ESE 318 Digital Systems Design
ESE 380 Embedded Microprocessor Systems Design

2. The following three courses are required.

ESM 353 Biomaterials: Manufacture, Properties, and Applications

BIO 152 Principles of Biology: From Molecules to Organisms

BIO 328 Mammalian Physiology

The remaining one technical elective must be chosen from the following list.

BIO 361, 362 Biochemistry I, II

CHE 321, 322 Organic Chemistry I, II

ESM 369 Polymers

Any of the design course subjects listed above in item 1 which have not been taken for the design sequence.

Electrical Engineering

Core

ESE 271 Electrical Circuit Analysis

ESE 372 Electronics

1. Subspecialty in Digital Systems

Design Courses:

ESE 318 Digital Systems Design

ESE 380 Microprocessors and Programmed Logic I

Electives (three courses chosen from the following):

ESE 316 Digital Devices and Circuits

ESE 347 Digital Signal Processing

ESE 342 Digital Communications Systems

ESE 349 An Introduction to Fault Diagnosis of Digital Systems

ESE 381 Embedded Microprocessor System Design II

2. Subspecialty in Analog Systems

Design Courses:

ESE 304 Electronic Instrumentation

ESE 315 Control Systems Design
Electives (three courses chosen from the following):

ESE 311 Electronic Circuit Design

ESE 321 Electromagnetic Waves and Fiber Optics

ESE 331 Physical Electronics

ESE 362 Optoelectronic Devices and Optical Imaging Techniques

ESE 352 Energy Conversion

Manufacturing Engineering

Two Design Courses:

MEC 310 Kinematics and Dynamics of Machinery and MEC 410 Design of Machine Elements or ESM 334

Materials Engineering and ESM 335 Mechanical Properties of Materials

Electives (three courses chosen from the following):

AMS 310 Survey of Probability and Statistics

MEC 305 Heat and Mass Transfer

ESM 302 Introduction to the Crystalline State

ESM 336 Electronic Materials

ESM 353 Biomaterials: Manufacture, Properties and Applications

ESM 369 Polymers

EST 392 Engineering and Managerial Economics

Materials Science and Engineering

1. Subspecialty in Electronic, Optical, and Magnetic (EOM) Applications

Design Courses:

ESE 318 Digital Systems Design

ESE 380 Embedded

Microprocessor Systems Design or ESE 304 Electronic Instrumentation

ESE 315 Control Systems Design

Electives (three courses chosen from the following, of which two must be ESG/ESM):

ESE 319 Introduction to Electromagnetic Fields and Waves

ESE 321 Electromagnetic Waves and Fiber Optics

ESM 325 Diffraction Techniques and Structure of Solids

ESM 336 Electronic Materials

ESM 369 Polymers

2. Subspecialty in Physical Metallurgy

Design Courses:

ESM 334 Materials Engineering

ESM 335 Mechanical Properties of Materials

Electives (three courses chosen from the following):

MEC 305 Heat and Mass Transfer

MEC 355 Applied Stress Analysis

ESM 309 Thermodynamics of Solids

ESM 353 Biomaterials:

Manufacture, Properties, and Applications

Mechanical Engineering

Core

MEC 260 Engineering Statics

MEC 262 Engineering Dynamics

MEC 301 Thermodynamics (in lieu of ESG 302)

MEC 363 Mechanics of Solids

Design Courses:

MEC 310 Kinematics and Dynamics of Machinery

MEC 410 Design of Machine Elements

Electives (three of the following):

MEC 364 Introduction to Fluid Mechanics

MEC 393 Engineering Fluid Mechanics

MEC 398 Thermodynamics II

MEC 350 Energy Conversion and Alternate Energy Technologies

MEC 422 Thermal System Design

Engineering Chemistry

The engineering chemistry major combines work in the Department of Materials Science and Engineering and the Department of Chemistry and leads to the Bachelor of Science degree, awarded through the College of Arts and Sciences. See College of Arts and Sciences chapter for a description of this program.

Physics of Materials

Physics majors may wish to pursue a career in engineering physics, particularly in the application of solid-state physics to materials science and engineering. After taking five courses in the Department of Materials Science and Engineering, the student may become

eligible for the department's master's degree program. See College of Arts and Sciences chapter for information about the physics major.

Bachelor's/M.S. Program

An engineering science, engineering chemistry, or physics student may apply at the end of the junior year for admission to this special program, which leads to a Bachelor of Engineering or Bachelor of Science degree at the end of the fourth year and a Master of Science degree at the end of the fifth year. In the senior year, a student in the program takes three credits of ESM 599 Research and three credits of an additional graduate course. In the fifth year the student takes 24 graduate credits, of which at least 15 credits are coursework and three credits are ESM 599. The advantages of this program over the regular M.S. program are that a student may start his or her M.S. thesis in the senior year, and that he or she needs only 24 credits in the fifth year as opposed to 30 credits for a regular M.S. student. For details of the M.S. degree requirements, see the Graduate Bulletin.

The Minor in Materials Science

The sequence of courses included in the minor in materials science (ESM) provides a firm background for students seeking employment in the materials science industry or those who will pursue graduate study in related fields. There are 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.)

For students with majors leading to the B.S. degree, six courses with a grade of C or higher in each are required:

1. ESG 100
2. Two of ESG 332, 333, 339
3. Two of ESM 325, 334, 335, 353, 355, one of the subjects not completed in number 2.
4. ESM 488 or ESM 499

For students in the engineering science major, six courses with a grade of C or higher in each are required:

1. ESG 100
2. Four of the following: ESM 325, 334, 335, 353, 355, 369; ESG 332, 333, 339
3. ESM 488 or ESM 499

EST

Program in

Technology and Society

Director: Thomas T. Liao

Undergraduate Program Director: Joseph S. Hogan

Faculty

John C. Bierwirth, *Professor, J.D., Columbia University*: Foreign affairs; management; ethics; environment.

Randolph Cope, *Lecturer, M.E.E., Polytechnic University*: Engineering management; electronic systems.

David L. Ferguson, *Professor, Ph.D., University of California, Berkeley*: Quantitative methods; computer applications; intelligent tutoring systems; mathematics and engineering education. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1992, and the President's Award for Excellence in Teaching, 1992.

Joseph S. Hogan, *Associate Professor, Ph.D., New York University*: Planetary atmospheres; climate change; environmental satellites.

Thomas T. Liao, *Professor, Ed.D., Columbia University*: Science education; educational technology; curriculum development. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1993, and the President's Award for Excellence in Teaching, 1993.

Lester Paldy, *Distinguished Service Professor, M.S., Hofstra University*: Physics; science policy and education.

Sheldon J. Reaven, *Associate Professor, Ph.D., University of California, Berkeley*: Energy-environmental issues; waste management; philosophy of science and technology.

John G. Truxal, *Distinguished Teaching Professor Emeritus, Sc.D., Massachusetts Institute of Technology*: Technology and society issues; automatic control systems.

Affiliated Faculty

Jacqueline G. Brooks, *Science, Mathematics, and Technology Education*

Adjunct Faculty

Estimated number: 10

Teaching Assistants

Estimated number: 10

The program in 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 program also provides one of the vehicles through which Stony Brook interacts with other universities and colleges, pre-college institutions, and professional schools.

The Minor in Technology and Society

There are two versions of the minor in technology and society. Students should arrange for an interview with a program faculty member to discuss the requirements listed below.

The minor for students with majors leading to the B.A. or B.S. degree may be fulfilled by satisfactorily completing six courses totaling at least 18 credits:

1. at least four EST courses
2. two other College of Engineering and Applied Sciences courses approved by the undergraduate program director

The minor for students with majors leading to the B.E. degree may be fulfilled by satisfactorily completing six courses totaling at least 18 credits:

1. four EST courses (An EST technical elective cannot be used to satisfy both this requirement and a major in the College of Engineering and Applied Sciences)
2. two courses not offered by the College of Engineering and Applied Sciences and approved by the undergraduate program director. These could include SOC 315 Sociology of Technology; PHI 364 Philosophy of Technology; PHI 368 Philosophy of Science. AMS 331 Mathematical Modeling is the only exception to the rule.

In both versions, at least three of the six courses must be at the 300 level or above and a 2.5 grade point average must be attained for the six courses.

ISE

Program in Information Systems

Undergraduate Program Director: Hussein Badr

The information systems major, which is housed in the Department of Computer Science, prepares its graduates to design and manage computerized data processing and decision support systems. The program is technically oriented, emphasizing the design and implementation aspects of large-scale information systems as well as the more traditional managerial and organizational issues, and it balances development of system engineering skills with learning to deliver reliable systems on time and within budget. Throughout the program, students are exposed to diverse application areas ranging from traditional business, finance, and accounting through telecommunications, networks, multimedia, and database management, to computer-aided design and industrial production management systems.

Acceptance into the Information Systems Major

Students who were not accepted directly into the major upon admission to the University may be accepted into the major after completion of ISE/CSE 112, CSE 106, MAT 131, and ECO 109, each with a grade of C or higher, and a minimum cumulative G.P.A. of 2.6. Students not meeting the grade point average requirement may petition the department for admission.

Requirements for the Major in Information Systems

The major in information systems leads to the Bachelor of Science degree. The following courses, totaling approximately 70 credits, are required. At least one of the courses under requirement A-2 below and all of the courses under requirement A-3 must be completed at Stony Brook.

A. Information Systems/Computer Science Courses

1. CSE 106, ISE/CSE 112, CSE 114, 214, 220

2. ISE/CSE 305, 308
3. ISE 310, 440, 441
4. Twelve credits chosen from the following CSE and ISE courses:
CSE 306, 307, 326, 328, 359, 366, 373, 491
ISE/CSE 309, 325, 332, 333, 334
ISE 315, 390, 487, 488

B. Mathematics Courses

1. MAT 131 (or MAT 141 or 126)

2. AMS 210 or MAT 211, and AMS 310; or AMS 201 or 210 or MAT 211, and ECO 320

C. Economics and Business Courses

- 1 ECO 109
2. BUS 114
3. One course chosen from BUS 214; ECO 368, 389; EST 392, 393; BUS 346, 349
4. One course chosen from ECO 345;

Sample Course Sequence in the Information Systems Major

Freshman Fall	Credits
MAT 131	4
EGC 101	3
CSE 101 or Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	16

Spring	Credits
ECO 109	4
CSE 106	1
ISE 112	3
Gen Ed	3
Gen Ed	3
Total	14

Sophomore Fall	Credits
BUS 114	3
CSE 114	3
AMS 201 or 210 or MAT 211	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
CSE 214	4
CSE 220	4
Requirement C course	3
Gen Ed	3
Total	14

Junior Fall	Credits
ISE 308	3
ISE 305	4
Requirement C course	3
ECO 320 or AMS 310	3-4
Gen Ed or open elective	3
Total	16-17

Spring	Credits
ISE 310	3
CSE/ISE elective	3
CSE/ISE elective	3
Open elective	3
Open elective	3
Total	15

Senior Fall	Credits
ISE 300	1
ISE 440	3
CSE/ISE elective	3
Open elective	3
Open elective	3
Open elective	3
Total	16

Spring	Credits
ISE 441	3
CSE/ISE elective	3
Requirement C course	3
Open elective	3
Open elective	3
Total	15

BUS 348; POL 319, 359; PSY 313;
SOC 383

5. One course chosen from EST 302,
325; BUS 340

6. Upper-Division Writing and Oral
Skills Requirement:

All degree candidates must demonstrate written and oral communication skills at a level acceptable for information systems majors. To satisfy the requirement, the ISE student must register for the writing and oral skills course ISE 300 and

1. submit a technical paper on an appropriate information systems topic that illustrates the student's ability to write in a clear, concise, technical, and organized manner;
- and 2. give an oral presentation that demonstrates the student's ability to communicate effectively with other suitably trained technical persons. The oral skills portion of the requirement is met by giving a presentation of the technical paper described above, by serving as an undergraduate T.A. in an information systems course and leading a recitation lecture, or by some other suitable presentation approved by an Information Systems faculty member. Students whose writing or speaking does not meet the required standard are directed to seek remedial help and to resubmit their work or repeat their presentation.

Grading

All courses taken to satisfy requirements A through C (with the exception of ISE 488) must be taken for a letter grade and completed with a grade of C or higher. A grade of C or higher is required in prerequisite courses listed for all upper-division CSE and ISE courses.

MEC

Department of

Mechanical Engineering

Chairperson: Fu-Pen Chiang

Undergraduate Program Director: Jahangir Rastegar

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, *Assistant Professor, Ph.D., University of California, Irvine*: Mechanical design; kinematics; robotics; CAD/CAM; computer graphics.

Stewart Harris, *Professor, Ph.D., Northwestern University*: Physics of fluids; environmental engineering.

Peisen S. Huang, *Assistant Professor, Ph.D., University of Michigan; D. Eng., Tohoku University, Japan*: Optical measurement; precision engineering.

Imin Kao, *Assistant Professor, Ph.D., Stanford University*: Robotics; control; neural networks; computer integrated manufacturing.

John Kincaid, *Professor, Ph.D., Rockefeller University*: Statistical mechanics; thermodynamics.

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 at 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, Ph.D., The Johns Hopkins University*: Fluid mechanics; chemically reactive flows; turbulence.

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.

James Tasi, *Professor, Ph.D., Columbia University*: Mechanics of solids.

Lin-Shu Wang, *Associate Professor, Ph.D., University of California, Berkeley*: Thermodynamics.

Affiliated Faculty

Robert D. Cess, *Marine Sciences Research Center*

Clinton Rubin, *Orthopaedics*

George Stell, *Chemistry*

Adjunct Faculty

Estimated number: 5

Teaching Assistants

Estimated number: 15

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 interest 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, many 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 introduce 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.

Requirements for the Major in Mechanical Engineering:

The major in mechanical engineering leads to the Bachelor of Engineering degree. The following courses, totaling approximately 110 credits, are required:

1. Mathematics

MAT 131, 132

AMS 236

AMS 261 or MAT 203

AMS 361 or MAT 303

Note: The following alternate calculus course sequences may be substituted for MAT 131, 132 in major requirements or prerequisites:

- MAT 124, 126, 127, or
- MAT 125, 126, 127, or
- MAT 141, 142

2. Natural Sciences

- PHY 131, 132
- PHY 251 or ESG 281
- CHE 198 and 199

Notes:

- a. The physics course sequence PHY 125, 126, 127 or 141, 142 is acceptable in lieu of PHY 131, 132.
- b. The chemistry course sequence CHE 131, 132, and 133 or CHE 141, 142, and 143 is acceptable in lieu of CHE 198 and 199.

3. Computer Programming

- MEC 111

4. Laboratories

- MEC 316, 317, and 417

5. Mechanical Engineering

- MEC 100, 202, 203, 260, 262, 301, 305, 309, 363, and 364

6. Materials Science

- ESG 332

7. Electrical Science

- ESE 275 or 271

8. Engineering Design

- MEC 310, 320, 410, 411, 440, and 441

9. Engineering Economics

- EST 392 (also satisfies D.E.C. category F)

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:

Sample Course Sequence in the Mechanical Engineering Major

Freshman Fall	Credits
EGC 101	3
MAT 131	4
MEC 100	3
PHY 131	4
Gen Ed	3
Total	17

Spring	Credits
CHE 198	4
CHE 199	1
MAT 132	4
PHY 132	4
MEC 111	3
MEC 202	1
Total	17

Sophomore Fall	Credits
MEC 260	3
ESG 281 or PHY 251	4
ESG 332	4
AMS 261 or MAT 203	4
AMS 236	1
Total	16

Spring	Credits
MEC 262	3
MEC 363	4
AMS 361 or MAT 303	4
ESE 275 or 271	4
MEC 203	1
Total	16

Junior Fall	Credits
MEC 301	4
MEC 309	3
MEC 316	3
MEC 364	4
Gen Ed	3
Total	17

Spring	Credits
MEC 300	0
MEC 305	4
MEC 310	3
MEC 317	2
MEC 320	3
Technical Elective	3
Gen Ed	3
Total	18

Senior Fall	Credits
MEC 410	3
MEC 411	4
MEC 440	3
Technical Elective	3
EST 392	3
Total	16

Spring	Credits
MEC 417	2
MEC 441	3
Technical Elective	3
Gen Ed	3
Gen Ed	3
Total	14

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. Upper-Division Writing Requirement

All degree candidates must demonstrate skill in written English at a level acceptable for mechanical engineering majors. The MEC student must register for the writing course MEC 300 concurrently with MEC 317

and submit two final reports written for MEC 317. Students whose writing does not meet the required standard are referred for remedial help. Detailed guidelines are provided by the department. If the standard of writing is judged acceptable, the student receives an S grade for MEC 300.

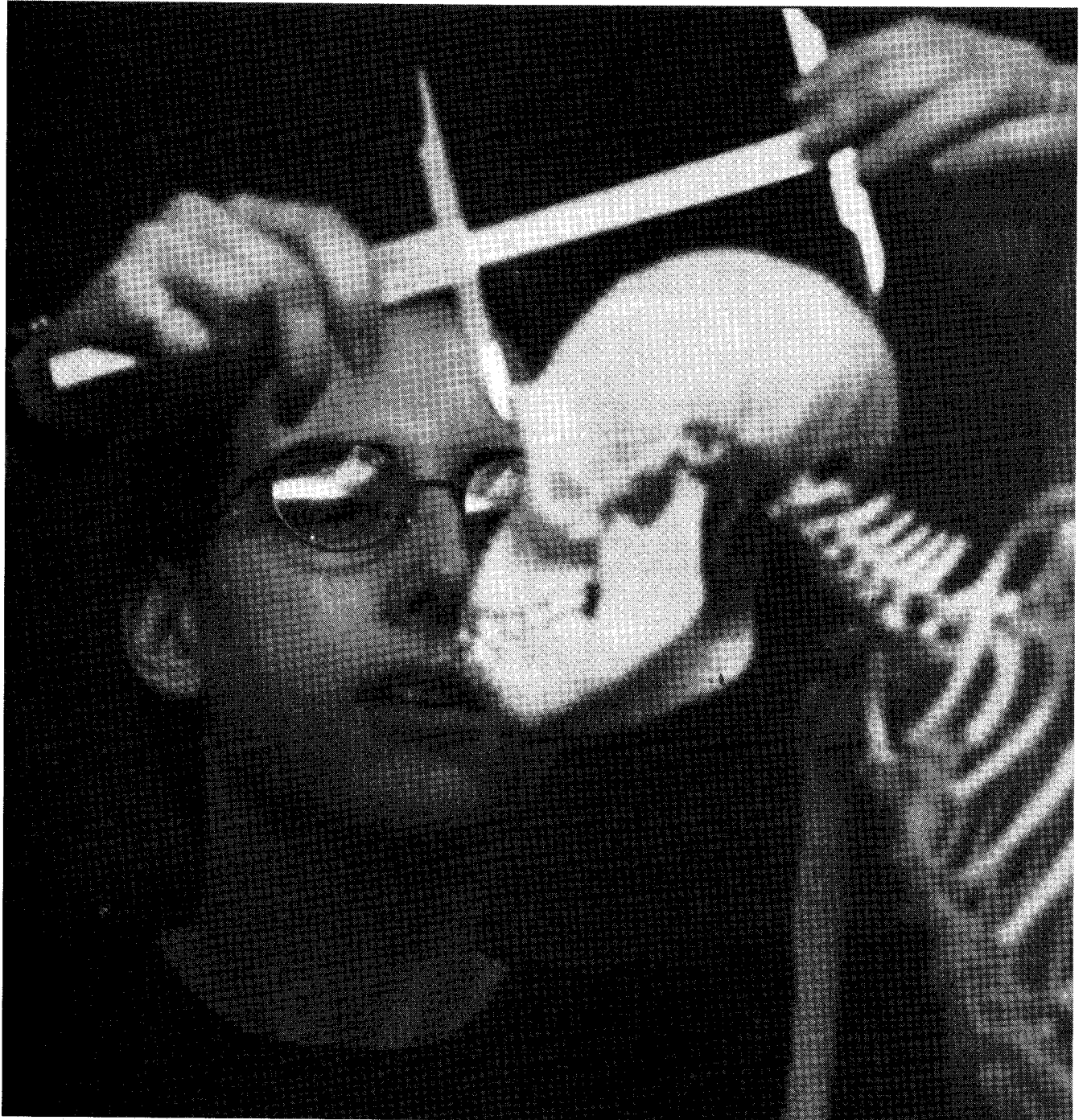
Grading

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, 411, 417, 440, 441 and technical electives must be at least 2.0.



Health Sciences Center

Norman Edelman, Lorna McBarnette, Lenora McClean, Burton Pollack, 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 at the back of this Bulletin under the heading of Health Sciences Center Approved Courses. 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. The schools—Dental Medicine, Health Technology and Management, Medicine, Nursing, and Social Welfare—offer professional education to approximately 2,200 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. Occupational Therapy

- B.S. Physical Therapy
- B.S. Physician Assistant Education
- B.S. Respiratory Care
- M.S. Health Care Policy and Management

School of Nursing

- B.S., B.S./M.S., M.S. Nursing
- Post Master's Nursing Certificate

School of Social Welfare

- B.S., M.S.W., Ph.D. Social Work

School of Dental Medicine

- D.D.S. Doctor of Dental Surgery
- M.S., Ph.D. Oral Biology and Pathology
- Post Doctoral Certificates in 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 and 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 undergraduate programs should be obtained in the fall preceding the year of anticipated admission.

Undergraduate Eligibility

All Health Sciences Center professional baccalaureate programs begin in the junior year. (Stony Brook freshmen can declare the four-year lower division major in either Clinical Laboratory Sciences or Respiratory Care. Automatic advancement to the upper division major is contingent upon successful completion of program prerequisites and the pre-professional course.) Admission to Health Sciences Center programs is by formal application only and is selective. To be eligible for consideration, students must have completed 57 college credits or their equivalent before matriculating in the program to which they seek admission. All programs require specific course pre-

requisites, which are given below under the appropriate school offering the program(s). Most undergraduate programs 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.

Applications for all undergraduate programs are accepted from both Stony Brook students and from students transferring to Stony Brook from other educational institutions. Stony Brook undergraduate students are not automatically admitted to Health Sciences Center programs; they should note that admission to any of the undergraduate programs is not simply a change of major. Application forms and information about course and program content is available from each school and from the Office of Student Services, Health Sciences Center.

Pre-Application Advising

On West Campus, advising for each undergraduate program prior to application concerning course sequence and requirements is given through the Academic Advising Center; graduate health professions advising takes place 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.

The University Career Placement Center also assists Stony Brook students applying to undergraduate health professions schools through its credentials service. 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 mod-

ules 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 in the West Campus, the School of Social Welfare, and the graduate program in the School of Health Technology and Management, as well as for most courses in the schools of Dental Medicine, Medicine, and Nursing. Modules are used exclusively for courses in the undergraduate programs of the School of Health Technology and Management and for some basic sciences courses. 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

Although undergraduate students enter the Health Sciences Center programs at the junior level, the School of Health Technology and Management 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.

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: hospitals, private laboratories and medical practices, and government and industrial laboratories. A double major in a basic science with a concentration in immunology, hematology, microbiology, or biochemistry is also available.

Pre-Application Requirements

- 3 credits of English composition
- 6 credits in the arts and/or humanities†
- 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
- 3 credits of college-level mathematics
- 2.5 G.P.A.

(Courses in physics, biochemistry, general microbiology, genetics, molecular biology, anatomy, physiology, and computer literacy are recommended.)

Cytotechnology

Cytotechnologists are trained medical laboratory technologists who study the structure and function of cells. They work with pathologists to detect changes in body cells that may be important in the early diagnosis of cancer. They use a microscope to screen slide preparations of body cells for abnormalities in structure, indicating either benign or malignant conditions. Using special techniques, cytotechnologists prepare cellular samples for study under a microscope and assist in the diagnosis of disease by examining the samples. 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†
- 6 credits in the social and behavioral sciences
- 12 credits of biology with labs
- 8 credits of chemistry with labs
- 3 credits in college-level mathematics
- 2.5 G.P.A.

(Courses in botany, genetics, cell physiology, general microbiology, histology, anatomy, sociology, psychology, and computer literacy are recommended.)

Occupational Therapy

Occupational therapists apply goal-oriented activity in the evaluation, diagnosis, and treatment of persons whose function is impaired by physical illness or injury, emotional disorder, congenital or developmental disability, or the aging process, in order to achieve optimum

functioning, prevent disability, or maintain health. They provide services including, but not limited to, education and training in activities of daily living; the design, fabrication, and application of orthoses (splints); 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 disabled.

Pre-Application Requirements

- 3 credits of English composition
- 6 credits in the arts and/or humanities†
- 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
- 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
- 2.5 G.P.A. (Preference is given to 3.0 G.P.A.)

Physical Therapy

Physical therapists use physical agents such as heat, light, water, and electrical energy to treat illness and disability, to relieve pain, or to change a patient's physiological status. As a member of the rehabilitation team, they treat trauma, stroke, and heart disease patients who must relearn how to use their muscles and attain maximum physical potential. Physical therapists work in hospitals, clinics, health agencies, special centers and schools for the disabled, or private practice.

Pre-Application Requirements

- 3 credits of English composition
- 6 credits in the arts and/or humanities†
- 6 credits in the social and behavioral sciences
- 8 credits of biology with labs
- 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 completed science requirements within the last ten years

3.0 minimum cumulative G.P.A. and 3.0 minimum science G.P.A.

(At least a year of psychology is also recommended.)

Physician Assistant

Physician assistants (PAs) practice medicine under 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†

6 credits in the social and behavioral sciences

11 credits in biological sciences, including 3 credits in microbiology

8 credits of chemistry with labs

3 credits of college-level mathematics

Minimum of one year (or two thousand hours) of documented experience in direct patient care and/or health-related care

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)

(Courses in psychology, sociology, and

statistics are also recommended.)

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 natural science credits 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 knowledge 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†

6 credits in the social and behavioral sciences

11 credits in biological sciences, including 3 credits in microbiology

8 credits of chemistry with labs

8 credits of physics with labs

3 credits of college-level mathematics

Cardiopulmonary resuscitation and first aid certification

2.5 G.P.A.

Notes:

* Stony Brook freshmen may declare clinical laboratory sciences or respiratory care as a major. In addition to the requirements listed above, students in

those four-year programs must successfully complete HAD 210 Introduction to Clinical Laboratory Sciences or HAT 210 Introduction to Respiratory Care during the fall of their sophomore year.

† Excluding studio, skills, or technique courses

School of Nursing

Nurses synthesize knowledge from a variety of fields of study as they are prepared to assist people in the performance of activities that contribute to health, its recovery or to the alleviation of distress or discomfort in preparing people for a peaceful death.

The goals of the program in nursing at the University at Stony Brook are to:

- Educate a diverse population of men and women for professional generalist nursing practice in a variety of health care settings.
- Contribute to the scholarly development of the profession by testing and evaluating theoretical formulations, applications of knowledge, and innovative practices.
- Provide an educational foundation for advanced and specialized study in a field of nursing.
- Prepare for improvement of health care at the local, state and national levels through individual, collaborative and interdisciplinary efforts.

Nurses prepared at the baccalaureate level are employed in a diverse array of health care areas ranging from hospital to ambulatory, home, school, short- and long-term care facilities. They are employed as leaders in health care management, case management and supervision of assistive health care providers. A career in nursing includes a masters degree as preparation for advanced nursing as a nurse practitioner or clinical nurse specialist. Nurse educators, nurse researchers, and analysts are prepared at the doctoral level.

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 G.P.A. of 2.5. The nursing major also requires certification in cardiopulmonary resuscitation (CPR). Students are strongly encouraged to

Sample Course Sequence: Requirements for Application to the School of Nursing

Social Work: Two-Year Sample

Freshman Fall	Credits
EGC 101 or EGL 202	3
CHE 111	3
PSY 103	3
Gen Ed (Humanities)	3
Elective	3
Total	15

Spring	Credits
BIO 152	4
CHE 112	3
SOC 105	3
Gen Ed (Humanities)	3
Elective	3
Total	16

Fall 1	Credits
EGC 101	3
BIO 101	3
ANT 102 or SOC 105	3
PSY 103 or MAP 103*	3
Total	12

Spring 1	Credits
Natural Science or Math	3
POL 102	3
HIS 104	3
Humanities Elective	3
Total	12

Sophomore Fall	Credits
BIO 328	3
ANP 300	4
PSY 220	3
Gen Ed (Humanities)	3
Total	13

Spring	Credits
AMS 102	3
BIO 232	3
PSY 240	3
HBM 320	3
HBM 321	1
Total	13

Fall 2	Credits
Humanities Elective	3
PSY 103 or MAP 103*	3
**200- and 300-level D.E.C. categories courses	9
Total	15

Spring 2	Credits
**200- 300-level D.E.C. categories courses	15
Total	15

identify themselves as potential nursing majors by declaring an area of interest (GNS).

Required Courses

AMS 102
 CHE 111 or 131
 BIO 152
 BIO 328 (prerequisite BIO 152)
 CHE 112
 ANP 300
 HBM 320 with laboratory HBM 321
 EGC 101 or 202
 PSY 103
 PSY 220
 SOC 105
 SOC 382 or PSY 240
 Humanities (9 credits)

Recommended Courses

HNI 190
 HNI 290
 CSE/EST 100
 PHY 117

School of Social Welfare

Social Work is grounded in a commitment to address the impact of oppression and to challenge it as the source of many of the problems people face in society. 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 communi-

ties to organize services that contribute to the welfare of all institutions. BSW graduates are prepared for entry level social work professional 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.

Pre-Application Requirements

3 credits of English composition
 6-8 credits in the fine arts and humanities†
 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
 2.5 G.P.A.

(Applicants should have demonstrated interest in the social welfare field through paid or volunteer experience in programs aimed at social improvement.)

Notes:

† Exclusive of elementary languages, design, or skills improvement courses.

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.

* Students must take an English placement and mathematics placement examination and the courses specified.

**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.

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

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. To register for these courses, West Campus students should have earned a minimum of 57 University credits. Permission of the instructor is required for all courses.

School of Medicine

Although its program is primarily for post-baccalaureate students, the School of Medicine offers courses for elective credit, and the Scholars for Medicine Program for West Campus undergraduate students.

Scholars for Medicine

The Scholars for Medicine Program is an eight-year, integrated program for completion of the bachelor's and Doctor of Medicine degrees. The program develops an effective bridge between the collegiate preparatory period and the medical curriculum. Notification of admission may be given at either of two levels: freshman-level entry into the Honors College, or upon completion of the first two years of undergraduate education at Stony Brook. With the guidance of an advisor, students plan their undergraduate study and projects that help explore and affirm the student's special interests. Students also participate in some medical school classes and undertake assignments that broaden their undergraduate preparation and help them explore their interest in science and medicine. Students accepted into the program who continue to meet program requirements and meet MCAT score requirements are assured a position in the school.

Further information is available from the Office of Undergraduate Academic Affairs.



Marine Sciences Research Center

Kirk Cochran, Dean



ATM / MAR

Programs of the

Marine Science Research Center

Dean and Director: J. Kirk Cochran

Director of Undergraduate Studies: Robert M. Cerrato

Faculty

Josephine Y. Aller, *Research Associate Professor, Ph.D., University of Southern California*: Marine benthic ecology; invertebrate zoology; marine microbiology; biogeochemistry.

Robert C. Aller, *Professor, Ph.D., Yale University*: Marine geochemistry; marine animal-sediment relations.

Henry J. Bokuniewicz, *Professor and Associate Dean for Education, Ph.D., Yale University*: Near-shore transport processes; coastal sedimentation; marine geophysics.

Malcolm J. Bowman, *Professor, Ph.D., University of Saskatchewan*: Oceanography of coastal waters; water quality modeling; microstructure and turbulence.

Vincent T. Breslin, *Assistant Professor, Ph.D., Florida Institute of Technology*: Metal leachability from combustion residues; trace metal geochemistry.

Bruce J. Brownawell, *Associate Professor, Ph.D., Massachusetts Institute of Technology*: Biogeochemistry of organic pollutants in seawater and groundwater.

Edward J. Carpenter, *Professor, Ph.D., North Carolina State University*: Nitrogen cycling; phytoplankton ecology.

Robert M. Cerrato, *Associate Professor, Ph.D., Yale University*: Benthic ecology; population and community dynamics.

Robert D. Cess, *Distinguished Professor, Ph.D., University of Pittsburgh*: Radiative transfer and climate modeling; greenhouse effect; nuclear winter theory; atmospheric structures of Mars, Saturn, and Jupiter.

Andre Y. Chistoserdov, *Assistant Professor, Ph.D., Institute of Genetics and Selection of Industrial Organisms*: Marine microbiology; marine biotechnology and bioremediation.

J. Kirk Cochran, *Professor and Dean and Director, Ph.D., Yale University*: Marine geochemistry; use of radionuclides as geochemical tracers; diagenesis of marine sediments.

Daniel C. Conley, *Assistant Professor, Ph.D., University of California, San Diego*: Sediment transport; wave boundary layers; near-shore processes.

David O. Conover, *Professor and Associate Dean for Research, Ph.D., University of Massachusetts-Amherst*: Ecology of fishes; fishery biology.

Elizabeth M. Cosper, *Research Associate Professor, Ph.D., City University of New York*: Phytoplankton physiology and ecology; resistance of microalgae to pollutants.

Robert K. Cowen, *Professor, Ph.D., University of California, San Diego*: Fishery oceanography; near-shore fish populations; fish ecology.

Nicholas S. Fisher, *Professor, Ph.D., State University of New York at Stony Brook*: Marine phytoplankton physiology and ecology; biogeochemistry of metals; marine pollution.

Roger D. Flood, *Associate Professor, Ph.D., Massachusetts Institute of Technology*: Marine geology; sediment dynamics; continental margin sedimentation.

Jane Lee Fox, *Professor, Ph.D., Harvard University*: Planetary upper atmospheres.

Marvin A. Geller, *Professor and Director of Institute for Terrestrial and Planetary Atmospheres, Ph.D., Massachusetts Institute of Technology*: Atmospheric dynamics; stratosphere dynamics; ozone behavior.

Valrie A. Gerard, *Associate Professor, Ph.D., University of California, Santa Cruz*: Marine macrophyte ecology and physiology.

Sultan Hameed, *Professor and Coordinator of Atmospheric Sciences Program, Ph.D., University of Manchester*: Climate change.

Cindy Lee, *Professor, Ph.D., University of California, San Diego*: Marine geochemistry of organic compounds; organic and inorganic nitrogen cycle biochemistry.

Darcy J. Lonsdale, *Associate Professor, Ph.D., University of Maryland at College Park*: Zooplankton ecology with special interest in physiology; life history studies.

Glenn R. Lopez, *Professor, Ph.D., State University of New York at Stony Brook*: Benthic ecology; animal-sediment interactions.

Kamazima Lwiza, *Assistant Professor, Ph.D., University College of North Wales*: Coastal ocean circulation; tides and tidal fronts; mixing.

James E. Mackin, *Associate Professor, Ph.D., University of Chicago*: Geochemistry of suspended sediment/solution interactions.

John L. McHugh, *Professor Emeritus, Ph.D., University of California, Los Angeles*: Fishery management; fishery oceanography; whales and whaling.

Steven G. Morgan, *Assistant Professor, Ph.D., University of Maryland at College Park*: Marine ecology.

Charles Nittrouer, *Professor, Ph.D., University of Washington*: Geological oceanography, continental margin sedimentation.

Donald W. Pritchard, *Professor Emeritus, Ph.D., University of California, San Diego*: Estuarine and coastal dynamics; coastal zone management.

Frank J. Roethel, *Lecturer, Ph.D., State University of New York at Stony Brook*: Environmental chemistry; behavior of coal waste in the environment; solution chemistry.

Sergio A. Sanudo-Wilhelmy, *Assistant Professor, Ph.D., University of California, Santa Cruz*: Chemical oceanography; coastal geochemistry; metal cycling in aquatic systems.

J. R. Schubel, *Professor Emeritus, Ph.D., The Johns Hopkins University*: Coastal sedimentation; suspended sediment transport; coastal zone management.

Mary I. Scranton, *Professor, Ph.D., Massachusetts Institute of Technology*: Marine geochemistry; biological-chemical interactions in seawater.

Gordon Taylor, *Assistant Professor, Ph.D., University of Southern California*: Marine microbiology; microbial ecology; plankton trophodynamics; marine biofouling.

Prasad Varanasi, *Professor, Ph.D., University of California, San Diego*: Planetary spectroscopy.

Duane E. Waliser, *Assistant Professor, Ph.D., University of California, San Diego*: Atmospheric dynamics; climate modeling.

Dong Ping Wang, *Professor, Ph.D., University of Miami*: Coastal ocean dynamics.

Peter K. Weyl, *Professor Emeritus, Ph.D., University of Chicago*: Coastal zone planning; physical oceanography.

Robert E. Wilson, *Associate Professor, Ph.D., The Johns Hopkins University*: Estuarine and coastal ocean dynamics.

Peter M.J. Woodhead, *Research Professor, B.S., University of Durham*: Behavior and physiology of fish; coral reef ecology; ocean energy conversion systems.

Charles F. Wurster, *Associate Professor Emeritus, Ph.D., Stanford University*: Effects of chlorinated hydrocarbons on phytoplankton communities.

Jeannette Yen, *Associate Professor, Ph.D., University of Washington*: Marine zooplankton ecology.

Minghua Zhang, *Assistant Professor, Ph.D., Academia Sinica*: Atmospheric dynamics; climate modeling.

Affiliated Faculty

Robert L. deZafra, *Physics*

William H. Greene, *Medicine*

Herbert Herman, *Materials Science and Engineering*

Lee E. Koppelman, *Political Science*

Jeffrey Levinton, *Ecology and Evolution*

William J. Meyers, *Earth and Space Sciences*

Sheldon Reaven, *Technology and Society*

Lawrence B. Slobodkin, *Ecology and Evolution*

Teaching Assistants

Estimated number: 13

The Marine Sciences Research Center (MSRC) is the center for research, undergraduate and graduate education, and public service in the marine sciences for the State University of New York system. In addition, MSRC features five distinguished institutes: the Living Marine Resources Institute, the Coastal Ocean Action Strategies Institute, the Institute for Urban Ports and Harbors, the Waste Management Institute, and the Institute for Terrestrial and Planetary Atmospheres. Three features distinguish MSRC from other leading oceanographic institutions: a clear focus on the coastal ocean, a persistent effort to integrate the marine and atmospheric sciences, and a commitment to translate the results of research into forms readily usable by decision makers in resolving important environmental and management problems.

MSRC offers an undergraduate major in atmospheric and oceanic sciences (ATM), a minor in marine sciences (MAR), and a certificate program in waste management. MSRC also provides an array of marine and atmospheric science courses that are geared toward both non-science and science majors.

The first-year graduate courses at MSRC are, with the permission of the instructor and subject to University limits, available for advanced undergraduate students. MSRC offers opportunities to undergraduates for research and training in marine sciences, atmospheric sciences, and waste management.

Further information can be obtained from the Graduate Bulletin and from the graduate studies director of the Marine Sciences Research Center.

Requirements for the Major in Atmospheric and Oceanic Sciences

The major in atmospheric and oceanic sciences leads to the Bachelor of Science degree. Completion of the major requirements entails approximately 65 credits.

Two tracks of study are available in the Atmospheric and Oceanic Sciences

undergraduate major at Stony Brook. 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.

The core courses for both tracks are as follows:

A. Required Courses in Mathematics, Physics and Chemistry:

MAT 131 and 132 (see note below)

MAT 203 or 205 or AMS 261

CHE 131 and 132 or 141 and 142

PHY 125, 126, 127 or 131, 132, or 141, 142

PHY 251 Modern Physics

PHY 306 Thermodynamics

B. Required Departmental Courses:

ATM 205 Introduction to Atmospheric Sciences

ATM 345 Theoretical Meteorology

ATM 346 Dynamic Meteorology

ATM 397 Air Pollution and Its Control

MAR 333 Coastal Oceanography

MAR 334 Remote Sensing

MAR 340 Environmental Problems

C. Upper-Division Writing Requirement:

All students majoring in atmospheric sciences/meteorology must submit two papers from required departmental courses (term papers, laboratory reports, or independent research papers) to the director of undergraduate studies for evaluation by the end of the junior year. If this evaluation is satisfactory, the student has fulfilled the upper-division writing requirement. If it is not, the student must fulfill the requirement before graduation.

Additional Requirements for the Meteorology Track:

ATM 247 Weather Prediction I

ATM 347 Weather Prediction II

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 work-

ing under cooperative agreements at two nearby NOAA weather forecasting installations. Students graduating in this track will have satisfied all of the course work 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.

Additional Requirements for the Atmospheric and Oceanic Sciences Track:

MAT 306 Calculus IV

MAR 350 Ocean Physics

MAR 487 Research

Students graduating in this track will have taken the course work 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 124, 126, 127 or 125, 126, 127 or 141, 142 or 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 detailed information about the various calculus sequences, see "Beginning Mathematics Courses" under the Mathematics Department in this Bulletin.

Grading

All required ATM and MAR courses must be taken for a letter grade and completed with a grade of C or higher.

Minor in Marine Sciences

The minor in marine sciences (MAR) is open to students who either wish to prepare themselves for future graduate education in marine sciences or who are preparing for a career in a marine-related field. The minor, which is interdisciplinary in nature, provides a foundation in marine aspects of biology, chemistry, geology, and physics for the undergraduate. Intended primarily for science majors, the minor assumes completion of basic courses in mathematics, physics, chemistry, biology, or geology. It requires 18 credits:

**Sample Course Sequence for the Atmospheric and
Oceanic Sciences Major**

Freshman Fall	Credits
MAT 131	4
CHE 131 or CHE 141	4
PHY 131 or PHY 141	4
EGC 101	3
Total	15

Spring	Credits
MAT 132	4
CHE 132 or CHE 142	4
PHY 132 or PHY 142	4
Gen Ed	3
Total	15

Sophomore Fall	Credits
ATM 205	3
PHY 251 or MAT 203 or MAT 205	4
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	16

Spring	Credits
ATM 247	3
PHY 251 or MAT 203 or MAT 205	4
Gen Ed	3
Gen Ed	3
Gen Ed	3
Total	16

Junior Fall	Credits
ATM 345	3
ATM 305 or PHY 306	3
MAR 334	3
Gen Ed	3
Gen Ed	3
Total	15

Spring	Credits
ATM 346	3
ATM 348 or ATM 397	3
Gen Ed	3
UD Elective	3
Elective	3
Total	15

Senior Fall	Credits
ATM 347	3
ATM 305 or PHY 306	3
MAR 340	3
UD Elective	3
Elective	3
Total	15

Spring	Credits
ATM 348 or ATM 397	3
MAR 333	3
UD Elective	3
Elective	3
Elective	3
Total	15

A. MAR 101 or 104

B. At least 15 credits from the following: All upper-division MAR courses (with a maximum of three credits each from MAR 487 and MAR 488), BIO 343, or BIO/GEO 353

Note: No more than three credits of Pass/No Credit will be accepted toward the minor.



Approved Courses: College of Arts And Sciences



AFH

Africana Studies/ 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 (in Translation)

A study of representative texts from the French Caribbean translated into English. This course focuses on literary manifestations of a search for a specific identity by writers from Martinique, Guadeloupe, French Guiana, and Haiti. Crosslisted with HUF 212.

Mandatory Prerequisites: EGC 101 or equivalent; one course in literature
3 credits

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

A general and detailed look at African-American literature and music and their importance for literature and music generally in the 19th and 20th centuries. Topics include Country Blues, City Blues, New Orleans music, Rag and Boogie Woogie, Big Band, Be-Bop, and the new music of the 1960s and beyond; Frederick Douglas, folk literature, the slave narratives, Langston Hughes, and James Baldwin.

Advisory Prerequisites: One D.E.C. category B or D course; completion of D.E.C. categories I and J
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-J is crosslisted with HUF 318-J.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in literature
3 credits per class

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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: ARH 201
3 credits

AFH 447 Readings in Africana Studies

Individually supervised reading in selected topics in the Black Experience. May be repeated once.

Mandatory Prerequisite: Permission of instructor and program director
1-3 credits

AFH 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: to AFH 475: Africana studies major or minor; U4 standing; permission of instructor
Mandatory Prerequisites: to AFH 476: AFS 475; permission of instructor
3 credits per class, S/U grading

AFH 487 Research in Africana Studies (1-3)

Mandatory Prerequisite: Permission of instructor and program director
1-3 credits

AFS

Africana Studies/ Social and Behavioral Sciences

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

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

3 credits per class

AFS 223-F The African Continuum

An examination of the persistence of African culture in the Americas. Exploration of some of the factors that have influenced these African-based cultural forms and their impact on other ethnic groups in the Americas. Crosslisted with ANT 223-F.

Advisory Prerequisite: AFS 101 or 102 or ANT 102
3 credits

AFS 225-J Africa in the 20th Century World

A survey of those global issues that have been the basis of change in 20th century Africa. Topics include the impact of colonial rule, the emergence of the Cold War, the role of Africa in the global economy, and the status of Africa in the post-Cold War era.

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

Analysis of the key concepts defining the Black Experience in the United States, and the African diaspora, as formulated by 20th-century African-American intellectuals. Topics include forms of political organization and collective struggle; the social and psychic consequences of racist subjection; the relationship among race, racism, and culture; and the cultural politics of race and gender. Crosslisted with HIS 277

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 a social and educational problem relating primarily to the African-American experience. Specific programs may include working with children from low-income families, educational and cultural enrichment projects, tutoring in various institutional settings, and other projects to be announced. May be repeated once.

Mandatory 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 on U.S. urban life and made important contributions to its sense of vitality and cultural diversity.

Mandatory 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 (Formerly AFS 200)

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

Mandatory 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. Three forms in which racism manifests itself today are identified and discussed: overt, covert, and reactive racism. Examples of these three forms and the groups involved with them are identified and discussed, showing the similarities and differences where they exist.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two D.E.C. category F courses
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.

Mandatory 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

Mandatory 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 are discussed.

Mandatory Prerequisite: AFS 239 or 240
3 credits

AFS 350-J Black Women and Social Change: A Cross-Cultural Perspective (Formerly AFS 275)

A cross-cultural survey of the history of black women in the context of the struggles for social justice in the Caribbean (English- and Spanish-speaking), Africa, and the United States. Several major topics are covered: the slave resistance and the anti-slavery movement; the anti-colonial struggle in Africa and the Caribbean; the trade union movement in the United States and Africa; the struggle against underdevelopment in Cuba, Puerto Rico, and Jamaica; and the anti-apartheid movement in South Africa. Crosslisted with WNS 350.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two D.E.C. category F courses
3 credits

AFS 360-K African-American Social Commentary

A study of African-American responses to the social order in America. The course concentrates on the various ways African Americans have conceptualized and described their condition. Particular attention is paid to the solutions proposed by African-American spokespersons during various historical eras.

Mandatory 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 372-K Contemporary Political Thought and the Black Community

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

Mandatory 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 375-F Slavery

The historical experience of blacks in slavery with emphasis on the American South and with comparative references to slave systems as they developed in the western hemisphere.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two D.E.C. category F courses
3 credits

AFS 380 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. Cross listed with ANT 380.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: ANT 219 or AFS 240 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.

Mandatory Prerequisites: HIS 213 or 214 or LAC 200 or AFS 239 or 240 or 277
3 credits

AFS 395 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 ANT 395.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: ANT 351
3 credits

AFS 410 Computers and Third World Social Issues

A consideration of significant Third World issues using basic computing skills in a DOS environment. The use of computer concepts and word processing skills to evaluate current social issues and their impact. The course encourages utilization of the computer in problem solving, research, and decision making.

Mandatory Prerequisites: U3 or U4 standing; permission of instructor
Advisory Prerequisites: Two AFS courses
4 credits

AFS 417-K The African-American Family (Formerly AFS 370)

The African-American family in historical perspective. The nature and structure of that family, the obstacles it has faced, and its interrelationships with the African-American community and the diversity of American society.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

AFS 419-F Legal Process and Social Structure (Formerly AFS 390)

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

Mandatory Prerequisite: U3 or U4 standing
3 credits

AFS 421 422 Topics in Africana Studies

An examination of a selected topic in the Black Experience to be announced each term. May be repeated for different topics.

Mandatory Prerequisite: Permission of instructor
3 credits per class

AFS 435-J Contemporary African Problems (Formerly AFS 335)

An investigation into the nature of African societies by studying the variety of African political, social, and traditional forms necessary to understanding developments in the 19th and 20th centuries. Emphasis is on some of the long-standing problems essential to understanding the diversity of ideas and people in the African scene. Crosslisted with POL 435.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two AFS or POL courses
3 credits

AFS 447 Reading in Africana Studies

Individually supervised readings in selected topics in the Black Experience. May be repeated once.

Mandatory 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.

Mandatory Prerequisites: U3 or U4 standing; permission of instructor
4 credits per class

AFS 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisite to AFS 475: Permission of instructor

Mandatory Prerequisites to AFS 476: AFS 475; permission of instructor
3 credits per class, S/U grading

AFS 487 Research in Africana Studies

Mandatory Prerequisite: Permission of instructor
1-3 credits

AFS 488 Internship

May be repeated up to a limit of 12 credits, but no more than 6 credits count toward Africana studies major requirements.

Mandatory Prerequisites: Africana studies major or minor; 15 credits in AFS courses; permission of instructor, program director and Office of Undergraduate Academic Affairs
3-12 credits, S/U grading

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 rewriting. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used. Does not count toward graduation. Open to AIM/EOP students only.

Mandatory Prerequisite: Placement by English Placement Examination
Mandatory Corequisite: EGC 100
3 credits

AIM 103 Analysis and Critical Reasoning

Development of skills in reasoning and writing and improvement of vocabulary through reading, analyzing, and writing about a variety of personal experiences and literary texts. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used. Does not count toward graduation. Open to AIM/EOP students only

Mandatory Prerequisites: Placement by English Placement Examination
Mandatory Corequisite: EGC 101
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."

Mandatory Prerequisite: BIO 151 or BIO 152 or ANP 120
4 credits

ANP 320-E Primate Functional Morphology and Biomechanics

A broad review of methods employed in the interpretation of morphological adaptation of animals, with special focus on the order Primates. Topics include the development and application of biomechanical models, kinetics and kinematics, electromyography, and the statistical analysis of functional morphological data.

Mandatory Prerequisite: ANP 120 and 210
3 credits

ANP 321-E Primate Evolution

The evolution of the order Primates from its origins to the appearance of the human family. Primate origins; the first primates of modern aspect; origins and adaptive radiations of monkeys; appearance and adaptations of apes and humans. Relevant topics in geology such as geochronology, paleogeography, taphonomy, and paleoecology.

Mandatory Prerequisite: 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: ANP 120 or BIO 151 or 171; 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.

3 credits

ANP 391-E Topics in Physical Anthropology

Mandatory Prerequisite: ANP 120.
Advisory Prerequisite: One other ANP course
3 credits

ANP 403 Problems in Physical Anthropology

Mandatory Prerequisite: ANP 120 or BIO 151 or 171
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.

Mandatory Prerequisites: ANP 300; permission of instructor
3 credits

ANP 447 Readings in Physical Anthropology

Mandatory Prerequisites: ANP 321 and 330; permission of instructor
3 credits

ANP 475, 476 Undergraduate Teaching Practicum

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to ANP 475: ANP 321 and 330; permission of instructor
Mandatory Prerequisites to ANP 476: ANP 475; permission of instructor
3 credits per class, S/U grading

ANP 487 Independent Research in Physical Anthropology

May be repeated up to a limit of six credits.
Mandatory Prerequisites: Two 200- or 300-level ANP courses; permission of instructor and department
3-6 credits

ANP 495-496 Senior Honors Project in Anthropology

Mandatory Prerequisite: Admission to the anthropology honors program
3 credits per class

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 overview of archaeology as a field of study and an introduction to the methods, goals, and theoretical concepts used by archaeologists. The course outlines how archaeologists make behavioral interpretations using the cultural material of past human societies. Techniques used to detect and study past settlements are presented.

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.

Mandatory Prerequisite: ANP 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.

Mandatory Prerequisite: ANP 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.

Mandatory Prerequisite: ANP 102
3 credits

ANT 223-F The African Continuum

An examination of the persistence of African culture in the Americas. Exploration of some of the factors that have influenced these African-based cultural forms and their impact on other ethnic groups in the Americas. Crosslisted with AFS 223-F.

Advisory Prerequisite: AFS 101 or 102 or ANP 102
3 credits

ANT 230-J Peoples of the World

Adaptations and cultural development of peoples in different parts of the world, focusing on subsistence activities and their relationship to the development of distinctive social and political forms. Recent changes brought about by intercultural contact are also discussed. Readings are on selected peoples throughout the world.

Mandatory Prerequisite: ANP 102
3 credits

ANT 255-F Technology, Art, and Material Culture

An introduction to various approaches to the study of material culture in its technological and artistic aspects, using ethnographic and archaeological studies from different cultures. Emphasis is on viewing

artifacts and their associated technologies within the context of a total culture, and in particular on seeing the relationship between material and nonmaterial forms of culture.

Mandatory Prerequisite: ANP 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, etc., and relates these innovations to changes in sociopolitical organization.

Mandatory 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.

Mandatory Prerequisite: ANP 102
Advisory Prerequisite: One other ANP course
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.

Mandatory Prerequisites: ANP 104; permission of instructor
3-6 credits

ANT 333-F Witchcraft and Magic (3)

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.

Mandatory Prerequisite: ANP 102
Advisory Prerequisite: One other ANP course
3 credits

ANT 350-F Medical Anthropology (Formerly ANT 250)

Concepts of health and illness in cross-cultural perspective. Topics include the achievement of health and harmony, disease causation, and methods of diagnosis and treatment. Physical and psychological states of health and illness are considered from both individual and community perspectives. Readings encompass studies of cultures from all parts of the world.

Mandatory Prerequisite: ANP 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.

Mandatory Prerequisites: 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: ANT 102
3 credits

ANT 356-K Urban Anthropology

A cross-cultural review of current anthropological research in urban societies with primary reference to the American context. Topics include family and kinship behavior, social status and role, rules and regulations, social stratification, mobility and upward mobility, assimilation and acculturation, and political relations.

Mandatory Prerequisite: ANT 102
3 credits

ANT 357-F The Agricultural Revolution

An in-depth examination of a fundamental transformation in human history, the shift from hunting and gathering to farming, from reacting to the environment to controlling it, and from a nomadic way of life to permanent settlement. The course considers the archaeological evidence as to how this readaptation to the natural environment took place in different parts of the world.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: ANT 102
3 credits

ANT 362J 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.

Mandatory 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. Following a chronological review, the course will focus on different approaches to specific ethnoarchaeology, systems theory, site formation processes, and spatial analysis.

Mandatory 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.

Mandatory 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. Not for credit in addition to the discontinued ANT 359.

Mandatory Prerequisite: ANT 104
3 credits

ANT 367-F Male and Female

A study of the development and manifestation of sex roles in different cultures, with an emphasis on the different adaptations of males and females in economics, politics, religion, and education.

Mandatory Prerequisite: ANT 102
3 credits

ANT 368-F Ice Age Europe

A survey of the archaeological record for Europe and western Asia during the Pleistocene epoch, or "Ice Age." This course examines environmental change and human behavioral evolution between 1.6 million to 13,000 years ago. Specific topics include initial human colonization, the origin of modern humans, the fate of the Neanderthals, and the significance of cave art.

Mandatory Prerequisite: ANT 104
3 credits

ANT 369-F Foragers to Farmers: Europe After the Ice Age

A survey of the archaeological record for western Eurasia between 12,000 and 5,000 years ago. This course is a detailed review of evidence for the emergence of complex post-glacial hunter-gatherer societies, the domestication of plants and animals, and the spread of settled village life from southwest Asia to temperate Europe. Each of these developments is examined in its ecological and biogeographic context.

Mandatory Prerequisite: ANT 104
3 credits

ANT 370-F Great Archaeological Discoveries (Formerly ANT 270)

A survey of great archaeological discoveries that have contributed to current knowledge of the human past. The discoveries at Olduvai, Jericho, Tutankhamen's tomb, Xian, Ebla, Tikal, etc. are discussed within the context of the ancient cultures that they have illuminated. Recent controversies about the origin of modern humans, "goddess cults," and the rise of ancient civilizations are also examined.

Mandatory Prerequisite: U3 or U4 standing
3 credits

ANT 380-J Race and Ethnicity in Latin America and the Caribbean-bean

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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: ANT 219 or AFS 240 or LAC 200
3 credits

ANT 381-F Applied Anthropology (Formerly ANT 280)

An examination of how anthropology is used in nonacademic settings, such as AIDS research, environmental impact and preservation, legal and advocacy issues, marketing, biomedical anthropology, and forensics. Case studies in sociocultural anthropology, archaeology, and physical anthropology are discussed.

Mandatory Prerequisite: U3 or U4 standing
3 credits

ANT 385-J Prehistoric Peoples of the Americas (Formerly ANT 285)

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 life-ways, plant and animal domestication, the origins of village life, and state-level societies.

3 credits

ANT 390, 391-F Topics in Social and Cultural Anthropology

May be repeated as the topic varies.

Mandatory Prerequisites: ANT 102
3 credits per class

ANT 392-K Topics in American Cultural Alternatives

May be repeated as the topic varies.

Mandatory Prerequisites: ANT 102
Advisory Prerequisite: One other anthropology course
3 credits

ANT 393-F, 394-F Topics in Archaeology

May be repeated as the topic varies.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: ANT 351
3 credits

ANT 401 Problems in Social and Cultural Anthropology

May be repeated as the topic varies.

Mandatory Prerequisite: ANT 102
Advisory Prerequisites: Two other ANT courses at the 200 level or higher
3 credits

ANT 402 Problems in Archaeology

May be repeated as the topic varies.

Mandatory Prerequisite: ANT 104
Advisory Prerequisites: Two other archaeology courses to be specified when the topic is announced
3 credits

ANT 418 Lithic Technology

An introduction to the practical skills needed to study lithics (stone tools) from archaeological sites. Topics include typology of prehistoric industries and technological, functional, and behavioral analysis of lithic variation. Students work with teaching collections, learning to draw, measure, and classify stone tools. Laboratory sessions teach students how to make and use replicas of prehistoric stone tools using aboriginal techniques.

Mandatory Prerequisite: ANT 104; permission of instructor
Advisory Prerequisites: Two other archaeology courses at the 200 level or higher
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.

Mandatory 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 will design and complete 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. Crosslisted with GEO 420.

Mandatory Prerequisite: ANT 104 and permission of instructor

Advisory Prerequisite: One other archaeology, physical anthropology, biology, geology, or marine science course at the 200 level or higher
4 credits

ANT 440-J Immersion in Another Culture (Formerly 240)

A specific world area such as the highlands of New Guinea or the Nilotic Southern Sudan, or a particularly well-documented people such as the Trobriand Islanders is considered in detail. Lectures, texts, and films consider ecology, history, social change, language, cultural systems, and social arrangements. The aim is to provide students with a comprehensive understanding of another cultural system. May be repeated as the topic varies.

Mandatory Prerequisite: ANT 102

Advisory Prerequisite: ANT 310
3 credits

ANT 447 Readings in Anthropology

May be repeated twice.

Mandatory 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

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: to ANT 475: U4 or advanced U3 anthropology major or minor status; permission of instructor

Mandatory Prerequisites: to ANT 476: ANT 475; permission of instructor
3 credits per class, S/U grading

ANT 487 Independent Research in Anthropology

May be repeated up to a limit of six credits.

Mandatory Prerequisites: 15 credits in anthropology; permission of instructor and department
3-6 credits

ANT 488 Internship

May be repeated up to a limit of 12 credits.

Mandatory Prerequisites: 15 credits of anthropology; permission of instructor, department, and Office of Undergraduate Academic Affairs
3-12 credits, S/U grading

ANT 495-496 Senior Honors Project in Anthropology

Mandatory Prerequisite: Admission to the anthropology honors program
3 credits per class

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. No student who has had two or more years of Arabic in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for ARB 111 without written permission from the supervisor of the course.

Mandatory Prerequisite: to ARB 112: ARB 111
3 credits per class

ARB 211-J, 212-J Intermediate Arabic I, II (Formerly ARB 191, 192)

Continued study of Arabic at a more advanced level of speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work. No student who has had four or more years of Arabic in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for ARB 211 or 212 without written permission from the supervisor of the course.

Mandatory Prerequisite: to ARB 211: ARB 112
Mandatory Prerequisite: to ARB 212: ARB 211
3 credits per class

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 native arts of Africa, Oceania, and the Americas. Following discussion of basic concepts in studying non-Western art, the course focuses on comparing and contrasting the arts of particular societies in each of these regions from ancient times to the present.

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.

Mandatory Prerequisite: ARH 101 or 102
3 credits

ARH 204-G History of Photography

A historical survey of the technical, theoretical, and aesthetic development of black-and-white and color still photography and its close interrelationship with the evolution of modern art.

Mandatory Prerequisite: ARH 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 once.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: ARH 101 and 102
3 credits

ARH 307-I High Renaissance and Mannerism in Central Italy

Art and architecture in Florence and Rome in the 16th century. The High Renaissance will be studied in the works of Leonardo, Michelangelo, Raphael, and Bramante; Mannerism in the works of Pontorno, Bronzino, Gianbologna, Giulio Romano, and Vignola, among others.

Mandatory Prerequisites: ARH 101 and 102
Advisory Prerequisite: ARH 306
3 credits

ARH 310-I Renaissance Art in Venice

Venetian painting of the 15th and 16th centuries studied through the works of such major figures as Bellini, Mantegna, Giorgione, Titian, Veronese, and Tintoretto, stressing the special character and continuity of the art of Venice.

Mandatory 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.

Mandatory 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.

Mandatory 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 Lorrain, and on the sculptors of Versailles.

Mandatory 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.

Mandatory Prerequisite: ARH 101 or 102
Advisory Prerequisites: 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: ARH 101 and 102
Advisory Prerequisite: ARH 205
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.

Mandatory Prerequisite: ARH 201
3 credits

ARH 327-J Arts of Central Africa

A study of the arts of Central Africa from ancient to contemporary civilizations. Emphasis is primarily on the history of sculptural traditions, especially figurative sculpture and masquerade. These arts are examined in their political, social, and cultural contexts, as objects of ritual and religious practices, and as evidence of aesthetic choices and achievements.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: ARH 201
3 credits

ARH 331-K American Art to 1890

A chronological and thematic survey of painting, sculpture, and architecture from the colonial period to the post-Civil War period. The course explores the theme of American pluralism, addressing such areas as Hispanic and European influences in American architecture; the imaging of encounter and ideologies of westward expansion; the construction of gender in the arts; the image of the Native American and the African American; the woman and African American artist.

Mandatory Prerequisite: ARH 101 or 102
3 credits

ARH 332-K Art of the United States, 1890-1930

American painting, sculpture, and architecture from the period spanning Progressivism and the rise of modern urban commercial culture to the end of World War II, emphasizing major events and various social, cultural, and ethnic influences. The course explores the theme of American pluralism, addressing such areas as the construction of race, gender, ethnicity, and class in the arts and the impact of immigration, urbanization, and commercial culture.

Mandatory Prerequisite: ARH 101 or 102
Advisory Prerequisite: ARH 331
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.

Mandatory 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 neoclassicism, romanticism, realism, and impressionism.

Mandatory 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.

Mandatory Prerequisite: ARH 102
3 credits

ARH 349-G The Creative Process in the Fine Arts

An examination of the creative process and its philosophical foundations in Western culture. Students explore highlights of the philosophical tradition since Plato; attend exhibits, rehearsals, and performances; and discuss with visiting artists their work and its sources. Crosslisted with THR 349 and MUS 349.

Mandatory Prerequisites: One course in philosophy; ARH 101 or 102 or MUS 101 or 119 or THR 101 or 104
3 credits

ARH 360-G Art and Eros

A study of erotic imagery in various cultures and its psychosocial significance. A typology of erotic images is developed. The approach is largely, but not exclusively, psychoanalytic, both Freudian and object relational. The social context is brought in through stylistic considerations.

Mandatory Prerequisite: ARH 101 or 102
Advisory Prerequisite: PSY 103
3 credits

ARH 400-403 Topics in Art History and Criticism

May be repeated as topic varies.

Mandatory Prerequisites: ARH 101 or 102; one other ARH course, varying with topic
3 credits

ARH 404 Topics in Film Studies and Criticism

May be repeated as topic varies.

Mandatory Prerequisites: Two of the following: CSL 335, HIS 361, HUM 201, 202, THR 117
3 credits

ARH 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to ARH 475: Art history/criticism major; preferably U4 standing; sponsorship of an instructor; permission of department

Mandatory Prerequisites to ARH 476: ARH 475; permission of instructor and director of undergraduate studies
3 credits per class, S/U grading

ARH 485 Projects in Art History and Criticism in New York City

Mandatory 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.

Mandatory Prerequisites: At least four courses in art; sponsorship of a faculty member; permission of department

1-6 credits

ARH 488 Internship

May be repeated up to a limit of 12 credits, but no more than six credits may count toward the major in studio art.

Mandatory 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, department, and Office of Undergraduate Academic Affairs
3 credits, S/U grading

ARS

Studio Art

ARS 154-D Foundation 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.

Mandatory Prerequisite: One 200 level ARS, MUS or THR course
3 credits

ARS 230-G Design Fundamentals

Elements of two- and three-dimensional design such as line, shape, value, color, volume, plane, scale, and space are analyzed and applied to projects developed in class. Relevant works from Western and non-Western cultures are discussed. A visit to a New York City exhibition is required.

Mandatory Pre- or corequisite: ARS 255
3 credits

ARS 255-D Introductory Painting (Formerly ARS 155)

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.

Mandatory Prerequisite: ARS 154
3 credits

ARS 256-D Fundamentals of Sculpture (Formerly ARS 156)

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.

Mandatory Pre- or corequisite: ARS 154
3 credits

ARS 264-D 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.

Mandatory Pre- or corequisite: ARS 154
3 credits

ARS 274-D Beginning Printmaking

An introduction to printmaking. Demonstrations and lectures treat printmaking techniques and print shop procedures. Students are introduced to intaglio (etching, drypoint, engraving), relief (wood block, line block) monoprinting, and if time permits, lithography.

Mandatory Pre- or corequisite: ARS 154
3 credits

ARS 281-D Photography I

An intensive course with extensive practice and experimentation in the aesthetics, techniques, and materials of black-and-white photography. It is expected that the student's academic program or vocational objectives require a legitimate need for photographic training, and the course is structured accordingly. Students must provide their own 35mm camera equipped with a single focal length normal lens (no zoom lens) and the ability for full manual operation. They must expect to spend approximately \$450 during the semester on materials.

Mandatory Prerequisite: ARS 154
3 credits

ARS 317 Interactive Performance, Media, and MIDI

Practical and theoretical issues related to interactive performance, combining elements of art, music, theatre, performance art, video, and computer science. Course topics include sound synthesis, sampling, video, lighting, alternative input, and MIDI. This hands-on course stresses small experimental-creative laboratory assignments and culminates in final small-group or individual projects. Crosslisted with MUS 317 and THR 317.

Mandatory Prerequisite: At least one 200- or 300-level ARS, MUS, or THR studio or performance course
3 credits

ARS 330 Advanced Theory and Practice of Design

An intensive advanced exploration, analysis, and interpretation of visual elements in 2- and 3-dimensional space. The elements of design are analyzed and applied, resulting in three comprehensive projects. Relevant works from Western and non-Western cultures are discussed. A visit to three New York City exhibitions will be required.

Mandatory Prerequisites: ARS 230 and 256
3 credits

ARS 350 Life Drawing and Painting (Formerly ARS 250)

Drawing and painting of the human figure. May be repeated once.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: ARS 351
3 credits

ARS 359-G Theory and Practice of Conceptual Drawing

The further study of different processes and methods of generating drawings, encouraging individual expression. Slide presentations, assigned readings, and gallery visits are part of the student's experience.

Mandatory Prerequisite: ARS 255
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.

Mandatory Prerequisite: ARS 264
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.

Mandatory Prerequisite: ARS 256
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.

Mandatory Prerequisite: ARS 256
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.

Mandatory 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.

Mandatory Prerequisite: ARS 274
3 credits

ARS 381 Photography II

An advanced course in the theory and practice of black-and-white photography utilizing 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: ARS 365; ARH 342
3 credits

ARS 466 Advanced Theory and Practice of Sculpture: Modeling, Carving, and Casting

A course in advanced sculpture utilizing clay and wax modeling. Representational sculptures, including work from a nude model, and more abstract works are developed. Advanced reproduction techniques (including plaster and flexible rubber molds) are used with subsequent castings in a variety of media such as plaster, polyester resin, and metal. May be repeated once.

Mandatory Prerequisites: ARS 366; 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.

Mandatory 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.

Mandatory Prerequisite: ARS 375
3 credits

ARS 475, 476 Undergraduate Teaching Practicum: Theory and Practice

Students may not serve as a teaching assistants in the same course twice.

Mandatory Prerequisites to ARS 475: Studio art major; preferably U4 standing; sponsorship of an instructor; permission of department

Mandatory Prerequisite to ARS 476: Permission of department

3 credits per class, 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.

Mandatory 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 for supplies is \$300.

Mandatory Prerequisite: ARS 381
3 credits

ARS 487 Advanced Directed Projects in Studio Theory and Practice

May be repeated once.

Mandatory Prerequisites: Advanced status in one of the studio areas; sponsorship of a faculty member; permission of department
3 credits

ARS 488 Internship

Mandatory Prerequisites: U3 or U4 standing; 15 credits in art department courses; permission of department and Office of Undergraduate Academic Affairs
3-12 credits, S/U grading

ARS 491, 492 Special Topics in Studio/ Theory and Practice

May be repeated as subject matter varies.

Mandatory Prerequisite: Permission of department

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 111 Astronomy Laboratory A

An introduction to observational activities in astronomy. Students will make simple astronomical measurements using instruments such as a quadrant, cross-staff, spectrometer, and telescope. Not for credit in addition to AST 112.

Mandatory Pre- or corequisite: AST 101 or 105 or 248
1 credit

AST 112 Astronomy Laboratory B

An introduction to observational activities in astronomy primarily intended for the ESS major. Students will make astronomical measurements, using instruments they build, and learn how to reduce measurement errors. They will study the basics of using computers in observational astronomy by using a computer-operated spectroscope, telescope, and image analyzers. Not for credit in addition to AST 111.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: One D.E.C. category E course
3 credits

AST 287 Introductory Research in Astronomy

Mandatory Prerequisites: Permission of instructor and URECA coordinator.

Advisory Prerequisites: U1 or U2 standing; one AST course
1-3 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 will follow an interdisciplinary approach and is not for major credit.

Mandatory Prerequisites: Any two of the following: AST 101 or 105 or 248; PHY 121 or 125 or 131 or 141; MAT 131 or 141 or 124 or 125
3 credits

AST 341-E, 342-E Astrophysics I, II

An introduction to, and development of, a firm physical understanding of the observed properties of the stars and our galaxy. Topics include the structure of the interior and atmosphere of stars, evolution of stars, dynamics of multiple star systems, physics of the interstellar medium, and the structure of our galaxy.

Mandatory Prerequisites: to AST 341: AST 203; PHY 132 or 142 or 126, 127; MAT 127 or 132 or 142

Mandatory Corequisites: to AST 341: PHY 251; MAT 203 or 205 or 211 or AMS 261

Mandatory Prerequisite: to AST 342: AST 341

3 credits per class

AST 343-E Extragalactic Astronomy

An introduction to the properties of normal and active galaxies, the structure of the local universe, and cosmology with an emphasis on the physical processes responsible for the observed phenomena.

Mandatory Prerequisite: AST 203

Mandatory Corequisites: PHY 251; MAT 203 or 205 or 211 or AMS 261

3 credits

AST 344-E Black Holes, Quasars, and Collapsed Objects

A discussion of some of the most exciting astronomical discoveries of the past 30 years. Topics are selected from the evolution of objects leading to pulsars, black holes, supernovae, and the Big Bang.

Mandatory Prerequisite: AST 203

Mandatory Corequisites: PHY 251; MAT 203 or 205 or 211 or AMS 261

3 credits

AST 345 Undergraduate Research in Astronomy

Mandatory Prerequisite: Permission of instructor.
1 credit

AST 351-E Introduction to Planetary Physics

Overview of the solar system for science majors. Topics include orbits and bulk properties of the planets, moons, asteroids, and comets; composition, structure, and origin of planetary atmospheres; cratering and other surface processes; tidal heating; planetary rings; the origin of the solar system and formation of other planetary systems.

Mandatory Prerequisites: AST 203; PHY 251; MAT 203 or 205 or AMS 261

4 credits

AST 443 Observational Techniques in Optical Astronomy

An introduction to modern astronomical instrumentation and data handling and to the use of telescopes. Emphasis is placed on techniques and equipment appropriate for wavelengths shorter than one micron. Extensive laboratory and observing exercises will be required.

Mandatory Prerequisite: AST 341 or PHY 301

4 credits

AST 447 Senior Tutorial in Astronomy

May be repeated once.

Mandatory Prerequisites: Permission of instructor; U4 standing
1-3 credits

AST 475 Teaching Practicum in Astronomy

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: U4 standing; permission of instructor

3 credits, S/U grading

AST 487 Senior Research in Astronomy

Mandatory Prerequisite: Permission of instructor
1-3 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

The nature and causes of atmospheric phenomena. Basic physical and chemical processes and energetics. Atmospheric thermodynamics, hydrostatics, dynamics, kinematics. Atmospheric wind systems and pressure patterns, clouds and precipitation, severe storms.

Mandatory Prerequisites: PHY 119 or 121 or 126 or 131 or 141; MAT 124 or 125 or 131 or 141

3 credits

ATM 237-H Current Topics in World Climate and Atmosphere

An exploration of current concerns about the greenhouse effect, acid rain, and global ozone loss, in a format accessible to non-science majors. The social and political steps being taken to limit global atmospheric pollution and climate change are discussed. Not for major credit. Crosslisted with PHY 237.

Mandatory Prerequisites: One D.E.C. category E course; satisfaction of entry skill in mathematics requirement

3 credits

ATM 247-E Weather Prediction I

The application of principles of thermodynamics and fluid dynamics, and empirical knowledge of the ways weather systems operate to develop principles of weather forecasting. Operational weather products such as weather maps, National Weather Service model predictions, and station data are used to analyze the behavior of past weather systems as well as to make real-time weather predictions.

Mandatory 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.

Mandatory Prerequisites: MAT 124 or 125 or 131 or 141; CHE 131 or 141

Advisory Prerequisite: PHY 119 or 132 or 142 or 127

3 credits

ATM 345-E Theoretical Meteorology

An introduction to the quantitative interpretation of the thermal and dynamical structure of planetary atmospheres. Topics to be covered include hydrostatic equilibrium, hydrostatic stability and convection, solar and terrestrial radiation, the atmospheric equations of motion for a rotating planet, and atmospheric energy relationships and general circulation.

Mandatory Prerequisite: ATM 205

3 credits

ATM 346-E Dynamic Meteorology

Introduction to the structure and dynamics of the large-scale atmospheric motions that are responsible for weather and climate. Topics include principles of fluid dynamics; Coriolis force, geostrophic equilibrium, and the Proudman-Taylor theorem; circulation

and vorticity, baroclinic instability, cyclogenesis, frontogenesis, and the weather systems; and climate and the general circulation of the atmosphere.

Mandatory Prerequisite: ATM 205
3 credits

ATM 347-E Weather Prediction II

The application of theoretical meteorology to the analysis of the current state and prediction of the future state of the atmosphere. The latest numerical and statistical weather prediction models are discussed, as are the application of mesoscale diagnostics, interpretation of weather satellite imagery, Doppler weather radar data, vertical profiler data, and lightning detection displays.

Mandatory Prerequisites: ATM 247, 345 and 346
3 credits

ATM 348-E Atmospheric Physics

An investigation of the relationship between atmospheric phenomena and the nature of matter as expressed in the principles of physics. Topics studied include gravitational effects, thermodynamic properties of atmospheric gases, formation and growth of cloud particles, atmospheric electricity, solar and terrestrial radiation, atmospheric signal phenomena, atmospheric motions, and heat and mass transfer in the atmosphere.

Mandatory Prerequisite: PHY 132 or 142 or 126, 127
3 credits

ATM 397-E Air Pollution and Its Control

A detailed introduction to the causes, effects, and control of air pollution. The pollutants discussed include carbon monoxide, sulfur oxides, nitrogen oxides, ozone, hydrocarbons, and particulate matter. The emissions of these gases from natural and industrial sources and the principles used for controlling the latter are described. The chemical and physical transformations of the pollutants in the atmosphere are investigated and the phenomena of urban smog and acid rain are discussed. Crosslisted with MEC 397.

Mandatory Prerequisites: PHY 119 or 132 or 142 or 126, 127; CHE 131 or 141 or 198; MAT 124 or 125 or 131 or 141; 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.

Mandatory 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 major in the department may conduct research for academic credit. A research proposal must be prepared by the student and submitted to the MSRC Undergraduate Studies Committee for approval before the beginning of the semester in which credit is to be given. A written report must be submitted before the end of the semester. May be repeated once.

Mandatory Prerequisite: Permission of instructor and MSRC Undergraduate Studies Committee
1-3 credits

ATM 488 Internship

May be repeated up to a limit of 12 credits.

Mandatory Prerequisites: ATM 347; permission of instructor, department, and Office of Undergraduate Academic Affairs
3 credits, S/U grading

BCP

Pharmacology

BCP 394 Environmental Toxicology and Public Health

Principles of toxicology will be presented and problems associated with major classes of toxic chemicals to human and environmental health will be examined. Case studies dealing with current waste management issues will also be discussed. May not be taken for credit in addition to MAR 336. Crosslisted with MAR 394.

Mandatory Prerequisites: BIO 151; CHE 131
3 credits

BCP 400 Writing in Pharmacology

See requirements for the major in pharmacology, upper-division writing requirement.

Mandatory Prerequisites: Pharmacology major; U3 or U4 standing
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.

Mandatory Prerequisites: BIO 362; CHE 322 and 327; a G.P.A. of 3.0 or higher in these courses and their prerequisites

Mandatory Corequisite: 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.

Mandatory Prerequisites: BCP 401 and 403; minimum of B- in BCP 401

Mandatory 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

Mandatory 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.

Mandatory Prerequisites: BCP 401 and 403

Mandatory 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. May be repeated.

Mandatory Prerequisites: BIO 152 or 171; CHE 322; a G.P.A. of 3.0 in these courses and their prerequisites
1 credit

BCP 475 Undergraduate Teaching Practicum in Pharmacology

Students may not serve as teaching assistants in the same course twice.

Mandatory 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 HBH 396, 398, and 399. May be repeated.

Mandatory Prerequisites: BIO 152; CHE 322 and 327; a G.P.A. of 3.0 in these courses and their prerequisites; permission of instructor and department.
1-3 credits

BCP 488 Internship

Repeatable up to 12 credits. Summer only.

Mandatory Prerequisites: BIO 361; CHE 322; G.P.A. of 3.0 or higher in these courses and their prerequisites; permission of department and Office of Undergraduate Academic Affairs.

3-6 credits, S/U grading

BIO

Biology

BIO 101-E, 102-E Biology: A Humanities Approach

The major concepts of biology are presented from historical, contemporary, and critical viewpoints. These concepts include the cell, the gene, molecular biology, development, and evolution. The human implications or values associated with each concept are emphasized. Not for major credit.

Mandatory Prerequisite to BIO 102: BIO 101
3 credits per class

BIO 114-E Dinosaur Evolution and Ecology

The study of the anatomy, ecology, behavior, physiology, and evolution of dinosaurs. The benefits of studying the history of extinct forms of life on earth are emphasized, particularly with regard to mass extinction and the need to maintain biodiversity. Not for major credit.

3 credits

BIO 115-E Evolution and Society

The historical development of evolutionary thought, the evolutionary diversification of life, and the mechanisms of evolution are presented. The geological, genetic, and other biological principles necessary to comprehend evolutionary concepts are presented as background. Current controversies over the evidence for evolution are reviewed. Human evolution, medical and agricultural applications of evolutionary theory, and its implications for the development of human and other social systems are considered. An introductory course in biology is not a prerequisite, but it would be helpful. Not for major credit.

3 credits

BIO 151-E Principles of Biology: From Organisms to Ecosystems

A survey of the diversity and evolutionary history of major groups of organisms, ecological relations of organisms to their environments, elementary genetics, and the mechanisms of evolution. Intended for prospective majors. Three hours of lecture and one three-hour laboratory per week.

Mandatory Prerequisites: High school biology and chemistry
4 credits

BIO 152-E Principles of Biology: From Molecules to Organisms

The chemical and cellular bases of structure, energy metabolism, and heredity in living organisms, and the reproduction, development, and physiology of animals. Intended for prospective majors. Three hours of lecture and one three-hour laboratory per week.

Mandatory Prerequisites: High school biology; CHE 111 or 131 or 141; satisfaction of entry skill in mathematics requirement
4 credits

BIO 171-E Honors Biology: Organisms to Ecosystems

An enriched course following the topics of BIO 151, drawing more on the student's previous background in biology, chemistry, and mathematics. The material

is presented in greater detail and with a more quantitative approach. The laboratory includes a research project. Three lectures and one three-hour laboratory per week. May not be taken in addition to BIO 151.

Mandatory Prerequisites: High school biology and chemistry; permission of instructor
4 credits

BIO 172-E Honors Biology: Molecules to Organisms

An enriched course following the topics of BIO 152, drawing more on the student's previous background in biology, chemistry, and mathematics. The material is presented in greater detail and with a more quantitative approach. The laboratory includes a research project. Three lectures and one three-hour laboratory per week. May not be taken in addition to BIO 152.

Mandatory Prerequisites: High school biology; CHE 111 or 131 or 141; MAT 123; permission of instructor
4 credits

BIO 204-H Ecology of Food Production

A survey of the ecology of agricultural systems and the natural limits of food production. Topics include the impact of environmental factors on agricultural systems, the biology of food production by major crop plants, and the role that human population growth and evolution may play in global patterns of feast or famine. May not be taken for credit after BIO 347.

Mandatory Prerequisites: U2 standing; one D.E.C. category E course
3 credits

BIO 208-H Cell, Brain, Mind

An introduction to the human brain and how it is the target of diseases, drugs, and psychological disturbances. The course explores these topics through a knowledge of basic cell neurobiology. The implications of brain science for human behavior in society are also considered. Not for major credit.

Mandatory Prerequisites: High school chemistry or CHE 111; BIO 101 or 152 or 172
3 credits

BIO 213-E Applied 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. Not for credit in addition to the discontinued BIO 113-E.

3 credits

BIO 231 Anatomy Laboratory for Pre-Nursing Students

Mammalian anatomy, including human material and an intensive dissection of the cat. One hour of recitation and one three-hour laboratory per week. Not for major credit.

Mandatory Prerequisite: BIO 152 or 172
2 credits

BIO 232 Physiology Laboratory for Pre-Nursing Students

Laboratory studies in mammalian physiology. One hour of lecture, one hour of recitation, and one three-hour laboratory per week. May not be taken for credit after BIO 335. Not for major credit.

Mandatory Prerequisites: BIO 231 and 328
3 credits

BIO 241-E General Botany

A survey of the plant and fungal kingdoms. Topics include cellular structure and function, photosynthesis and respiration, gross anatomy, taxonomy and the diversity of organisms, fungal and plant ecology, agriculture, and aspects of fungal and plant evolution.

Mandatory Prerequisites: BIO 151, 152 or BIO 171, 172
3 credits

BIO 242-E Zoology

Aspects of the natural history, morphology, and evolution of protozoans, multicellular invertebrates, and vertebrates. Not for credit after BIO 306 or 355.

Mandatory Prerequisite: BIO 252 or 213 or MAR 104
3 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.

Mandatory Prerequisites: BIO 101, 102 or 151, 152 or 171, 172
3 credits

BIO 306-H Ecological Risks and Environmental Decisions

The role of ecology in solving practical environmental problems in aquatic and terrestrial ecosystems. Topics include ecologically based technologies, methods of ecological risk analysis, releases of genetically engineered organisms, and response of ecosystems to pollution and overexploitation.

Mandatory Prerequisites: One D.E.C. category E course; MAT 124 or 125 or 131 or 141
3 credits

BIO 307 Computer Modeling of Biological Systems

Tools for visualizing and modeling biological systems. Tools include graphics programs, spread sheets, 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. Crosslisted with EST 307.

Mandatory Prerequisites: BIO 151 or 152 or 171 or 172; CHE 132; MAT 124 or higher
3 credits

BIO 310-E Cell Biology

The cell is studied as the unit of structure, biochemical activity, genetic control, and differentiation. The principles of biochemistry and genetics are applied to an understanding of nutrition, growth, and development.

Mandatory Prerequisites: C or higher in BIO 152 or 172; 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.

Mandatory Prerequisites: CHE 132 or 142; BIO 151, 152 or 171, 172; MAT 125 or higher; permission of instructor
3 credits

BIO 314-E Biological Clocks

The temporal dimension of biological organization focusing on the cellular and molecular timekeeping mechanisms characteristic of living systems. Topics include a survey of circadian rhythms and their properties in eukaryotic microorganisms; cell cycle clocks; the quest for anatomical loci; dissection of clocks by chemical and molecular genetic techniques; entrainment and coupling pathways; biochemical and molecular models of circadian oscillators; pacemaker dysfunction; cellular aspects of chrono-pharmacology and chronotherapy; and cellular clocks in development and aging.

Mandatory Prerequisite: BIO 310 or 325 or 361 or 374
3 credits

BIO 315-E Microbiology

The organization, structure, energetics, and reproduction of microorganisms. Interactions of bacteria and viruses are discussed.

Mandatory Prerequisites: BIO 151, 152 or 171, 172; CHE 322
3 credits

BIO 317-E Principles of Cellular Signaling

Basic principles of cellular signaling and maintenance of cellular and organismic homeostasis through intra- and intercellular signaling mechanisms. Emphasis is on relationships between nuclear events and ongoing processes of the cell. The roles of membrane receptors and second-messenger pathways in mediating such diverse events as bacterial chemotaxis, protozoan locomotion, and secretion are discussed.

Mandatory Prerequisites: BIO 152 or 172
3 credits

BIO 320-E General Genetics (Formerly BIO 220)

An introductory course in genetics for biology majors. General areas to be discussed include transmission genetics, cytogenetics, immunogenetics, molecular genetics, population genetics, and quantitative genetics.

Mandatory Prerequisites: BIO 151, 152 or 171, 172
Mandatory Pre- or corequisite: CHE 131 or 141
3 credits

BIO 321-E Animal Embryology

A survey of the developmental anatomy of vertebrates. Laboratory exercises consist of the study of embryonic development from sectioned material and whole embryos of selected vertebrates. Lectures and readings cover the principal developmental sequences and some of the important experimental analyses of these processes. Three hours of lecture and one three-hour laboratory per week.

Mandatory Prerequisite: BIO 151 or 152 or 171 or 172
4 credits

BIO 323-E Plant Cell and Developmental Biology

Problems of plant growth, development, and morphogenesis with special reference to higher plants. Topics include cellular processes related to development, and cell-cell interactions during histogenesis and morphogenesis. Biotechnological implications are considered.

Mandatory Prerequisites: BIO 151, 152 or 171, 172; CHE 321 or 331
3 credits

BIO 325-E Animal Development I

The development of form and function in multicellular animals, emphasizing experimental analysis of diverse animal systems. The first semester focuses on basic processes, including molecular genetics, cell biology, and biochemistry of developmental control, signaling, positional information, and specification of cell fate.

Mandatory Prerequisite: C or higher in BIO 320
Mandatory Pre- or corequisite: CHE 321 or 331
3 credits

BIO 326-E Animal Development II

A continuation of BIO 325, focusing on how the fundamental developmental mechanisms described in the first semester operate in a coordinated fashion to generate mature animals. Germ layer fate specification, gastrulation, neurulation, induction, and cell-cell communication will receive particular attention.

Mandatory Prerequisite: C or higher in BIO 325
Mandatory Pre- or corequisite: CHE 321 or 331
3 credits

BIO 328-E Mammalian Physiology

The basic principles of mammalian physiology. The subject matter includes circulation, respiration, nutrition, excretion (and their control by the nervous and endocrine systems), and sensation and coordination. May not be taken for credit in addition to HBY 350.

Mandatory Prerequisite: BIO 152 or 172
Advisory Prerequisite: CHE 111 or 131 or 141
3 credits

BIO 330-E Comparative Physiology

An introduction to the physiological adaptations of various animal species to environmental variables. Emphasis is placed on homeostatic mechanisms at the organismic level.

Mandatory Prerequisite: BIO 328 or 343 or 353
3 credits

BIO 334-E Principles of Neurobiology

The ionic basis of nerve potentials, the physiology of synapses, sense organs and effectors, and the integrative action of the nervous system are discussed.

Mandatory Prerequisites: BIO 152 or 172; 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.

Mandatory Prerequisites: CHE 132, 133
Mandatory Pre- or corequisite: BIO 328
3 credits

BIO 343-E Invertebrate Zoology

Aspects of the diversity, comparative and functional morphology, natural history, evolution, and water-land transitions of invertebrates exclusive of arthropods. Three hours of lecture and one three-and-one-half-hour laboratory per week.

Mandatory Prerequisite: BIO 151 or 171 or MAR 104
4 credits

BIO 344-E Chordate Zoology

An introduction to the diversity, comparative and functional morphology, natural history, and evolution of chordates, with interest centered on the modern fauna. Three hours of lecture or discussion and one three-and-one-half-hour laboratory per week. Not for credit in addition to BIO 346.

Mandatory Prerequisite: BIO 151 or 171.
4 credits

BIO 346-E Aquatic Arthropods and Vertebrates

Aspects of the diversity, comparative and functional morphology, natural history, and evolution of arthropods and vertebrates. Water-land transitions are considered. Three hours of lecture and one three-and-one-half-hour laboratory per week. Not for credit in addition to BIO 344.

Mandatory Prerequisite: BIO 151 or 171 or MAR 104
4 credits

BIO 347-H Botany and Biotechnology

An introduction to the developmental origin, structure, and growth of the higher plant body as a basis for understanding the broader principles of plant biology and biosynthesis of useful products, as well as the relations of plants to human life. Economically important plants and their products, especially as sources of food, shelter, clothing, drugs, and industrial raw materials, are stressed. Current problems in agriculture, medicine, plant industry, and biotechnology, as well as the use, conservation, and appreciation of plants are included.

Mandatory Prerequisites: BIO 151, 152 or 171, 172
Mandatory Pre- or corequisite: CHE 321 or 331
3 credits

BIO 350-H Darwinian Medicine

Evolutionary mechanisms will be presented as background to interpret the ultimate causes for degenerative and infectious diseases and their symptoms. The evolution of mechanisms by which humans resist infection of pathogen evolution in response to natural and technological defenses, and of phenomena associated with several other medically important phenomena will be discussed. Evolutionary phenomena will be treated from molecular, organismal, populational, and ecological levels.

Mandatory Prerequisite: BIO 320
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.

Mandatory Prerequisites: BIO 151 or 171; completion of mathematics requirement for biology major
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.

Mandatory Pre- or corequisite: BIO 351; permission of instructor
3 credits

BIO 353-E Marine Ecology

A survey of biotic responses to ecological challenges in different marine realms. Controls of diversity and trophic structure in the marine ecosystem, historical aspects of marine realms, productivity in the oceans, plankton, soft-bottom communities, intertidal habitats, coral reefs, deep-sea environments, and effects

of pollution in the ocean are discussed. Crosslisted with GEO 353.

Mandatory Prerequisite: BIO 151 or 171 or MAR 104
Advisory Prerequisite: BIO 343
3 credits

BIO 354-E Evolution

A detailed discussion of the mechanisms of evolution, focusing on the ways in which genetic changes in populations lead to adaptation, speciation, and historical patterns of evolutionary change.

Mandatory Prerequisite: BIO 320
3 credits

BIO 355 Computer Modeling Techniques in Ecology

An introduction for advanced biology majors to the use of software as applied to ecology and conservation biology. This computer laboratory course uses packaged ecological software to teach analytical and simulation methods for ecological risk and endangered species evaluations.

Mandatory Prerequisites: A year of calculus; BIO 151 and 152
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. Not for credit after BIO 306 or 355.

Mandatory Prerequisites: MAT 126 or higher; BIO 151 and 152
2 credits

BIO 357-E General Microbial Ecology

An introduction to the study of the interaction of microorganisms with their natural or artificial environments. The course includes the historical development of microbial ecology, a review of microbial diversity and structure, ecological parameters, population interactions, applied microbial ecology, experimental design and data analysis, and ecosystem modeling as applied to microbial ecology.

Mandatory Prerequisites: BIO 151, 152 or 171, 172; CHE 322 or 332
3 credits

BIO 359-E Behavioral Ecology

A consideration of the patterns of animal behavior in relation to ecological circumstances and evolutionary history. Vertebrate examples are emphasized.

Mandatory Prerequisites: BIO 151, 152 or 171, 172
3 credits

BIO 361-E, 362-E Biochemistry I, II

Biochemistry I surveys the major chemical constituents of the cell, including carbohydrates, lipids, and proteins. Emphasis is on enzyme structure, enzyme kinetics, reaction mechanisms, and metabolic pathways. Biochemistry II treats nucleic acid structure, replication, and transcription, both in vivo and in vitro. The machinery of protein synthesis is also covered, including amino acid activation; transfer RNA; ribosomes; the genetic code; and peptide chain initiation, elongation, and termination.

Mandatory Prerequisites for BIO 361: C or higher in BIO 152 or 172; CHE 322 or 332

Mandatory Prerequisite for BIO 362: C or higher in BIO 361

3 credits per class

BIO 365 Biochemistry Laboratory

A series of laboratory experiments and discussions designed particularly to complement BIO 361. Topics include isolation of cellular organelles, extraction and characterization of nucleic acids and enzymes, recombinant DNA technology, photosynthesis, electrophoresis, and column chromatography. Four hours of laboratory and discussion per week.

Mandatory Pre- or corequisite: BIO 310 or 361
2 credits

BIO 366-E Protein Crystallography

The determination of the three-dimensional structures of biological macromolecules using the X-ray diffraction analysis of their single crystals.

Mandatory Prerequisites: CHE 322 or 332; MAT 127 or 132 or 142

Advisory Prerequisite: BIO 361
3 credits

BIO 374-E Molecular Biology of Learning and Memory

Cellular and molecular processes of nerve excitability, neurotransmission, and higher-order functions such as learning and memory. Molecular events underlying those aspects of neural development that contribute to the plasticity of the adult nervous system are emphasized. Invertebrate and vertebrate model systems are used to illustrate the relation of cellular processes to behavioral adaptation.

Mandatory Prerequisite: BIO 310 or 328 or 334 or 361
3 credits

BIO 379-E Developmental Neurobiology

An introduction to the development of the nervous system. General areas to be discussed include neuroembryology, neuronal differentiation, synapse formation, neurotrophic interactions, and specificity and plasticity of neuronal connections.

Mandatory Prerequisite: BIO 310 or 334
Advisory Prerequisite: BIO 361
3 credits

BIO 380-E Entomology

A survey of the anatomy, development, classification, biogeography, physiology, ecology, and evolution of the insects. The laboratory will stress a knowledge of insect diversity and morphology. Three hours of lecture and three hours of laboratory per week.

Mandatory Prerequisites: BIO 151, 152 or 171, 172
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.

Mandatory Prerequisites: BIO 151, 152 or 171, 172
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.

Mandatory Prerequisite: CHE 322.

Mandatory Pre- or corequisite: MAT 125
Advisory Prerequisite: BIO 151 or 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. May be repeated as subject matter differs.

Mandatory Prerequisite: Permission of instructor
2 credits per class

BIO 407 Colloquium in Ecology and Evolution for Biology Majors

Students will attend the weekly departmental colloquia in ecology and evolution. The content of each session will be discussed during a separate class meeting. Conducted as a seminar.

Mandatory Prerequisites: BIO 151, 152 and 320; 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

May be repeated as topic varies.

Mandatory Prerequisite: Varying with topic
2 credits

BIO 430 Approaches to Current Researches in Neuroscience

Use of the scientific method, focusing on neurosciences. Topics are chosen from neuroanatomy, molecular and cellular neurobiology, integrative and system neurophysiology, and neuroethology. Intended to prepare students for research in neuroscience.

Mandatory Prerequisites: BIO 152 or 172; CHE 321 or 331; permission of instructor.

Mandatory Corequisite: BIO 317 or 328 or 334
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
May be repeated, but not more than two credits may be used toward biology major requirements. Limit of one topic per semester.

Mandatory Prerequisites for BIO 444, 446, and 449: Written permission of instructor and undergraduate studies committee

Mandatory Prerequisites for BIO 447: Permission of instructor and Department of Biochemistry and Cell Biology

1-2 credits per class, S/U grading

BIO 475 476 Undergraduate Teaching Practicum in College Biology I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to BIO 475: Permission of instructor and undergraduate studies committee

Mandatory Prerequisites to BIO 476: BIO 475; Permission of instructor and undergraduate studies committee

2-3 credits per class, 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
May be taken for more than two semesters, but no more than four credits of research and internship may be used for biology major requirements. Limit of one topic per semester. BIO 484 does not apply to the laboratory requirements of the biology major.

Mandatory Prerequisites for 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.

Mandatory Prerequisites for BIO 487: Permission of instructor and Department of Biochemistry and Cell Biology

Advisory Prerequisite for BIO 486: BIO 430

1-4 credits per class, S/U grading

BIO 488 Internship in Biological Sciences

May be repeated, but no more than four credits of research and internship may be counted toward the biology major.

Mandatory Prerequisites: BIO 151, 152 or 171, 172; CHE 132; permission of faculty sponsor, biology internship committee, and the Office of Undergraduate Academic Affairs

3-12 credits per class, S/U grading

CBN**Center for Behavioral Neurobiology****CBN 241-F Survey in Biopsychology**

Introduction to the neural basis of sensor processes, motor control, attention, emotion, and learning. Crosslisted with PSY 250.

Mandatory Prerequisite: PSY 103 or BIO 101 or 151 or 171

3 credits

CBN 340 Behavioral Neuroscience

An advanced survey of the neurobiological bases of complex behavior. A review of basic neurophysiology, neuroanatomy, and neurochemistry is followed by considerations of the circuitry and neural processing supporting perception, motion, emotion, sleep, attention, learning, language, and higher cognitive mechanisms. Crosslisted with PSY 356

Mandatory Prerequisite: BIO 152 or 172 or CBN 241/PSY 250

3 credits

CBN 350 Neurobiology of Learning and Memory

A survey of research on the neural basis of learning and memory in humans and laboratory animal models. Topics include cellular mechanisms of neural plasticity, learning and memory in simple nervous systems, the organization of memory in the mammalian brain, and the neurobiology of memory decline during aging.

Mandatory Prerequisite: CBN 340/ PSY 356 or BIO 334

3 credits

**CHE
Chemistry****CHE 111-E Elementary Chemistry I**

An introduction to the concepts of chemical composition, structure, and reactions, illustrated with examples from the life sciences. Appropriate for students preparing for admission to nursing and some other undergraduate health professions programs, liberal arts students, and those lacking high school preparation for CHE 131. Except for pre-nursing students, any student who has completed high school chemistry or a college chemistry course needs permission to take this course.

Mandatory Pre- or corequisite: MAP 102 or 103 or equivalent by placement exam or transfer evaluation
3 credits

CHE 112-E Elementary Chemistry II

A terminal course in fundamental organic and biological chemistry, appropriate for students preparing for admission to nursing and some other undergraduate health professions programs.

Mandatory Prerequisite: CHE 111 or 131
3 credits

CHE 131-E, 132-E General Chemistry

A broad introduction to the fundamental principles of chemistry, including substantial illustrative material drawn from the chemistry of inorganic, organic, and biochemical systems. The principal topics covered are stoichiometry, the states of matter, chemical equilibrium and introductory thermodynamics, electrochemistry, chemical kinetics, electron structure and chemical bonding, and chemical periodicity. The sequence emphasizes basic concepts, problem solving, and factual material. It provides the necessary foundation for students who wish to pursue further coursework in chemistry. This sequence is inappropriate for students who have completed two or more years of chemistry in high school; such students should take CHE 141, 142. Three lecture hours and one discussion hour per week. CHE 131 may not be taken for credit in addition to CHE 141, and CHE 132 may not be taken for credit in addition to CHE 142 or 198.

Mandatory Prerequisite to CHE 131: High school chemistry or CHE 111

Mandatory Prerequisite to CHE 132: MAT 123 or higher or equivalent by placement exam or transfer evaluation

Mandatory Prerequisite to CHE 132: C or higher in CHE 131

Mandatory Pre- or corequisite to CHE 132: MAT 124 or higher

4 credits per class

CHE 133, 134 General Chemistry Laboratory

Designed to familiarize students with (1) some chemical and physical properties of substances, (2) techniques of quantitative chemistry, and (3) scientific methodology. Four hours of laboratory and discussion per week. CHE 133 may not be taken for credit in addition to CHE 143, and CHE 134 may not be taken for credit in addition to CHE 144 or 199.

Mandatory Pre- or corequisite to CHE 133: CHE 131 or 198

Mandatory Prerequisite to CHE 134: CHE 133

Mandatory Pre- or corequisite to CHE 134: CHE 132 or 198

1 credit per class

CHE 141-E, 142-E Honors Chemistry

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 discussion hour per week. CHE 141 may not be taken for credit in addition to CHE 131, and CHE 142 may not be taken for credit in addition to CHE 132 or 198. Priority given to students in the University's honors programs.

Mandatory Prerequisite to CHE 141: High school chemistry

Mandatory Pre- or corequisite to CHE 141: MAT 125 or higher or equivalent by placement exam or transfer evaluation

Mandatory Prerequisite to CHE 142: C or higher in CHE 141

Mandatory Pre- or corequisite to CHE 142: MAT 126 or higher

4 credits per class

CHE 143, 144 Honors Chemistry Laboratory

Laboratory program similar in content to CHE 133, 134 but conducted at a more intensive and stimulating level. Four hours of laboratory and discussion per week. CHE 143 may not be taken for credit in addition to CHE 133, and CHE 144 may not be taken for credit in addition to CHE 134 or 199. Priority given to students in the University's honors programs.

Mandatory Corequisite to CHE 143: CHE 141

Mandatory Prerequisite to CHE 144: CHE 143

Mandatory Corequisite to CHE 144: CHE 142

1 credit per class

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.

Mandatory Prerequisite: High school chemistry

Mandatory Corequisite: CHE 199

Mandatory Pre- or corequisites: PHY 132 or 142 or 126, 127; MAT 127 or 132 or 142

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.

Mandatory Corequisite: CHE 198

1 credit

CHE 221-E Introduction to Chemistry of Solids

Introduction to the synthesis, structure, properties, and applications of solid materials. Topics include preparation and characterization of solids (introduction to X-ray diffraction), thermal decomposition, crystal structure, crystal defects, and solid-state properties that influence chemical reactivity. Crosslisted with ESM 221.

Mandatory Prerequisites: CHE 132 or 142 or 198; MAT 131 or 141 or 126

3 credits

CHE 301-E Physical Chemistry I

The quantitative study of microscopic and macroscopic chemical systems, covering introductory quantum theory of atoms and molecules (energy levels and states), statistical thermodynamics, and fundamental thermodynamics with application to chemical reactions and simple systems.

Mandatory Prerequisites: CHE 132 or 142 or 198; MAT 132 or 142 or 127

Mandatory Pre- or corequisite: PHY 121 or 125 or 131 or 141
4 credits

CHE 302-E Physical Chemistry II

Applications of thermodynamics to chemical equilibria, electrochemistry, and ideal solutions. Applications of quantum theory to chemical bonding, molecular structure, and spectroscopy.

Mandatory Prerequisites: CHE 301; MAT 211 or 203 or 205 or AMS 261

Mandatory Pre- or corequisite: PHY 122 or 132 or 142 or 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.

Mandatory Prerequisite: CHE 134 or 144 or 199

Mandatory 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.

Mandatory Prerequisite: CHE 303

Mandatory Corequisite: CHE 302

Advisory Prerequisite: Knowledge of computer programming
2 credits

CHE 305-E Physical Chemistry III

Application of the principles of physical chemistry to real-world systems, both microscopic and macroscopic. Among the topics to be addressed are chemical kinetics and dynamics, nonideal solutions and electrochemical systems, transport properties, and applications of statistical mechanics and quantum theory to chemical systems.

Mandatory Prerequisite: CHE 302

3 credits

CHE 310-H Chemistry in Technology and the Environment

Use of chemical principles in understanding processes that occur in the modern technological world and in the natural environment. Certain ecological problems of a chemical nature are analyzed. Methods of controlling these problems are discussed.

Mandatory Prerequisite: CHE 112 or 132 or 142 or 198
3 credits

CHE 312-E Physical Chemistry (Short Course)

A one-semester treatment of fundamental concepts of physical chemistry, intended primarily for students of the biological sciences desiring an introduction to physical chemistry. Topics include equations of state; classical thermodynamics and its application to chemical equilibrium in reaction systems, multiphase systems, and electrochemical cells; kinetic theory of gases; transport properties; chemical kinetics. Cannot be taken for credit by students who have completed CHE 301. Not for major credit.

Mandatory Prerequisites: CHE 132 or 142 or 198; MAT 127 or 132 or 134

Mandatory Pre- or corequisite: PHY 121 or 125 or 131 or 141
3 credits

CHE 321-E, 322-E Organic Chemistry

A systematic discussion of the structures, physical properties, and syntheses of carbon compounds, based on modern views of chemical bonding and mechanism. The chemistry of substances important in biology and technology, including macromolecules, is emphasized. CHE 321 may not be taken for credit in addition to CHE 331, and CHE 322 may not be taken for credit in addition to CHE 332.

Mandatory Prerequisites to CHE 321: CHE 132 or 142; CHE 134 or 144

Mandatory Prerequisite to CHE 322: C or higher in CHE 321

3 credits per class

CHE 327 Organic Chemistry Laboratory

Techniques of isolating and handling organic substances, including biological materials. A one-semester course that provides a basic organic laboratory experience. It is recommended that students take CHE 327 at the same time as or immediately following CHE 322 or 332. Safety considerations make it necessary to prohibit wearing contact lenses in these laboratories. Four laboratory hours and one lecture hour per week. Not for credit in addition to CHE 333.

Mandatory Prerequisite: CHE 134 or 144

Mandatory Pre- or corequisite: CHE 321 or 331; permission of department

2 credits

CHE 331-E, 332-E Honors Organic Chemistry

An organic chemistry course similar to CHE 321, 322 but providing a more fundamental view of organic compounds, reaction mechanisms, and synthesis, based somewhat more explicitly on thermodynamics and kinetics. Especially for those who may major in chemistry, biochemistry, or another physical science. CHE 331 may not be taken for credit in addition to CHE 321, and CHE 332 may not be taken for credit in addition to CHE 322.

Mandatory Prerequisites to CHE 331: CHE 132 or 142; CHE 134 or 144

Mandatory Prerequisite to CHE 332: C or higher in CHE 331

3 credits per class

CHE 333, 334 Organic Chemistry Laboratory B

Fundamental laboratory techniques of organic chemistry, including methods of isolation, purification, and structure identification, with applications to synthetic, structural, and mechanistic problems. For students who require substantial laboratory skills, such as those planning careers in research. Safety considerations make it necessary to prohibit wearing contact lenses in these laboratories. Not for credit in addition to CHE 327.

Mandatory Prerequisite: CHE 134 or 144

Mandatory Corequisites: CHE 321, 322 or 331, 332

Mandatory Prerequisite to CHE 334: CHE 333

2 credits per class

CHE 344-E Spectroscopy of Organic Compounds

Modern spectroscopic methods applied to organic compounds. Structural effects on spectroscopic properties are surveyed with dual emphasis on fundamental aspects and problem solving. The student learns how spectroscopic methods are used both to solve complex structural problems and to investigate bonding features in organic molecules.

Mandatory Prerequisite: CHE 322 or 332

3 credits

CHE 345-E Structure and Reactivity in Organic Chemistry

Electronic and stereochemical theories relating to organic structure and reactions. Topics such as bonding, strain, aromaticity, MO theory, molecular rearrangements, pericyclic reactions, and photochemistry are covered.

Mandatory Prerequisite: CHE 322 or 332

Mandatory Pre- or corequisite: CHE 301 or 312

3 credits

CHE 346-E Biomolecular Structure and Reactivity

The reactivity and physiological function of biological macromolecules and their monomeric constituents are described at the chemical level. The course reflects the most recent advances at the interface of organic chemistry and biochemistry. Specific topics include catalysis, biomimicry, protein and DNA modification, binding and target recognition, and correlation between three-dimensional structure and reactivity.

Mandatory Pre- or corequisite: BIO 361

3 credits

CHE 351-E Quantum Chemistry

Concepts of quantum theory, Schrödinger wave mechanics, and related mathematical techniques illustrated by application to systems of chemical bonding, spectroscopy, molecular structure, and molecular collision phenomena.

Mandatory Prerequisites: CHE 302; MAT 203 or 205

3 credits

CHE 353-E Chemical Thermodynamics

A rigorous development of thermodynamics and its application to systems of interest to chemists, including electrochemical cells, gases, polymers, and homogeneous and heterogeneous equilibrium. An introduction to statistical mechanics is included.

Mandatory 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.

Mandatory Prerequisites: CHE 304 and 333

2 credits

CHE 361-E Nuclear Chemistry

Properties of radioactive substances and their use in the study of chemical problems, nuclear stability and structure, nuclear reactions, radioactive decay, interactions of radiation with matter, nuclear medicine, isotope applications, and environmental control. Offered in summer only.

Mandatory Prerequisites: Four semesters of chemistry; PHY 132 or 142 or 126, 127; MAT 127 or 132 or 142; permission of department through application by January 30

Mandatory 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.

Mandatory Corequisite: CHE 361

3 credits

CHE 375-E Inorganic Chemistry I

A survey of inorganic chemistry covering various classes of inorganic compounds and reactions with emphasis on the structural aspects. Wherever possible, the subject is treated on the basis of modern concepts of chemical bonding. Thermodynamic and kinetic aspects of inorganic reactions are included.

Mandatory Prerequisites: CHE 302; CHE 321 or 331

3 credits

CHE 376-E Inorganic Chemistry II

The chemistry of the elements with an emphasis on the transition metals. Reaction mechanisms, synthesis, and structure are covered. Specific areas of concern include coordination chemistry, organometallic chemistry, bioinorganic chemistry, and selected topics from solid-state and non-transition metal chemistry.

Mandatory Prerequisite: CHE 375

3 credits

CHE 377 Inorganic Chemistry Laboratory

Synthesis of inorganic and organometallic compounds and characterization by physical and chemical methods.

Mandatory Prerequisites: CHE 303; CHE 327 or 333; CHE 375

2 credits

CHE 461 Selected Topics in Chemistry

May be repeated as topic varies.

Mandatory Prerequisites: Varying with topic

1-3 credits

CHE 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisite to CHE 475: Permission of department

Mandatory Prerequisites to CHE 476: CHE 475; permission of department

3 credits per class, S/U grading

CHE 487 Tutorial in Special Topics in Chemistry

May be repeated.

Mandatory Prerequisites: Permission of instructor and department

1-3 credits

CHE 488 Internship

May be repeated up to a limit of 12 credits.

Mandatory Prerequisites: CHE 334; permission of instructor, department, and Office of Undergraduate Academic Affairs

3-6 credits, *SIU grading*

CHE 490 Current Trends in Biological Chemistry I

A discussion of current topics of research and methodology in modern biological chemistry. The course will include directed readings, attendance, and discussion at seminars presented by speakers from various academic and industrial institutions. May be repeated.

Mandatory Prerequisite: CHE 322 or 332

Mandatory Pre- or corequisite: CHE 301 or 312
3 credits

CHE 491-492 Senior Research

A two-semester research program to be carried out under the supervision of a staff member. The results of this work are to be submitted to the department in the form of a senior research report. The student is given an oral examination in May by a faculty committee consisting of the student's supervisor and three other faculty members. A composite grade for the two semesters is assigned.

Mandatory Prerequisites: U4 standing; permission of instructor and department

3 credits per class

CHI**Chinese Language Courses;****CNH****Chinese Studies in Humanities;****CNS****Chinese Studies in Social Sciences****CHI 111, 112 Elementary Chinese I, II**

An introduction to spoken and written Chinese Mandarin, with equal attention to speaking, reading, and writing. Laboratory practice supplements class work. No student who has had two or more years of Chinese in high school or who has otherwise acquired an equivalent proficiency will be permitted to enroll in CHI 111 without written permission from the supervisor of the course.

Mandatory Prerequisite to CHI 112: CHI 111

4 credits per class

CHI 211-J, 212-J Intermediate Chinese I, II (Formerly CHI 191, 192)

An intermediate course in Chinese Mandarin to develop audiolingual skills and reading and writing ability. Selected texts serve as the basis for practice in reading comprehension and composition. Intensive exercises in character writing will be required to develop writing technique.

Mandatory Prerequisite to CHI 211: CHI 112

Mandatory Prerequisite to CHI 212: CHI 211

3 credits per class

CHI 311-J, 312-J Advanced Chinese I, II (Formerly CHI 221, 222)

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.

Mandatory Prerequisite to CHI 311: CHI 212

Mandatory Prerequisite to CHI 312: CHI 311

3 credits per class

CHI 475 Undergraduate Teaching Practicum

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: Interview; permission of instructor

3 credits

CHI 487 Independent Research

Mandatory Prerequisites: Interview; permission of instructor

3 credits

CNH, CNS 447 Readings in Chinese Studies

Mandatory Prerequisite: Permission of instructor

3 credits per class

CNH, CNS 461 Senior Seminar in Chinese Studies

A seminar exploring in depth a single theme in Chinese studies, e.g., ideological and political campaigns, art and literature, educational policies and practices, foreign trade and tourism, etc. The designator CNH is assigned to topics in the humanities area; CNS is assigned to topics in the social and behavioral sciences. May be repeated once as topic differs.

Mandatory Prerequisites: U3 or U4 standing; Chinese or Korean or Japanese studies minor; permission of instructor

3 credits per class

CNH, CNS 487 Research in Chinese Studies

Individual research projects in Chinese studies carried out under the direct supervision of a faculty member. The designator CNH is assigned to topics in the humanities area; CNS is assigned to topics in the social and behavioral sciences. May be repeated once.

Mandatory Prerequisites: Interview; permission of instructor

1-3 credits

CNS 249-J Chinese Culture and Society: Traditional China

An interdisciplinary consideration of those cultural and social elements in traditional China that have had a lasting impact and given unique shape to Chinese civilization. Topics include land and resources; religion and philosophy; art and architecture; science and technology; language and literature; and socioeconomic development. Crosslisted with SSI 249-J

3 credits

CNS 250-J Chinese Culture and Society: Modern China

An interdisciplinary consideration of themes that dominate the development of modern China. Topics include history and geography; ideology and organization; the individual and the state; the family and society; conflict in society; the economy; literature and the arts; science and technology; and future prospects. Crosslisted with SSI 250-J

3 credits

CLS**Classics****CLS 113-B Greek and Latin Literature in Translation**

Historical and analytical study of the development of classical Greek and Latin literature. Extensive readings in translation include works illustrating epic, lyric, drama, history, oration, and literary criticism.

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-I Topics in Classical Civilization

Mandatory Prerequisites: Two courses in ancient Greek or Latin language, literature, mythology, religion, art, or history

3 credits

CLS 447 Directed Readings in Classics

Mandatory Prerequisite: Permission of instructor

1-4 credits

CSL**Comparative Studies in Literature****CSL 211-I Literary Survey: Medieval Through Late Renaissance**

Historical and analytical study of representative works illustrating medieval epic, romance, and lyric. The beginnings of humanism through the late Renaissance.

Advisory Prerequisite: One course in literature
3 credits

CSL 212-I Literary Survey: Enlightenment through Modern

Historical and analytical study of literature from the late 17th century, the neoclassic era, the romantic revolution, and the 19th century (realism, naturalism, symbolism), leading to the culmination of modernism.

Advisory Prerequisite: One course in literature
3 credits

CSL 220-J Non-Western Literature

A survey of the major themes and forms of non-Western literature, such as Oriental, Indian, and African. Topics vary. May be repeated.

Advisory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation

3 credits

CSL 235-K American Pluralism in Film and Literature

An exploration of the diversity of American culture as expressed in literary and cinematic texts from a variety of traditions within the American fabric. Topics may include representations of the immigrant experience, fictional accounts of African-American or Latino music, and intensive examination of novels and films from a specific American ethnic tradition.

Advisory Prerequisite: Completion of D.E.C. categories I and J

3 credits

CSL 266-G The 20th-Century Novel

A study of major works and developments in the modern and contemporary novel. Crosslisted with EGL 266.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation

3 credits

CSL 301-G Theory of Literature

An introduction to the different modes of analyzing literature by periods, ideas, traditions, genres, and aesthetic theories. Stress is placed on classical theory and on developments in the 20th century.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in comparative literature

3 credits

CSL 320-K Multicultural Experience in American Literature

An exploration of the roles of ethnicity and race in American culture through the fiction and poetry of three or more of the following ethnic groups: Native American, African American, Italian, Irish, Jewish, Greek, Latino, and Asian.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: One 200-level course in literature; completion of D.E.C. categories I and J

3 credits

CSL 331-G Literary Genres: Poetry

Analysis of poetic form as illustrated by various kinds of poetry, e.g., epic and lyric. Works selected from different national literatures and literary movements.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CSL 332-G Literary Genres: Drama

Analysis of dramatic form through readings of major works in tragedy and comedy. Works selected from different national literatures and literary movements.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CSL 333-G Literary Genres: Novel

Historical and analytical study of the novel form. Works selected from different national literatures and literary movements.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CSL 334-G Other Literary Genres

Historical and analytical study of such literary genres as satire, fable, romance, epistle, saga, allegory, etc.
Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in literature
 3 credits

CSL 335-G The Interdisciplinary Study of Film

An inquiry into the aesthetics, history, and theory of film as it relates principally to literature but also to disciplines such as art, music, psychology, and cultural history.
Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: One course in literature; HUM 201 or 202 or THR 117
 3 credits

CSL 361-G Literature and Society

An inquiry, interdisciplinary in nature, into the relationship between the events and materials of political and social history and their effect on the form and content of the literature of a period. Also subsumed under the rubric Literature and Society is the topic Literature and Psychology.
Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in literature
 3 credits

CSL 362-G Literature and Ideas

An inquiry into the primary writings and significant documents in the history of ideas and their effect on the form and content of the literature of a period.
Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in literature
 3 credits

CSL 363-G Literature and the Arts

An inquiry into the aesthetic milieu (including the plastic arts, theatre, and music) and its relationship to the form and content of the literature of a period.
Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in literature
 3 credits

CSL 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.
Mandatory Prerequisites: to CSL 475: U4 standing; permission of instructor and chairperson
Mandatory Prerequisites: to CSL 476: CSL 475; permission of instructor and chairperson
 3 credits per class, S/U grading

CSL 467 Independent Reading and Research

Mandatory Prerequisites: Permission of instructor and department
 3 credits

CSL 495 Comparative Studies in Literature Honors Project

Mandatory Prerequisites: Permission of instructor and department
 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 will be presented. Not for credit in addition to the discontinued ECO 101.
Mandatory Prerequisites: MAP 103 or equivalent; EGC 100 or higher or equivalent by placement examination or transfer evaluation
 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 will stress the development of problem-solving skills and the use of the personal computer as an analytical tool. No previous knowledge of computers is assumed. Not for credit in addition to the discontinued ECO 101.
Mandatory Prerequisite: EGC 100 or higher or equivalent

by placement examination or transfer evaluation
Mandatory Pre- or corequisite: MAT 123 or equivalent
 4 credits

ECO 303-F Intermediate Microeconomic Theory

Analytical study of the behavior of fundamental economic units (consumer and the firm) and its implications for the production and distribution of goods and services. Emphasis on the use of economic theory to provide explanations of observed phenomena, including the analytical derivation of empirically verifiable propositions.

Mandatory Prerequisites: A grade of C or higher in one semester of calculus; ECO 101 or 107 and 109
 4 credits

ECO 305-F Intermediate Macroeconomic Theory

The theory of national income determination, employment, distribution, price levels, inflation, and growth. Keynesian and classical models of the different implications of monetary and fiscal policy.

Mandatory Prerequisites: A grade of C or higher in one semester of calculus; ECO 101 or 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.

Mandatory Pre- or corequisite: ECO 303
 4 credits

ECO 315-J Economic Development of Latin America (Formerly ECO 302)

An analysis of patterns of economic development as they have been affected by the market and by planning-oriented government policies. The evolving roles of public and private sectors in Latin America are examined on a comparative basis among several countries, particularly with reference to agrarian reform, industrialization, human development, and international trade and investment.

Mandatory Prerequisite: ECO 101 or 107 or 109
 3 credits

ECO 317-F Marxist Political Economy

A Marxian analysis of capitalism, including some of the writings of Marx, Lenin, and Mao Zé D -ong. The method of dialectical, historical materialism is applied to the historical development of capitalism, the operation of modern advanced monopoly capitalism, and such phenomena as economic crisis, war, and the capitalist conditions that give rise to socialism.

Mandatory Prerequisite: ECO 101 or 107 or 109
 3 credits

ECO 318-F Labor Economics

Analysis of labor demand and supply, wage determination, and collective bargaining. Evaluation of labor legislation and of institutional responses to employment problems will be discussed.

Mandatory Prerequisite: ECO 101 or 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. Students may not receive credit for this course and AMS 310.

Mandatory Prerequisites: ECO 101 or 107 and 109; one semester of calculus
 4 credits

ECO 321-F Econometrics

The application of mathematical and statistical methods to economic theory. Topics include the concept of an explanatory economic model, multiple regression, hypothesis testing, simultaneous equation models, and estimating techniques. Emphasis is placed on the application of econometric studies.

Mandatory Prerequisite: ECO 320 or AMS 310 and ECO 101 or 107 and 109; one semester of calculus
 4 credits

ECO 325-F International Economics

Economic theory of international trade, protection, commercial policy, customs unions, capital movements, and international finance.

Mandatory Prerequisite: ECO 303
 3 credits

ECO 326-F 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 will be discussed.

Mandatory Prerequisite: ECO 303
 3 credits

ECO 333-F Demographic Economics

Problems related to both economics and demography. In scope, the material deals with both contemporary and historical situations and with both developing and developed countries. Microeconomic aspects of the course concern fertility, marriage, divorce, and migration; macroeconomic aspects concern the implications for growth and development of various patterns of population increase.

Mandatory Prerequisites: ECO 303 and 305
Mandatory Pre- or corequisite: ECO 321
 3 credits

ECO 335-F Economic Development

An examination of problems and aspects facing developing countries in the transition from traditional, predominantly rural economic systems to modern, largely urban-oriented economies. Theories of economic growth and development are presented in the light of the actual experience of developing countries.

Mandatory Prerequisite: ECO 305
 3 credits

ECO 337-F Advanced Labor Theory

Microeconomic theory is used to investigate specific topics in the field of labor economics. Areas to be covered include the household's decision-making process and the supply of labor, investments in human capital and discrimination in the marketplace, the effect of market structure on the demand for labor, and the distribution of income.

Mandatory 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.

Mandatory Prerequisite: ECO 101 or 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.

Mandatory Prerequisite: ECO 101 or 107 or 109
 3 credits

ECO 343-F 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 will involve case studies of both advanced and less advanced economic systems.

Mandatory Prerequisite: ECO 101 or 107 or 109
 3 credits

ECO 345-F Law and Economic Issues

An application of economic issues to major fields of law, to study their effects on market and nonmarket 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.

Mandatory Prerequisite: ECO 303
3 credits

ECO 348-F Analysis for Managerial Decision Making

Development of analytical techniques (such as linear programming and statistical decision theory) for making economic decisions, both in public and private enterprises. The student makes decisions on large-scale and detailed cases in realistic managerial situations and is introduced to the use of the computer. Not for credit in addition to BUS 349.

Mandatory Prerequisite: ECO 303
4 credits

ECO 351-F, 352-F, 353-F, 354-F, 356-F, 357-F Special Topics in Economics

Mandatory Prerequisites: ECO 101 or 107 or 109; at least one other course to be specified when the topic is announced.

3 credits per class

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
3 credits

ECO 360-F Money and Banking

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

Mandatory Prerequisite: ECO 101 or 107 or 109
3 credits

ECO 368-F Modern Portfolio Theory

The economics of uncertainty and modern portfolio theory. Topics include expected utility theory, measurement of risk, the capital asset pricing model, and efficient markets. Students maintain a portfolio of common stocks and evaluate its performance.

Mandatory Prerequisites: ECO 303 and 320
Mandatory Pre- or corequisite: ECO 321
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 will be discussed.

Mandatory Prerequisite: ECO 303
3 credits

ECO 383-F Public Finance

Theories of taxation and the satisfaction of public wants; the nature of public goods; theory of public expenditure; effects of taxes on resource allocation and welfare; theories of tax incidence; fiscal and equity implications of alternative tax schemes; fiscal dynamics and growth; intergovernmental fiscal relations.

Mandatory Prerequisites: ECO 303 and 305
3 credits

ECO 387-F Stabilization Policy, Business Cycles, and Forecasting

The use of econometric models and techniques to forecast economic conditions and evaluate alternative economic policies. Properties of the Federal Reserve Board model, the Brookings model, and other major models in use in the U.S. economy are investigated. Topics also include specification of demand and supply equations in the analysis of single-product markets. Students are expected to estimate and manipulate actual models.

Mandatory Prerequisites: ECO 303, 305, and 321
3 credits

ECO 389-F Corporate Finance

The corporation as a social and economic institution for raising capital and organizing economic activity, emphasizing financial decision making. The birth, oper-

ation, growth, and death of corporations; risk-taking and control; sources and uses of funds; financial management; mergers, acquisitions, conglomeration, reorganization; bankruptcy; regulation; public responsibility.

Mandatory Prerequisite: ECO 303
Advisory Prerequisite: ECO 305
3 credits

ECO 475, 476 Undergraduate Teaching Practicum in Economics I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisite: ECO 475: Permission of instructor and department

Mandatory Prerequisites: ECO 476: ECO 475; permission of instructor and department
3 credits per class, S/U grading

ECO 487 Independent Research

May be repeated.

Mandatory Prerequisite: Permission of department.
1-6 credits

ECO 488 Internship (3-12, S/U grading)

May be repeated up to a limit of 12 credits, but no more than six credits count toward economics major requirements.

Mandatory Prerequisites: ECO 303 and 305; permission of department internship coordinator, and Office of Undergraduate Academic Affairs
3-12 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. No student who has had two or more years of the selected language in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for EEL 111 without written permission from the supervisor of the course. May be repeated for more than one language.

Mandatory Prerequisite: EEL 112: EEL 111

EGC

English Composition

EGC 100 Introduction to the Writing Process

Extensive practice in writing to help students develop clear thinking and more fluent use of language. Writing from experience is emphasized. There is less emphasis on expository writing and formal revision than in EGC 101. May be repeated once.

Mandatory Prerequisite: Placement by examination or by ESL instructor
3 credits, S/U grading

EGC 101-A Writing Workshop

Intensive practice in writing frequent short papers. Emphasis on strategies for drafting and revising. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used.

Mandatory Prerequisite: Placement by examination or by EGC 100 or ESL instructor
3 credits

EGC 102-A Writing Workshop II

A continuation of EGC 101. Emphasis on the development of expository and argumentative writing skills. Frequent papers. May satisfy category A for students under D.E.C. who do not satisfy it through EGC 101 and who earn a C or higher in the course.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation, or recommendation of EGC 101 instructor
3 credits

EGC 201-B Academic Writing

Critical analysis of a wide variety of texts as preparation for construction of persuasive arguments designed for selected audiences. Students will pro-

duce extended written projects which require the development of electronic literacy skills, presentations of various kinds of evidence, and use of academic sources and proper documentation.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

EGL

English

EGL 191-B Introduction to Poetry

Intensive analysis of poems in English of various periods and types and varying complexity. (Not for English major credit.)

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

EGL 192-B Introduction to Fiction

An analysis of fictional prose in terms of each section's specific theme. A goal of each section is to interpret various pieces of literature in relation to a political or historical view, or a particular literary technique. (Not for English major credit.)

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

EGL 193-B Introduction to Drama

Introduction to the analysis of drama, emphasizing the literary more than the theatrical dimension of the works, through examination of a range of plays from a variety of genres and periods. (Not for English major credit.)

Mandatory Prerequisite: EGC 101 or placement 4 on the English Placement Examination
3 credits

EGL 199-G Freshman Honors Seminar

Intensive reading and discussion of related works of imaginative literature. Enrollment limited to 15. For freshmen with exceptionally strong records in high school. (Not for English major credit.)

Mandatory Prerequisites: Permission of department; EGC 101 or equivalent by placement examination or transfer evaluation, or acceptance in a University honors program
3 credits

EGL 202-A Intermediate Writing Workshops

Intensive work on more complex problems in writing. Different sections may have different emphases (e.g., argument, personal reflection, research methods), but all concentrate on nonfiction prose. Descriptions of current offerings are available before registration each semester. Satisfies category A for students under D.E.C. who earn a C or higher in the course. May be repeated once with permission of the director of writing programs.

Mandatory Prerequisites: EGC 101 or equivalent by placement examination or transfer evaluation and U2 standing
3 credits

EGL 204 Literary Analysis and Argumentation

on 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.

Mandatory Prerequisites: EGC 101 or equivalent by placement examination or transfer evaluation; permission of department
3 credits

EGL 205-I Survey of British Literature I

The study of British literature from the Old English period to Milton.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

EGL 206-I Survey of British Literature II

The study of British literature from Dryden to the end of the 19th century.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
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. Not for credit in addition to the discontinued EGL 380.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

EGL 217-K American Literature I

The study of American literature from 1607 to 1865.
Mandatory Prerequisites: EGC 101 or equivalent by placement examination or transfer evaluation
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.
Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
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.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation.
3 credits

EGL 226-K Contemporary American Literature: 1945 to the Present

A survey of major works reflecting the regional, ethnic, and traditional interests of contemporary American writers.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

EGL 235-G World Literature in Translation

The study in English translation of selected works of world literature that have influenced or achieved importance within English literature or literary criticism, thereby contributing to a greater understanding of English literature. Selections may be related to one another thematically or by historical period.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
Advisory Prerequisite: Completion of D.E.C. category B
3 credits

EGL 243-I Shakespeare: The Major Works

A study of major works in several genres. Designed for students who want a one-semester survey of Shakespeare.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

EGL 260-G Mythology in Literature

The analysis of myth in literature from antiquity to the present. The course explores literary texts that use mythic material, analyzes the irrational in myth, and examines the history of motifs, figures, and themes in myth that persist in Western literature.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
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.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

EGL 266-G The 20th-Century Novel

Major works and developments in the modern and contemporary novel. Crosslisted with CSL 266.

Mandatory Prerequisite: EGC 101 or equivalent by

placement examination or transfer evaluation

3 credits

EGL 274-K Black American Literature

A survey of 19th- and 20th-century Black American literature.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
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 WNH 276.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

EGL 285 Writing Workshop: Fiction

A workshop in the development of skills in writing fiction through practice supplemented by readings.

Mandatory Prerequisites: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

EGL 286 Writing Workshop: Poetry

A workshop in the development of skills in writing poetry. Poetry writing is supplemented by readings.

Mandatory Prerequisites: Permission of instructor; EGC 101 or equivalent by placement examination or transfer evaluation
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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory 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 Victorian Age, 1798-1832.

Mandatory Prerequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 314-G Victorian Literature

Mandatory Prerequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 316-G Early American Literature

Mandatory Prerequisite: EGL 204

Advisory Prerequisite: EGL 217

3 credits

EGL 318-G 19th-Century American Literature

Mandatory Prerequisite: EGL 204

Advisory Prerequisite: EGL 217

3 credits

EGL 320-G Literature of the 20th Century

Mandatory Prerequisite: EGL 204

Advisory Prerequisite: EGL 218

3 credits

EGL 340-G Chaucer

Mandatory Prerequisite: EGL 204

Advisory Prerequisite: EGL 205

3 credits

EGL 342-G Milton

Mandatory 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 differs.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: EGL 204

Advisory Prerequisites: EGL 205 and 243

3 credits

EGL 347-G Major Writers of the Neoclassical Period in England

May be repeated for credit as the topic differs.

Mandatory Prerequisite: EGL 204

Advisory Prerequisite: EGL 206

3 credits

EGL 348-G Major Writers of the Romantic Period in England

May be repeated for credit as the topic differs.

Mandatory Prerequisite: EGL 204

Advisory Prerequisite: EGL 206

3 credits

EGL 349-G Major Writers of the Victorian Period in England

May be repeated for credit as the topic differs.

Mandatory Prerequisite: EGL 204

Advisory Prerequisite: EGL 206

3 credits

EGL 350-G Major Writers of American Literature, Colonial Period to 1900

May be repeated for credit as the topic differs.

Mandatory Prerequisite: EGL 204

Advisory Prerequisite: EGL 217.

3 credits

EGL 352-G Major Writers of 20th-Century Literature in English

May be repeated for credit as the topic differs.

Mandatory Prerequisite: EGL 204

Advisory Prerequisite: EGL 218 or 224.

3 credits

EGL 354-G Major Writers of Contemporary British and American Literature

May be repeated for credit as the topic differs.

Mandatory 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. May be repeated for credit as the topic differs.

Mandatory 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. May be repeated for credit as the topic differs.

Mandatory 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. May be repeated for credit as the topic differs.

Mandatory 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. May be repeated for credit as the topic differs.

Mandatory 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

Mandatory Prerequisite: EGL 204

3 credits

EGL 366-G Topics in Literary Criticism and Theory

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisite: EGL 274 or AFH 206
3 credits

EGL 369-K Topics in Ethnic Studies

Mandatory 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

Mandatory 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 on issues they raise relating to gender and literature. May be repeated for credit as the topic differs. Crosslisted with WNH 372.

Mandatory 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. May be repeated for credit as the topic differs.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

EGL 375-G Literature in English in Relation to Other Disciplines

The study of literature in English as it affects and is affected by other disciplines such as anthropology, science, sociology, the history of ideas, theology, and psychology. May be repeated for credit as the topic differs.

Mandatory 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. May be repeated for credit as the topic differs.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

EGL 377-G Literature in English in Relation to Other Disciplines

Mandatory 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. Not for credit in addition to the discontinued EGL 368.

Mandatory 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. Not for credit in addition to the discontinued EGL 368.

Mandatory Prerequisite: One literature course at the 200 level or higher
3 credits

EGL 381, 382 Advanced Analytic and Argumentative Writing

An intensive writing course, refining skills appropriate to upper-division work. Content varies: focus may be on analysis of various intellectual issues, rhetorical strategies, and compositional problems within or across disciplines, but frequent substantial writing projects are central to every version of the course.

Mandatory Prerequisites: U3 or U4 standing; permission of instructor
3 credits per class

EGL 385 Advanced Creative Writing

A creative writing workshop. Students receive detailed criticism of their work. May be repeated with permission of the director of undergraduate studies.

Mandatory Prerequisites: EGL 285 or 286; permission of instructor
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.

Mandatory Prerequisites: EGL 204; permission of instructor
3 credits

EGL 451 Supervised Student Teaching: Middle School Grade Levels 7-9

EGL 452 Supervised Student Teaching: High School Grade Levels 10-12

Mandatory Prerequisites: Enrollment in English Teacher Preparation Program; permission of instructor

Mandatory Corequisite: EGL 454
6 credits each, S/U 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.

Mandatory Corequisites: EGL 451 and 452
3 credits

EGL 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to EGL 475: Upper-division standing; 12 credits of English; permission of instructor and director of undergraduate studies.

Mandatory Prerequisites to EGL 476: EGL 475; permission of instructor and director of undergraduate studies

3 credits per class, S/U grading

EGL 487 Independent Project

Mandatory Prerequisites: Permission of instructor and director of undergraduate studies.

1-3 credits

EGL 488 Internship

Mandatory Prerequisites: 12 credits of English; 2.5 G.P.A.; permission of instructor, department, and Office of Undergraduate Academic Affairs

3-12 credits

EGL 490 Honors Seminar

Mandatory Prerequisite: Permission of instructor
3 credits

EGL 496 Senior Honors

Mandatory Prerequisites: EGL 490; permission of department
3 credits

ENS

Environmental Studies

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-E.

andatory Prerequisites: MAT 124 or 125 or 131 or 141
4 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 will be discussed. May not be taken for credit in addition to BIO 386.

Mandatory Prerequisites: BIO 151 and 213; 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 will be explored.

Mandatory Prerequisites: BIO 213; 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 will

be presented. Working in small groups, students will 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.

Mandatory Prerequisites: U3 or U4 standing; ENS major
2 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.

3 credits

ESL 193 Advanced Composition

Advanced training in writing for ESL students who need to concentrate on paragraph development. The first half of the semester deals with paragraph construction, stressing concepts of the main thesis and supporting arguments. Some advanced grammar is reviewed, but the assumption is that basic structures and mechanics of writing have already been mastered. The second half of the semester stresses combining paragraphs into short compositions. Both descriptive and argumentative writing are practiced. Diagnostic test during first week of classes determines placement in the course.

3 credits

ESL 194 Oral/Aural Skills for U.S. Residents

The study of spoken English for students who are graduates of American high schools but are nonnative speakers of English. The focus of the course is on helping students to speak and understand English in academic contexts. Particular attention is paid to verbal skills necessary for academic success, such as understanding lectures, increasing vocabulary, and improving pronunciation. Priority given to Language Enhancement Program students.

3 credits

ESL 197 Advanced Grammar

Review of complex grammar of English, both oral and written. Material reinforces the work done in ESL 193 and 198 and is intended to supplement those courses. Topics include all modals, indirect speech, the conditional and subjunctive, sequence of tenses, and more, depending on the needs of the class. Diagnostic test during first week of classes determines placement in the course.

3 credits

ESL 198 Advanced Oral/Aural Skills and Accent Improvement

An advanced course in speaking and listening skills for nonnative speakers of English. Work is done with individual problem sounds, stress, and intonation in order to help students modify their accent and make their speech more intelligible. Techniques of speaking before a group are taught to enable nonnative speakers to feel more confident in participating in their other classes. Advanced work in American idioms and grammar is usually included. Language laboratory work may be required by individual instructors. Especially useful for undergraduate and graduate students who need to make seminar presentations and

for graduate students with teaching assistantships.

3 credits

ESL 475, 476 Undergraduate Teaching Practicum I, II
Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to ESL 475: LIN 375; permission of instructor

Mandatory Prerequisites to ESL 476: ESL 475; permission of instructor

3 credits per class, 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, including a survey of audiolingual techniques and other recent developments. Special attention is given to the problems and purposes of the teaching of foreign languages at the high school level.

Mandatory 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. Through mini- and micro-teaching, students have the opportunity to enjoy clinical experiences in the actual classroom each week for at least two hours. Clinical experiences are discussed in a weekly seminar.

Mandatory Prerequisite: FLA 339

3 credits

FLA 451 Supervised Student Teaching: Middle School Grade Levels 7-9

FLA 452 Supervised Student Teaching: High School Grade Levels 10-12

Mandatory Prerequisite: Enrollment in the Foreign Language Teacher Preparation Program; permission of instructor

Mandatory 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, audiolingual training, use of audio-visuals, testing, and professional organizations. The course includes a unit on identifying and reporting child abuse and maltreatment. Students in this course are required to pay a fee; it is used to secure the New York State Certificate in Identifying and Reporting Child Abuse and Maltreatment.

Mandatory Prerequisites: FLA 339 and 340

Mandatory Corequisites: FLA 451 and 452

3 credits

FRN

French

FRN 101 Elementary French (An Intensive Course)

An intensive course covering the elementary French program (FRN 111, 112) in one semester. No student who has had two or more years of French in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for this course without written permission from the supervisor of the course. May not be taken for credit after any other course in French.

6 credits

FRN 111, 112 Elementary French I, II

An introduction to spoken and written French, stressing pronunciation, speaking, comprehension, reading, and writing. Language laboratory supplements class

work. No student who has had two or more years of French in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for FRN 111 without written permission from the supervisor of the course. May not be taken for credit in addition to FRN 101.

Mandatory Prerequisite to FRN 112: FRN 111

4 credits per class

FRN 201-I Intermediate French (An Intensive Course) (Formerly FRN 195)

Review of grammar and discussion of simple French texts through reading, writing, and discussion. Language laboratory supplements class work.

Mandatory Prerequisite: FRN 101 or 112

6 credits

FRN 211-I, 212-I Intermediate French I, II (Formerly FRN 191, 192)

Intermediate courses in conversation, composition, and the interpretation of French texts.

Mandatory Prerequisite to FRN 211: FRN 112

Mandatory Prerequisite to FRN 212: FRN 211

3 credits per class

FRN 221-I Conversation and Composition

A course in the active use of spoken and written French. Language laboratory supplements class work.

Mandatory Prerequisite: FRN 212 or 201

3 credits

FRN 222-I Introduction to Stylistics

Reading of selected short passages of prose and poetry in class with emphasis on improved writing skills, oral expression, and increased mastery of French syntax and techniques of literary analysis.

Mandatory Prerequisite: FRN 221

3 credits

FRN 223 Vocabulary Through Music

A course designed to increase the vocabulary and oral comprehension of students of French, and to enrich their understanding of the poetry and culture of France. It is divided among poetry of recognized poets (Ronsard, Baudelaire, Verlaine, Prévert) put to music, folk songs, and "chansons."

Mandatory Prerequisite: FRN 221

1 credit

FRN 320 Business French

A course designed for students who wish to become more proficient in reading, writing, and translating French. Students also are trained in the use of French in business, in administration, and in everyday professional life. Emphasis is placed on the idiomatic peculiarities of the French language and the relation of French to the structure of English.

Mandatory Prerequisite: FRN 222

3 credits

FRN 321 Phonetics and Diction

A course designed to develop mastery of the spoken language. Students learn to express themselves in the current idiom with fluency and accuracy. At least one hour of laboratory is required weekly.

Mandatory Prerequisite: FRN 222

3 credits

FRN 322 Stylistics

A course designed to acquaint students with the subtleties of French grammar and style. Extensive practice in composition and in translation from English to French.

Mandatory Prerequisite: FRN 222

3 credits

FRN 323 Advanced French Conversation

A course designed to develop and maintain complete fluency in the language.

Mandatory Prerequisite: FRN 222

3 credits

FRN 331-G The French Novel (Formerly FRN 301)

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.

Mandatory Prerequisite: FRN 222

3 credits

FRN 332-G The French Comedy from Molière to Ionesco (Formerly FRN 302)

The study of the comic tradition from Molière to the contemporary theatre.

Mandatory Prerequisite: FRN 222
3 credits

FRN 395-G, 396-G Readings in French Literature: Analysis and Interpretation (Formerly FRN 295, 296)

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.

Mandatory Prerequisite: FRN 222
3 credits per class

FRN 432-G Studies in Renaissance Literature (Formerly FRN 333)

Mandatory Prerequisites: FRN 311 and 312

Advisory Prerequisite: FRN 395 or 396
3 credits

FRN 433-G Studies in 17th-Century Literature (Formerly FRN 343)

Mandatory Prerequisites: FRN 311 and 312

Advisory Prerequisite: FRN 395 or 396
3 credits

FRN 434-G Studies in 18th-Century Literature (Formerly FRN 351)

Mandatory Prerequisites: FRN 311 and 312

Advisory Prerequisite: FRN 395 or 396
3 credits

FRN 435-G Studies in 19th-Century Literature (Formerly FRN 361)

Mandatory Prerequisites: FRN 311 and 312

Advisory Prerequisite: FRN 395 or 396
3 credits

FRN 436-G Studies in 20th-Century Literature (Formerly FRN 373)

Mandatory Prerequisites: FRN 311 and 312

Advisory Prerequisite: FRN 395 or 396

FRN 438-J Caribbean and African Literature in French (Formerly FRN 319)

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.

Mandatory Prerequisites: FRN 395 or 396
3 credits

FRN 441-I French Civilization (Formerly FRN 390)

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.

Mandatory Prerequisite: FRN 221 or 222

Advisory Prerequisite: FRN 395 or 396
3 credits

FRN 442-G Free Seminar (Formerly FRN 393)

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.

Advisory Prerequisite: FRN 395 or 396
3 credits

FRN 447 Directed Readings in French

Mandatory Prerequisite: Permission of department
1-6 credits

FRN 475 Undergraduate Teaching Practicum in French

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: Fluency in French; permission of instructor and department
3 credits S/U grading

FRN 495 Senior Honors Project in French

Mandatory Prerequisite: Permission of department
3 credits, S/U grading

GEO

Geology

GEO 101-E Environmental Geology

A survey of humankind's interaction with the natural environment. Fundamental earth science concepts are used to assess the impact of human activities on the land surface and the natural waters, as well as the influence of natural processes on development and land utilization. Topics include water usage and pollution, acid rain, soil erosion, radioactive and solid waste disposal, landslides, stream flooding, coastal erosion, volcanic activity, and earthquakes. Consideration is also given to the environmental consequences of energy and mineral resource utilization.

3 credits

GEO 102-E The Earth

A summary of the processes that have shaped the earth and the other terrestrial planets as inferred from study of their surface materials, structural features, and interiors. Topics considered include (1) the earth in the solar system; (2) earth materials and rock-forming processes; (3) surface processes and their bearing on human activities; (4) crustal deformation and global tectonics; (5) the earth's interior; and (6) the geological features, compositions, and evolution of the terrestrial planets.

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. Not 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

Examination of materials from on and near the surface of the earth, including sampling techniques and introductory analysis. Use of maps and field data in study of drainage, contamination, waste disposal, and flow problems.

Mandatory Pre- or corequisite: GEO 101
1 credit

GEO 112 Physical Geology Laboratory

Rock and mineral identification, introduction to topographic and geologic maps.

Mandatory 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.

Mandatory 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
4 credits

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.

Mandatory Prerequisite: One of the following: GEO 101, 102, 103, 107, or 122

3 credits

GEO 287 Introductory Research in Geology

Mandatory Prerequisites: U1 or U2 standing; one GEO course; permission of instructor and URECA coordinator

1-3 credits

GEO 302-E Paleontology

Principles and methods in the study of the history of life. The origin of life, premetazoan evolution, principles of evolution illustrated by extinct biotas, analysis of diversity and community structure, morphology and autecology of extinct species, and paleobiogeography and dating are considered. Three hours of lecture and one three-hour laboratory per week.

Mandatory 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 nonmetallic commodities to industry and community as well as the ultimate limits of their abundances. Environmental concerns related to the exploitation of mineral resources with review of legislation and other steps being taken to minimize environmental damage.

Mandatory 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-E Mineralogy and Petrology I

An introduction to mineralogy and petrology. Topics in mineralogy include basic crystallography, crystal chemistry, and identification of the important rock-forming and ore minerals. Topics in petrology focus on the processes that govern the formation and distribution of igneous and metamorphic rocks. Laboratory exercises include crystallography, mineral and rock identification, and interpretation of igneous and metamorphic histories of selected rock suites. Two hours of lecture and two three-hour laboratories per week.

Mandatory Prerequisite: GEO 122 or 102 and 112

Mandatory Pre- or corequisite: CHE 132 or 142

4 credits

GEO 309-E Structural Geology

Principles of structural geology, including classification, criteria for recognition, and mechanics of formation of crustal structural features. Elementary concepts of rock mechanics. Discussion of important tectonic features of the continents and oceans. Accompanying laboratory to cover map interpretation and algebraic and graphical solutions of structural

problems. Three hours of lecture and one three-hour laboratory per week. A two-day weekend field trip visits its classical structural localities in the East.

Mandatory Prerequisite: GEO 122 or GEO 102 and 112
4 credits

GEO 310-E Introduction to Geophysics

The study of the techniques and results of geophysics. The course will cover seismology, gravity, magnetism, and heat flow, with applications to the structure of the earth's crust and interior, earthquakes, and dynamic processes.

Mandatory Prerequisites: MAT 127 or 132 or 142; GEO 122 or 102 and 112; PHY 122 or 132 or 142 or 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. Not for credit in addition to the discontinued GEO 308.

Mandatory Prerequisite: GEO 101 or 102 or 107 or 122
3 credits

GEO 315-E Groundwater Hydrology

Physical and chemical principles of geohydrology. Concepts of groundwater geology. Introduction to quantitative models of regional fluid flow and groundwater contamination. Groundwater and geologic processes, with examples from tectonics, petroleum geology, geothermics, and economic mineralization.

Mandatory Prerequisites: GEO 102 or 122; MAT 127 or 132 or 142
3 credits

GEO 316-E Geochemistry of Surficial Processes

Chemical principles used in the study of surface and near-surface water, rocks, and soils. Application of equilibrium concepts and reaction rates to reactions involving gases, fluids, and minerals in nature. Consideration of soil properties and processes.

Mandatory Prerequisites: GEO 122 or 102 and 112; CHE 132 or 142
4 credits

GEO 318-E Engineering Geology and Coastal Processes

Fundamental concepts of soil, sediment, and rock mechanics and the physics of surficial processes. Application is made to problems of geotechnical and coastal engineering. Topics include consolidation, loose boundary hydraulics, slope stability, underground excavations and beach and tidal inlet stability, and channel sedimentation. Crosslisted with MAR 318.

Mandatory Prerequisites: GEO 122 or 102 and 112; MAT 127 or 132 or 142
3 credits

GEO 353-E Marine Ecology

A survey of biotic responses to ecological challenges in different marine realms. Controls of diversity and trophic structure in the marine ecosystem, historical aspects of marine realms, productivity in the oceans, plankton, soft-bottom communities, intertidal habitats, coral reefs, deep-sea environments, and effects of pollution in the ocean are discussed. Crosslisted with BIO 353.

Mandatory Prerequisite: BIO 151 or 171 or MAR 104
Advisory Prerequisite: BIO 343
3 credits

GEO 401 Optical Mineralogy (Formerly GEO 301)

An introduction to the use of optical crystallography for mineral identification using polarized light microscopy. Topics will include indices of refraction of isotropic, uniaxial, and biaxial minerals; optical indicatrix theory; interference figures, and other optical characteristics of minerals. Laboratory exercises will provide hands-on experience in using the polarizing light microscope for mineral identification.

Mandatory Prerequisite: GEO 306
1 credit

GEO 403-E Stratigraphy (Formerly GEO 303)

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.

Mandatory Prerequisite: GEO 306

Mandatory Corequisite: GEO 401

4 credits

GEO 407-E Mineralogy and Petrology II (Formerly GEO 307)

Topics in mineralogy include advanced crystallography, crystal chemistry, optical mineralogy, and X-ray analytical techniques. Topics in petrology focus on the use of thin sections to interpret evolutionary histories of igneous and metamorphic rocks, integrating petrography, phase equilibria, and the physical properties of magma and rocks. Two hours of lecture and two three-hour laboratories per week.

Mandatory Prerequisites: GEO 306

Mandatory Corequisite: GEO 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 will design and complete 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. Crosslisted with ANT 420.

Mandatory Prerequisites: ANT 104 and permission of instructor

Advisory Prerequisite: One other archaeology, physical anthropology, biology, geology, or marine science course at the 200 level or higher
4 credits

GEO 447 Senior Tutorial in Geology

Mandatory Prerequisites: Permission of instructor and chairperson

1-3 credits

GEO 452-E Seismology (Formerly GEO 352)

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.

Mandatory Prerequisites: MAT 303 or 305 or AMS 361; PHY 132 or 142 or 126 and 127

3 credits

GEO 475, 476 Teaching Practicum in Geology

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to GEO 475: U4 standing; previous preparation in subject field; interview; permission of instructor

Mandatory Prerequisites to GEO 476: GEO 475; previous preparation in subject field; interview; permission of instructor and department

3 credits per class, S/U grading

GEO 487 Senior Research in Geology

Mandatory Prerequisite: Permission of instructor and chairperson

1-3 credits

GEO 488 Internship

Mandatory Prerequisites: Permission of instructor, department, and Office of Undergraduate Academic Affairs

3-6 credits

GER

German

GER 101 Elementary German (Intensive)

An intensive course covering the elementary German program (GER 111, 112) in one semester. No student

who has had two or more years of German in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for this course without written permission from the supervisor of the course. May not be taken for credit after GER 111 or any other course in German.

6 credits

GER 111, 112 Elementary German I, II

An introduction to spoken and written German, stressing pronunciation, speaking, comprehension, reading, writing, and culture. The course consists of four hours in a small section conducted in German, and one laboratory hour. No student who has had two or more years of German in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for GER 111 without written permission from the supervisor of the course.

Mandatory Prerequisite to GER 112: GER 111

4 credits per class

GER 211-I, 212-I Intermediate German I, II (Formerly GER 191, 192)

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 aural skills.

Mandatory Prerequisite to GER 211: GER 101 or 112

Prerequisite to GER 212: GER 211

3 credits per class

GER 311-J, 312-I German Conversation and Composition (Formerly GER 221, 221)

These courses consist of the active use of spoken and written German.

Mandatory Prerequisite: GER 212

3 credits per class

GER 343-G Introduction to Germanic Studies (Formerly GER 203)

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.

Mandatory Prerequisite: GER 212

3 credits

GER 344-G Survey of German Literature (Formerly GER 204)

A chronological survey of German literature from its beginnings to the present with stress on defining the periods therein. All readings are in German.

Mandatory Prerequisite: GER 343

3 credits

GER 401-G German Drama (Formerly GER 301)

A survey of German drama and its subgenres. All work is done in German.

Mandatory Prerequisite: GER 344

3 credits

GER 402-G German Prose (Formerly GER 302)

A survey of German prose and its subgenres. All work is done in German.

Mandatory Prerequisite: GER 344

3 credits

GER 403-G German Poetry (Formerly GER 303)

A survey of German poetry and its subgenres. All work is done in German.

Mandatory Prerequisite: GER 344

3 credits

GER 404-G Goethezeit (Formerly GER 304)

An intensive study of German literature in the period 1750-1832. All work is done in German.

Mandatory Prerequisite: GER 344

3 credits

GER 411, 412 Advanced German Conversation and Composition I, II (Formerly GER 323, 324)

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.

Mandatory Prerequisites: GER 311 and 312

3 credits per class

GER 420 Special Topics in German Literature

An intensive study of the works of a German author or a period of German literature. All work is done in German. May be repeated as the topic varies.

Mandatory Prerequisites: GER 411 and 412
3 credits

GER 431, 432 Business German I, II (Formerly GER 321, 322)

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.

Mandatory Prerequisites: GER 311 and 312
3 credits per class

GER 438 Structure of German (Formerly GER 338)

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.

Mandatory 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.

Mandatory Prerequisite: Permission of instructor and department
3 credits

GER 488 Internship

Mandatory Prerequisites: GER 311 and 312; permission of instructor, department, and Office of Undergraduate Academic Affairs; specific placement examinations where applicable

3-12 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: Permission of Comparative Studies chairperson
1-4 credits

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. No student who has had two or more years of Hebrew in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for HBW 111 without written permission from the supervisor of the course.

Mandatory Prerequisite to HBW 112: HBW 111
3 credits per class

HBW 211-J, 212-J Intermediate Hebrew I, II (Formerly HBW 191, 192)

Intermediate courses in conversation, composition, and the reading of texts in modern Hebrew.

Mandatory Prerequisite to HBW 211: HBW 112
Mandatory Prerequisite to HBW 212: HBW 211
3 credits per class

HBW 311-J Advanced Hebrew I (Formerly HBW 221)

A course in the active use of spoken and written Hebrew. Readings of classics in the Hebrew language. Discussion is conducted mainly in Hebrew.

Mandatory Prerequisite: HBW 212
3 credits

HBW 312-J Advanced Hebrew II (Formerly HBW 222)

Readings in modern Hebrew authors. Oral and written reports. Discussion is conducted mainly in Hebrew.

Mandatory Prerequisite: HBW 311
3 credits

HBW 405-G Studies in Hebrew Literature (Formerly HBW 305)

May be repeated as the topic varies.

Mandatory Prerequisite: HBW 311 or 312
3 credits

HBW 415 The History of the Hebrew Language (Formerly HBW 315)

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.

Mandatory Prerequisite: HBW 311
3 credits

HBW 447 Directed Readings in Hebrew

May be repeated.

Mandatory Prerequisite: Permission of director
1-4 credits

HIS

History

HIS 101-F Early Modern European History: From Renaissance to Revolution

A study of European ideas and institutions from the Renaissance to the French Revolution, including the heritage of the Middle Ages; Renaissance art, politics, and thought; the Reformation and Counter-Reformation; the rise of the modern state; the new science; the Enlightenment; and the course of the French Revolution to 1815.

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 to be treated include the transplantation of European culture to America, the rise of American nationalism, the democratization of American society, the institution of slavery, and the emergence of an industrial society.

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 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 100-level 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 100-level 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 100-level HIS 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 103 or 110 or one 100-level 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 103 or 110 or one 100-level HIS course
3 credits

HIS 234-I Medieval Europe: A Survey

A survey of medieval Europe, 400-1400. The emphasis is on social and cultural as well as political history, using selected medieval sources to recreate a world of change, experimentation and exploration, and an ongoing dialogue regarding self and society.

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 or equivalent

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 and its political application in Nazi Germany. Topics covered include the destruction process, ghetto life, resistance, foreign response, and the war crimes trials. Crosslisted with JDS 241.

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.

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 emphasizing political developments beginning with the Cold War, decolonization, the problems of postindustrial society, managed capitalism, and intellectual and cultural movements such as existentialism and Marxist humanism.

Advisory Prerequisite: HIS 102

3 credits

HIS 261-K Change and Reform in the United States, 1877-1919 (Formerly HIS 367)

The growth of industrialism, class conflict, and ethnic diversity in America and the rise of social reform movements to address resulting problems. Emphasis on modern liberalism as a response to major changes in American society.

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. 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

The beginnings of modern political, economic, and social institutions in the United States, and the conflicts that developed between the North and South because of national consolidation and expansion. Areas covered include economic growth and diversity, political democratization and the rise of the professional politician, changes in the roles of men and women, and the development of American popular culture. The format is topical, contrasting society in 1800 to its development by 1850.

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 that led to the Civil War. Major themes include how two very different societies fought the war; the political battles over the nature of the reunited nation; the Black Experience during slavery, wartime, and Reconstruction; and changing white racial attitudes throughout this era.

Advisory Prerequisite: HIS 103

3 credits

HIS 268-K Recent U.S. History, 1919 to the Present

A survey of recent U.S. history: the 1920s, the Great Depression and New Deal, the Cold War, the 1960s and after.

Advisory Prerequisite: HIS 104

3 credits

HIS 277-K The Modern Color Line

Analysis of the key concepts defining the Black Experience in the United States, and the African diaspora, as formulated by 20th-century African-American intellectuals. Topics include forms of political organization and collective struggle; the social and psychic consequences of racist subjection; the relationship among race, racism, and culture; and the cultural politics of race and gender. Crosslisted with AFS 277

Advisory Prerequisites: AFS 101 and 102; completion of D.E.C. categories I and J

3 credits

HIS 301-I Early Modern Europe

An investigation of European society and culture from the middle of the 15th century to the end of the 18th. Prominent subjects include the Renaissance; the Protestant Reformation; the Counter (or Catholic) Reformation; state formation, diplomacy, and conflict; the Enlightenment; and the nature of Europe's anciens régimes.

Mandatory Prerequisite: HIS 101

3 credits

HIS 304-I Early Modern England: Change and Reformation, 1509-1603

The development of English society from the reign of Henry VIII to the death of Elizabeth: the decline of medieval institutions, the course of the Reformation, and its impact on political, economic, and cultural life.

Mandatory Prerequisite: One course in European history

3 credits

HIS 305-I Early Modern England: Revolution and War, 1603-1714

An inquiry into the source, nature, and outcome of the English Revolution of the mid-17th century. Various interpretations are examined along with representative contemporary documents.

Mandatory Prerequisite: One course in European history

3 credits

HIS 307-I European Radicalism from the Protestant Reformation to the Russian Revolution

An examination of radical movements in Europe that have required people to choose between the rights of the individual and the rights of the community, between personal autonomy and equality of condition. The course focuses on the ideological debates over these opposed principles, and the outcome of the struggles that followed from them.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 101 or 102

3 credits

HIS 308-H History of the Physical Sciences

The development of the practices of the modern physical sciences from Newton to quarks. The course focuses on the transformation from the experimental surprises of the 1890's and the interactions between experiments and theory in the 20th century.

Mandatory Prerequisites: HIS 237 or 238; two D.E.C. category E courses in physics or chemistry or the equivalent; satisfaction of basic mathematics entry skill requirement

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.

Mandatory 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.

Mandatory 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. Major theme: the power struggles of traditional authoritarianism versus liberalism and socialism in an age of drastic economic transformation.

Mandatory Prerequisite: HIS 102

3 credits

HIS 312-I From Empire to Third Reich: Germany, 1890-1945

From Bismarck's dismissal through the Wilhelmian Empire, the First World War and Revolution to Germany's unsuccessful experiment with democracy—the Weimar Republic—accompanied by the rise of Hitler's Nazi movement, which culminated in the Third Reich and the Second World War.

Mandatory Prerequisite: HIS 102

3 credits

HIS 313-I 18th-Century England, 1714-1830

The emergence of modern England: aristocracy and parliamentary rule; wars for empire; hierarchical society and industrialism; the Augustan and Romantic ages; evangelical revival; French Revolution and reaction. The age of Chatham, Wesley, Burke, Johnson, Adam Smith, Bentham, Wordsworth, Coleridge, and Shelley.

Mandatory Prerequisite: HIS 102
3 credits

HIS 314-I Victorian England, 1830-1901

The era of British economic and political preeminence. The establishment of a modern industrial society, flowering of liberalism, imperial expansion, rise of democracy and socialism. The age of Gladstone and Disraeli, Dickens and Kipling, Mill, Darwin, and Marx.

Mandatory Prerequisite: HIS 102
3 credits

HIS 315-I 20th-Century Britain

The decline and fall of British preeminence and imperial power. The crisis of liberalism, two world wars, trade unionism, socialism, and the welfare state. The age of Lloyd George and Churchill, Shaw, Russell, Orwell, and Keynes.

Mandatory Prerequisite: HIS 102
3 credits

HIS 316-F The Healer and the Witch in History

Female healers, their association with "diabolic" powers, and the progressive development of a mechanism for their repression and control. The course also treats the development of organized medicine and its impact upon female healers and patients. Crosslisted with WNS 316.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: One 100-level HIS course or any WNS course or WNH 103
3 credits

HIS 317-F Expansion of Europe

The European influence on the wider world during the industrial age. Forms of European overseas settlement, conditions of conquest, local responses to European domination, and decolonization are studied. The course emphasizes comparisons and original documents.

Mandatory 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. Sample themes include liberalism, conservatism, romanticism, 19th-century realism, and the discovery of the unconscious.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: HIS 101 or 102
3 credits

HIS 321-F Long Island History

An exploration of Long Island's rich but neglected history, from colonial times to the present. Topics include the island's Native Americans; colonial settlement, towns and counties, the Revolution, slavery, whaling, farming, the Long Island Rail Road, social reform, art and literature, the Civil War, gold coast estates, suburban growth, "roaring twenties," the Great Depression, Robert Moses, post-World-War II expansion, aviation and aerospace, the turbulent sixties, the "post-suburban" era, and problems of the 21st century.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: HIS 104 or AFS 101 or 102
3 credits

HIS 326-F History of Popular Culture

The development of popular culture in Europe and the United States. The course will examine different aspects and genres of popular mentality beginning with peasant cultures in the 18th century. Other aspects include artisanal culture in the 18th century in Europe and America, commercial cultures in 19th century England and America, and the rise of mass media culture in the 20th century.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 103 or 104
3 credits

HIS 327-K Origins of American Society (Formerly HIS 380)

An inquiry into the origins of a distinctive American social order. The aspects of economics and class; slavery and race; and ethnic, provincial, and national identities as they evolved in America between the founding of the American colonies and the era of Jackson and Tocqueville.

Mandatory Prerequisite: one course in U.S. history
Advisory Prerequisite: HIS 103
3 credits

HIS 328-K Ethnicity in America, 1830-1920

The immigration experience of Americans in the context of economic and social history from 1830 to 1920. Issues of assimilation and conflict, old and new world experiences, generational differences, and the formation of mixed group cultures in America form the main themes.

Mandatory Prerequisite: HIS 103
3 credits

HIS 329-K Assimilation and Pluralism in American Social Thought (Formerly HIS 372)

Twentieth-century American social thought on the issues of cultural diversity and accommodation. This is examined against the backdrop of a growing central government, the imperatives of national unity during world wars and the Cold War, the rise of mass media, and the adjustments of social and political protest in response to these historical developments. Writings by commentators of a variety of ethnic groups and backgrounds are considered.

Mandatory Prerequisite: HIS 104 or AFS 102
Advisory Prerequisite: HIS 268
3 credits

HIS 333-K Women in U.S. History

An interpretation of the history of women in relation to the major themes in American history such as industrialization and urbanization. Emphasis is placed on topics of special interest to women, i.e., the cult of domesticity, the birth control movement, feminism, women and reform, and changing attitudes toward female sexuality. Crosslisted with WNS 333.

Mandatory Prerequisite: HIS 103 or 104 or WNS/SSI 102 or WNH 103
Advisory Prerequisite: 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 WNS 334.

Mandatory Prerequisite: HIS102 or WNS/SSI 102 or WNH 103
3 credits

HIS 338-I Modern Russian Intellectual History

The development of modern Russian thought from the Enlightenment of the late 18th century until the revolution of 1917. Emphasis is placed on the relationship between ideas and society as well as the role of ideas in leading to the revolution of 1917. Political and social ideas (such as gentry radicalism, Hegelianism, nihilism, populism, Marxism, and anarchism) are given primary consideration, but aesthetic and literary concepts receive attention as well.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: One course in modern European history
3 credits

HIS 339-I Russian Social History, 1825-1929

An in-depth review of the transformation of Russian society "from the bottom up." The course examines the effects of economic and social transformation on large socioeconomic groups in Russia from the end of the old society, through the emancipation of the serfs, to industrialization. It then proceeds to the revolutionary years of 1905-1917 and to the postrevolutionary era to examine how the turmoil and the new society affected the lives of common people in Russia.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: One course in modern European history
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.

Mandatory Prerequisite: One 100-level 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. Emphasis is on those aspects of history and culture that are still shaping Japanese society today.

Mandatory Prerequisite: One 100-level 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.

Mandatory Prerequisite: One 100-level 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 twentieth-century changes in Western and Asian relations in China brought about by nationalism, interaction with Western influences, and socialist rule.

Mandatory Prerequisites: One of the following: HIS 219, HIS 220, CNS 249, CNS 250, or any WNS or WNH course

3 credits

HIS 348-J History of British India

The rise, development, and decline of British power in India from the mid-eighteenth century to the mid-twentieth centuries; 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.

Mandatory Prerequisite: HIS 101 or 102 or 219 or 220 or SAS 240
3 credits

HIS 352-H The Social History of Science

A consideration of some important topics on the function and development of science in Western society since 1600. Such topics include science and government, science in warfare, industrial research, and the professionalization of science.

Mandatory Prerequisites: HIS 237 or 238; one D.E.C. category E course or equivalent
3 credits

HIS 360-I Women in Premodern Europe

An examination of the position of women in European society from ancient Greece through the Italian Renaissance. The course emphasizes women in the European Middle Ages, their roles in marriage and the economy, their relations with the Christian church, their significance in cultural forms such as courtly love. Crosslisted with WNS 360.

Mandatory Prerequisite: One 100-level HIS course or any WNS or WNH course
3 credits

HIS 361-K American History/American Film

A study of classic American films as a reflection on their times and an influence upon style and belief. The course tries to teach students to view film as a product of history and a reflection of the social and ideological tone and culture of America. Not for credit in addition to the discontinued HIS 267.

Mandatory Prerequisite: U3 or U4 standing
3 credits

HIS 362-K 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. Not for credit in addition to the discontinued HIS 272.

Advisory Prerequisite: U3 or U4 standing
3 credits

HIS 365-F The American Environmental Movement

A study of American environmental history with an emphasis on the twentieth century. Topics include the Columbian Exchange; ideas of nature and civilization in the nineteenth century; resource conservation and wilderness preservation; the emergence of ecology; and the contemporary environmental movement.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: HIS 104
3 credits

HIS 371-F 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: HIS 103
3 credits

HIS 373-K Crime, Justice, and Law in American History

An exploration of the changing (and persisting) problem of crime and the evolution of police forces and other institutions of the criminal justice system from the colonial era to the twentieth century. Focus will be on the social context of crime and how it is defined and combated.

Mandatory Prerequisites: HIS 103 and 104
Advisory Prerequisite: HIS 261 or 268
3 credits

HIS 374-K 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.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisite: One course in history or one course in women's studies.

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.

Mandatory Prerequisite: HIS 103 or 104

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

HIS 376-F History of U.S. Foreign Relations Since 1920

The evolution of the United States from great power to superpower. Topics include the forms of American intervention abroad, uses of military and economic power in the global environment, and the role of domestic politics in the formulation of foreign policy.

Mandatory Prerequisite: HIS 104
3 credits

HIS 379-F American Legal History to 1900

The role of law and legal institutions in American society from the colonial period to the late nineteenth century. Emphasis is on the interrelation between social and economic change and law.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 103 or 104

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.

Mandatory 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 History of Aztec and Inca Societies

An inquiry into the history of native peoples of Mexico and Peru before and after the European invasion. The course considers the nature and dynamics of Aztec and Inca civilizations before Columbus, the significance of Indian-European cultural contact from the perspective of native societies, and the biological and cultural consequences of Spanish colonial rule for native peasantries in Mexico and Peru.

Mandatory 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.

Mandatory 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 WNS 387.

Mandatory Prerequisite: HIS 213 or HIS/POL 214 or any WNS course or WNH 103

3 credits

HIS 388-J Slavery in Latin American 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.

Mandatory Prerequisites: HIS 213 or 214 or LAC 200 or AFS 239 or 240 or 277

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.

Mandatory Prerequisite: HIS 213 or HIS/POL 214 or 216

3 credits

HIS 391-F Global History

The origins and structure of global history. Topics include the transition from world history to global history, multinational corporations and international trade, global electronic networks, and the politicization of ecology and biotechnology. The focus of the course is on the range of transnational possibilities and problems that have emerged since World War II.

Mandatory Prerequisite: One course in 20th-century history
3 credits

HIS 394-H Human Reproduction in Western Civilization

Examination of human reproduction in the history of the West using three perspectives: scientific and medical theories, social policy and demography, and cultural representation.

Mandatory Prerequisite: One 100-level or 200-level HIS course

3 credits

HIS 395-J History of South Africa

An analysis of the development of South African society; expansion of white settlement since the 17th century; British imperialism, frontier conflicts, Afrikaner nationalism in the 19th century; patterns of race relations in the 20th century; apartheid and African resistance.

Mandatory Prerequisite: HIS 101 or 102

Advisory Prerequisite: AFS 225

3 credits

HIS 401, 402, 403 Colloquia in European History

May be repeated as the topic varies.

Mandatory Prerequisite: Permission of instructor
3 credits per class

HIS 404 Colloquium in the History of the Social and Behavioral Sciences

A seminar in the history of the social and behavioral sciences, including sociology, anthropology, and psychoanalysis, the precise subjects varying with faculty interest and student expectations. The focus of the course is on the great impact that social and behavioral science theories have had historically in social practice. Topics might include the origins of social theory, the impact of Marxism on the social sciences, or the history of psychoanalysis in the 20th century. May be repeated as the topic varies.

Mandatory Prerequisite: Permission of instructor
3 credits

HIS 411-414 Colloquia in American History

May be repeated as the topic varies.

Mandatory Prerequisite: Permission of instructor
3 credits per class

HIS 421, 422 Colloquia in Latin American History

May be repeated as the topic varies.

Mandatory Prerequisite: Permission of instructor
3 credits per class

HIS 431, 432 Colloquia in Asian History

May be repeated as the topic varies.
Mandatory Prerequisite: Permission of instructor
 3 credits per class

HIS 441 Colloquium in World History

May be repeated as the topic varies.
Mandatory Prerequisite: Permission of instructor
 3 credits

HIS 447 Independent Readings in History

May be repeated as the topic varies.
Mandatory Prerequisites: A strong background in history; permission of instructor and department
 1-3 credits

HIS 451 Colloquium in Medieval History

May be repeated as the topic varies.
Mandatory Prerequisite: Permission of instructor
 3 credits

HIS 461 Colloquium in the History of Science

May be repeated as the topic varies.
Mandatory Prerequisite: Permission of instructor
 3 credits

HIS 487 Supervised Research

May be repeated.
Mandatory Prerequisite: Permission of instructor and either department or departmental URECA coordinator
 1-3 credits

HIS 488 Internship

May be repeated up to a limit of 12 credits
Mandatory Prerequisites: 15 credits in history; permission of instructor, department, and Office of Undergraduate Academic Affairs.
 3-12 credits, S/U grading

HIS 495-496 Senior Honors Project in History

Mandatory Prerequisite: Admission to the history honors program
 3 credits per class

HON

Honors College

HON 101, 102 Progress and Its Discontents

An introduction to social, cultural and intellectual history leading up to the emergence of progress as a dominant concept at the beginning of the 19th century, its incorporation into various disciplines through the 20th century, and its implications for the future. Students will examine through textual examination alternative models and analyze how they served to shape the changing concept of progress.
Mandatory Prerequisite: Acceptance into the Honors College
 3 credits per class

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

Autobiographical reflections by distinguished scholars, artists, and professionals on how their careers developed. The presenters—Stony Brook faculty, staff, and alumni—serve as models to Honors College students.
Mandatory Prerequisite: Acceptance into the Honors College
 1 credit per class

HON 201 Honors College Interdisciplinary Seminar: Brief Lives

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

HON 203, 204 The University as a Cultural Microcosm

An introduction for Honors College students to many

of the University's numerous cultural activities, including the Poetry Center, the Distinguished Lecture Series, campus musical and theatrical presentations, art exhibits at the Staller Center and the Stony Brook Union, and art films presented on campus. Students consider how a university's resources can enrich their lives, how culture is a composite of many arts and learned activities, and how various experts develop their special gifts.

Mandatory Prerequisite: Acceptance into the Honors College
 1 credit per class

HON 301 Honors College Interdisciplinary Seminar: Science, Values, and Society

An examination of science and technology through social, political, historical, and philosophical perspectives.

Mandatory Prerequisites: Acceptance into the Honors College; junior standing
 3 credits

HON 351 Creating a Scholarly Book

A faculty member writing a book conducts a seminar on that work to show students how an idea eventually becomes a book. Students read chapters from the book and collateral readings on these topics.

Mandatory Prerequisites: Upper Division standing; 12 credits of honors coursework (any combination of Honors College courses, freshman honors courses, and other departmental honors courses)
 3 credits

HON 401 Honors College Interdisciplinary Seminar: Global Issues in the 20th Century

An advanced interdisciplinary seminar focusing on selected topics and regions of the world. Students examine how historical background, geographical context, political systems, and economic structures affect regional and global developments.

Mandatory Prerequisite: Acceptance into the Honors College; U4 standing
 3 credits

HON 495, 496 Honors College Senior Project

A two-semester research or other creative project to be arranged with and approved by the Honors College Chair. Students will work with the course instructor and selected faculty sponsor to develop appropriate project expectations and provide ongoing supervision. Each student must submit a written project report and make a presentation at the year-end Honors College Senior Project Colloquium. Students may apply for permission to substitute enrollment in a departmental senior research project course, provided that course has at least the same work and supervision requirements. Such a substitution does not exempt a student from the requirement to submit a written project report to the Honors College and to make a presentation at the year-end Honors College Senior Project Colloquium.

Mandatory Prerequisite: U4 standing in the Honors College
 3 credits per class

HUE

European Literature and Culture Courses in English

HUE 269-I Topics in Contemporary Slavic Culture (in English)

Analysis and discussion of contemporary literary and social topics dealing with Russia or Eastern Europe. May be repeated as topic varies, but counts toward fulfillment of Russian major requirements only once.
 3 credits

HUE 392-I Topics in Slavic Studies (in English)

May be repeated as topic varies, but counts toward fulfillment of Russian major requirements only once.
Mandatory 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 111-B French Masterpieces in Translation

An introduction to the world of French literature through study, in translation, of a text (or texts) of well-known French authors such as Rabelais's *Gargantua*, Montaigne's *Essays*, Molière's *Tartuffe* and *School for Wives*, Rousseau's *Confessions*, Stendhal's *The Red and the Black*, and Camus's *The Plague*. These are read within the sociocultural contexts of their times as an introduction to literary and philosophical interpretation.
 3 credits

HUF 211-D French Cinema (in English)

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 (in Translation)

A study of representative texts from the French Caribbean translated into English. This course focuses on literary manifestations of a search for a specific identity by writers from Martinique, Guadeloupe, French Guiana, and Haiti. Crosslisted with AFH 212.
Mandatory Prerequisites: EGC 101 or equivalent; one course in literature
 3 credits

HUF 213-G Caribbean and American Connections in Literature (in English)

An exploration of the connections between writers from the French-speaking and English-speaking Caribbean and from the African-American community, who share a similar cultural heritage, historical heritage, and historical experience, but differ in geopolitical situations. Special attention is paid to spirituality, gender, and identity motifs in the literature.
Advisory Prerequisite: Completion of D.E.C. category B or equivalent
 3 credits

HUF 216-G 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 or equivalent
 3 credits

HUF 219-I Modern France (in English)

A survey of contemporary France and its political, social, and economic structure, as well as the study of cultural life and institutions. Special attention is given to other French-speaking countries and their relations to France.
 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 will include Faulkner, Melville, Camus, Sartre, Plath, and Rousseau. Meets English major requirements.
Advisory Prerequisite: Completion of D.E.C. category B or equivalent
 3 credits

HUF 236-G Passion and Reason in the French Enlightenment

A study of literature, opera, theatre, and painting in 18th century France. Discussion will focus on the conflict between reason and passion and how it is expressed in these art forms. Authors studied may include Prevost, Voltaire, Rousseau, Diderot, Graffigny, and Beaumarchais
Advisory Prerequisite: Completion of D.E.C. category B or equivalent
 3 credits

HUF 311-G French Literature in Translation

A course given on a major French author or literary movement in relation to European or American literature. May be repeated as topic varies. May be used to satisfy English or Comparative Studies in Literature major with permission of major department.
 Mandatory 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. AFH 329-J is crosslisted with AFH 329-J.

Mandatory 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 (in English)

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 (in English)

A survey of contemporary Germany and its political, social, and economic structure, as well as the study of cultural life and institutions with comparisons to American models and standards.

3 credits

HUG 321-G Topics in the Literature of Germany (in English)

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.)

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two literature courses

3 credits

HUI

Italian Literature and Culture Courses in English

HUI 131-B Search for Identity in Modern Italian Literature in Translation

The concept of identity and diversity in the works of Pirandello, Svevo, Moravia, and Calvino. The question of identity will be discussed from a variety of perspectives within the social and psychological context of contemporary times.

3 credits

HUI 216-G 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: Fulfillment of D.E.C. category B or equivalent

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 will be discussed. Films by directors such as Bertolucci, Fellini, and Wertmüller will be studied. Readings will include selected works of film history, criticism, and theory.

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 will be analyzed. Meets English major requirements.

Advisory Prerequisite: Completion of D.E.C. category B or equivalent

3 credits

HUI 239-I Modern Italy (in English)

A survey of contemporary Italy and its political, social, and economic structure, as well as the study of cultural life and institutions with comparisons to American models and standards.

3 credits

HUI 331-G Italian Literature in Translation

A topics course given in English on a major Italian author or literary movement in relation to European or American literature. May be repeated as topic varies. May be used to satisfy English or Comparative Studies in Literature major requirements with permission of major department.

Mandatory 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 (in English)

Literary and historical perspectives on the experience of Italians in America and their contribution to American culture. Course is given in English. May be used to satisfy English or Comparative Studies in Literature major requirements with permission of major department.

Mandatory 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 (in English)

An historical and sociological examination from colonial America to the present with the major focus on the period from 1870 to today. Comparative experience with other ethnic and minority groups within the U.S., including formation, migration, and conflict.

Mandatory 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 Films

Italian-American ethnicity as represented in mainstream and independent American cinema from the silent era to the present. Particular attention will be paid to the origin and existence of the traditional stereotypes associated with these representations and how Italian-American filmmakers respond to them.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: HUM 201 or HUM 202; HUI 231

3 credits

HUI 431 Special Topics in Italian Cinema

A topics course given in English on Italian cinema. topics may include films of particular actor or director, genre, theme, or historical period.

Mandatory Prerequisite: HUI 231

Advisory Prerequisite: HUI 338

3 credits

HUI 439-K The Emigrant Experience in Italian Literature

The experience of emigration, from the shock of uprooting to the assimilation into American society, as narrated by Italian writers. The consequences of emigration on the Italian homeland will also be studied, through the accounts of authors such as Silone, Pavese, Levi, and Palandri. May be used to satisfy English or Comparative Studies in Literature major requirements with permission of major department.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of nine credits of HUI or ITL courses

3 credits

HUI 447 Directed Readings in Italian Studies (in English)

Individually supervised readings in Italian studies in English. Primarily for students who do not have the language proficiency to take ITL 447. May be repeated.

Mandatory Prerequisite: Permission of department

1-6 credits

HUI 475, 476 Undergraduate Teaching Practicum in Italian Studies I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisite to HUI 475: Permission of department

Mandatory Prerequisites to HUI 476: HUI 475; permission of department

3 credits per class, S/U grading

HUL

Romance Language Courses in English

HUL 424 The Linguistics of Romance Languages (in English) (Formerly HUL 384)

The linguistic evolution of the Romance languages is studied, along with their synchronic grammars. The course is conducted in English.

Mandatory Prerequisite: FRN 312 or ITL 312 or SPN 222 or LAT 112 or LIN 201 and 211

3 credits

HUM

Humanities Courses

HUM 101-B Freshman Seminar in the Humanities

An introduction to the role of the humanities and the arts and in intellectual life. The course investigates the construction and transmission of concepts and practices that shape different civilizations. Frequent writing assignments will sharpen students' abilities to understand the expressions of various cultures.

Mandatory Prerequisites: EGC 101 or the equivalent

3 credits

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 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 Studies I

An introduction to the study of film and television through the concept of genre. Special attention is given to how film and television deal with issues of race and gender.

Mandatory Prerequisite: One D.E.C. category B course or equivalent

3 credits

HUM 202-D Film and Television Studies II

An introduction to the theory and criticism of film and television from the "primitive" era to the present. Weekly film and video showings are accompanied by readings in both contemporary and classical film theory. Special attention is given to mainstream Hollywood cinema as well as to experimental traditions originating in the Soviet Union, France, and Germany.

Mandatory Prerequisite: One D.E.C. category B course or equivalent

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. Examples could include the contemporary East/West encounter in its many dimensions, or formative encounters in the history of particular regions, like the encounter of India and China in the spread of Buddhism or of the ancient Near East and the Hellenistic world in the formation of the Christian Europe.

Mandatory Prerequisite: One D.E.C. Category B course or equivalent

3 credits

HUM 495 Humanities Honors Project

Mandatory Prerequisites: Permission of instructor and director of undergraduate studies

3 credits

HUR

Russian Literature and Culture Courses in English

HUR 141-B, 142-B Introduction to Russian Literature (in English) I, II

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 per class

HUR 145-D Russian Film and Culture (in English)

Study of Russian films from the 1920s to the present viewed in terms of their interaction with Russian culture.

3 credits

HUR 235-G Crime and Punishment in World Literature

An exploration of the nature of crime and its punish-

ment 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. Meets English major requirements.

Advisory Prerequisite: One D.E.C. category B course or equivalent

3 credits

HUR 241-I Special Russian Author in Translation

Analysis of major works and significant criticism. Each semester is devoted to one particular author such as Tolstoy, Dostoevsky, Chekhov, or Bulgakov. May be repeated, but counts toward fulfillment of Russian major requirements only once.

3 credits

HUR 242-I Special Genre or Period of Russian Literature in Translation

Examination of a genre or period. Each semester is devoted to one particular genre such as the Russian novel, or period such as the 20th century. May be repeated, but counts toward fulfillment of Russian major requirements only once.

3 credits

HUR 249-I Russia Today (in English)

Contemporary cultural trends viewed in terms of the social and political context. Recent responses to historical change such as the breakup of the Soviet Union, the new economic order, and the search for Russian national identity are explored in literature, the arts, and media.

3 credits

HUR 341-G Russian Literature in Translation

A topics course given in English on a major Russian author or literary movement in relation to European or American literature. May be repeated as the topic varies. May be used to satisfy English or Comparative Studies in Literature major requirements with permission of major department.

Mandatory 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 in Translation

Selected topics in literary analysis focusing on the work of one or more Russian authors in translation. Topics may include literature and philosophy, cross-cultural relations, and interdisciplinary approaches to literature. Concentrated study of one or more authors. May be repeated as the topic varies.

Mandatory Prerequisites: One literature course at the 200 level or higher, one philosophy course

Advisory Prerequisite: PHI 109 or 110

3 credits

HUS

Spanish Literature and Culture Courses in English

HUS 254-J Latin America Today (in English)

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 (in English)

An examination of major cultural and social developments in Spain during the 20th century, with special emphasis on the Spanish Civil War, the Franco era, and the transition to democracy. Presented in English, the course seeks to enhance understanding of Spain through analysis of such issues as national character, change and continuity, and regional diversity.

3 credits

HUS 361-G Latin American Literature in Translation

A topics course given in English on a major Latin American author or literary movement in relation to European or American literature. May be repeated as the topic varies. May be used to satisfy English or Comparative Studies in Literature major requirements

with permission of major department.

Mandatory 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 in Translation

A topics course given in English on a major Latino author or literary movement in relation to European or American literature. May be repeated as the topic varies. May be used to satisfy English or Comparative Studies Literature major requirements with permission of major department.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisite: A literature course at the 200 level or higher

3 credits

HUS 390-J Latin American Cinema (in English)

A contextual approach to the national cinemas of Latin America. Students will develop their skill in film analysis as they examine the specific role of film in refocusing the terms of ongoing debates on questions of national identity and the function of culture in society.

Mandatory 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

ITL

Italian

ITL 101 Intensive Elementary Italian

An intensive course covering the elementary Italian program (ITL 111, 112) in one semester. No student who has had two or more years of Italian in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for this course without written permission from the supervisor of the course. May not be taken for credit after any other course in Italian.

6 credits

ITL 111, 112 Elementary Italian I, II

An introduction to spoken and written Italian, stressing pronunciation, speaking, comprehension, reading, and writing. Selected texts are read. Practice in language laboratory supplements class work. No student who has had two or more years of Italian in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for ITL 111 without written permission from the supervisor of the course. May not be taken for credit in addition to ITL 101.

Mandatory Prerequisite: to ITL 112: ITL 111

4 credits per class

ITL 201-I Intensive Intermediate Italian (Formerly ITL 195)

An intensive course covering the intermediate Italian program (ITL 211, 212) in one semester.

Mandatory Prerequisite: ITL 101 or 112

6 credits

ITL 211-1, 212-I Intermediate Italian I, II (Formerly ITL 191, 192)

Intermediate courses in the reading and discussion of selected Italian texts. An intensive grammar review offers an opportunity to develop conversational ability.

Mandatory Prerequisite: to ITL 211: ITL 101 or 112

Mandatory Prerequisite: to ITL 212: ITL 211

3 credits

ITL 311-I Italian Conversation and Composition I (Formerly ITL 221)

A course in spoken and written Italian, with emphasis on precision and fluency in the spoken form.

Mandatory Prerequisite: ITL 201 or 212

3 credits

ITL 312-I Italian Conversation and Composition II (Formerly ITL 222)

A course in spoken and written Italian, with emphasis on precision in written form.

Mandatory Prerequisite: ITL 201 or 212

3 credits

ITL 313 Italian Vocabulary (Formerly ITL 223)

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 differs.
Mandatory Prerequisite: ITL 201 or 212
1 credit

ITL 395-G, 396-G Readings in Italian Literature I, II (Formerly ITL 295, 296)

Literary analysis and its application to representative texts chosen from the various periods of Italian literature. Readings, writings, and discussions are in Italian.
Mandatory Prerequisite: ITL 311
3 credits per class

ITL 410 Business Italian (Formerly ITL 320)

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.
Mandatory Prerequisite: ITL 311
3 credits

ITL 411 Advanced Conversation and Composition I (Formerly ITL 321)

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.
Mandatory Prerequisite: ITL 311
3 credits

ITL 412 Advanced Conversation and Composition II (Formerly ITL 322)

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.
Mandatory Prerequisite: ITL 411
3 credits

ITL 424 History of the Italian Language (Formerly ITL 324)

A study of the history of the Italian language from Latin to its present form.
Mandatory Prerequisite: ITL 311
3 credits

ITL 425 Italian and Its Dialects (Formerly ITL 325)

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.
Mandatory Prerequisite: ITL 311
3 credits

ITL 430-G, 431-G Studies in 13th- and 14th-Century Literature (Formerly ITL 329, ITL 330)

May be repeated as the topic varies.
Mandatory Prerequisite: ITL 395 or 396
3 credits

ITL 432-G Studies in 15th- and 16th-Century Literature (Formerly ITL 331)

May be repeated as the topic varies.
Mandatory Prerequisite: ITL 395 or 396
3 credits

ITL 433-G Studies in 17th- and 18th-Century Literature (Formerly ITL 351)

May be repeated as the topic varies.
Mandatory Prerequisite: ITL 395 or 396
3 credits

ITL 434-G Studies in 19th-Century Literature (Formerly ITL 361)

May be repeated as the topic varies.
Mandatory Prerequisite: ITL 395 or 396
3 credits

ITL 435-G Studies in Contemporary Literature (Formerly ITL 373)

May be repeated as the topic varies.
Mandatory Prerequisite: ITL 395 or 396
3 credits

ITL 440-I The Italian Scene (Formerly ITL 390)

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.
Mandatory Prerequisite: ITL 312 or 395 or 396
3 credits

ITL 441-G Free Seminar (Formerly ITL 393)

A seminar built around a theme such as "Cities in Italian Literature," "Women in Italian Literature," "Death and Resurrection in Contemporary Italian Literature," or "Sin and Sensuality in the Italian Short Story." A detailed description of the seminar may be obtained from the department for each semester it is offered. May be repeated as the topic varies.
Mandatory Prerequisite: ITL 311
3 credits

ITL 447 Directed Readings in Italian

May be repeated.
Mandatory Prerequisite: Permission of instructor
1-6 credits

ITL 475 Undergraduate Teaching Practicum in Italian

Students may not serve as teaching assistants in the same course twice.
Mandatory Prerequisites: Fluency in Italian; permission of instructor and department
3 credits, S/U grading

ITL 488 Italian Internship

Mandatory Prerequisites: ITL 320; permission of instructor, department, and Office of Undergraduate Academic Affairs
3 credits, S/U grading

ITL 495 Senior Honors Project in Italian

Mandatory Prerequisite: Permission of department
3 credits

JDH**Judaic Studies/ 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.
Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

JDH 320-G The Rabbinic Tradition

The origin and development of the Rabbinic tradition, examination of the chief elements of Rabbinic teaching at various times, and analysis of the major types of Rabbinic literature. Crosslisted with RLS 320.
Mandatory Prerequisite: JDS/HIS 225 or 226 or RLS/JDH 230
3 credits

JDH 366-G The American Jewish Experience in Fiction

A study of the American Jewish experience as it is revealed in the fiction of the Jewish writers in the period of 1917 through the present. The course explores the long-range effect on the second, third, and fourth generations of: immigration; acculturation; the impact of the Depression; World War II and the Holocaust; the emergence of the State of Israel; suburbanization; the entry of the Jewish writer into the center of the literary world; and the new search for Jewish identity.
Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher
3 credits

JDH 369-G Topics in Biblical Interpretation

May be repeated as the topic varies
Mandatory Prerequisite: One literature course at the

200 level or higher or JDH 230
3 credits

JDH 390-G Topics in Judaic Studies

May be repeated as the topic varies.
Mandatory Prerequisite: JDS/HIS 225 or 226 or RLS/JDH 230
3 credits

JDH 415-G Judaic Responses to Catastrophe (Formerly JDH 465)

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.
Mandatory Prerequisite: JDH/RLS 230 or JDS/HIS 225 or 226
3 credits

JDH 447 Readings in Judaic Studies

May be repeated.
Mandatory Prerequisite: Permission of Instructor
1-4 credits

JDS**Judaic Studies/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 103 or 110 or one 100-level 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 103 or 110 or one 100-level HIS course
3 credits

JDS 241-I The Holocaust: The Destruction of European Jewry-Causes and Consequences

The rise of modern anti-Semitism and its political application in Nazi Germany. Topics covered include the destruction process, ghetto life, resistance, foreign response, and the war crimes trials. Crosslisted with HIS 241.
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 WNS 320.
Mandatory Prerequisite: One JDS or WNH or WNS course
3 credits

JDS 390-F Topics in Judaic Studies

May be repeated as the topic varies.
Mandatory Prerequisite: JDS/HIS 225 or 226
3 credits

JDS 447 Readings in Judaic Studies

May be repeated.
Mandatory Prerequisites: Two JDS courses, or one course each in JDS and JDH; permission of director
1-4 credits

JNH, JNS, and JPN

Japanese Studies/Humanities, Japanese Studies/Social and Behavioral Sciences, and Japanese Language Courses

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: One D.E.C. category B course
3 credits

JNH 251-J Japanese Literature in Translation

An introduction in English to the literary tradition of Japan. Representative texts chosen from various periods are studied with attention to their historical background and the aesthetic and cultural values that formed them.

Mandatory Prerequisite: EGC 101 or equivalent
3 credits

JNH/JNS 331-J, 332-J Topics in Japanese Studies

Mandatory Prerequisite: JPN 211 or any course listed in minor requirement 2
3 credits per class

JNH 351-J Studies in Japanese Literature (in English)

A study in translation of a particular author, period, genre, or theme in Japanese literature, such as Matsuo Basho, the Tokugawa period, haiku, or the spirit world. May be repeated as the topic varies.

Mandatory Prerequisite: JNH 251 or permission of instructor
3 credits

JNH/JNS 447 Independent Study

May be repeated as the topic varies.

Mandatory Prerequisite: Permission of instructor and director of the minor
1-4 credits per class

JPN 111, 112 Elementary Japanese I, II

An introduction to spoken and written Japanese with equal attention to speaking, reading, and writing. Linguistic analysis of the characters provides cultural and historical background of the language. No student who has had two or more years of Japanese in high school (or has otherwise acquired an equivalent proficiency) is permitted to enroll in JPN 111 or 112 without written permission from the supervisor of the course.

Mandatory Prerequisite to JPN 112: JPN 111
4 credits per class

JPN 211-J, 212-J Intermediate Japanese I, II (Formerly JPN 191, 192)

An intermediate course in Japanese language to develop audiolingual skills and reading and writing ability. Selected literary texts serve as the basis for practice in reading comprehension and composition. No student who has had three or more years of Japanese in high school (or has otherwise acquired an equivalent proficiency) is permitted to enroll in JPN 191 or 192 without written permission from the supervisor of the course.

Mandatory Prerequisite to JPN 211: JPN 112
Mandatory Prerequisite to JPN 212: JPN 211
3 credits per class

JPN 311-J, 312-J Advanced Japanese I, II (Formerly JPN 221, JPN 222)

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.

Mandatory Prerequisite to JPN 311: JPN 212
Mandatory Prerequisite to JPN 312: JPN 311
3 credits per class

JPN 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to JPN 475: Fluency in Japanese; senior standing; permission of instructor
Mandatory Prerequisites to JPN 476: JPN 475; permission of instructor

3 credits per class, 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.

Mandatory Prerequisites: EGC 101 or equivalent; 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.

Mandatory 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.

Mandatory 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 rewrite long features.

Mandatory 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.

Mandatory Prerequisite: JRN 387
Advisory Prerequisite: JRN 288
3 credits

JRN 390 Computer-Assisted Reporting

An advanced course in the use of computers, data bases 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.

Mandatory Prerequisites: JRN 287; either JRN 387 or 288
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.

Mandatory Prerequisites: JRN 288 and 387
3 credits

JRN 395 News Editing

Editing copy for grammatical correctness, consistency, accuracy, tightness, and brightness; writing head-

lines. The course also considers the broader aspects of editing, such as assigning stories and handling writers sensitive about their copy.

Mandatory Prerequisite: JRN 287
Advisory Prerequisite: JRN 288
3 credits

JRN 488 Internship

Mandatory Prerequisites: 12 credits of journalism courses; 2.5 G.P.A.; permission of instructor, minor coordinator, and Office of Undergraduate Academic Affairs

3-12 credits, S/U grading

KOR, KRH, and KRS

Korean Language Courses, Korean Studies/Humanities, and Korean Studies/Social and Behavioral Sciences

KOR 111, 112 Elementary Korean I, II

An introduction to spoken and written Korean with equal attention to speaking, reading, and writing. Fundamental communication skills are acquired through intensive study of basic grammar and pronunciation. No student who has had two or more years of Korean in high school (or who has otherwise acquired an equivalent proficiency) is permitted to enroll in KOR 111 or 112 without written permission from the supervisor of the course.

Mandatory Prerequisite to KOR 112: KOR 111
4 credits per class

KOR 211-J, 212-J Intermediate Korean I, II (Formerly KOR 191, KOR 192)

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.

Mandatory Prerequisite to KOR 211: KOR 112 or placement test
Mandatory Prerequisite to KOR 212: KOR 211 or placement test
3 credits per class

KOR 311-J Advanced Korean (Formerly KOR 221)

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.

Mandatory Prerequisite: KOR 212 or placement test
3 credits

KOR 351-J Studies in Korean Literature

May be repeated as the topic varies.

Mandatory Prerequisite: KOR 311
Advisory Prerequisite: One additional Asian studies course.
3 credits

KOR 475, 476 Undergraduate Teaching Practicum in Korean I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to KOR 475: Fluency in Korean; U3 or U4 standing; permission of instructor and director
Mandatory Prerequisites to KOR 476: KOR 475; permission of instructor and director
3 credits per class S/U grading

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 in Translation

An introduction in English to the literary tradition of Korea. Representative literary texts chosen from various periods are studied with attention to their historical background and the aesthetic and cultural values that inform them.

Mandatory Prerequisite: EGC 101 or equivalent
3 credits

KRH/KRS 331-J, 332-J Topics in Korean Studies

May be repeated with permission of the program director.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: two courses in Asian studies
3 credits per class

KRH 346-J Philosophy of Education in Korea and Japan

An examination of the philosophical and religious principles of traditional education in Korea and Japan and the way in which these are reflected in actual practice. Since Confucius provides the basic framework for the discussion, special attention is paid to his teachings and the way in which they were adapted and modified by his followers over the centuries.

Mandatory Prerequisite: One 200-level course in Asian religion or philosophy
3 credits

KRH 400 Seminar in Korean Studies

May be repeated once as topic varies.

Mandatory Prerequisites: U3 or U4 standing; permission of instructor.
3 credits

KRH, KRS 447 Directed Readings in Korean Studies

May be repeated.

Mandatory Prerequisites: U3 or U4 standing; permission of instructor
3 credits per class

KRH 475, 476 Undergraduate Teaching Practicum in Korean Studies

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisite to KRH 475: Fluency in Korean; U3 or U4 standing; permission of instructor and director

Mandatory Prerequisite to KRH 476: KRH 475; permission of instructor and director
3 credits per class, S/U grading

LAC**Latin American and Caribbean Studies****LAC 200-J Introduction to Latin American and Caribbean Societies**

Social science, historical, and cultural perspectives on Latin America and the Caribbean, as well as on Latino communities in the United States. The goal is to develop a critical understanding of Latin America's social and historical problems and challenges and an appreciation of the region's economic and cultural contributions to the world.

Advisory Prerequisites: One D.E.C. F course; one D.E.C. B or G course
3 credits

LAC 488 Internships

Mandatory Prerequisites: 15 credits in LAC studies; permission of instructor, director, and Office of Undergraduate Academic Affairs
3-12 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. No student who has had two or more years of the offered language in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for LAN 111 in that language without written permission from the supervisor of the course.

Mandatory Prerequisite to LAN 112: LAN 111
3 credits per class

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. No student who has had four years of the offered language in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for LAN in that language without written permission from the supervisor of the course.

Mandatory Prerequisite to LAN 211: LAN 112
Mandatory Prerequisite to LAN 212: LAN 211
3 credits per class

LAN 475, 476 Practicum in Language Teaching I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to LAN 475: LIN 101; fluency in the language being taught; U3 or U4 standing; permission of instructor.

Mandatory Prerequisites to LAN 476: LAN 475; fluency in the language being taught; permission of instructor.
3 credits per class, 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. No student who has had two or more years of Latin in high school or who has otherwise acquired an equivalent proficiency will be permitted to enroll in LAT 111 without written permission from the course supervisor.

Mandatory Prerequisite to LAT 112: LAT 111
3 credits per class

LAT 251-I, 252-I Readings in Latin Literature I, II

Readings in classical Latin literature of the Republic. The course includes a brief intensive review of grammar and the sampling of a number of authors including Catullus, Cicero, Virgil, and Livy.

Mandatory Prerequisite to LAT 251: LAT 112
Mandatory Prerequisite to LAT 252: LAT 251
3 credits per class

LAT 353-I Literature of the Roman Republic

Selected works of Plautus, Terence, Cicero, Lucretius and Catullus are translated and examined in their social and historical context. The reading of critical works in English is also required.

Mandatory Prerequisite: Permission of instructor
3 credits

LAT 354-I Literature of the Roman Empire

Selected works of Virgil, Horace, Livy, Petronius, Martial, Tacitus, and Juvenal are translated and examined in their social and historical context. The reading of critical works in English is also required.

Mandatory Prerequisite: Permission of instructor.
3 credits

LAT 355-I Early Medieval Latin

Translation and discussion of Christian and secular Latin literature from the 4th to the 12th century. The course includes an intense review of Latin grammar and an outline of the changes in the language that took place during early medieval times. Selections from the Vulgate and the writings of Jerome, Augustine, and Bede are read.

Mandatory Prerequisite: Permission of instructor
3 credits

LAT 356-I Late Medieval Latin

Translation and discussion of Latin literature from the 12th to the 16th century. Authors include the Archpoet, Thomas Aquinas, Petrarch, Erasmus, and Thomas More.

Mandatory Prerequisite: Permission of instructor.
3 credits

LAT 447 Directed Readings in Latin

May be repeated

Mandatory Prerequisite: Permission of minor coordinator
1-4 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.

Mandatory Prerequisite: U1 or U2 standing or transfer student with fewer than 30 Stony Brook credits
1 credit

LES**Living/Learning Center in Environmental Studies****LES 101 Prospects for Planet Earth**

An introduction for non-science majors to the prospects for planet earth. The course begins by describing the global environment, follows with an exploration and assessment of how humans are agents of change in the global environment, and concludes with a discussion and evaluation of strategies for humans to live in greater harmony with planet earth. Global issues will be related to the particular issues of the United States, the Northeast, and the greater metropolitan New York City-Long Island area.

3 credits

LES 102 Opportunities in Environmental Studies

An introduction to the nature of environmental studies in college and careers. Topics covered include the use of environmental libraries, environmental courses and programs offered in college, careers in environmental fields, and individualized advising. May not be taken for credit in addition to LSE 101, LHD 101, USB 101, SGE 101, or EAS 101.

Mandatory Prerequisites: U1 standing, residence in Gershwin College (nonresident or more advanced students with permission of minor coordinator)
1 credit, S/U grading

LES 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.

1 credit

LES 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.

Mandatory Prerequisites: LES 101 and 102; residence in Gershwin College
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, sexual orientation. These issues are examined from an interdisciplinary perspective.

Mandatory Prerequisite: Permission of director; priority given to residents of Langmuir 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. May be repeated once as the topic varies.

Mandatory Prerequisite: Permission of director; priority given to residents of Langmuir 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. May be repeated once as the topic varies.

Mandatory Prerequisite: Permission of director; priority given to residents of Langmuir College
1 credit

LHD 309, 310 AIDS Peer Education Training

Examination and practice of the various ways to educate and modify behavior regarding HIV risk reduction.

Mandatory Prerequisite to LHD 309: Permission of instructor
Mandatory Prerequisites to LHD 310: LHD 309; permission of instructor
1 credit per class, S/U grading

LHD 401 Advanced Seminar in Human Sexual and Gender Development

May be repeated once as the topic varies.

Mandatory Prerequisite: Permission of director; priority given to residents of Langmuir College
1 credit

LHD 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to LHD 475: Minor in human sexual and gender development; LHD 487; U3 or U4 standing; permission of instructor and director
Mandatory Prerequisites to LHD 476: LHD 475; U3 or U4 standing; permission of instructor and director
3 credits per class, S/U grading

LHD 487 Independent Study in Human Sexual and Gender Development

May be repeated once.

Mandatory Prerequisites: LHD 101 or 301; LHD 302; permission of instructor and director
3 credits

LHD 488 Internship

May be repeated up to a limit of 6 credits.

Mandatory Prerequisites: Permission of instructor, director of the minor, and Office of Undergraduate Academic Affairs
3-6 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 will trace the general development of the arts from their common

practical origins in basic communication, ritual, and decoration to the present, and examine how these original commonalities work together and unify the arts in modern culture. Students will develop in-class presentations using multiple art forms.

3 credits

LIA 487 Directed Research in Interdisciplinary 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 Students Arts Festival.

Mandatory Prerequisite: Permission of instructor.
1-6 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 covered 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 121-F The Structure of English Words and Sentences

An introduction to methods of linguistic analysis through the analysis of complex English words. Students gain some understanding of such areas of linguistics as morphology, semantics, and historical linguistics as well as increase their English vocabulary. Not for major credit.

3 credits

LIN 200-K Language in the United States

Survey of the languages and language-related issues in the United States. Topics include native American languages; immigrant languages; dialectal variations (e.g., Black English); the domains in which these languages were and are used; maintenance and loss of minority languages; language contact and its effects; evolution of American English from colonial times to its present world-wide status; the use and impact of Spanish; language attitudes and politics including bilingual education; and official language movements.

Advisory Prerequisite: 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 301-F Phonology

The theory of sound systems of languages and the interaction of sounds in language.

Mandatory Prerequisite: LIN 201

3 credits

LIN 307-K Sociolinguistics

An examination of the interaction between language and society, focusing on diversity in American English as it relates to differences in gender, geography, social class, ethnicity, and national origin.

Mandatory Prerequisite: One 200-level linguistics course

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

LIN 330-F Language Acquisition

Introduction to the field of language acquisition.

Issues include cognitive processes, role of innate ability and environment, developmental stages, individual variation, universal tendencies, interaction of language and cognition, bilingualism, similarities and differences between first- and second-language acquisition, and language disorders.

Mandatory Prerequisites: LIN 201 and 211

3 credits

LIN 340-F Historical Linguistics

The application of linguistic theory to the comparative reconstruction of language systems.

Mandatory 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. Special attention is given to the decipherment of ancient writing.

Mandatory 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.

Mandatory Prerequisite: LIN 101 or LIN 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. May be repeated once as the topic varies.

Advisory Prerequisite: LIN 101

3 credits

LIN 375 Methods and Materials of Teaching English as a Second Language I

The application of linguistic methodology to teaching English to nonnative speakers. The course involves current review of ESL teaching materials applicable to all levels. Students are given an opportunity to observe ESL classes on campus.

Mandatory 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.

Mandatory Prerequisite: LIN 375

3 credits

LIN 385-K Language and Science: A Multicultural Perspective

In-depth study of the linguistically diverse population in American schools and its unique linguistic, social, and cultural needs. The development of effective classroom environments for language acquisition is explored with a focus on using hands-on projects in science and mathematics. Supervised field work experience in K-8 classroom settings is included. Crosslisted with SCI 385.

Mandatory Prerequisites: LIN 101; U3 or U4 standing; permission of instructor.

3 credits

LIN 425, 426, 427 Special Topics in Linguistics

Seminars for advanced linguistics students, the topics of which vary with student demand and faculty interest. May be repeated as the topics varies.

Mandatory Prerequisite: Varies with subject matter

3 credits per class

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.

Mandatory Pre-or Corequisites: LIN 211 and 301
3 credits

LIN 447 Directed Readings in Linguistics May be repeated.

Mandatory Prerequisite: Permission of department
1-4 credits

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**

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.

Mandatory Prerequisites: Linguistics major, 3.0 G.P.A. in major; 2.75 G.P.A. overall; permission of department
Mandatory Corequisite: LIN 454
6 credits per class, S/U 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.

Mandatory 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.

Mandatory Prerequisites: LIN 211 and 301
3 credits

LIN 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Teaching practica in lower-division linguistic courses.
Mandatory Prerequisites: Linguistics major; U3 or U4 standing, permission of instructor.
3 credits per class, S/U grading

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.

Mandatory Prerequisites: 15 credits in linguistics; permission of department and Office of Undergraduate Academic Affairs
3-12 credits, S/U grading

LIN 495-496 Senior Honors Project in Linguistics

Mandatory Prerequisite: Admission to the Linguistics Honors Program
3 credits per class

LIS**Living/Learning Center in International Studies****LIS 301 Introductory Seminar in International Studies**

An introductory seminar dealing with global issues. Topics focus on general subjects such as the international order and global political economy; the United Nations system, its structure, history, and evolving roles; multilateral economic, political, and security organizations such as the World Bank, North Atlantic Treaty Organization, and the Organization of African Unity; "North-South" issues; the role of power and ideology in the evolving post-Cold War order.

Mandatory Prerequisite: Permission of director; priority given to Stimson residents
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 discussions, oral presentations, and a substantial essay on themes drawn from various topics and regions. May be repeated twice as the topic differs.

Mandatory Prerequisites: LIS 301; permission of director; priority given to Stimson residents
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.

Mandatory Prerequisites: LIS 302; permission of director; priority given to Stimson residents
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.

Mandatory Prerequisites: LIS 401; permission of director; priority given to Stimson residents
1-3 credits

LSE**Living/Learning Center in Science and Engineering****LSE 101 University Studies in Science and Engineering (1, S/U grading)**

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, LES 101, LHD 101, SGE 101, or USB 101.

Mandatory Prerequisites: U1 standing; residence in Keller College (nonresident students with permission of the program director)
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.

Mandatory Prerequisite: Residence in Keller College (nonresident students with permission of the program director)
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.

Mandatory Prerequisites: U3 or U4 standing; completion of at least two upper-division science or engineering courses; residence in Keller College (nonresident students with permission of program director)
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.

Mandatory Prerequisites: U3 or U4 standing; completion of at least two upper-division science or engineering courses; residence in Keller College (nonresident students with permission of program director)
3 credits

LSE 315 Research Seminar in Science and Engineering

A series of seminars in which guest speakers describe their ongoing research projects in science and engineering. Other topics include preparing for research careers, the origin of good research ideas, and ways to minimize errors in scientific research. Students make oral and written presentations on research results reported in the literature.

Mandatory Prerequisites: U3 or U4 standing; completion of at least two upper-division science or engineering courses; residence in Keller College (nonresident students with permission of program director)
3 credits

LSE 475 Undergraduate Teaching Practicum

Students may not serve as teaching assistants in the same course twice.

Students work with the instructor in a 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.

Mandatory Prerequisites: U3 or U4 standing; permission of instructor and program director.
3 credits, S/U grading

MAE**Mathematics Secondary Education****MAE 301 Foundations of Secondary School Mathematics**

A reexamination of elements of school mathematics, including topics in algebra, geometry, and elementary functions. Competence in basic secondary-level ideas and techniques will be tested.

Mandatory Prerequisite: MAT 211
Mandatory 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.

Mandatory Prerequisites: MAE 301 and 311
Mandatory 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 will observe classes in middle school and high school settings.

Mandatory Prerequisites: MAT 211
Mandatory 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.

Mandatory Prerequisite: MAE 311
Pre- or corequisite: MAE 302
2 credits

MAE 447 Directed Readings in Mathematics Education

Mandatory Prerequisite: MAE 312
1 credit

MAE 451 Supervised Student Teaching: Middle School Grade Levels 7-9**MAE 452 Supervised Student Teaching: High School Grade Levels 10-12**

Intensive supervised teaching in secondary schools. Students work in the school under the supervision of an experienced teacher.

Mandatory Prerequisites: MAE 312; MAT 310 or 313; MAT 320; permission of director of mathematics teacher preparation program

Mandatory Corequisite: MAE 454
6 credits per class, 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.

Mandatory Corequisites: MAE 451 and MAE 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. May not be taken for Pass/No Credit.

3 credits

MAP 102 Proficiency Mathematics

A review of high school algebra and other mathematics as preparation for non-calculus-based statistics such as in AMS 101 and 102. Facility with exponents, basic graphing, solving linear and quadratic equations in one variable, solving linear systems in two variables, polynomials, factorization of algebraic expressions, binomial theorem, and inequalities. More extensive graphing, work with ratios and proportions, coin tossing in probability, mean and variance. Does not count toward graduation. May not be taken for Pass/No Credit.

3 credits

A-C/U grading only

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. May not be taken for Pass/No Credit.

3 credits

A-C/U grading only

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 212-E 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.

Mandatory Prerequisites: BIO 151 or 152 or 171 or 172; CHE 111 or 131 or 141

3 credits

MAR 302-E Marine Microbiology and Microbial Ecology

Introduction to the evolution, diversity, and importance of the microbial flora of the sea. Lectures highlight the physiological distinctions and ecological functions of each of the major microbial groups (viruses, bacteria, fungi, protozoans, algae). Particular emphasis is placed on the role of these microorganisms in many of the elemental (geochemical) cycles of the oceans. Aspects of the microbiota as agents of environmental pollution or detoxification are also discussed.

Mandatory Prerequisites: BIO 151, 152 or 171, 172; CHE 132 or 142

Advisory Prerequisite: MAR 212

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.

Mandatory Prerequisites: U3 or U4 standing; BIO 151 or 171

Advisory Prerequisites: AMS 110 or equivalent; 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.

Mandatory Prerequisites: MAT 127 or 132 or 142

Advisory Prerequisites: MAR 101 or 104 or 333; PHY 122 or 126 or 132 or 142

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.

Mandatory Prerequisites: U3 or U4 standing; BIO 151

Advisory Prerequisites: CHE 131 or 141; AMS 110 or equivalent; 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.

Mandatory 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.

Mandatory Prerequisites: CHE 132, 134 or 142, 144

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 will emphasize how the application of conservation principles varies from terrestrial, aquatic, and marine realms.

Mandatory Prerequisites: BIO 213 or 351 or 353

3 credits

MAR 318-E Engineering Geology and Coastal Processes

Fundamental concepts of soil, sediment, and rock mechanics and the physics of surficial processes. Application is made to problems of geotechnical and coastal engineering. Topics include consolidation, loose boundary hydraulics, slope stability, underground excavations and beach and tidal inlet stability, and channel sedimentation. Crosslisted with GEO 318.

Mandatory Prerequisites: GEO 122 or 102 and 112; MAT 127 or 132 or 142

3 credits

MAR 320-E 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 will be explored through lecture and laboratory instruction. The laboratory portion of the course will include field sampling to investigate temporal variation in water chemistry and plankton biology, and laboratory experiments to demonstrate important concepts.

Mandatory Prerequisites: BIO 151; 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.

Mandatory Prerequisites: MAT 124 or 125 or 131 or 141; 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.

Mandatory Prerequisites: PHY 119 or 127 or 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.

Mandatory Prerequisites: CHE 132 or 142; BIO 152 or 172

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 will be considered. Contaminants will include metals, oil, halogenated hydrocarbons, radioactive wastes, excess nutrients, plastics, and solid wastes.

Mandatory Prerequisites: BIO 151 or 171; 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.

Mandatory Prerequisites: U3 or U4 standing; one D.E.C. category E course in chemistry or biology

3 credits

MAR 346-E 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.

Mandatory 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.

Mandatory Prerequisites: PHY 119 or 121 or 125 or 131 or 141; MAT 127 or 132 or 142

2 credits

MAR 366-E Marine Plankton

An introduction to the biology of the plant and animal plankton present in the sea. Techniques of collection, enumeration, and identification of phytoplankton and zooplankton are described. Life histories are studied and factors that influence seasonal changes in species and biomass are examined.

Mandatory Prerequisites: BIO 151, 152 or 171, 172

3 credits

MAR 371 Introduction to Tropical Marine Ecology

An examination of coral reefs, seagrass beds, and mangroves and the physical and biological parameters that influence them at the LaParguera Marine Station, Puerto Rico. Through morning lectures and afternoon and evening field and laboratory studies students are introduced to the general features of tropical marine systems, including a description of the oceanographic setting, formation of reefs, species diversity, and productivity, as well as more specific aspects of the biology, behavior, and ecology of the fish, invertebrates, and plants associated with these tropical marine habitats and communities. Students participate in group projects designed to demonstrate the interplay of physical and biological processes in shaping these communities. Offered in winter intersession only.

Mandatory Prerequisites: BIO 151; permission of instructor

Advisory Prerequisites: PHY 121 or 125 or 131 or 141; CHE 131

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 will be required.

Mandatory Prerequisite: BIO 151 or 171; MAT 124 or 125 or 131 or 141

3 credits

MAR 390-H Development of Aquaculture

A comprehensive, interdisciplinary description and analysis of the culture of aquatic organisms for human use. The course covers both marine and freshwater aquaculture of plants, shellfish, and finfish. Basic prin-

ciples of aquaculture are illustrated with specific examples of organisms cultured for staple and luxury foods, biochemicals, wastewater treatment, etc. The development of aquaculture as an industry and its role in managing aquatic resources are covered. While much of the course material is biological, economic, social, and legal aspects of natural resource allocation are also emphasized.

Mandatory Prerequisite: BIO 151 or 171

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.

Mandatory 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 will be introduced as will the complex social, political, and scientific issues of making sound policy decisions.

Mandatory Prerequisites: GEO 101; CHE 131 or PHY/ENS 119 or equivalent

3 credits

MAR 395 Topics in Marine Environmental Sciences

May be repeated as the topic varies.

Mandatory Prerequisites: 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.

Mandatory Prerequisite: MAT 127 or 132 or 142;

Advisory Prerequisites: CHE 301; MAR 333

3 credits

MAR 413-E 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.

Mandatory Prerequisites: BIO 152 or 172; CHE 322 or 332

3 credits

MAR 475 Teaching Practicum in Marine Sciences

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: U3 or U4 standing; permission of instructor and MSRC Undergraduate Studies Committee

3 credits, S/U grading

MAR 487 Research in Marine Sciences

May be repeated.

Mandatory Prerequisites: Permission of instructor and MSRC Undergraduate Studies Committee.

1-3 credits

MAR 488 Internship

May be repeated up to a limit of 12 credits.

Mandatory Prerequisites: MAR 333; permission of instructor, department, and Office of Undergraduate Academic Affairs

3-12 credits, S/U grading

MAT

Mathematics

MAT 123-C Introduction to Calculus

The basics of calculus, taught along with the necessary preparatory material from 12th-year high school

mathematics and illustrated with relatively simple examples. Slope and derivative, rational functions, mean value theorem, maxima and minima, area under a graph, the fundamental theorem, integration of polynomial functions, introduction to exponential and logarithmic functions.

Mandatory Prerequisite: MAP 103 or equivalent; *prerequisite* must be met within one year prior to beginning MAT 123

3 credits

MAT 124-C Introduction to Calculus B

Continuation of MAT 123. Trigonometric functions, review of the fundamental theorem, differentiation and integration of elementary algebraic and trigonometric functions, with emphasis on computations and applications. May not be taken for credit in addition to MAT 125, 130, 131 or 141

Mandatory Prerequisite: C or higher in MAT 123

3 credits

MAT 125-C Calculus A

Calculus, emphasizing computations and applications, for students who have the necessary background from 12th-year high school mathematics. Differentiation and integration of elementary algebraic and trigonometric functions, area under a graph, the fundamental theorem. May not be taken for credit in addition to MAT 124, 131, or 141.

Mandatory Prerequisite: 12th-year high school mathematics or equivalent

3 credits

MAT 126-C Calculus B

Applications of the definite integral to geometric and physical problems, differentiation and integration of logarithmic and exponential functions, inverse functions, techniques of integration, improper integrals and l'Hospital's rule. May not be taken for credit in addition to MAT 132 or 142.

Mandatory Prerequisite: C or higher in MAT 124 or 125 or 131 or 141

3 credits

MAT 127-C Calculus C

Sequences, infinite series, Taylor series, complex numbers and the complex exponential, first- and second-order differential equations. May not be taken for credit in addition to MAT 132 or 142.

Mandatory Prerequisite: MAT 126

3 credits

MAT 130 Trigonometric Functions

Trigonometry, trigonometric functions, radians, trigonometric limits. Open to prospective students in engineering, physical sciences, and mathematics who need to bridge the gap between MAT 123 and MAT 131. May not be taken for credit in addition to MAT 124.

Advisory Prerequisite: C or higher in MAT 123

Advisory Corequisite: MAT 131

1 credit

MAT 131-C Calculus I

Functions of one variable, derivatives and applications, integration, the fundamental theorem. Applications-oriented approach with emphasis on numeric and graphical solutions; use of graphing calculators. May not be taken for credit in addition to MAT 124 or 125 or 141.

Mandatory Prerequisite: C or higher in MAT 123 and coregistration in MAT 130 or 12th-year high school mathematics or equivalent

4 credits

MAT 132-C Calculus II

Numerical methods of integration, applications of integration, differential equations (first and second order) and applications, complex numbers, Taylor and Fourier series. Applications-oriented approach with emphasis on numeric and graphic solutions; use of graphing calculators. May not be taken for credit in addition to MAT 126 or 127 or 142.

Mandatory Prerequisite: C or higher in MAT 131 or 141

4 credits

MAT 141-C Honors Calculus I

The topics of MAT 131 treated with additional attention to the underlying theory as a means of understanding why the processes of calculus work. May not be taken for credit in addition to MAT 124, 125, or 131. Priority given to students in the University's honors programs.

Mandatory Prerequisite: 12th-year high school mathematics or equivalent
4 credits

MAT 142-C Honors Calculus II

A continuation of MAT 141 in the same spirit, covering the topics of MAT 132. May not be taken for credit in addition to MAT 126, 127, or 132.

Mandatory Prerequisite: A or A- in MAT 141 or MAT 131
4 credits

MAT 203 Calculus III with Applications

Vector algebra in two and three dimensions, multivariate differential and integral calculus, optimization, vector calculus including the theorems of Green, Gauss, and Stokes. Applications to economics, engineering, and all sciences, with emphasis on numerical and graphical solutions; use of graphing calculators. May not be taken for credit in addition to the equivalent AMS 261 or MAT 205.

Mandatory Prerequisite: MAT 127 or 132 or 142
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.

Mandatory Prerequisite: MAT 127 or 132 or 142
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 210.

Mandatory Prerequisite: MAT 131 or 141, or coregistration in MAT 126
3 credit

MAT 250 Problem Seminar

Intended for students interested in sharpening their problem solving skills and in developing their ability to express mathematical ideas.

Advisory Prerequisite: MAT 131 or 126
1 credit, S/U grading

MAT 303 Calculus IV with Applications

Homogeneous and inhomogeneous linear differential equations; systems of linear differential equations; series solutions; Laplace transformations; introduction to waves, heat, and Laplace equations; Fourier series. Applications to economics, engineering, and all sciences with emphasis on numerical and graphical solutions; use of computers. May not be taken for credit in addition to the equivalent AMS 361.

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.

Advisory Prerequisite: MAT 211 or 305 or AMS 210
3 credits

MAT 311 Number Theory

Congruences, quadratic residues, quadratic forms, continued fractions, Diophantine equations, number-theoretical functions, and properties of prime numbers.

Advisory Prerequisites: MAT 211; MAT 203 or 205 or AMS 261
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.

Mandatory Prerequisites: AMS 210 or MAT 211; AMS 261 or MAT 203 or 205
3 credits

MAT 313 Abstract Algebra

Groups and rings together with their homomorphisms and quotient structures. Unique factorization, polynomials, and fields.

Advisory Prerequisites: MAT 211; MAT 203 or 205 or AMS 261
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.

Advisory Prerequisites: MAT 211; MAT 203 or 205 or AMS 261
3 credits

MAT 318 Classical Algebra

Reexamines 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.

Advisory Prerequisite: MAT 125 or 131
Advisory Corequisite: MAT 211 or AMS 210
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.

Advisory Prerequisite: MAT 203 or 205 or 211 or AMS 261 or A- or higher in MAT 127 or 132
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.

Advisory Prerequisites: MAT 203 or 205 or AMS 261; MAT 320
3 credits

MAT 331 Computer-Assisted Mathematical Problem Solving I

Utilization of the computer as a tool to gain insight into complex mathematical problems. Numerical integration, computation of special numbers (π , $\exp(-20)$, $\gamma(1/3)$, etc.), Euler-Maclaurin summation formula, interpolation and extrapolation, splines and least squares, nonlinear equations and systems, maxima and minima. Graphics: plotting of surfaces, level sets, orbits of dynamical systems.

Advisory 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.

Advisory Prerequisite: 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.

Advisory Prerequisite: MAT 303 or 305 or AMS 361
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 will describe examples of chaotic behavior and of fractal attractors, and develop some of the mathematical tools for understanding them.

Advisory Prerequisites: MAT 303 or 305 or AMS 361
3 credits

MAT 360 Geometric Structures

Formal geometries and models. Topics selected from projective, affine, Euclidean, and non-Euclidean geometries.

Advisory Prerequisite: MAT 211 or AMS 210; MAT 203 or 205 or AMS 261
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.

Advisory Prerequisite: MAT 203 or 205 or AMS 261
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 know 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.

Advisory Prerequisite: MAT 205
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.

Mandatory 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.

Mandatory 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 varies.

Mandatory Prerequisite: MAT 320
3 credits per class

MAT 475 Undergraduate Teaching Practicum in Mathematics

Students may not serve as teaching assistants in the same course twice. May not be used for major credit.

Mandatory Prerequisite: Permission of the director of undergraduate studies
3 credits, S/U grading

MAT 487 Independent Study in Special Topics

May be repeated.

Mandatory Prerequisite: Permission of the director of undergraduate studies

3 credits

MAT 495 Honors Thesis

Mandatory Prerequisite: Permission of the director of undergraduate studies

3 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 values. No previous musical training is assumed.

3 credits

MUS 105-G Musics of the World I

An introduction to musical traditions in the Middle East and Asia. Consideration of selected musical genres and styles in their relation to religious beliefs, social systems, and other aspects of culture. Not for major credit. Not for credit in addition to the discontinued MUS 103.

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 major credit. Not for credit in addition to the discontinued MUS 104.

3 credits

MUS 109-G Rock Music

A study of rock music, including an investigation of its musical constituents: rhythm, form, pitch structure, instrumental texture, and vocal style. An historical survey beginning with the roots of rock in earlier folk and popular styles and tracing its development from the end of World War II to the present. Special attention is paid to various syntheses of African and European traditions.

3 credits

MUS 119-D The Elements of Music

The notation of intervals, scales, chords, rhythms, and meters; practical exercises and ear training. Not for major credit.

3 credits

MUS 120 Elementary Sight-Singing and Dictation

Beginning ear-training, including rhythmic and melodic dictation and sight-singing. Intended for students who are not prepared to enter MUS 121. May be repeated, but credit counts toward graduation only once. Not for major credit.

Mandatory Prerequisite: MUS 119 or placement by undergraduate musicianship examination

2 credits

MUS 121 Musicianship I

Review of notation of pitch, rhythm, scales, intervals, and chords. Sight singing, dictation, and transcription of melodic, harmonic, and rhythmic material.

Mandatory Prerequisite: Placement by undergraduate musicianship examination (consult department as early as possible concerning dates)

Mandatory Corequisites: MUS 131 and 222

2 credits

MUS 131, 132 Keyboard Harmony I, II

Practical studies in music theory through basic keyboard exercises.

Mandatory Prerequisite: to MUS 131: Placement by undergraduate musicianship examination

Mandatory Corequisites: to MUS 131: MUS 121 and 222; audition with instructor for section placement

Mandatory Prerequisites: to MUS 132: MUS 131; audition with instructor for section placement

Mandatory Corequisites: to MUS 132: MUS 220 and 321

1 credit per class

MUS 161 to 187 Performance Study

MUS 161 Piano

MUS 163 Harpsichord

MUS 165 Violin

MUS 166 Viola

MUS 167 Cello

MUS 168 String Bass

MUS 169 Classical Guitar

MUS 170 Flute

MUS 171 Oboe

MUS 172 Clarinet

MUS 173 Bassoon

MUS 175 Horn

MUS 176 Trumpet

MUS 177 Trombone

MUS 180 Percussion

MUS 182 Voice

MUS 187 Other Instruments

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Mandatory Prerequisites: Audition; permission of instructor

Mandatory Prerequisite: to MUS 187: Approval of department undergraduate studies committee

Mandatory Corequisite: to MUS 165-168, 170-180, 187: MUS 262 or 263 or 264

Mandatory Corequisite: to MUS 182: MUS 261 or 393

2 credits per class

MUS 208 Technology in the Arts

A multidisciplinary, hands-on introduction to the concepts and techniques of computer-influenced art, combining art, music, and theatre. Students explore computer creation and manipulation of sounds and images, as well as various ways of combining them. Current creative work using these techniques is studied. Crosslisted with ARS 208 and THR 208.

Mandatory 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. Elementary analysis of a few basic forms.

Mandatory Prerequisites: MUS 121 or placement by undergraduate musicianship examination; MUS 131 and 222

Mandatory Pre- or corequisite: MUS 101

Mandatory Corequisites: MUS 132 and 321

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.

Mandatory Prerequisite: MUS 220 or placement by undergraduate musicianship examination

Mandatory Corequisites: MUS 231 and 322

3 credits

MUS 222 Modal Counterpoint I

An introduction to fundamental principles of musical structure through exercises in two-part species counterpoint in 16th-century style.

Mandatory Corequisites: MUS 121 and 131

3 credits

MUS 231, 232 Keyboard Harmony III, IV

Practical studies in music theory through intermediate keyboard exercises.

Mandatory Prerequisites: to MUS 231: MUS 132, 220 and 321; audition with instructor for section placement

Mandatory Corequisites: to MUS 231: MUS 221 and 322

Mandatory Prerequisites: to MUS 232: MUS 221, 231, and 322; audition with instructor for section placement

Mandatory Corequisites: to MUS 232: MUS 323 and 331

1 credit per class

MUS 261 Stony Brook Chorale

Study and performance of a repertory from the Middle Ages to the present. Grading is based upon attendance. May be repeated.

Mandatory Prerequisite: Audition

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.

Mandatory 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.

Mandatory Prerequisite: Audition

1 credit

MUS 264 Jazz Ensemble

Study and performance of works for jazz ensemble. Grading is based on attendance. May be repeated.

Mandatory Prerequisite: Audition

3 credits

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.

Mandatory Prerequisite: Audition

1 credit

MUS 290 Vocal Repertory

Performance and analysis of works from the vocal repertory. May be repeated.

Mandatory Prerequisite: Permission of instructor

Mandatory 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 will be traced through opera and oratorio, cantata and chorale, concerto, suite, and trio sonata, to its ultimate expression in the works of Handel, Bach, and their contemporaries. Not for major credit.

Mandatory Prerequisite: MUS 101 or 119

3 credits

MUS 302-I The Music of J.S. Bach

The vocal and instrumental works of Johann Sebastian Bach and the cultural and musical traditions in which they were grounded. Not for major credit.

Mandatory Prerequisite: MUS 101 or 119

3 credits

MUS 303-I The Music of Beethoven

An exploration of the meaning and continuing relevance of one of the pivotal composers of the Western world by the study of his symphonies, string quartets, piano sonatas, and other works. Not for major credit.

Mandatory Prerequisite: MUS 101 or 119

3 credits

MUS 304-K Contemporary Traditions in American Music: 1900 to the Present

Study 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 will be considered for instance, with respect to such issues as how 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 major credit.

Mandatory Prerequisites: MUS 101 or 119

Advisory Prerequisite: 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 major credit.

Mandatory Prerequisite: MUS 101 or 119
3 credits

MUS 306-G The Symphony

Study of important symphonic works from the 18th century to the present. The course will concentrate on the development of styles from Haydn, Mozart, and Beethoven through the romantics, Brahms, and Mahler, concluding with the transformation of the symphonic idea in works of Stravinsky and Weber. Not for major credit.

Mandatory Prerequisite: MUS 101 or 119
3 credits

MUS 307-I Music and Drama

The ritual and dramatic uses of music from antiquity to the modern lyric theatre, with emphasis on the operatic repertory from Mozart to Berg. Not for major credit.

Mandatory Prerequisite: MUS 101 or 119
3 credits

MUS 308-K History of Jazz

Survey of jazz styles, including ragtime, blues, New Orleans jazz, swing, bebop, "cool" jazz, "free" jazz, fusion, and Latin styles. Guidance in the appreciation of jazz and related musics, musical analysis of representative works, and demonstrations of improvisation. Jazz as an expression of cultural pluralism. Not for major credit.

Mandatory Prerequisite: MUS 101 or 109 or 119
Advisory Prerequisite: Completion of D.E.C. categories I and J or equivalent
3 credits

MUS 309-G Music of the 20th Century

An introduction to the variegated and rapidly changing trends of the present century, including impressionism, expressionism, neoclassicism, twelve-tone and other serialism, constructivism, chance music, electronic and computer music, as well as styles derived from folk music, jazz, and other forms of popular music. Not for major credit.

Mandatory Prerequisite: MUS 101 or 119
3 credits

MUS 310-K Music and Culture in the 1960s

The music of Bob Dylan, John Cage, the Beatles, Pauline Oliveros, Ornette Coleman, Milton Babbitt, Luciano Berio, and others is studied in conjunction with texts from or criticism on the 1960s. Music and texts are correlated by the topics of protest, chaos, mass culture, the women's movement, subcultures, superrationality, deconstruction, and others. Not for major credit.

Mandatory Prerequisite: MUS 101 or 119
3 credits

MUS 312-J Music in the Middle East

A survey of traditional and contemporary musics of Turkey, Iran, Israel, and the Arab world. Musics of rural and urban communities are examined both in terms of their structure and style, and in the ways that they relate to aspects of Middle Eastern life such as religious observance, social relations, ethnic and national identity, modernization, and emigration. Not for major credit.

Mandatory Prerequisite: MUS 101 or 119
3 credits

MUS 313-G Cross-Cultural Musics from Stravinsky to World Beat

An investigation into cross-cultural exchanges in Western and non-Western classical and popular musics in the 20th century, exploring the political and social contexts of, the role of technology in, and the aesthetic and ethical implications of musical borrowings. Among the topics covered are turn-of-the-century exoticism, uses of folk music by classical composers, mutual borrowings between the West and Indonesia, Middle Eastern music and the West, and Paul Simon and the music of South Africa. Not for major credit.

Mandatory Prerequisite: MUS 101 or 119
3 credits

MUS 314-G Women Making Music

A study of the contributions made by women to music making in various contemporary and historical cultures of the world, with emphasis on Western traditions. Topics include women as composers, performers, and listeners; genres designed for women; women's roles in relation to men's; gender implications in musical style; and depictions of women in musical dramas. All types of music will be considered: "classical," rock, pop, folk, jazz, various "fusions," and non-Western musics such as those from India, China, Indonesia, and the Middle East. Crosslisted with WNH 314.

Mandatory Prerequisite: MUS 101 or 119
3 credits

MUS 315, 316 The Structural Principles of Music I, II

An introduction to the language and basic structural concepts of the art through the study of such elements as melody, rhythm, harmony, counterpoint, and form; analysis, written exercises, and discussion of theoretical principles. Not for major credit.

Mandatory Prerequisite to MUS 315: MUS 119
Mandatory Prerequisite to MUS 316: MUS 315
3 credits per class

MUS 317 Interactive Performance, Media, and MIDI

Practical and theoretical issues related to interactive performance, combining elements of art, music, theatre, performance art, video, and computer science. Course topics include sound synthesis, sampling, video, lighting, alternative input, and MIDI. This hands-on course stresses small experimental-creative laboratory assignments and culminates in final small-group or individual projects. Crosslisted with ARS 317 and THR 317.

Mandatory Prerequisite: At least one 200- or 300-level ARS, MUS, or THR studio or performance course
3 credits

MUS 321, 322 Tonal Harmony I, II

Practice in homophonic writing, including the harmonization of chorales.

Mandatory Prerequisites to MUS 321: MUS 121, 131, and 222
Mandatory Corequisites to MUS 321: MUS 132 and 220
Mandatory Prerequisites to MUS 322: MUS 132, 220, and 321
Mandatory Corequisites to MUS 322: MUS 221 and 231
3 credits per class

MUS 323 Techniques of Late 19th- and 20th-Century Music

Study and practice in the techniques used in the late 19th and 20th centuries to organize pitch, rhythm, tone color, and dynamics.

Mandatory Prerequisites: MUS 132, 221, and 322
Mandatory Corequisites: MUS 232 and 331
Advisory Prerequisite: MUS 352
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.

Mandatory Prerequisites: MUS 221, 231, and 322
Mandatory Corequisites: MUS 232 and 323
2 credits

MUS 339 Beginning Composition (Formerly MUS 229)

Individual projects in composition discussed and criticized in class. Enrollment limited to eight. May be repeated once.

Mandatory Pre- or corequisite: MUS 323
3 credits

MUS 349-G The Creative Process in the Fine Arts

An examination of the creative process and its philosophical foundations in Western culture. Students explore highlights of the philosophical tradition since Plato; attend exhibits, rehearsals, and performances; and discuss with visiting artists their work and its sources. Crosslisted with ARH 349 and THR 349.

Mandatory Prerequisites: One course in philosophy; ARH 101 or 102 or MUS 101 or 119 or THR 101 or 104
3 credits

MUS 350-G Western Music before 1600 (Formerly MUS 340)

The history of Western music from antiquity to the late 16th century.

Mandatory Prerequisites: MUS 132, 220, and 321
4 credits

MUS 351-I Western Music from 1600 to the Early 19th Century

A survey of style and form from early opera through the late quartets of Beethoven. (Not for credit in addition to the discontinued MUS 341-G)

Mandatory Prerequisite: MUS 350
4 credits

MUS 352-G Western Music of the 19th and 20th Centuries (Formerly MUS 342)

A survey of music from the early 19th century until the present day, with emphasis on major currents of stylistic development.

Mandatory Prerequisites: MUS 322 and 351
4 credits

MUS 355-G Special Topics in Music

May be repeated as topic varies.

Mandatory Prerequisite: MUS 101 or 105 or 106 or 119
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.

Mandatory Prerequisites: Audition; permission of instructor

Mandatory Prerequisite to MUS 387: Approval of department undergraduate studies committee
Mandatory Corequisite to MUS 365-368, 370-380, 387: MUS 262 or 263 or 264

Mandatory Corequisite to MUS 382: MUS 261 or 393
4 credits per class

MUS 388 Fundamentals of Accompanying

Development of skills required of an accompanist, including sight-reading and instrumental and vocal accompaniment. Specific accompanying assignments will be made throughout the semester. May be repeated once.

Mandatory Prerequisites: Audition; permission of instructor
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.

Mandatory Prerequisites: MUS 119 or 121; 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 repertory. Two hours of rehearsal per week under the supervision of

a faculty member or graduate assistant. May be repeated.

Mandatory Prerequisite: Permission of instructor
1 credit

MUS 393 Chamber Chorus

Performance of works for small chorus. Repertory to be chosen from all periods. May be repeated.

Mandatory Prerequisite: Audition
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.

Mandatory Prerequisite: MUS 322
Advisory Prerequisite: MUS 351
3 credits

MUS 422 Analysis of 20th-Century Works

Music to be studied is selected from representative works by Debussy, Bartok, Schoenberg, Stravinsky, Weber, and others.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: MUS 322
Advisory Prerequisites: MUS 323, 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 concrete and live performance will be included. Studio work includes technical practice and creative assignments. Technical background is not required.

Mandatory 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.

Mandatory 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 varies.

Advisory Prerequisite: MUS 350-352; MUS 322 or 323, depending on topic
3 credits

MUS 475 Undergraduate Teaching Practicum

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: U3 or U4 standing in music major; permission of instructor and department
3 credits, 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.

Mandatory Prerequisites: Permission of instructor; approval of department's undergraduate studies committee
1-6 credits

MUS 491 Conducting

Manual technique and the analysis and preparation of scores for performance. May be repeated.

Mandatory 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 will 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

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.

Mandatory 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 cardio-vascular 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 will be 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.

Mandatory 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 113 Basic Fencing

A beginning course in fencing including study of equipment, fitness, body position, and fencing skills. There is an introduction to bouts.

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.

Mandatory 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.

Mandatory 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 will be on cardiovascular conditioning; exercises that develop flexibility, muscular strength, and endurance are also included. The natural buoyancy and resistance of water make this activity well suited for individuals who are overweight or physically impaired and who wish to achieve and maintain fitness levels while avoiding the risk of injury.

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.

Mandatory Prerequisite: PEC 133
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.

Mandatory 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 Universal gym machine 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 Universal gym machine or free weights, stretching, calisthenics, and other activities known for their physical conditioning benefits.

Mandatory 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.

Mandatory 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 Beginning Horsemanship

Designed for the student with little or no experience in English riding. Covers basic controls and techniques employed in hunter seat equitation. The theory program begins the study of the environmental needs of the horse. An extra-fee course.

1 credit, S/U grading

PEC 181 Advanced Beginning Horsemanship

Designed for the student who has acquired the basic skills in hunter seat equitation. Techniques are

refined, and cross-country and beginning jumping are covered. Theory includes breeds, colors, and sports. An extra-fee course.

Mandatory Prerequisite: PEC 180

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 195 Squash****PEC 196 Swimming****PEC 197 Tennis****PEC 198 Volleyball****PEC 199 Track and Field**

Participation in a sport at the intercollegiate level including all the instruction, practice, and competition associated with such an activity. Advanced skills and strategies are covered. May be repeated for credit as far as the limit on 100-level PEC courses permits.

Mandatory Prerequisite: Permission of instructor

1 credit, 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: PEC 223

2 credits per class

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.

Mandatory Prerequisites to PEC 227: PEC 221 and 223; permission of instructor

Mandatory Prerequisites to PEC 228: PEC 227; permission of instructor

2 credits per class

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.

Mandatory 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. The course includes teaching methods and protocols of cardiopulmonary resuscitation, including infant, child, and adult procedures.

Mandatory 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.

Mandatory Prerequisites: PEC 270; permission of instructor

2 credits

PEC 282 Intermediate Horsemanship

A stable management course: the care of the horse and the control of his environment; first aid and training of the young horse. Riding covers sophisticated jumping techniques in the ring and in the hunt course. An extra-fee course.

Mandatory Prerequisite: PEC 181

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.

Mandatory 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.

Mandatory 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 intercollegiate sport or an intramural season) and assumes the responsibility for injury prevention, recognition, emergency care, and rehabilitation.

Mandatory Prerequisite: PEC 311

2 credits per class

PEC 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: Advanced skill level; permission of instructor and department

2 credits per class, 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 is used. May not be taken for credit in addition to PHI 150.

3 credits

PHI 104-B Moral Reasoning (II)

An historical introduction to philosophy through inquiry into the formation, justification, and evaluation of moral judgments. Students are introduced to the major theories and problems of ethics, such as utilitarianism, Kant's categorical imperative, ethical relativism, egoism, and classical conceptions of the good and virtue. Against this background students engage in discussions of contemporary moral issues.

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 106-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 thinking 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)

A study of different systems of Eastern philosophy and of the main classical texts drawn from Hinduism, Buddhism, Taoism, Confucianism, and Neo-Confucianism. Efforts are made to recover the different modes of knowledge, language, identification, and liberation dealt with in these texts.

3 credits

PHI 150-G Honors Introduction to Philosophy (I, II, III)

An introduction to philosophy through one of the following approaches: (1) the study of a basic philosophical problem, e.g., the mind-body problem or the limits of human knowledge; (2) the application of philosophical analysis to some phenomenon of contemporary life, e.g., technology; or (3) the study of philoso-

phy's relation to another discipline, e.g., science or history. May not be taken for credit in addition to PHI 103.

Mandatory Prerequisite: Permission of department; priority given to students in the University's honors programs

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 220-C Introduction to Symbolic Logic (II)

This first course in logic emphasizes the development of systematic techniques for assessing the validity of arguments: truth tables and truth values analysis, Venn diagrams, elementary quantification theory, and deduction in both the propositional calculus and quantification theory.

Mandatory Prerequisites: 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.

Mandatory Prerequisites: U2 standing or one course in philosophy

Advisory Prerequisite: One D.E.C. category E course or equivalent

3 credits

PHI 247-G Existentialism (II)

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.

Mandatory 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.

Mandatory Prerequisites: 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 or ARH or 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.

Mandatory 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 WNH 284.

Advisory Prerequisite: U2 standing or one course in philosophy or women's studies

3 credits

PHI 285-G The Uses of Philosophy (III)

Introductory study of the bearing of philosophic considerations on the special arts and sciences. May be repeated as the topic varies.

Advisory Prerequisite: U2 standing or one course in philosophy

3 credits

PHI 300-I Ancient Philosophy (I)

Advanced studies in selected Greek thinkers from Thales to Aristotle.

Mandatory Prerequisites: Two courses in philosophy

Advisory Prerequisites: 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.

Mandatory 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.

Mandatory Prerequisites: Two courses in philosophy

Advisory Prerequisite: 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.

Mandatory Prerequisites: Two courses in philosophy

Advisory Prerequisite: PHI 200, 206, 208, 247, 300, or 306

3 credits

PHI 310-K American Philosophy (I)

A study of selected major figures in the American tradition, e.g., Jefferson, Emerson, Edwards, James, Peirce, Dewey, Whitehead, and Santayana.

Mandatory Prerequisites: Two courses in philosophy

Advisory Prerequisites: Completion of D.E.C. categories I and J or equivalent; 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. May be repeated for credit as the topic varies.

Mandatory Prerequisites: Two courses in philosophy

Advisory Prerequisite: PHI 200, 206, 208, 247, 300, 304, 306, or 310

3 credits

PHI 320-G Metaphysics (II)

An inquiry into the first principles of all science, art, and action as these are treated by representative classical and modern authors.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: Two courses in philosophy
3 credits

PHI 330-C Advanced Symbolic Logic (II)

A study of such topics as a natural deduction system of quantification theory including consistency and completeness proofs; axiomatic formal systems and associated concepts of consistency, completeness, and decidability; elementary modal logic; and introductory set theory.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: One course in philosophy or one course in 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.

Mandatory Prerequisites: Two courses in philosophy or one course in religious studies
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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: Two courses in philosophy
Advisory Prerequisite: PHI 247, 264, 306, 208, 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: One course in philosophy; two D.E.C. category F courses or equivalent
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.

Mandatory Prerequisites: One course in philosophy; two D.E.C. category E courses or equivalent
3 credits

PHI 366-G Philosophy and the Environment (III)

Philosophical aspects of how human beings relate to the natural world. Close consideration is given to the meaning and scope of basic concepts such as nature, the earth, wilderness. Also to be examined are philosophical issues in ecology, e.g., those raised by the contemporary movements of deep ecology (which investigates non-anthropocentric values inherent in nature) and ecological feminism (which explores parallels between misogyny and the exploitation of natural resources). Current environmental problems facing the world are also considered.

Mandatory Prerequisites: Two courses in philosophy, or one course in philosophy and two D.E.C. category E courses or equivalent
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 philosophical concern, such as metaphysics.

Mandatory Prerequisites: One course in philosophy; two D.E.C. category E courses or equivalent
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.

Mandatory Prerequisites: One course in philosophy; one D.E.C. category C course or equivalent.
Advisory Prerequisites: PHI 206 and 220
3 credits

PHI 370 Philosophical Psychology

An examination of philosophical and some psychological theories concerning the nature of the person and the sources of the self. The course will include such topics as the dimensions of the person, the nature of conscious life, the scope of human cognition, and gender identity.

Mandatory Prerequisite: One course in philosophy
Advisory Prerequisites: PHI 100, 103, or 104
3 credits

PHI 370-G Philosophical Psychology (III)

An examination of traditional philosophic theories concerning the nature of a person and their connection to such theories in psychology as psychoanalysis, medical models of mental illness, and theories of behavior modification.

Mandatory Prerequisites: Two philosophy courses or PSY 103
Advisory Prerequisites: PHI 100, 206, 323, 332, or 353
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.

Mandatory Prerequisites: PHI 104 and one other PHI course
Advisory Prerequisite: PHI 108, 200, 206, 208, 300, 304, 306, 308, or 366
3 credits

PHI 374-G Philosophy in Relation to Other Disciplines (III)

The study of philosophy as it affects and is affected by other disciplines such as anthropology, science, sociology, the history of ideas, theology, and psychology.

Mandatory Prerequisites: Two courses in philosophy
3 credits

PHI 375-G Philosophy of Law (III)

An examination of the concept of law and the nature of legal reasoning. The course explores the relationship of law to other central philosophical and social ideas such as freedom, rights, morality, authority, welfare, property, justice, equality, and constitutionalism.

Mandatory 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.

Mandatory 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 (III)

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.

Mandatory Prerequisites: Two courses in philosophy
Advisory Prerequisites: PHI 105, 277, or 375; a 300-level political science course
3 credits

PHI 378-K Philosophical Topics in Asian American Studies (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. This course is intended for both Asians and non-Asians.

Mandatory 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 relations between literature and philosophy. Primary texts are selected to demonstrate the precise nature of the relationship. Topics vary from term to term.

Mandatory 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.

Mandatory Prerequisites: Two courses in philosophy; one D.E.C. category D course or equivalent
Advisory Prerequisites: PHI 109 or 110; PHI 264
3 credits

PHI 384-G Advanced Topics in Feminist Philosophy (III)

An intensive philosophical study of selected topics of feminist concern. Topics are selected to further the understanding of what effect feminism has upon the traditional tenets of philosophy, such as universality and truth, as well as providing a detailed understanding of particular feminist theories. Crosslisted with WNH 384.

Mandatory Prerequisites: One course in philosophy; one course in women's studies
Advisory Prerequisites: PHI/WNH 284; one other course in women's studies or philosophy
3 credits

PHI 400-G, 401-G Individual Systems of the Great Philosophers (I) (Formerly PHI 391, 392)

A detailed study of the works of a single great philosopher. May be repeated as the topic varies.

Mandatory Prerequisite: PHI 300 or 304 or 306 or 308 or 310 or 312
3 credits per class

PHI 402-G Analysis of Philosophic Texts (II) (Formerly PHI 393)

Detailed analysis of a major philosophic text. May be repeated as the topic varies.

Mandatory Prerequisite: PHI 300 or 304 or 306 or 308 or 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. May be repeated as the topic varies.

Mandatory Prerequisites: U4 standing or five courses in philosophy
3 credits

PHI 435 Senior Seminar

An intensive study of an issue, topic, figure, or historical period in philosophy intended to provide both a cul-

minating 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.

Mandatory 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

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to PHI 475: Prior preparation in subject field; permission of instructor and director of undergraduate studies
Mandatory Prerequisites to PHI 476: PHI 475; prior preparation in subject field; permission of instructor and director of undergraduate studies
3 credits per class, S/U grading

PHI 487 Readings and Research in Philosophy (II)

May be repeated

Mandatory Prerequisites: U4 standing in philosophy major; permission of department
1-6 credits

PHI 489 Readings and Research in the History of Philosophy (I)

May be repeated.

Mandatory Prerequisites: U4 standing in philosophy major; permission of department
1-6 credits

PHI 490 Readings and Research in Philosophical Investigations of other Disciplines (III)

May be repeated.

Mandatory Prerequisites: U4 standing in philosophy major; permission of department
1-6 credits

PHY Physics

PHY 111-E The Physics of Musical Sound

A discussion of the physical basis of music starting with the nature of sound itself and its human perception, then proceeding through discussions of pitch, loudness, spectrum analysis of musical instruments, architectural acoustics, and the high-fidelity reproduction of recorded music. Hypotheses about the nature and perception of sound are developed through comparison of the predictions of quantitative models with the results of experimentation (some of which are demonstrated in lecture).

Mandatory Prerequisite: Satisfaction of entry skill in mathematics requirement
3 credits

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 phenomenon 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.

Mandatory 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 refer-

ence to their therapeutic use. Three lecture hours and one three-hour laboratory period per week.

Mandatory Prerequisites for PHY 117: High school algebra and trigonometry

Mandatory Prerequisite for PHY 118: PHY 117
4 credits per class

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-E.

Mandatory Prerequisite for PHY 119: MAT 124 or 125 or 131 or 141
4 credits

PHY 121-E, 122-E Physics for the Life Sciences

Primarily for students majoring in biological sciences or in preclinical programs. A general introduction to physics, with applications to biological systems. Topics include mechanics, fluid mechanics, electromagnetism, optics, acoustics, and radiation phenomena. Three lecture hours, one recitation, and two laboratory hours per week. Credit cannot be received for PHY 121 and either PHY 125 or 131 or 141, or for PHY 122 and either PHY 126, 127, 132, or 142.

Mandatory Prerequisites for PHY 121: MAT 124 or 125 or 131 or 141; CHE 132 or 142
Mandatory Prerequisite for PHY 122: PHY 121
4 credits per class

PHY 125-E Classical Physics A

An introductory survey of the mechanics of point particles and extended objects. Particular emphasis is placed upon motion in one and two dimensions and upon the concepts of momentum and energy. Calculus is used concurrently with its development in MAT 125. Three lecture hours, one recitation, and two laboratory hours per week. Not for credit in addition to PHY 131, 121, or 141.

Mandatory Corequisite: MAT 131 or 141 or 125 or 124
4 credits

PHY 126-E Classical Physics B

An introduction to fluid mechanics, thermodynamics, wave mechanics, and optics. Three lecture hours, one recitation, and two laboratory hours per week. Not for credit in addition to PHY 132, 122, or 142.

Mandatory Prerequisite: PHY 125 or 131 or 141
Mandatory Corequisite: MAT 131 or 141 or 126
4 credits

PHY 127-E Classical Physics C

An introductory survey of electromagnetism and electric circuit theory. Particular emphasis is placed upon the concepts of vector fields, scalar potentials, as well as DC and AC circuit theory with real and complex impedances. Calculus is used concurrently with its development in MAT 126. Three lecture hours, one recitation, and two laboratory hours per week. Not for credit in addition to PHY 132, 122, or 142.

Mandatory Prerequisite: PHY 125 or 131 or 141
Mandatory Corequisite: MAT 132 or 142 or 126
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, and two laboratory hours per week. Not for credit in addition to PHY 121, 125, or 141.

Mandatory Corequisite: MAT 131 or 141 or 126
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, and two laboratory hours per week. Not for credit in addition to PHY 122, 126, 127, or 142.

Mandatory Prerequisite: PHY 131 or 141
Mandatory Corequisite: MAT 132 or 142 or 127
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 top-

ics covered are similar to those in PHY 131, 132, but are treated in more depth in a small class setting. Students may transfer to PHY 131, 132 at any time during the first half of each semester without penalty. Three lecture hours, one recitation hour, and one two-hour laboratory per week. Credit cannot be received for PHY 141 and PHY 121, 125, or 131, or for PHY 142 and PHY 122, 126, 127, or 132.

Mandatory Prerequisite to PHY 141: Permission of department; priority given to students in the University's honors programs.

Mandatory Corequisite to PHY 141: MAT 131 or 141 or 126

Mandatory Prerequisite to PHY 142: PHY 141 or permission of department

Mandatory Corequisite to PHY 142: MAT 132 or 142 or 127

4 credits per class

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.

Mandatory Prerequisite: Permission of department
1 credit per class

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.

Mandatory Prerequisites: One D.E.C. category E course; satisfaction of entry skill in mathematics requirement
3 credits

PHY 242-H Personal and Public Aspects of Physical Science

A study of key principles and facts of physical science in the context of case studies. Examples are drawn from public issues such as risks proposed by technology, and from philosophical issues that affect personal attitudes toward the external world, such as the origins of uncertainty in science.

Mandatory Prerequisites: One D.E.C. category C course or equivalent; one D.E.C. category E course or equivalent
3 credits

PHY 251-E Modern Physics

The elements of the special theory of relativity. Wave-particle duality, the concept of wave functions, and other fundamentals of the quantum theory are treated and applied to nuclei, atoms, molecules, and solids. In the laboratory students perform some of the pivotal experiments of the 20th century. Three lecture hours, one recitation hour, and one two-hour laboratory per week.

Mandatory Prerequisite: PHY 132 or 142 or 126, 127
Mandatory Pre- or corequisite: MAT 205 or 203 or AMS 261

4 credits

PHY 262-E An Introduction to Solid-State Physics

Presentation of important electrical, thermal, and optical properties of solids, particularly semiconductors and superconductors. Topics include crystal structure, wave phenomena in periodic media, phonons, free electron theory of metals, band theory of solids, and their applications. Phenomena introduced in lecture are studied in the laboratory with emphasis on understanding bulk properties of solids in terms of their underlying microstructure.

Mandatory Prerequisite: PHY 251

4 credits

PHY 291 Transitional Study

A laboratory for transfer students to supplement a course taken at another institution. Students take the laboratory portion of a 200-level course for which they have taken the theoretical portion elsewhere.

Mandatory Prerequisite: Permission of department
1 credit

PHY 301-E, 302-E Electromagnetic Theory

Review of elementary electromagnetic phenomena and their unification in Maxwell's equations, applications of the theory to static and changing electric and magnetic fields, interaction of the fields with bulk matter, circuit theory, interaction of charged particles with electromagnetic fields, propagation of electromagnetic waves, and radiation.

Mandatory Prerequisite to PHY 301: PHY 251 or permission of department

Mandatory Corequisite to PHY 301: MAT 341

Mandatory Prerequisite to PHY 302: PHY 301

3 credits per class

PHY 303-E Mechanics

The Newtonian formulation of classical mechanics is reviewed and applied to more advanced problems than those considered in PHY 131 and 132. The Lagrangian and Hamiltonian methods are then derived from the Newtonian treatment and applied to various problems.

Mandatory Prerequisites: PHY 251 or permission of department; MAT 305 or 303 or AMS 361

3 credits

PHY 306-E Thermodynamics, Kinetic Theory, and Statistical Mechanics

The course is in two parts. Those relations among the properties of systems at thermal equilibrium that are independent of a detailed microscopic understanding are developed by use of the first and second laws of thermodynamics. The concepts of temperature, internal energy, and entropy are analyzed. The thermodynamic potentials are introduced. Applications to a wide variety of systems are made. The second portion of the course, beginning with the kinetic theory of gases, develops elementary statistical mechanics, relates entropy and probability, and treats simple examples in classical and quantum statistics.

Mandatory Prerequisite: PHY 251

3 credits

PHY 308-E Quantum Physics

The concepts, historical development, and mathematical methods of quantum mechanics. Topics include Schrödinger's equation in time-dependent and time-independent forms; one- and three-dimensional solutions, including the treatment of angular momentum and spin. Applications to simple systems, especially the hydrogen atom, are stressed.

Mandatory Prerequisites: PHY 262, 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.

Mandatory Prerequisites: PHY 122 or 127 or 132 or 142; permission of instructor

1 credit

PHY 335 Electronics and Instrumentation Laboratory

An intensive laboratory-based electronics course covering modern electronic circuits and the theory behind them. Topics include AC circuits, digital techniques, and interfacing to computers involving both the interface hardware and programming in a high-level language such as BASIC or Pascal. Two three-hour laboratories per week.

Mandatory Prerequisite: PHY 262

3 credits

PHY 352-E Optics and Waves

A survey of geometrical and physical optics with associated laboratory. Polarization, interference, and diffraction phenomena are studied. Three lecture hours and one three-hour laboratory per week.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: PHY 302 and 303; MAT 342

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.

Mandatory 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.

Mandatory Prerequisites to PHY 445: PHY 308 and 335

Mandatory Prerequisite to PHY 446: PHY 445

3 credits per class

PHY 447, 448 Tutorial in Advanced Topics

May be repeated.

Mandatory Prerequisite: Permission of the director of undergraduate studies

2-4 credits per class

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.

Mandatory Prerequisites: PHY 308 or ESG 333; PHY 352

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.

Mandatory Prerequisite: PHY 352

3 credits

PHY 461 Modern Physics Research Through Computers

A project-oriented course aimed at developing the basic skills of programming, numerical analysis, and computation in the physical sciences. Emphasis is placed on physical problems in interdisciplinary subjects covering classical physics, quantum physics, and statistical physics. Projects address topical issues in atomic physics, high-energy nuclear and particle physics, and astrophysics. Six hours of laboratories per week.

Mandatory Prerequisite: PHY 308
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.

Mandatory Prerequisites: PHY 306 and 308
3 credits

PHY 475 Undergraduate Teaching Practicum

Students may not serve as teaching assistants in the same course twice. Not for major credit and not repeatable.

Mandatory Prerequisite: Permission of director of undergraduate program
2 credits, *S/U grading*

PHY 487, 488 Research

May be repeated.

Mandatory Prerequisite: Permission of director of undergraduate studies
2-4 credits per class

POL**Political Science****POL 101-F World Politics**

Analysis of the basic concepts and issues of international relations in the contemporary international system. The behaviors of states and their decision makers are considered according to various models of national and international conflict. The relationship between the characteristics of nations and their foreign policies is studied on a comparative basis.

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, SOC 202.

Mandatory 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 100-level 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.

Mandatory Prerequisite: Permission of departmental URECA coordinator
1-6 credits

POL 305-I Government and Politics of the United Kingdom

Examination of the political system of Great Britain and Northern Ireland, including the Constitution, parliament, cabinet, political parties, and the policy-making process.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 103
3 credits

POL 311-F Introduction to International Law

Casebook approach to standard introductory course in international law, including the following topics: state jurisdiction and responsibility, individuals, international organization, and use of force.

Mandatory 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.

Mandatory Prerequisite: POL 101
Advisory Prerequisite: POL 201 or equivalent
3 credits

POL 317-F American Election Campaigns

The politics of presidential nominations through primaries, caucuses, and conventions; the conduct of presidential general election campaigns; mass media coverage and opinion polling; the citizen's involvement in campaign politics; voter attitudes toward parties, candidates, and issues; and the interpretation of electoral outcomes.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: POL 102 or 105; POL 201
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.

Mandatory Prerequisites: 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105
3 credits

POL 323-F The Legislative Process

An examination of American legislative institutions—Congress, state governments, local legislatures—in light of recent research. How legislatures actually operate and how American legislatures contribute to the "democratic culture."

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105
3 credits

POL 327-K Urban Politics

Emphasizes both the formal and informal political institutions and processes in American cities and suburbs, including governmental structures, political parties, interest groups, and service delivery systems. Special attention is given to the multiethnic and multicultural context within which urban politics in the United States takes place.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 320
3 credits

POL 330-K Gender Issues in the Law

An exploration of areas of American law that have had a particular impact on the personal and professional lives of women such as employment discrimination, child custody, the battered spouse syndrome, and property laws affecting women. In addition, the course examines the obstacles to the advancement of women in the legal profession including gender bias in the court systems and the tension between career and family responsibilities. Crosslisted with WNS 330.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105 or WNS/SSI 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisites: POL 102 or 105; POL 201 or equivalent
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.

Mandatory Prerequisite: U3 or U4 standing
3 credits

POL 347-K Women and Politics

Analysis of the role of women in current American politics from a social psychological perspective. The focus is on changing trends in women's electoral participation, political interest, and office seeking over the last several decades, and recent gender differences in political involvement, candidate support, support for women's issues, and support for other public policies. Crosslisted with WNS 347.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 201 or equivalent
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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 201 or equivalent
3 credits

POL 350-I Contemporary European Political Theory

Analysis of major writings in 20th-century European political thought, focusing on four important ideological groupings: liberalism, socialism, fascism, and conservatism.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two D.E.C. category F courses or equivalent
3 credits

POL 351 Social Surveys in Contemporary Society

An interdisciplinary course on the history, uses, design, and implementation of the social survey. Emphasis is given to the use of surveys in politics, the media, and business. Crosslisted with SOC 377.

Mandatory Prerequisite: POL 201 or equivalent
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.

Mandatory 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.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: POL 102 or 105; POL 201 or equivalent
3 credits

POL 366-F Government Regulation of Business

An examination of the scope of government regulation of business in the United States today/regulation at both the federal and state levels, regulation by both economic and social agencies. The course also compares alternative explanations for regulatory agency failures as well as possible explanations for why some regulatory agencies perform better than others. Finally, the course considers proposed reforms, such as clearer legislative standards, curbs on "revolving door" practices, greater citizen participation in agency proceedings, and deregulation.

Mandatory 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/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.

Mandatory Prerequisite: U3 or U4 standing
Advisory 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.

Mandatory 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.

Mandatory Prerequisites: Two courses in philosophy
Advisory Prerequisites: PHI 105, 277, or 375; a 300-level 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.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: HIS 213 or HIS/POL 214 or HIS/POL 216 or LAC 200
3 credits

POL 401, 402, 403, 404 Seminars in Advanced Topics

May be repeated as topic varies.

Mandatory Prerequisite: Permission of instructor
3 credits per class

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.

Mandatory 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.

Mandatory Prerequisites: U3 or U4 standing
Advisory Prerequisite: ECO 101 or 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.

Mandatory 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.

Mandatory Prerequisites: U3 or U4 standing; POL 101 and 102; one D.E.C. category E course
3 credits

POL 413 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.

Mandatory Prerequisite: POL 311 or 313 or 336
3 credits

POL 434-F Supreme Court Decision Making (Formerly POL 334)

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.

Mandatory Prerequisite: POL 201 or equivalent
Advisory Prerequisite: POL 320
3 credits

POL 435-J Contemporary African Problems (Formerly POL 335)

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

understanding the diversity of ideas and people in the African scene. Crosslisted with AFS 435.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two AFS or POL courses
3 credits

POL 447 Directed Readings in Political Science

May be repeated, but total credit may not exceed six credits.

Mandatory Prerequisites: Political science major; 15 credits in political science; permission of instructor and department
1-3 credits

POL 451 Advanced Survey Research (Formerly POL 352)

Advanced review of survey techniques and report writing. The course covers the analysis of survey data and the preparation of descriptive reports suitable for distribution to the media. Topics include a refresher on basic statistics, the logic of scientific inquiry and hypothesis testing, the use of focus groups and in-depth interviewing to supplement survey responses, the addition of census information to complement survey responses, effective report writing, and the varied uses of social science data. Crosslisted with SOC 477.

Mandatory Prerequisite: POL 351/SOC 377
3 credits

POL 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice. May not be used to fulfill major requirements.

Mandatory Prerequisites: POL 475: Political science major; U4 standing; interview; permission of instructor
Mandatory Prerequisite: POL 476: POL 475; political science major; U4 standing; permission of instructor and department
3 credits per class, S/U grading

POL 487 Directed Research

May be repeated but total credits may not exceed six credits

Mandatory Prerequisites: Political science major; 15 credits in political science; permission of instructor and department; permission of departmental URECA coordinator may be substituted
1-3 credits

POL 488 Internship

May be repeated up to a limit of 12 credits.

Mandatory Prerequisites: Political science major or minor with 3.0 G.P.A.; 15 credits in political science; permission of instructor, department, and Office of Undergraduate Academic Affairs
3-12 credits, S/U grading

POL 489 Washington or Albany Internship

Only three credits may be applied to major requirements.

Mandatory Prerequisites: Admission to Washington Center or New York State Assembly or Senate Program; political science major or minor with 3.0 G.P.A.; 15 credits in political science; sponsorship of a political science faculty member
Mandatory Corequisite: POL 490
12 credits, S/U grading

POL 490 Washington or Albany Seminar

Mandatory Prerequisites: Admission to Washington Center or New York State Assembly or Senate Program; political science major or minor with 3.0 G.P.A.; 15 credits in political science; sponsorship of a political science faculty member
Mandatory Corequisite: POL 489
3 credits

POL 495-496 Senior Honors Project in Political Science

Mandatory Prerequisite: Admission to the political science honors program
3 credits per class

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. No student who has had two or more years of Portuguese in high school (or who has otherwise acquired an equivalent proficiency) is permitted to register for POR 111 without written permission from the supervisor of the course.

Mandatory Prerequisite: to POR 112: POR 111
4 credits per class

POR 447 Directed Individual Study

Individually supervised studies in selected topics of Luso-Brazilian language, literature, and culture. May be repeated.

Mandatory 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, psychobiology, 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 non-parametric techniques. May not be taken for credit after AMS 102, ECO 320, POL 201, or SOC 202

Mandatory Prerequisites: PSY 103; satisfaction of entry skill in mathematics requirement
3 credits

PSY 220-F Survey in Developmental Psychology

(Formerly PSY 211)

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.

Mandatory Prerequisite: PSY 103
3 credits

PSY 230-F Survey in Clinical Psychology (Formerly PSY 215)

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.

Mandatory Prerequisite: PSY 103
3 credits

PSY 240-F Survey in Social Psychology (Formerly PSY 209)

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.

Mandatory Prerequisite: PSY 103
3 credits

PSY 250-F Survey in Biopsychology (Formerly PSY 241)

Introduction to the neural basis of sensor processes, motor control, attention, emotion, and learning. Crosslisted with CBN 241.

Mandatory Prerequisite: PSY 103 or BIO 101 or 151 or 171
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. (Not for credit in addition to the discontinued PSY 348)

Mandatory 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. Information about the opportunities available is through the Undergraduate Office of 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.

Mandatory Prerequisite: Permission of instructor
1-6 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 Undergraduate Office in the Department of Psychology. May be repeated up to a limit of six credits.

Mandatory Prerequisite: Permission of instructor
1-3 credits, S/U grading

PSY 300-F Research Methodology

Basic principles in the design and execution of research in psychology.

Mandatory Prerequisite: PSY 103, PSY 201 or AMS 102
3 credits

PSY 301 Advanced Statistics (Formerly PSY 322)

Survey of probability and sampling theory, descriptive and inferential statistics, and introduction to experimental design.

Mandatory Prerequisite: PSY 300
3 credits

PSY 325-F Children's Cognitive Development

A survey of the basic principles of cognition from experimental research with children. Topics will include perceptual development, language development, memory development, conceptual development, and the development of academic skills.

Mandatory Prerequisites: PSY 220 and 300
3 credits

PSY 326-F Children's Social and Emotional Development

Current theories, models, research methods, and findings in the study of children's socioemotional development. The course will emphasize 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.

Mandatory Prerequisites: PSY 220 and 300
3 credits

PSY 329-F Special Topics in Developmental Psychology

May be repeated as the topic varies.

Mandatory Prerequisites: PSY 220 and PSY 300
3 credits

PSY 335-F Clinical Behavior Modification (Formerly PSY 315)

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.

Mandatory Prerequisites: PSY 230 and 300
3 credits

PSY 336-F 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.

Mandatory Prerequisites: PSY 230 and 300
3 credits

PSY 337-F Mood Disorders

An in-depth survey of current research on depression and manic-depression. Topics include diagnosis and classification, genetics, personality, cognitive theories, stress, the family environment, and psychological and biological treatments.

Mandatory Prerequisites: PSY 230 and 300
3 credits

PSY 338-F Behavior Deviation in Children (Formerly PSY 312)

Development and modification of behavioral deviations in children; application of principles derived from experimental analysis of behavior to problems of children.

Mandatory Prerequisites: PSY 220 and 300
3 credits

PSY 339-F Special Topics in Clinical Psychology

May be repeated as the topic varies.

Mandatory Prerequisites: PSY 230 and 300
3 credits

PSY 345-F Theories of Personality

Contemporary theories of personality with emphasis on the experimental literature pertaining to personality development and current methods of personality assessment in the applied areas. (Not for credit in addition to the discontinued PSY 206-F)

Mandatory Prerequisites: PSY 240 and PSY 300
3 credits

PSY 346-F Health Psychology (Formerly PSY 391)

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.

Mandatory Prerequisites: PSY 240 and 300
3 credits

PSY 347-F Psychology of Women (Formerly PSY 377)

The psychological impact of important physiological and sociological events and epochs in the lives of women; menstruation, female sexuality, marriage, childbirth, and menopause; women and mental health, mental illness, and psychotherapy; the role of women in the field of psychology. Crosslisted with WNS 377.

Mandatory Prerequisites: WNS/SSI 102; ANT 367 or PSY 103 or SOC/WNS 247
3 credits

PSY 349-F Special Topics in Social Psychology

May be repeated as the topic varies.

Mandatory Prerequisites: PSY 240 and PSY 300
3 credits

PSY 355 Human Brain Function (Formerly PSY 342)

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.

Mandatory Prerequisite: PSY 250/CBN 241
3 credits

PSY 356 Physiological Psychology (Formerly PSY 340)

An advanced survey of the neurobiological bases of complex behavior. A review of basic neurophysiology, neuroanatomy, and neurochemistry is followed by considerations of the circuitry and neural processing supporting perception, motion, emotion, sleep, attention, Learning, language, and higher cognitive mechanisms. Crosslisted with CBN 340.

Mandatory Prerequisite: BIO 152 or 172 or CBN 241/PSY 250
3 credits

PSY 357-F Animal Learning (Formerly PSY 318)

Principles of adaptation and behavioral change with emphasis on techniques of reward and punishment and of stimulus control.

Mandatory Prerequisite: PSY 300
3 credits

PSY 359-F Special Topics in Biopsychology

May be repeated as the topic varies.

Mandatory Prerequisite: PSY 250/CBN 241
3 credits

PSY 365-F The Psychology of Language (Formerly PSY 370)

Examination of language acquisition and a consideration of its implication for cognitive psychology.

Mandatory Prerequisites: PSY 260 and 300
3 credits

PSY 366-F Human Problem Solving (Formerly PSY 353)

The application of basic principles of cognition to the acquisition of knowledge (concepts, cognitive strategies, verbal information), with an emphasis on instructional design.

Mandatory Prerequisites: PSY 260 and 300
3 credits

PSY 367-F Memory

A review of classic and current theories of memory and empirical research on memory in memory-intact and memory-impaired populations.

Mandatory Prerequisites: PSY 260 and 300
3 credits

PSY 368-F Sensation and Perception (Formerly PSY 323)

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.

Mandatory Prerequisite: PSY 300
3 credits

PSY 369-F Special Topics in Cognition and Perception

May be repeated as the topic varies

Mandatory Prerequisites: PSY 260 and 300
3 credits

PSY 375-F History and Systems of Psychology (Formerly PSY 352)

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.

Mandatory Prerequisites: Nine credits of psychology
3 credits

PSY 380 Research Lab: Human Cognition (Formerly PSY 303)

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.

Mandatory Prerequisites: PSY 300; permission of instructor
4 credits

PSY 381 Research Lab:**Cognition/Computers/Learning (Formerly PSY 306)**

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.

Mandatory Prerequisites: PSY 300; permission of instructor
4 credits

PSY 382 Research Lab: Social Psychology (Formerly PSY 304)

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.

Mandatory Prerequisites: PSY 300; permission of instructor
4 credits

PSY 383 Research Lab: Physiological Psychology (Formerly PSY 307)

Techniques for studying brain mechanisms underlying behavior through such topics as recording of autonomic responses in humans, motor control in humans or animals, pharmacological effects on animal behavior, and recordings of human brain activity. One hour of lecture and four hours of laboratory per week.
Mandatory Prerequisites: PSY 300; PSY 250/CBN 241; PSY 356/CBN 340; permission of instructor
 4 credits

PSY 384 Research Lab: Human Factors (Formerly PSY 302)

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.
Mandatory Prerequisites: PSY 260 and 300
 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.
Mandatory Prerequisites: PSY 300; 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.
Mandatory Prerequisites: PSY 300; permission of department
 1-3 credits

PSY 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.
Mandatory Prerequisites: PSY 300; U4 standing in psychology major; permission of instructor and department
 3 credits per class, S/U grading

PSY 487 Independent Research in Psychology

May be repeated up to a limit of 12 credits.
Mandatory Prerequisites: U3 or U4 standing; PSY 300; permission of department
 2-6 credits

PSY 488 Internship

May be repeated up to a limit of 12 credits.
Mandatory Prerequisites: 12 credits in psychology including PSY 300; permission of instructor, director of undergraduate studies, and Office of Undergraduate Academic Affairs
Mandatory Corequisite: PSY 447 or 491 or 492
 3-12 credits, S/U grading

PSY 491, 492 Advanced Seminars in Psychology

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.
Mandatory Prerequisites: PSY 300; permission of instructor
 3 credit per class

QRS**Quantitative Research in Social Sciences****QRS 130 Introduction to Quantitative Research in Social Sciences**

An introduction to the principles of statistics and research design, including sampling, randomization, and statistical inference. Social and behavioral science faculty will describe their research and present data sets for analysis. Students will use a computer program to analyze and interpret the data, and design and produce their own research proposals. Recommended but not required for the minor in Quantitative Research in Social Sciences.
Mandatory Prerequisites: U1 or U2 standing; permission of instructor
 3 credits

QRS 320 Statistical Modeling in Social and Behavioral Research

The general linear model in data analysis and experimental design. Balanced and unbalanced ANOVA; factorial, nested, and repeated-measures designs. Multiple regression and ANCOVA with applications in social and behavioral research.
Mandatory Prerequisites: AMS 210 or 201; one of the following statistics courses: AMS 110 or 310, ECO 320, POL 201, PSY 201, or SOC 202
 3 credits

QRS 321 Advanced Research Methods in the Social Sciences

A continuation of QRS 320, focusing on social science research methods and statistical tools for situations in which experimental control is lacking. Problems of causal inference, measurement, and mathematical modeling will be discussed. Social science data from a variety of sources will be analyzed, with an emphasis on conclusions that can be drawn from real-world situations.
Mandatory Prerequisite: QRS 320
 3 credits

RLS**Religious Studies****RLS 103-G, 104-G World Religions I, II**

An historical introduction to the major religious traditions of India, East Asia, the Middle East, and Europe. The first semester treats Judaism, Christianity, and Islam; the second semester studies Hinduism, Buddhism, Confucianism, and Taoism. Attention is given to the cultural background, art, literature, philosophy, and institutional development of each tradition.
 3 credits per class

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 150-B The Religious Dimension

An introduction to the nature and experience of religion as a universal dimension of human reality. Drawing from religious texts in all their worldwide variety, the course explores a particular topic as an introduction to the comprehension and analysis of religion in the comparative study of personal and cultural values. Topics include religious symbol and myth, death and afterlife, angels and demons, mystical experience, and religion and knowledge of the future.
 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 varies.
 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, nonaction, 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: Fulfillment 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.

Mandatory 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 varies.

Mandatory 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.

Mandatory Prerequisite: JDS/HIS 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.

Mandatory Prerequisite: RLS 104 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.

Mandatory Prerequisite: Permission of program coordinator
 3 credits

RLS 402-G Contemporary Theology (Formerly RLS 302)

An intensive study of influential recent work in theology, with primary emphasis on contemporary Christian and radical theology, including such themes as the death of God, the impact of historical criticism of scripture, and the emerging dialogue among the world religions.

Mandatory Prerequisites: One 200-level RLS course; U3 or U4 standing
3 credits

RLS 406-J Japanese Buddhism (Formerly RLS 361)

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.

Mandatory Prerequisite: RLS 246 or 260
3 credits

RLS 408-J Islamic Classics (Formerly RLS 380)

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 varies.

Mandatory Prerequisite: RLS 280
3 credits

RLS 415-G Judaic Response to Catastrophe (Formerly RLS/JDH 465)

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.

Mandatory Prerequisite: JDH/RLS 230 or JDS/HIS 225 or 226
3 credits

RLS 421-I Christian Classics (Formerly RLS 321)

Intensive study of a particular influential classic Christian text or genre, orthodox or heterodox, selected from early Christian, medieval, Reformation, or modern works that have significantly contributed to the shaping of European culture. May be repeated as the topic varies.

Mandatory Prerequisites: RLS 270 or EGL/JDH 261; permission of instructor
3 credits

RLS 426-G Feminine Spirituality (Formerly RLS 366)

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.

Mandatory Prerequisite: One 200-level RLS course
3 credits

RLS 430-G Special Topics (Formerly RLS 330)

May be repeated as the topic varies.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisite: Completion of D.E.C. Category B or equivalent
3 credits

RLS 447 Readings in Religious Studies

May be repeated.

Mandatory Prerequisite: Permission of program coordinator
1-6 credits

RLS 450-G Philosophical Theology (Formerly RLS 350)

A study of selected theological problems that integrates religious concerns with rigorous philosophical reflection, West and East, including the nature of the religious object, knowledge of the transcendent, the experiential basis of faith, the meaning of historical

process, and resources and dangers in selfhood. May be repeated as the topic varies.

Mandatory Prerequisite: One 200-level RLS or PHI course
3 credits

RLS 475 Undergraduate Teaching Practicum

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: U4 standing in religious studies major; permission of instructor and program coordinator
3 credits, S/U grading

RLS 495, 496 Senior Honors Project

Mandatory Prerequisite: Permission of instructor and program coordinator
3 credits per class

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. No student who has had two or more years of Russian in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for RUS 111 without written permission from the supervisor of the course.

Prerequisite to RUS 112: RUS 111
4 credits per class

RUS 211-I, 212-I Intermediate Russian I, II (Formerly RUS 191, 192)

Intermediate courses in Russian stressing an active command of the language. May not be taken for credit in addition to RUS 213.

Mandatory Prerequisite to RUS 211: RUS 112
Mandatory Prerequisite to RUS 212: RUS 211
3 credits per class

RUS 213-I Intermediate Russian for Students of Russian-Speaking Background (Formerly RUS 193)

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.

Mandatory Prerequisite: Native speaking proficiency in Russian
3 credits

RUS 311-I, 312-I Russian Conversation and Composition (Formerly RUS 221, 222)

A course in the active use of spoken and written Russian. Particular emphasis is placed on contemporary idiom.

Mandatory Prerequisites: RUS 212 or 213; permission of instructor required for students of Russian-speaking background
3 credits per class

RUS 411, 412 Advanced Russian Conversation and Composition (Formerly RUS 321, 322)

Courses designed to develop mastery of spoken and written Russian. Students learn to express themselves idiomatically and to translate advanced texts.

Mandatory Prerequisite: RUS 312 or equivalent proficiency in Russian
3 credits per class

RUS 423-G Russian Literary Texts (Formerly RUS 323)

A survey of representative texts chosen from various periods of Russian literature. Intended to improve the students' command of the literary language; readings and discussions will be in Russian.

Mandatory Prerequisite: RUS 312 or equivalent proficiency in Russian
3 credits

RUS 439 Structure of Russian (Formerly RUS 339)

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.

Mandatory Prerequisite: RUS 212 or equivalent proficiency in Russian
3 credits

RUS 447-Directed Readings in Russian

Mandatory 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-G Special Author (Formerly RUS 391)

A detailed study of the works of a major 19th- or 20th-century author, such as Pushkin, Gogol, Turgenev, or Blok. Readings are in Russian, and classes are conducted largely in Russian. May be repeated as the topic varies.

Mandatory Prerequisites: HUR 141, 142; RUS 312 or equivalent proficiency in Russian
3 credits

RUS 492-G Special Genre or Period (Formerly RUS 392)

A detailed study of a special genre such as the Russian novel or Russian drama, or period such as Soviet literature. Readings are in Russian, and classes are conducted largely in Russian. May be repeated as the topic varies.

Mandatory Prerequisites: HUR 141, 142; RUS 312 or equivalent proficiency in Russian
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, Ashokee, Akbar and great emperors, impact of Islam and Western colonization, and Gandhi and the impact of South Asia on the world.

3 credits

SAS 447 Directed Readings in South Asian Studies

Mandatory Prerequisites: U3 or U4 standing; permission of instructor
3 credits

SAS 487 Supervised Research in South Asian Studies

Mandatory Prerequisites: U3 or U4 standing; permission of instructor
3 credits

SCI

Science Teaching Secondary Education

SCI 200 Introduction to Science Teaching

The first course in a series for prospective secondary school teachers of science, including biology, chemistry, physics, and earth science. Emphasis on teaching strategies, lesson planning, use of materials, and student assessment. Readings from current science education journals, professional periodicals, state education syllabi, and local school district programs and publications. Additional on- and off-campus teaching and observation hours.

Mandatory Prerequisite: BIO 151 or 152 or 171 or 172 or CHE 131 or 141 or GEO 102/112 or 122 or PHY 125 or 131 or 141
3 credits

SCI 300 Science Instructional Strategies and Techniques

The second course in a series for prospective secondary school teachers of science, including biology, chemistry, physics, and earth science. Emphasis on pedagogy and the techniques necessary to create and

implement an interdisciplinary, investigative, student-centered learning environment within a science curriculum. Readings on school reform, philosophical approaches to education, and instructional techniques are also included. Additional on- and off-campus teaching and observation hours.

Mandatory Prerequisite: SCI 200
3 credits

SCI 385-K Language and Science: A Multicultural Perspective

In-depth study of the linguistically diverse population in American schools and its unique linguistic, social, and cultural needs. The development of effective classroom environments for language acquisition is explored with a focus on using hands-on projects in science and mathematics. Supervised field work experience in K-6 classroom settings is included. Crosslisted with LIN 385-K.

Mandatory Prerequisites: LIN 101; U3 or U4 standing; permission of instructor
3 credits

SCI 447 Readings in Science Education

Tutorial studies on recent advances in science education.

Mandatory Prerequisite: Permission of Center for Science, Mathematics, and Technology Education
1 credit

SCI 451 Supervised Teaching—Science: Middle Level Grades 7-9

Applications must be filed with the Center for Science, Mathematics, and Technology Education one semester prior to student teaching.

Mandatory Prerequisites: U4 standing with 2.7 G.P.A. in major; permission of Science Teacher Preparation Program

Mandatory Corequisite: SCI 454
6 credits per class, S/U grading

SCI 454 Student Teaching Seminar

Seminar on problems encountered by student teachers and public school teachers at the secondary level. Study and analysis of many aspects of science teaching such as classroom management, school culture, and social issues affecting schools and student performance. The course includes a unit on identifying and reporting child abuse and maltreatment. Students in this course are required to pay a fee that is used solely to secure the New York State Certificate in Identifying and Reporting Child Abuse and Maltreatment.

Mandatory Prerequisite: Permission of Science Teacher Preparation Program

Mandatory Corequisites: SCI 451 and SCI 452

3 credits

SCI 475 Teaching Practicum

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: U4 standing; permission of instructor

3 credits, S/U grading

SGE

Scholarly Activities and General Education

SGE 101 Scholarly Activities and General Education

An introduction to general education at a research university. Students explore intellectually stimulating relationships between several of the university's general education requirements and, at the same time, learn the process of discovery, which is the key to success in endeavors related to research and scholarly activity. The course also provides a forum for discussion of values, intellectual and social development, and personal and institutional expectations. Not for credit in addition to EAS 101, LES 102, LHD 101, LSE 101, or USB 101.

Mandatory Prerequisites: U1 standing; permission of the Office of Undergraduate Academic Affairs.

2 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.

Mandatory Prerequisite to SKT 112: SKT 111
3 credits per class

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. No student who has had two or more years of American Sign Language in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for SLN 111 without written permission from the supervisor of the course.

Mandatory Prerequisite to SLN 112: SLN 111
3 credits per class

SLN 211 Intermediate American Sign Language I (Formerly SLN 191)

Further development of manual fluency and comprehension in American Sign Language. Emphasis is placed on conversational regulators, conversation-facilitating behaviors, receptive and expressive-conversational skills, historical sign fluidity, casual vs. citation sign formations, facial expressions, and creative use of visual vernacular.

Mandatory Prerequisite: SLN 112
3 credits

SLN 212 Intermediate American Sign Language II (Formerly SLN 192)

Continued development of receptive and expressive sign skills and conversational sign language proficiency. Information on the deaf community, language and culture, heritage and literature, attitudes and values, and sign variations and selections is provided.

Mandatory Prerequisite: SLN 211
3 credits

SOC

Sociology

SOC 105-F Structure and Methods in Sociology

A general introduction to the science of sociology. This course emphasizes sociological theory and methods. Students are taught what is unique about the way in which sociologists analyze human behavior and society. Differences between the sociological perspective and perspectives of other social sciences are emphasized. There is also a heavy emphasis on the types of methods and data that sociologists use to test the validity of their ideas. May not be taken for credit in addition to SOC 106, 301, or 305.

3 credits

SOC 106-F Introduction to Sociology: Honors

An enriched introduction to the sociological perspective with an emphasis on how sociologists develop and test their hypotheses about human behavior. This course requires more reading and covers more complex topics than SOC 105, providing an introduction to sociology in greater depth. May not be taken for credit in addition to SOC 105, 301, or 305. Priority given to students in the University's honors programs

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 topic in introductory sociology.

Mandatory Corequisite: SOC 105

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.

Mandatory Prerequisite: SOC 105 or 106 or 301 or 305
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

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; 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 WNS 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 roles of women and men in American society; changing relations between the sexes; women's liberation and related movements. Crosslisted with WNS 247.

Advisory Prerequisites: Completion of D.E.C. categories I and J or equivalent

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.

Mandatory Prerequisite: SOC 105 or 106 or 301 or 305
3 credits

SOC 287 URECA Research in Sociology

May be repeated up to a limit of 12 credits, but a total of no more than six credits of SOC 287, 447, 487, and 488 may count toward the major.

Mandatory Prerequisite: Permission of departmental URECA coordinator
1-6 credits, S/U grading

SOC 301-F Principles of Sociology

An introduction for upper-division students committed to a major in a different field who want to find out how the sociologist looks at the world. The course illustrates the use of a sociological perspective in the analysis of the social world, rather than focusing on sociological concept development. Topics to be included are chosen from the following: ethnic relations, deviance and delinquency, socialization, organizational analysis, the family as a social institution, population analysis, and urban life. Not for credit in addition to

SOC 105, 106, or 305, or for major credit. May be used as a prerequisite for higher-level sociology courses in place of SOC 105, 106, or 305.

Mandatory Prerequisites: U3 or U4 standing; a major other than sociology
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.

Mandatory Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

SOC 303-F Social Stratification

Theories of social stratification; patterns of differentiation in wealth, prestige, and power; social mobility; power structures and elites.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 304-F Sociology of the Family

A historical and cross-cultural analysis of the family as a major social institution in society; the demography of contemporary American families; selected policy issues involving the family. Crosslisted with WNS 304.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 305-F Modernity and Identity

A sociological perspective applied to the emergence of modern society. Special attention is focused on the impact of the industrial revolution, urbanism, and the rise of modern democracies. The course considers how new social structures, such as bureaucracies, lead to new definitions of personal identity, and how social order and culture become increasingly problematic as new social groups are formed and demands made. May not be taken for credit in addition to SOC 105, 106, or 301.

Mandatory Prerequisite: U3 or U4 standing
3 credits

SOC 309-F Social Conflicts and Movements

An examination of aggregate phenomena; revolutionary and counterrevolutionary programs and organizations. Historical and cross-cultural examples are emphasized.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 310-K Ethnic Relations

The comparative experience of ethnic and other minority groups within the United States, including formation, migration, and conflict; prejudice, discrimination, and minority self-hatred.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; 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.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences; one D.E.C. category E course or equivalent
3 credits

SOC 317-H Decisions, Uncertainty, and Individual Futures

A study of the common but often little understood process by which probabilistic reasoning is routinely and necessarily used by experts to make decisions on the basis of often uncertain and vague information, decisions that affect everyone's daily lives. Case stud-

ies focus on decisions in such diverse areas as genetics, finance, and the environment and take up societal impacts and ethical considerations involved in the process.

Mandatory Prerequisites: U3 or U4 standing; one D.E.C. category E course or equivalent and any category C course in statistics or equivalent
3 credits

SOC 320-F Demography

Sources and consequences of changes in population size and composition; the "demographic explosion."

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 323-F Urban Society

The emergence of cities and the process of urbanization; an examination of urban structure; the consequences of the urban milieu for interpersonal relations and institutions.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 335-F Sociology of Labor Movements

An analysis of the rise and present status of labor movements with emphasis on the growth of large corporations; the role of the state; imperialism; and the influence of class, race, and gender.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 336-F Social Change

Development and modernization are studied in a historical and comparative perspective that emphasizes the universality of social change in human societies. The approach is macrosociological, focusing on broad patterns of change in economic, social, and political organization in the modern era. Revolutions as dramatic instances of socio-political change receive particular attention.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 337-F Social Deviance

Competing theories of the nature of social deviance; stigmatizing, labeling, and application of informal social controls; technical, legal, and ethical issues related to "non-victim" crimes.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 338-F The Sociology of Crime

The application of formal social control to criminally prosecutable offenses; the relationship of law and society; the criminal justice system.

Mandatory Prerequisite: SOC 337
3 credits

SOC 339-F Sociology of Alcoholism and Drug Abuse

An examination of the sociological literature on alcoholism and drug abuse. Topics include addictive careers, the epidemiology (spread) of abuse, history of attempts to control alcohol and drugs, treatment approaches, and policy alternatives.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; 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 WNS 340-H.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; a D.E.C. category E course in biology or equivalent
3 credits

SOC 341-F Historical Sociology

Sociological theories and methods applied to the study of historical phenomena such as revolutions, migration, and industrialization.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Advisory Prerequisite: One course in history
3 credits

SOC 342 The Use of Computers in Sociology

A general introduction to operating systems, storage media, and data management; statistical computing from demand mode using SPSS and BMDP; and introduction to programming languages. The course, which combines classroom work and a supervised laboratory, is designed to teach students how to use the computer to do sociological analysis.

Mandatory Prerequisite: SOC 202 or another allowed statistics course
4 credits

SOC 344-F Social Ecology

Analysis of how populations gain sustenance from their environments through organization, information, and technology. Evolution of technology and its ecological consequences for population growth, urbanization, social stratification, environmental destruction, and the quality of life. Problems in managing the human environment and communities.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 351-F Sociology of the Arts

Theories on the arts and society; the social role of the artist; processes of cultural production. Examples are drawn from one or more of the arts, including literature and the visual and performing arts.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 352-F Sociology of Religion

The ways in which sociocultural processes affect and are influenced by religious belief systems and organizations; changing structures and functions of religious institutions.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 353-H Sociology of Science

Social influences on the choice of research problems and on the behavior of scientists; the social organization of scientific enterprises.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; one D.E.C. category E course or equivalent
3 credits

SOC 354-F Sociology of Law

Law as an institution of social control; the legal profession, court systems, and bureaucratization of the legal process; the relation of law to social change.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 356-F Political Sociology

Social structure and processes as they affect, and are affected by, political behavior and organizations; the sociology of power, authority, and legitimacy.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 361-F Historical Development of Sociological Theory

Main currents in the development of modern sociology, with an emphasis on Marx, Weber, and Durkheim, among other leading theorists.

Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 362-F Contemporary Sociological Theory

A systematic treatment of the dominant general orientations in sociology including structural-functional analysis, symbolic interactionism, and modern versions of Marxism.

Mandatory 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. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 370-F Work and the Professions

The social patterning of work situations and careers; relations of work organizations to each other and to larger social structures. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 371-K Gender and Work

Gender differences in workforce participation and occupational attainment, with an emphasis on the United States. Covers such topics as historical changes in work force participation; economic, legal, and social factors affecting employment; career options; and pay equity. Readings and lectures focus on the historical and contemporary experience of American men and women, including differences by ethnicity and class. Crosslisted with WNS 371. *Mandatory Prerequisites:* WNS/SSI 102 or WNH 103 or SOC 105 or 106 or 301 or 305; two other courses in the social sciences
Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

SOC 372-F Mass Communications

Social influences on the content and effects of mass communications; communication systems; the public functions of mass communication. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 373-F Collective Behavior

Major unstructured social phenomena—such as mob violence, panics, fads and fashions, and public opinion—as the outcome of collective problem-solving activity. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 375-F Biosociology

Comparison of basic social processes in human and animal groups. Topics covered include dominance, hierarchies, the distribution of scarce resources, cooperation, and the division of labor. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; two other courses in the social sciences or two courses in biology
3 credits

SOC 377 Social Surveys in Contemporary Society

An interdisciplinary course on the history, uses, design, and implementation of the social survey. Emphasis is given to the use of surveys in politics, the media, and business. Crosslisted with POL 351. *Mandatory Prerequisite:* POL 201 or SOC 202
3 credits

SOC 380-F Social Psychology

Individual and social factors in human behavior; the structure of personality; identity development; communication processes; and attitudes. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305 or PSY 103; two other courses in the social sciences
3 credits

SOC 381-F Sociology of Organizations

Bureaucracy as a form of organization; the structure of relations between and within organizations. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 382-F Small Groups

The structure and functioning of face-to-face groups in field and laboratory settings. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305;

two other courses in the social sciences
3 credits

SOC 383-F Sociology of Business

Sociological material on the role of business organizations in American life. Among the topics to be considered are the internal social organization of large companies, the relationship between management and labor, the interaction between business organizations and the government, and the role of multinational businesses in world affairs. *Mandatory Prerequisite:* SOC 381
3 credits

SOC 384-F Sociology of the Life Course

Change and stability of individuals through the life course (from childhood to old age) in the context of social structure and interactional processes. Covers such topics as socially structured periods and transitions in the life course; identity formation; continuity and change; life crises; changing roles and transitions. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; 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. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 387-F Sociology of Education

Educational institutions as social systems; social patterns in the life cycles of students and teachers; class and ethnic factors in educational development. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

SOC 390-F, 391-F, 392-F, 393-F, 394-F Special Topics

May be repeated as the topic varies. *Mandatory Prerequisites:* SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits per class

SOC 447 Independent Readings

May be repeated. A total of no more than six credits of SOC 287, 447, 487, and 488 may be counted toward the major. A maximum of three credits may be taken with any one faculty member in any one semester. *Mandatory Prerequisites:* Written permission of instructor and director of undergraduate studies
1-6 credits

SOC 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice. *Mandatory Prerequisites:* to SOC 475: U3 or U4 standing; 12 credits of sociology; permission of instructor and director of undergraduate studies
Mandatory Prerequisites: to SOC 476: SOC 475; permission of instructor and director of undergraduate studies.
3 credits per class, S/U grading

SOC 477 Advanced Survey Research (Formerly SOC 378)

Advanced review of survey techniques and report writing. The course covers the analysis of survey data and the preparation of descriptive reports suitable for distribution to the media. Topics include a refresher on basic statistics, the logic of scientific inquiry and hypothesis testing, the use of focus groups and in-depth interviewing to supplement survey responses, the addition of census information to complement survey responses, effective report writing, and the varied uses of social science data. Crosslisted with POL 451. *Mandatory Prerequisite:* POL 351/SOC 377
3 credits

SOC 487 Independent Research

May be used for URECA projects associated with faculty research. May be repeated. A total of no more than six credits of SOC 287, 447, 487, and 488 may be counted toward the major.

Mandatory Prerequisites: Written permission of instructor and director of undergraduate studies. For URECA projects, permission of URECA coordinator required instead of that of the director of undergraduate studies
1-6 credits

SOC 488 Internship

May be repeated up to a limit of 12 credits, but a total of no more than six credits of SOC 287, 447, 487, and 488 may be counted toward the major. *Mandatory Prerequisites:* Twelve credits in sociology; permission of instructor, department, and Office of Undergraduate Academic Affairs.
3-12 credits, S/U grading

SOC 495, 496 Senior Honors Project I, II

Mandatory Prerequisite: to SOC 495: Admission to the sociology honors program
Mandatory Prerequisite: to SOC 496: SOC 495
3 credits

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. No student who has had two or more years of Spanish in high school (or who has otherwise acquired an equivalent proficiency) is permitted to register for SPN 111 without written permission from the supervisor of the course.

Mandatory Prerequisite: to SPN 112: SPN 111
4 credits per class

SPN 190-I Intermediate Spanish I (Emphasis on Spain)

A comprehensive review of the Spanish language as it is spoken in Spain. The course is intended to develop competence in reading, writing, and speaking Spanish through the study of grammar and interpretation of selected literary texts. May not be taken for credit in addition to SPN 191 or 193. Not intended for students of Spanish-speaking background.

Mandatory Prerequisite: SPN 112
3 credits

SPN 191-J Intermediate Spanish I (Emphasis on Latin America)

A comprehensive review of the Spanish language as it is spoken in Latin America. The course is intended to develop competence in reading, writing, and speaking Spanish through the study of grammar and interpretation of selected literary texts. May not be taken for credit in addition to SPN 190 or 193. Not intended for students of Spanish-speaking background.

Mandatory Prerequisite: SPN 112
3 credits

SPN 192-I Intermediate Spanish II

A comprehensive study of the Spanish language, taking into account its regional variations. The course is intended to develop greater competence in reading, writing, and speaking Spanish through continued study of grammar and interpretation of more advanced literary texts. Not intended for students of Spanish-speaking background. May not be taken for credit in addition to SPN 193.

Mandatory Prerequisite: SPN 190 or 191
3 credits

SPN 193-J Intermediate Spanish for Speakers of Spanish

A course intended for students of Spanish-speaking background whose formal training in the language has been limited to a year or less. It is designed to improve competence in Spanish as it is spoken and written in the Americas. May not be taken for credit in addition to SPN 190, 191, or 192.

Mandatory Prerequisite: Native speaking proficiency in Spanish
3 credits

SPN 220-J Spanish Grammar and Composition for Students of Hispanic-American Background

A course designed to improve writing through the study of Hispanic-American literature and culture. May not be taken for credit in addition to SPN 221.
Mandatory Prerequisite: SPN 193 or equivalent fluency in Spanish
3 credits

SPN 221-I Spanish Conversation and Composition

A thorough review of Spanish grammar and of the active use of spoken and written forms. May not be taken for credit in addition to SPN 220.
Mandatory Prerequisite: SPN 192
3 credits

SPN 222-G Introduction to Literary Studies

Reading of selected passages of prose and poetry in class, with special concentration on improving the students' written and oral skills, and introducing them to the basic elements of literary analysis of Spanish works.
Mandatory Prerequisite: SPN 220 or 221
3 credits

SPN 301 Advanced Spanish Grammar and Composition

A review of advanced Spanish grammar with emphasis on improving writing skills and increasing mastery of Spanish syntax. Extensive practice in composition and in translation.
Mandatory Prerequisites: SPN 222; permission of instructor
3 credits

SPN 303 Practical Spanish

A course for students who wish to become more proficient in reading, writing, and translating Spanish, to be used in business, administration, and in other fields of everyday professional life. Emphasis is placed on the idiomatic peculiarities of the Spanish language and the relation of Spanish to the structure of English.
Mandatory Prerequisite: SPN 222
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.
Mandatory Prerequisite: SPN 222
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.
Mandatory Prerequisite: SPN 222
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.
Mandatory Prerequisite: SPN 222
3 credits

SPN 396-J Introduction to Spanish-American Literature

Readings in Spanish-American literature from the colonial period to the present.
Mandatory Prerequisite: SPN 222
3 credits

SPN 397-I Introduction to Spanish Literature I

Readings in Peninsular literature from its origins through the 17th century.
Mandatory Prerequisite: SPN 222
3 credits

SPN 398-I Introduction to Spanish Literature II

Readings in Peninsular literature from the 18th century to the present.
Mandatory Prerequisite: SPN 222
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 varies.

Mandatory Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
3 credits

SPN 410 Theory in Contexts

The critical analysis of texts as they relate to Spanish or Latin American political, social, and gender relations and institutions. Sample topics include gender and representation, Marxism and Freudianism, the body, carnival, orality, the picaresque. May be repeated as the topic varies.

Mandatory Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
3 credits

SPN 415 Hispanic Cultures in Contact

Contemporary perspectives on Hispanic cultures in contact with each other and with non-Hispanic cultures. Sample topics include the literature of exile, border literature, ethnicity and culture, Latino/Latina literature, Spanish and Latin American cultural contacts. May be repeated as the topic varies.

Mandatory Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
3 credits

SPN 420 Topics in Spanish and Latin American Cinema

May be repeated as the topic varies.
Mandatory Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 396 (for a Latin American topic) or one course from each group (for a cross-cultural topic)
3 credits

SPN 435 Topics in Latin American Literature from the Colonial Period to the Present

May be repeated as the topic varies.
Mandatory Prerequisite: SPN 392 or 396
3 credits

SPN 445 Topics in Spanish Literature from the Middle Ages to the Present

May be repeated as the topic varies.
Mandatory Prerequisite: SPN 392 or 397 or 398
3 credits

SPN 447 Directed Individual Studies

May be repeated. Normally no more than three credits are allowed toward the major requirements; other credits are considered as electives.

Mandatory 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.

Mandatory Prerequisite: SPN 301 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.

Mandatory Prerequisite: SPN 301 or LIN 101
3 credits

SPN 465 Topics in Hispanic Linguistics

May be repeated as the topic varies.
Mandatory Prerequisite: SPN 301 or LIN 101
3 credits

SPN 475 Undergraduate Teaching Practicum in Spanish

Students may not serve as teaching assistants in the same course twice.

Mandatory 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

Mandatory Prerequisites: 3.5 G.P.A. in major; Spanish courses in major; 3.0 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**

A general introduction to women's studies in the social sciences and to the feminist movement. The course looks at the way a number of different academic disciplines have dealt with the female component of society, and examines the contributions women have made and the roles they have played in a variety of areas. Crosslisted with WNS 102.
3 credits

SSI 210-F Human Development: The Family Context (Formerly SSI 110)

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 or the discontinued PSY 211.
3 credits

SSI 249-J Chinese Culture and Society: Traditional China

An interdisciplinary consideration of those cultural and social elements in traditional China that have had a lasting impact and given unique shape to Chinese civilization. Topics include land and resources; religion and philosophy; art and architecture; science and technology; language and literature; and socioeconomic development. Crosslisted with CNS 249-J.
3 credits

SSI 250-J Chinese Culture and Society: Modern China

An interdisciplinary consideration of themes that dominate the development of modern China. Topics include history and geography; ideology and organization; the individual and the state; the family and society; conflict in society; the economy; literature and the arts; science and technology; and future prospects. Crosslisted with CNS 250-J.
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.

Mandatory Prerequisites: SSI 210 or PSY 220 or the discontinued PSY 211; permission of instructor

Mandatory Corequisite: SSI 381
3 credits, S/U grading

SSI 287 Supervised Research in Social Science

May be repeated up to a limit of six credits.
Mandatory Prerequisite: Permission of instructor
3 credits, S/U grading

SSI 308-F Abuse of Women and Children

Theories and research about physical and sexual abuse of women and children. Among the topics to be discussed are rape, incest, and spouse abuse. The approach includes sociological, psychological, and feminist perspectives. Solutions involving the medical and legal systems and the establishment of shelters are also explored.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Nine credits in the social and behavioral sciences
3 credits

SSI 310-F Contemporary Feminist Issues

An analysis of major issues affecting women in today's society. Reproductive rights, women's employment, and political power are among the topics discussed. Crosslisted with WNS 310.

Mandatory Prerequisites: 12 credits in the social and behavioral sciences

3 credits

SSI 311-F Interdisciplinary Problems in the Social Sciences

May be repeated as the topic varies.

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.

Mandatory Prerequisite: SSI 210 or PSY 220 or the discontinued PSY 211

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 the discontinued PSY 211 or SOC 304 or SSI 327

3 credits

SSI 322-F The Infant and Young Child (Formerly SSI 220)

Growth and development during the earliest stages of life. Socioeconomic class, ethnicity, and individual differences of infants and young children are explored. Topics include cognitive, socioemotional, and language development; the at-risk infant; and caregivers' role in health care, safety, and nutrition. Students make periodic systematic observations of infants and young children in a variety of settings.

Advisory Prerequisite: SSI 210 or PSY 220 or the discontinued PSY 211

3 credits

SSI 327-F Adolescent Growth and Development

The biological and psychological development of adolescents that affects teaching and curriculum development. Additional topics include adolescent psychiatric disorders, secondary special education programs, drug and alcohol use and abuse, and societal issues.

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.

Mandatory Prerequisite: SSI 210 or 322 or PSY 220 or the discontinued PSY 211

3 credits

SSI 345-K Parental Roles in a Pluralistic Society

An examination of parental roles in family life from a multicultural perspective. Theoretical models of parent education are evaluated, and alternative approaches to service delivery are explored within the context of America's pluralistic society. Specific issues such as ethnic socialization by parents and multiculturalism in child care and school settings are analyzed.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: SSI 210 or PSY 220 or the discontinued PSY 211 or SOC 304

3 credits

SSI 350-F Foundations of Education

An interdisciplinary study of the foundations of education focusing on the findings of the social and behavioral sciences as related to education and teaching. The course is designed to meet the needs of students enrolled in the secondary teacher preparation programs.

Advisory Prerequisites: U3 or U4 standing; enrollment in a teacher preparation program

3 credits

SSI 381-F Seminar in Child Development (Formerly SSI 281)

Students meet weekly to discuss their experience in a campus child-care center and to learn basic principles of early childhood education and development relevant to the day care situation. Lectures and demonstrations of early childhood activities emphasize language and cognition, social and motor behavior, play, "arts and crafts," and various techniques for organizing group and individual energies.

Mandatory Prerequisites: SSI 210 or PSY 220 or the discontinued PSY 211; permission of instructor

Mandatory 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.

Mandatory 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.

Mandatory 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, day care, and child abuse.

Mandatory Prerequisites: U3 or U4 standing; permission of instructor

3 credits

SSI 417 Senior Seminar in Child and Family Studies

Mandatory Prerequisites: U3 or U4 standing; permission of instructor

3 credits

SSI 447 Directed Readings in Social Science

May be repeated, but total credit may not exceed more than six credits.

Mandatory Prerequisite: Permission of instructor

1-3 credits

SSI 451 Supervised Student Teaching—Middle Level Grades 7-9**SSI 452 Supervised Student Teaching—High School Grades 10-12**

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 Bulletin Supplement published with the Class Schedule each semester.

Mandatory Prerequisites: SSI 397 and 398; 3.0 grade point average in the major; 2.75 grade point average overall; enrollment in the Social Studies Secondary Teacher Preparation Program; approval of social studies director

Mandatory Corequisite: SSI 454

6 credits per class, 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.

Mandatory Corequisites: SSI 451 and 452

3 credits

SSI 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to SSI 475: SSI major; U4 standing; interview; permission of instructor

Mandatory Prerequisites to SSI 476: SSI 475; permission of instructor

3 credits per class, S/U grading

SSI 487 Independent Project in the Social Sciences

May be repeated.

Mandatory Prerequisites: 18 credits in the social and behavioral sciences; permission of program

1-6 credits

SSI 488 Internship

May be repeated up to a limit of 12 credits.

Mandatory Prerequisites: 15 credits in the social and behavioral sciences; permission of instructor, program, and Office of Undergraduate Academic Affairs

3-12 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 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 will be 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 major credit.

3 credits

THR 105-D Acting I

The vocabulary and skills of the actor's craft. Lecture and workshop sessions explore the uses of basic acting techniques. Designed for students seriously interested in performing.

3 credits

THR 110 Public Speaking

An introduction to public speaking techniques that includes increased awareness of physical and vocal expression and speech content. Not for major credit.

3 credits

THR 115 Stagecraft I

A study of the tools and technology involved in the creation of theatrical lighting, sound, and costume.

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 Film, Video, and Audio Narrative

Principal techniques of dramatic narrative are studied in relation to film, video, and audio. Analysis of the work of major artists in each of these media.

3 credits

THR 164 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 (Formerly THR 161)

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 (Formerly THR 162)

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 (Formerly THR 163)

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-G Acting II

The exploration of realistic character analysis and development through scenes and monologues.

Mandatory Prerequisite: C or higher in THR 105

3 credits

THR 208 Technology in the Arts

A multidisciplinary, hands-on introduction to the concepts and techniques of computer-influenced art, combining art, music, and theatre. Students explore computer creation and manipulation of sounds and images, as well as various ways of combining them. Current creative work using these techniques is studied. Crosslisted with ARS 208 and MUS 208.

Mandatory 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.

Advisory Prerequisite: THR 115 or 116

3 credits

THR 223-D Stage Costume

An introduction to stage costume design and technology, combining theory and practice. Students study the tradition and history of costume design, do exercises in conceiving and rendering designs, and learn how to use costume shop equipment and materials.

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.

Mandatory Prerequisite: THR 105

3 credits

THR 232 Improvisation (Formerly THR 332)

Drill in both verbal and nonverbal exercises and assorted theatre games leading to the development of improvisational skills.

Mandatory Prerequisite: THR 105

3 credits

THR 244 Summer Theatre Workshop

Service as apprentices working on the planning, preparation, and execution of a summer stock series. May be repeated for a maximum of six credits. No more than six credits may be taken in combination with THR 340.

Mandatory Prerequisite: Permission of instructor

1-6 credits

THR 246-D Stage Lighting

An introduction to the aesthetics and traditions of stage lighting design and technology, combining theory and practice. The course includes an exploration of color, intensity, and control through classroom and laboratory exercises using equipment and computer boards in the Staller Center for the Arts.

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-D Movement Awareness and Analysis

A course designed for theatre arts majors covering the fundamentals of movement based on knowledge of the skeleton and muscles. Students are guided toward correct body alignment and movement based on theories of Laban, Bartentieff, Alexander, Feldenkrais, and Todd and Sweigard. Analysis of movement enables the student to correct improper use of the body, allowing for efficiency of movement.

Mandatory Prerequisite: THR 105

3 credits

THR 277 The Media Industry (Formerly THR 377)

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 varies.

Mandatory 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 varies.

Mandatory 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.

Mandatory Prerequisite: Permission of instructor

1 credit, S/U grading

THR 301 Stage Management Laboratory

May be repeated once.

Mandatory Prerequisite: Permission of department

1 credit

THR 302 Theatre Management Laboratory

May be repeated once.

Mandatory Prerequisite: Permission of department

1 credit

THR 303 Costume Crafts Laboratory

May be repeated once.

Mandatory Prerequisite: Permission of department

1 credit

THR 304 Marketing Laboratory

May be repeated once.

Mandatory Prerequisite: Permission of department

1 credit

THR 305 Lighting and Sound Laboratory

May be repeated once.

Mandatory Prerequisite: Permission of department

1 credit

THR 306 Stagecraft Laboratory

May be repeated once.

Mandatory Prerequisite: Permission of department

1 credit

THR 307 Performance Laboratory

May be repeated once.

Mandatory Prerequisite: Permission of department

0-1 credit

THR 311-I European Theatre and Drama

The relation between dramatic literature and theatre conventions in the Western tradition, focusing on an issue that illustrates the connection between performances and historical context. (Will be discontinued after Fall 1997 semester.)

Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent

3 credits

THR 312-K American Theatre and Drama

The history of American theatre and dramatic literature from its earliest origins through the influence of the European tradition, emphasizing major events and various cultural, religious, and ethnic influences. Original contributions to world theatre in the 19th century, particularly staging techniques and the development and growth of the musical theatre, are covered.

Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent

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, and Japan.

Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent

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.

Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent

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 will cover the historical and cultural context in which different forms of theatre occurred, changes in theatrical convention, and the drama of the period. Not for credit in addition to the discontinued THR 311.

Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent

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 twentieth century. Discussions will cover the historical and cultural context in which different forms of theatre occurred, changes in theatrical convention, and the drama of the period.
Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent
3 credits

THR 317 Interactive Performance, Media, and MIDI

Practical and theoretical issues related to interactive performance, combining elements of art, music, theatre, performance art, video, and computer science. Course topics include sound synthesis, sampling, video, lighting, alternative input, and MIDI. This hands-on course stresses small experimental-creative laboratory assignments and culminates in final small-group or individual projects. Crosslisted with ARS 317 and MUS 317.
Mandatory 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.

Mandatory Prerequisites: THR 115, 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.

Mandatory Prerequisites: THR 115, 116
3 credits

THR 322-G Acting III

Advanced work in scene study limited to one or two major playwrights.

Mandatory Prerequisites: THR 205, 230, and 264
3 credits

THR 323-G Costume Design

Advanced study in costume design involving play analysis, design, and presentation techniques with special emphasis on historical research.

Mandatory Prerequisite: THR 216
3 credits

THR 324 Stage Makeup (Formerly THR 222)

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.

Mandatory 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.

Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent
3 credits

THR 326 Playwriting

A workshop devoted to planning and writing finished scripts for the stage.

Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent
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.

Mandatory Prerequisite: THR 326
3 credits

THR 333-G Directing I

The work of the director, including selection of a play for production; problems of style, interpretation, and execution; and the director's approach to the actor.

Mandatory 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.

Mandatory Prerequisite: THR 321
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.

Mandatory 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.

Mandatory Prerequisite: U3 or U4 standing
3 credits

THR 346-G Lighting Design

Advanced topics in lighting design intended to acquaint the student with highly specialized lighting genres. Subjects include lighting for repertory theatres, the dance, and musical theatre.

Mandatory Prerequisite: THR 216
3 credits

THR 349-G The Creative Process in the Fine Arts

An examination of the creative process and its philosophical foundations in Western culture. Students explore highlights of the philosophical tradition since Plato; attend exhibits, rehearsals, and performances; and discuss with visiting artists their work and its sources. Crosslisted with ARH 349 and MUS 349.

Mandatory Prerequisites: One course in philosophy; ARH 101 or 102 or MUS 101 or 119 or THR 101 or 104
3 credits

THR 352-G Special Topics in Performance

A concentration in one aspect of acting, such as preparation for the work of a specific playwright, readers' theatre, oral interpretation, improvisation, or musical theatre. May be repeated once as the topic varies.

Mandatory Prerequisite: Permission of instructor
3 credits

THR 353-G Special Topics in Performance

May be repeated once as the topic varies.

Mandatory Prerequisites: THR 105; permission of instructor
3 credits

THR 354-G Topics in Dramaturgy

May be repeated as the topic varies.

Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent
3 credits

THR 356-G Scene Design

Principles of design for the theatre, including color composition and rendering techniques. These techniques are related to the aesthetics of dramatic composition and the flexibility of modern staging.

Mandatory Prerequisites: THR 256; permission of instructor
3 credits

THR 365 Modern Dance Technique II (Formerly THR 261)

Further development of modern dance training, devoted to improvement of style, technique, and physical and mental focus.

Mandatory Prerequisite: THR 165
3 credits

THR 366 Ballet Technique II (Formerly THR 262)

Further development of ballet training, devoted to improving style, technique, physical and mental focus.

Mandatory Prerequisite: THR 166
3 credits

THR 367 Jazz Dance Technique II (Formerly THR 263)

Further development of jazz dance training, devoted to improvement of style, technique, and physical and mental focus.

Mandatory Prerequisite: THR 167
3 credits

THR 368 Dance Improvisation (Formerly THR 270)

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.

Mandatory 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 will 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 will include the physicality of the dance. May be repeated as the topic varies.

Mandatory Prerequisites: Completion of D.E.C. categories A, B, and D or equivalent
3 credits

THR 370 Radio News

Principles of radio news, including writing and announcing, conceiving and producing features, field recording, legal concepts for the audio producer, and the role of radio news as an information resource. Students research, script, produce, and review such audio assignments as news casts, public service announcements, features, interviews, field recordings, and mini-documentaries.

Mandatory Prerequisite: THR 277
2 credits

THR 372 Introduction to Television (Formerly THR 272)

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.

Mandatory Prerequisite: THR 277
2 credits

THR 375 Television Production

Planning, writing, analysis, rehearsal, production, and post-production of a television program. Students study the techniques of studio lighting, camera operation, electronic field production (EFP) and studio taping, audio production, directing, and electronic editing. Films and tapes of professional productions are analyzed and critiqued.

Mandatory Prerequisite: THR 277
Advisory Prerequisite: THR 372
4 credits

THR 400 Performance Dance Ensemble

Concentrated development of dance technique and performance skills through rehearsal and presentation of choreography. May be repeated once.

Mandatory 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.

Mandatory Prerequisite: U4 standing
3 credits

THR 403 Media Theory and Criticism

Seminal essays in film theory from Eisenstein to Metz as well as recent developments in video aesthetics. Critical approaches to both film and video are compared and evaluated.

Mandatory 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. Topics vary by semester. May be repeated once.

Mandatory 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, no, kabuki, the Suzuki method, Beijing opera, and kutiyattam of India. Topics may vary by semester according to availability of guest artists and to productions scheduled in the season. May be repeated once.

Mandatory Prerequisites: THR 205, 230, and 264
3 credits

THR 439 Directing II (Formerly THR 339)

Advanced work in interpretation and handling of production complexities. Students mount a production.

Mandatory Prerequisite: THR 333
3 credits

THR 447 Readings In Theatre Arts

Mandatory Prerequisites: At least four theatre arts courses; sponsorship of a faculty member; permission of department

3 credits

THR 451 Auditioning for Careers (Formerly THR 351)

An examination of potential careers in acting and development of the audition skills requisite for pursuit of advanced degrees in acting or roles in professional theatre.

Advisory Prerequisite: THR 205
3 credits

THR 462 Acting for the Camera (Formerly THR 362)

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.

Mandatory Prerequisite: THR 322
3 credits

THR 465 Modern Dance Technique and Performance (Formerly THR 361)

Advanced study in modern dance techniques, combining dance training, compositional skills, and performance technique.

Mandatory Prerequisite: THR 365
3 credits

THR 467 Jazz Dance Technique and Performance (Formerly THR 363)

Advanced study of jazz techniques, combining dance training, compositional skills, and performance techniques.

Mandatory Prerequisite: THR 367
3 credits

THR 468 Choreography (Formerly THR 364)

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.

Mandatory Prerequisite: THR 465 or 467
3 credits

THR 475, 476 Undergraduate Teaching Practicum I, II

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites to THR 475: Theatre arts major; U4 standing; permission of instructor and department
Mandatory Prerequisites to THR 476: THR 475; permission of instructor and department
3 credits per class, S/U grading

THR 480 Projects in Media

THR 483 Projects in Theatrical Design

THR 487 Projects in Theatre

May be repeated up to a maximum of six credits. Only six credits of THR 480, 483, and 487 may be used to satisfy major requirements.

Mandatory Prerequisite: Permission of department
3 credits per class

THR 488 Internship

May be repeated up to a limit of 12 credits.

Mandatory Prerequisites: Permission of instructor, department, and Office of Undergraduate Academic Affairs
3-12 credits, S/U grading

URE

Undergraduate Research and Creative Activities

URE 187 Women in the Laboratory: Introduction to Science, Engineering, and Mathematics Research

An introduction to and hands-on experience in doing research in mathematics, engineering, and several science disciplines within a group setting. The students rotate among four research environments: computer science, mathematics, social sciences, and natural sciences and engineering. Within each environment they are given background readings, instructed in the problem to be studied, jointly carry out a small experiment related to the problem, and discuss the social implications of the research problem. Students make presentations related to one of the projects in which they participate.

Mandatory Prerequisites: Score of 600 or higher in quantitative SAT or mathematics or science College Entrance Examination Board achievement test, or 4 or 5 in mathematics or science AP examination; USB 101; permission of instructor
3 credits, S/U grading

URE 287 Introductory Undergraduate Research and Creative Activity (1-6, S/U grading)

A research or creative project for lower-division students under the sponsorship of an appropriate faculty member as part of URECA Program participation. The student must submit a URECA agreement form describing the planned project at the outset of the term and a research abstract summarizing the project at the end of the term to the URECA Program director in the Office of Undergraduate Academic Affairs. Request for approval of the URECA Program director must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. May be repeated up to a limit of 12 credits.

Mandatory Prerequisite: Permission of URECA Program director
1-6 credits, S/U grading

URE 487 Advanced Undergraduate Research and Creative Activity

A research or creative project under the sponsorship of an appropriate faculty member as part of URECA Program participation. The student must submit a URECA agreement form describing the planned project at the outset of the term and a research abstract summarizing the project at the end of the term to the URECA Program director in the Office of Undergraduate Academic Affairs. Request for approval of the URECA Program director must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. May be repeated up to a limit of 12 credits.

Mandatory Prerequisites: Permission of URECA Program director; U3 or U4 standing
1-12 credits per semester, 1-8 credits in summer

URE 488 Undergraduate Research Internship

Research participation in an off-campus industry, laboratory, or public agency under the sponsorship of an appropriate faculty member as part of URECA Program participation. The student must submit a URECA agreement form describing the planned project and the arrangements made for faculty sponsorship at the outset of the term and a research abstract summarizing the project at the end of the term to the URECA Program director in the Office of Undergraduate Academic Affairs. Request for approval of the URECA Program director must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. A written research report from the student must be submitted to the faculty sponsor at the end of each

term. May be repeated up to a limit of 12 credits.

Mandatory Prerequisites: Permission of faculty sponsor and URECA Program director
3-12 credits per semester, 3-8 credits in summer

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, LES 102, LHD 101, or LSE 101 or SGE 101
Mandatory Prerequisite: First-semester freshman or transfer student, according to section
1 credit, S/U grading

USB 402 University Capstone Seminar

An exploration of an intellectual issue that transcends disciplinary boundaries, such as "Simplicity and Complexity." This seminar gives seniors the opportunity to pursue with senior professors studies that call upon their academic accomplishments and developed ability to enjoy new intellectual challenges.

Mandatory Prerequisites: Completion of 84 credits; permission of instructor
3 credits

WNH

Women's Studies/ Humanities

WNH 103-G Introduction to Women's Studies in the Humanities

A general introduction to women's studies in the humanities and to interdisciplinary feminist thought. The course considers a number of different academic disciplines, particularly those most relevant to feminist work in the humanities, and examines the contribution of women's studies in various fields in the humanities.

3 credits

WNH 250-J Women in the Third World

The problems of women in Third World societies, as illustrated through narratives by and about women. Oppression, madness, and the quests for freedom, love, identity, and fulfillment are themes to be approached through the texts of this course. The interrelationships between women and men, underlining the basic human need for personal fulfillment, are studied.

3 credits

WNH 276-B Feminism: Literature and Cultural Contexts

An examination of works written by or about women reflecting conceptions of women in drama, poetry, and fiction. The course focuses on literature seen in relation to women's sociocultural and historical position. Crosslisted with EGL 276.

Mandatory Prerequisite: EGC 101 or equivalent by placement examination or transfer evaluation
3 credits

WNH 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 course in philosophy or women's studies
3 credits

WNH 314-G Women Making Music

A study of the contributions made by women to music making in various contemporary and historical cultures of the world, with emphasis on Western traditions.

Topics include women as composers, performers, and listeners; genres designed for women; women's roles in relation to men's; gender implications in musical style; and depictions of women in musical dramas. All types of music will be considered: "classical," rock, pop, folk, jazz, various "fusions," and non-Western musics such as those from India, China, Indonesia, and the Middle East. Crosslisted with MUS 314.

Mandatory Prerequisite: MUS 101 or 119
3 credits

WNH 372-G Topics in Women and Literature

The study of texts written by and about women and on issues they raise relating to gender and literature. May be repeated for credit as the topic differs. Crosslisted with EGL 372.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: A literature course at the 200 level or higher
3 credits

WNH 384-G Advanced Topics in Feminist Philosophy

An intensive philosophical study of selected topics of feminist concern. Topics are selected to further the understanding of what effect feminism has upon the traditional tenets of philosophy, such as universality and truth, as well as providing a detailed understanding of particular feminist theories. Crosslisted with PHI 384.

Mandatory Prerequisites: One course in philosophy; one course in women's studies
Advisory Prerequisites: PHI/WNH 284; one other course in women's studies or philosophy
3 credits

WNH-G 391, 392 Special Topics in Women's Studies

May be repeated once as the topic varies.
Mandatory Prerequisite: WNS/SSI 102 or WNH 103 or six credits from courses that satisfy requirements for the women's studies minor
3 credits per class

WNH 401, 402 Seminar in Women's Studies

May be repeated as the topic varies.
Mandatory Prerequisites: WNS/SSI 102 or WNH 103 or six credits from courses that satisfy requirements for the women's studies minor; at least one other course specified when the topic is announced
3 credits per class

WNH 407 Senior Seminar in Women's Studies

Mandatory Prerequisites: 15 credits of the women's studies minor
3 credits

WNH 447 Directed Readings in Women's Studies

May be repeated once.
Mandatory Prerequisites: Permission of instructor and program associate director
1-3 credits

WNH 487 Independent Project in Women's Studies

May be repeated once.
Mandatory Prerequisites: Permission of instructor and program associate director
3 credits

WNS

Women's Studies/Social Sciences

WNS 102-F Introduction to Women's Studies in the Social Sciences

A general introduction to women's studies in the social sciences and to the feminist movement. The course looks at the way a number of different academic disciplines have dealt with the female component of society, and examines the contributions women have made and the roles they have played in a variety of areas. Crosslisted with SSI 102.
3 credits

WNS 121 Library Skills for Research in Women's Studies

An introduction to basic library skills and bibliographic resources for research in women's studies, using a workbook and workshop approach. Reference and other library materials of special interest to women's studies minors are covered, with an emphasis on the

interdisciplinary nature of the field. Such topics as the efficient use of the on-line catalog, bibliographies, computerized sources, and specialized reference titles are treated. Workshop sessions are held throughout the semester.

Mandatory Prerequisites: WNS/SSI 102 or WNH 103 or six credits in other courses satisfying the women's studies minor
1 credit

WNS 204-F Intimate Relationships

The dynamics of forming, maintaining, and dissolving intimate relationships. Attention is focused on dating, partner selection, sexuality, marriage, divorce, and remarriage. Crosslisted with SOC 204.
3 credits

WNS 247-K Sociology of Gender

The roles of women and men in American society; changing relations between the sexes; women's liberation and related movements. Crosslisted with SOC 247.
Advisory Prerequisites: Completion of D.E.C. categories I and J or equivalent
3 credits

WNS 287 URECA Research in Women's Studies

May be repeated up to a limit of six credits, but only three credits may count toward the minor.
Mandatory Prerequisite: Permission of the program URECA coordinator
1-6 credits, S/U grading

WNS 304-F Sociology of the Family

A historical and cross-cultural analysis of the family as a major social institution in society; the demography of contemporary American families; selected policy issues involving the family. Crosslisted with SOC 304.
Mandatory Prerequisites: SOC 105 or 106 or 301 or 305; two other courses in the social sciences
3 credits

WNS 310-F Contemporary Feminist Issues

An analysis of major issues affecting women in today's society. Reproductive rights, women's employment, and political power are among the topics discussed. Crosslisted with SSI 310.
Mandatory Prerequisites: 12 credits in the social and behavioral sciences
3 credits

WNS 316-F The Healer and the Witch in History

Female healers, their association with "diabolic" powers, and the progressive development of a mechanism for their repression and control. The course also treats the development of organized medicine and its impact upon female healers and patients. Crosslisted with HIS 316.
Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: One 100-level HIS course or any WNS course or WNH 103
3 credits

WNS 320-F Women in Judaism

A survey of women in Judaism and in Jewish life from the Biblical period to the present, focusing on such topics as the representation of women in the Bible, Jewish law concerning women, the role of women in the Enlightenment in Germany and America, immigrant women in America, women in the Holocaust, and women in Israel. Crosslisted with JDS 320.
Mandatory Prerequisite: One JDS or WNH or WNS course
3 credits

WNS 330-K Gender Issues in the Law

An exploration of areas of American law that have had a particular impact on the personal and professional lives of women such as employment discrimination, child custody, the battered spouse syndrome, and property laws affecting women. In addition, the course examines the obstacles to the advancement of women in the legal profession including gender bias in the court systems and the tension between career and family responsibilities. Crosslisted with POL 330.
Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisite: POL 102 or 105 or WNS/SSI 102
3 credits

WNS 333-K Women in U.S. History

An interpretation of the history of women in relation to the major themes in American history such as indus-

trialization 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.

Mandatory Prerequisite: HIS 103 or 104 or WNS/SSI 102 or WNH 103
Advisory Prerequisite: Completion of D.E.C. categories I and J or equivalent
3 credits

WNS 334-I Women, Work, and Family in Modern European History

An analysis of the effect of urbanization and industrialization on women and the family in Europe from 1750 to the present. Special emphasis is placed on the development of the ideology of the "angel in the house" and the growth of female participation in the work force. Among the topics covered are domestic work, prostitution, sexual attitudes and mores, child-rearing practices, women and revolutionary movements, and the growth of feminism. Crosslisted with HIS 334.

Mandatory Prerequisite: HIS102 or WNS/SSI 102 or WNH 103
3 credits

WNS 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-H.

Mandatory Prerequisite: SOC 105 or 106 or 301 or 305; a D.E.C. category E course in biology or equivalent
3 credits

WNS 347-K Women and Politics

Analysis of the role of women in current American politics from a social psychological perspective. The focus is on changing trends in women's electoral participation, political interest, and office seeking over the last several decades, and recent gender differences in political involvement, candidate support, support for women's issues, and support for other public policies. Crosslisted with POL 347.

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: POL 102 or 105
3 credits

WNS 350-J Black Women and Social Change: A Cross-Cultural Perspective (Formerly WNS 275)

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 (Formerly AFS 275)

Mandatory Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two D.E.C. category F courses
3 credits

WNS 360-I Women in Premodern Europe

An examination of the position of women in European society from ancient Greece through the Italian Renaissance. The course emphasizes women in the European Middle Ages—their roles in marriage and the economy, their relations with the Christian church, their significance in cultural forms such as courtly love. Crosslisted with HIS 360.

Mandatory Prerequisite: One 100-level HIS course or any WNS or WNH course
3 credits

WNS 371-K Gender and Work

Gender differences in work force participation and occupational attainment, with an emphasis on the United States. Covers such topics as historical changes in work force participation; economic, legal, and social

factors affecting employment; career options; and pay equity. Readings and lectures focus on the historical and contemporary experience of American men and women, including differences by ethnicity and class. Crosslisted with SOC 371.

Mandatory Prerequisites: WNS/SSI 102 or WNH 103 or SOC 105 or 106 or 301 or 305; two other courses in the social sciences

Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

WNS 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.

Mandatory Prerequisites: WNS/SSI 102 or WNH 103; ANT 367 or PSY 103 or SOC/WNS 247
3 credits

WNS 387-J Women, Development, and Revolution in Latin America

Gender relations in Latin America, particularly in contemporary societies undergoing rapid social, economic, and political change. The course considers women, work, and family in historical perspective as well as the impact of agrarian change, migration, and industrialization on women. A major focus is on women in political protest and revolution. Crosslisted with HIS 387.

Mandatory Prerequisite: HIS 213 or HIS/POL 214 or any WNS course or WNH 103
3 credits

WNS-F 391, 392 Special Topics in Women's Studies

May be repeated once as the topic varies.

Mandatory Prerequisites: WNS/SSI 102 or WNH 103 or six credits from courses that satisfy requirements for the women's studies minor
3 credits per class

WNS 401, 402 Seminar in Women's Studies

May be repeated as the topic varies.

Mandatory Prerequisites: WNS/SSI 102 or WNH 103 or six credits from courses that satisfy requirements for the women's studies minor; at least one other course specified when the topic is announced
3 credits per class

WNS 407 Senior Seminar in Women's Studies

Mandatory Prerequisites: 15 credits of the women's studies minor
3 credits

WNS 447 Directed Readings in Women's Studies

May be repeated once.

Mandatory Prerequisites: Permission of instructor and program associate director
1-3 credits

WNS 475 Undergraduate Teaching Practicum

Students may not serve as teaching assistants in the same course twice.

Mandatory Prerequisites: Minor in women's studies; U3 or U4 standing; permission of instructor
3 credits, S/U grading

WNS 487 Independent Project in Women's Studies

May be repeated once.

Mandatory Prerequisite: Permission of instructor and program associate director
3 credits

WNS 488 Internship

May be repeated up to a limit of six credits.

Mandatory Prerequisites: Six credits toward the women's studies minor; permission of instructor, Associate Director of Women's Studies, and Office of Undergraduate Academic Affairs
3-6 credits, S/U grading

WSE

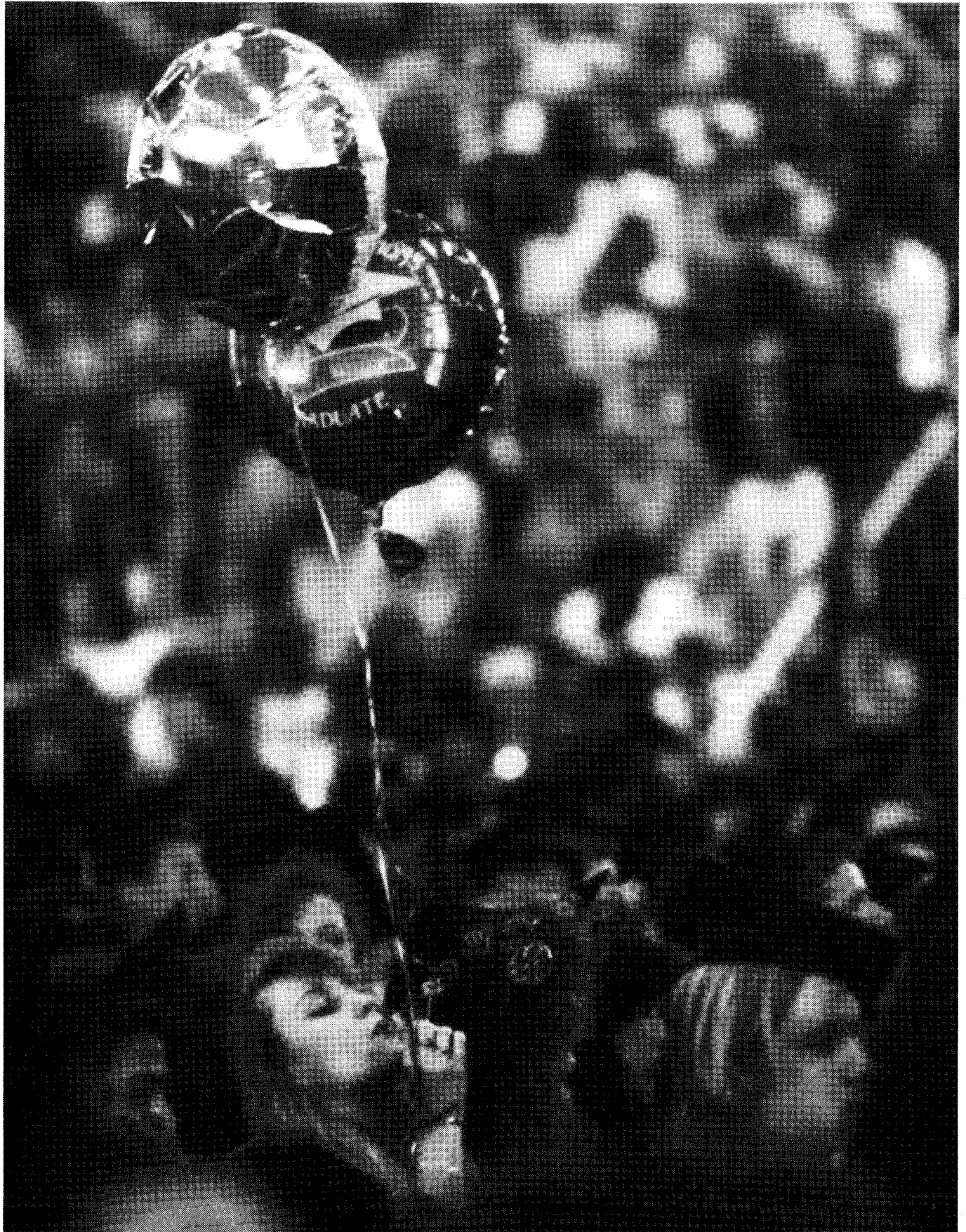
Women in Science and Engineering

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.

Mandatory Prerequisite: BIO 151 or 152 or 171 or 172 or CHE 131 or 141 or GEO 102/112 or 122 or PHY 125 or 131 or 141

3 credits





Approved Courses: College of Engineering And Applied Sciences



(All prerequisites are mandatory unless otherwise noted)

AMS

Applied Mathematics and Statistics

AMS 101-C Introduction to Finite Mathematics

Mathematical concepts and techniques needed for the mathematical models currently being used in such fields as anthropology, biology, economics, linguistics, psychology, and sociology. Topics to be covered include set theory, combinatorics, finite probability, matrix algebra, Markov chains, and linear programming. May not be taken by students with credit for MAT 127 or 132 or 142.

Prerequisite: Satisfaction of entry skill in mathematics requirement
3 credits

AMS 102-C Elements of Statistics

The use and misuse of statistics in real life situations; basic statistical measures of central tendency and of dispersion, frequency distributions, elements of probability, binomial and normal distributions, small and large sample hypothesis testing, confidence intervals, chi square test, and regression. May not be taken by students with credit for AMS 110, 310, 311, 312; ECO 320; POL 201; PSY 201, 203; or SOC 202 or 311, 312.

Prerequisite: Satisfaction of entry skill in mathematics requirement
3 credits

AMS 110 Probability and Statistics in the Life Sciences

A survey of probability theory and statistical techniques with applications to biological and biomedical situations. Topics covered include Markov chain models; binomial, Poisson, normal, exponential, and chi square random variables; tests of hypotheses; confidence intervals; t tests; and analysis of variance, regression, and contingency tables. May not be taken for credit in addition to AMS 102.

Prerequisite: MAT 124 or 125 or 131 or 141
3 credits

AMS 194-C Patterns of Problem Solving

Same as EST 194.

3 credits

AMS 201 Matrix Methods and Models

Basic properties of matrix algebra, matrix norms, eigenvalues, solving systems of equations; applications to economics, growth models, Markov chains, regression, linear programming. Computer software packages used. May not be taken by students with credit for MAT 211 or AMS 210.

Prerequisite: MAT 123 or 125 or 131 or 141
3 credits

AMS 210 Applied Linear Algebra

An introduction to the theory and use of vectors and matrices. Matrix theory including systems of linear equations. Theory of Euclidean and abstract vector spaces. Eigenvectors and eigenvalues. Linear transformations. May not be taken for credit in addition to MAT 211.

Prerequisite: MAT 127 or 132 or 142
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: 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

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 A

An introduction to graph theory and combinatorial analysis. The emphasis is on solving applied problems rather than on theorems and proofs. Techniques used in problem solving include generating functions, recurrence relations, and network flows. This course develops the type of mathematical thinking that is fundamental to computer science and operations research.

Prerequisite: AMS 210 or MAT 211 or AMS 361 or MAT 303
3 credits

AMS 303 Finite Mathematical Structures B

Paths and circuits, trees and tree based algorithms, graph coloring, digraphs, network flows, matching theory, matroids, and games with graphs.

Prerequisite: AMS 301
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 or Pascal or FORTRAN or Basic
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 unconfined aquifer systems.

Prerequisites: 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: 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 351 Applied Algebra

Topics in algebra: groups, informal set theory, relations, homomorphisms. Applications: error correcting codes, Burnside's theorem, computational complexity, Chinese remainder theorem. Crosslisted with MAT 312.

Prerequisites: AMS 210 or MAT 211; AMS 261 or MAT 203 or 205
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 MAT303.

Prerequisite: MAT 127 or 132 or 142
4 credits

AMS 373 Analysis of Algorithms

Same as CSE/MAT 373.

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 MAT211
2 credits

AMS 421 Statistical Quality Control and Design of Experiments

Same as MEC 421
3 credits

AMS 441 Business Strategy

Same as BUS 441.
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 grade point average of 3.0 in all Stony Brook courses and the grade of B in the course in which the student is to assist; permission of department
3 credits, S/U grading

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
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

BUS

Business Management

BUS 114 Financial Accounting

Introduction to some formal accounting statements commonly involved in economic analysis. Topics include business balance sheet and profit-and-loss statements and flow of funds accounting.

3 credits

BUS 214 Managerial Accounting

Concepts, theories, and use of the accounting system as a source of information in the planning, control, and evaluation of the enterprise by the manager. Cash and funds flow analysis, budget development, and cost control mechanisms.

Prerequisite: BUS 114
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.

Prerequisite: ECO 109 (or the discontinued 101)
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: MAT 123 or AMS 102 or higher level mathematics course
3 credits

BUS 341, 342 Special Topics in Management

May be repeated as the topic varies.

Prerequisite: Permission of instructor
3 credits per class

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.

Prerequisite: BUS 340
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.

Prerequisite: AMS 102, BUS 349
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: U3 or U4 standing; SOC 105 or 106 or PSY 103
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.

Prerequisite: BUS 114; MAT 123; AMS 102; ECO 109 (or the discontinued 101)
3 credits

BUS 349 Management Science

An introduction to modeling in management and policy analysis. The course treats the basic concepts of management science and offers different models in quantitative decision making, demonstrating the applicability of such models in business. Not for credit in addition to ECO 348.

Prerequisites: AMS 102 or MAT 123 or passing the Mathematics Placement Examination at level 4 or higher
3 credits

BUS 351 Introduction to Personnel 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: U3 or U4 standing and one of the following: BUS 114, AMS 102, SOC 105 or 106, PSY 103, ECO 109 (or the discontinued 101)
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 114; two D.E.C. category F courses; U3 or U4 standing
3 credits

BUS 355-F 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: AMS 102 or ECO 303
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 349 or ECO 348; BUS 355 or ECO 389; BUS 347 or SOC 381 (or the discontinued PSY 309 or 313)
3 credits

BUS 441 Business Strategy

The problems faced by the general manager in business planning, forecasting, and decision making. Typical case studies relating to establishing objectives and formulating strategies are assigned as a basis for a discussion-oriented class session. Analyses of financial statements, production planning, and organizational structures are involved in arriving at recommendations for action. Crosslisted with AMS 441.

Prerequisites: BUS 114 and 340; POL 319; BUS 347 or 351 or SOC 381 (or the discontinued PSY 309 or 313)
3 credits

BUS 475, 476 Undergraduate Teaching Practicum I, II
May be repeated, but only six credits of teaching practice may be counted towards degree requirements.

Prerequisites: to BUS 475: Grade of A or A- in the course in which the student is to assist or permission of undergraduate program director
Prerequisites: to BUS 476: BUS 475 or permission of undergraduate program director
3 credits per class, S/U grading

BUS 488 Internship

Prerequisites: BUS major, U4 standing; permission of undergraduate program director
3-6 credits, S/U grading

CSE

Computer Science

CSE 100 Societal Impact of Computers

Same as EST 100.

3 credits

CSE 101 Introduction to Computers and Information Technologies

An introduction to the basics of personal computing and information technologies intended primarily for students majoring in humanities, social and behavioral sciences, or business management. Topics include principles of personal (single-user) computer systems, office automation, and information in a modern, networked (multiuser) computing environment. Emphasis is on conceptual understanding of personal computing rather than use of specific hardware or software. Required participation in computer laboratories. May not be taken for credit in addition to CSE/EST 100 or after any other CSE or ISE course.

Prerequisite: Satisfaction of entry skill in mathematics requirement
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 106 Introduction to Modula 3 Programming

An introduction to programming in the Modula 3 programming language. Students gain experience in Modula 3 by solving programming problems. Primarily for students planning to take CSE 114. May not be taken for credit in addition to CSE 113.

1 credit, S/U grading

CSE 110-C Introduction to Computer Science

An introduction to fundamentals of computer science for non-majors. Topics covered include algorithms, problem-solving techniques, computer applications, data structures, and machine principles. Students gain experience using a modern higher-level computer programming language (currently Pascal) to solve a variety of numeric and 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 (or the discontinued CSE 111) may not take CSE 110.

Prerequisite: MAT 123 or passing the Mathematics Placement Examination at level 4 or higher

3 credits

CSE 112-C Fundamentals of Computer Information Systems

Same as ISE 112.

3 credits

CSE 113-C Foundations of Computer Science I

A rigorous introduction to the conceptual and mathematical foundations of computer science. Problem-solving techniques and mathematical concepts that aid in the thinking processes required for problem analysis and designing computer-based solutions. Emphasis on general problem-solving principles, logical reasoning, recursion and induction, and relevant discrete mathematics concepts. Extensive laboratory experience using logic-based theorem provers, logic programming, and functional programming.

Prerequisite: Passing the Mathematics Placement Examination at level 4 or higher

3 credits

CSE 114 Computer Science I

Introduces fundamental computer science concepts and applies principles the student has learned from ISE/CSE 112 or CSE 113 to the modeling, analysis, and development of software in a modern higher-level programming language. Concepts emphasized include software design, verification and validation, object-oriented design and development, data abstraction, recursive programming, and basic machine architecture. Students develop software systems for a broad range of computer applications. May not be taken simultaneously with CSE 110 or MEC 111.

Prerequisites: CSE 106 or equivalent programming experience; grade of C or higher in CSE/ISE 112 or CSE 113 or passing the proficiency examination for CSE 113

3 credits

CSE 127 Introduction to C Programming

An intensive introduction to programming in the C programming language. Students gain experience with C by solving programming problems. Primarily for students planning to take upper-division computer science courses that require knowledge of C.

Prerequisites: CSE major; U3 or U4 standing

1 credit

CSE 213 Foundations of Computer Science II

Builds a rigorous foundation for reasoning about algorithms and computer programs. Introduces formal techniques for specifying, verifying, and analyzing algorithms and programs, including mathematical

logic, proof techniques, BNF, formal grammars, algebraic structures, finite-state machines, and combinatorics (pre- and post-conditions, logical assertions, invariants). The use of graphs and other structures for representing and solving problems. These concepts are enhanced through extensive laboratory experience using mathematical symbol processing software, logic and functional programming, and finite-state machine simulators.

Prerequisites: CSE 113 or CSE/ISE 112; CSE 114

3 credits

CSE 214 Computer Science II

Development of advanced software techniques with emphasis on data representation and manipulation. Rigorous treatment of abstract data types (e.g., lists, stacks, and queues), tree structures, recursive data structures, and algorithms for searching, sorting, and translation. Reinforces modern software engineering concepts, including modular and object-oriented analysis and design, systems specifications, software reuse, documentation, and verification and validation techniques. Students develop applications using a modern high-level programming language.

Prerequisite: Grade of C or higher in CSE 114 or passing the proficiency examination for CSE 114

4 credits

CSE 220 Computer Organization and Systems Programming

Explores the physical structure of a computer; machine representation of information; architecture and organization of various mainframe, mini-, and microcomputers; primary and secondary storage; and input and output communication. Introduces machine and assembly language programming; and systems programming techniques in the programming language C.

Prerequisite: Grade of C or higher in CSE 110 or 114 or passing the proficiency examination for 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 and Oral Skills in Computer Science

See Requirements for the Major in Computer Science, Upper-Division Writing and Oral Skills 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 I

Introduces the basic concepts and modern tools and techniques of software engineering. Stresses the development of reliable and maintainable software via systems requirements and specifications, software design methodologies including object-oriented design, implementation, integration, and testing; software project management; life-cycle documentation; software maintenance; and consideration of human factors issues. Students become familiar with a state-of-the-art Computer-Aided Software Engineering (CASE) tool set and begin to apply these tools to actual software development projects. Crosslisted with ISE 308.

Prerequisite: CSE 214

3 credits

CSE 309 Software Engineering II

Students apply the concepts, tools, and techniques covered in CSE 308 to a large-scale software development project, working in teams consisting of at least five members so that they can acquire group management skills. Emphasis on the use of Computer-Aided Software Design (CASE) tools and object-oriented design and programming. Crosslisted with ISE 309.

Prerequisite: CSE/ISE 308

3 credits

CSE 325 Principles of Computer-Supported Cooperative Work

Same as ISE 325.

3 credits

CSE 326 Digital Image Processing

Same as ESE 357.

3 credits

CSE 327 Computer Vision

Same as ESE 358.

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

Same as ISE 332.

3 credits

CSE 333 User Interface Development

Same as ISE 333.

3 credits

CSE 334 Introduction to Multimedia Systems

Same as ISE 334.

3 credits

CSE 344 Digital Systems Synthesis

Small to medium scale components (logic gates, registers, adders); Verilog hardware description language and simulation. Introduces hardware synthesis tools and field programmable gate arrays. Students will use commercial synthesis and simulation tools in laboratory sessions. Requires familiarity with use of Windows and Unix operating systems. Knowledge of C language useful.

Prerequisite: CSE 220

3 credits

CSE 345 Computer Architecture

Starts with functional components at the level of registers, buses, arithmetic, and memory chips, and then uses a register transfer language to manipulate these in the design of hardware systems up to the level of complete computers. Specific topics included are microprogrammed control, user-level instruction sets, I/O systems and device interfaces, control of memory hierarchies, and parallel processing organizations. Crosslisted with ESE 345.

Prerequisite for electrical engineering majors: ESE 380

Prerequisites for computer science majors: CSE 220; ESE 318 or CSE 344

3 credits

CSE 346 Computer Communications

May not be taken for credit in addition to ISE 310.

Same as ESE 346.

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 359 Expert Systems

Characteristics of expert consultation and problem-solving systems. Techniques and tools for designing and building such systems. Problems of knowledge-base construction and maintenance; extracting the "expertise" from the experts. This is an application course. Students complete a project in which they propose, justify, specify, design, and program a prototype expert system. Coscheduled with CSE 539.

Prerequisites: CSE major; U4 standing

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 and 333

3 credits

CSE 370 Digital Simulation and Modeling

Pseudorandom number and variate generation. Discrete-event simulator design and construction. Model design, structuring, scaling, verification, and parameter identification. Model control using introductory statistical concepts (sampling, confidence interval calculation, etc.). Regenerative simulation. Efficient statistical simulation techniques. Pascal or FORTRAN, as well as GPSS, is used to implement models of computer and engineering systems, deterministic and random signal processing, etc.

Prerequisites: U3 or U4 standing; CSE 114 or MEC 111; MAT 211 or AMS 210

3 credits

CSE 371 Logic

A survey of the logical foundations of mathematics; development of propositional calculus and quantifica-

tion 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 475 Undergraduate Teaching Practicum

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 grade point average of 3.0 in all Stony Brook courses and the grade of B in the course in which the student is to assist; or permission of department

1 or 3 credits

CSE 487 Research in Computer Science

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.

Prerequisite: Permission of instructor and department

1-6 credits

CSE 488 Internship in Computer Science

May be repeated up to a limit of 12 credits, but cannot be used more than once as an elective to satisfy CSE major requirements.

Prerequisites: CSE major, U3 or U4 standing; permission of department

3 credits, S/U grading

CSE 491 Honors Seminar

May be repeated for different topics.

Prerequisites: Computer science major; U3 or U4 standing; permission of department

3 credits

EAS

Engineering and Applied Sciences

EAS 101 Engineering and Applied Sciences 101

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

ESE

Electrical 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: 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 ESE123. Knowledge of C at the level presented in this course is expected of all electrical engineering students in subsequent courses in the major.

Prerequisites: MAT 125 or 131 or 141; PHY 125 or 131 or 141

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: MAT 127 or 132 or 142; PHY 127 or 132 or 142

Corequisite: ESE 271

2 credits

ESE 271 Electrical Circuit Analysis

Introduction to linear electrical circuit analysis. Kirchoff's Laws, Ohm's Law, nodal and mesh analysis for DC circuits, capacitors, inductors, and steady-state AC; transient analysis using phasors and Laplace Transform. Fundamentals of AC power, coupled inductors, and two-ports.

Prerequisites: 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: MAT 127 or 132 or 142; PHY 126 and 127, or 132 or 142

4 credits

ESE 290 Transitional Study

A vehicle used to 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 Engineering

See Requirements for the Major in Electrical Engineering, Upper-Division Writing Requirement.

Prerequisites: ESE 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 271
3 credits

ESE 307 Modern Filter Design

Design of electrical wave filters for communication and control. Topics include: basic theorems on time and frequency response, physical realizability, minimum phase and attenuation characteristics; frequency transformation, transfer function synthesis based on insertion loss, optimum transmission, and maximum signal-to-noise ratio; and realization with LC elements, active circuits, and surface wave filters.

Prerequisite: ESE 271
3 credits

ESE 310 Modern Circuit Theory

Techniques of proofs. Finite and infinite graphs. Fundamental loops and cutsets and their algebraic representations. Elements of Hilbert-space theory. Existence and uniqueness of voltage-current regimes in finite and infinite networks. Least-power and monotonicity principles. Random walks on finite and infinite networks. Infinite cascades and grids. Applications to electrical engineering. Transfinite generalizations. Paradoxical behavior.

Prerequisite: ESE 271
3 credits

ESE 311 Electronics Circuits Design I

Engineering design concepts applied to electronic circuits. Basic network concepts, computational analysis and design techniques: models of electronic devices; biasing and compensation methods; amplifiers and filters designed by conventional and 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
Pre- or corequisite: ESE 372

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 com-

puter-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; engineering 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
3 credits

ESE 321 Electromagnetic Waves and Fiber Optics

Propagation of electromagnetic waves in free space and dielectrics; wave propagation in anisotropic media and crystals; guided electromagnetic waves and surface waves; microwave waveguides, thin film planar optical waveguides, and optical fibers; introduction to the fundamentals of optical fiber communication components and systems.

Prerequisite: ESE 319
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 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 Physical Electronics

A study of the physical principles involved in the operation of electronic devices such as bipolar transistors, field effect transistors, lasers, superconducting and

magnetic devices.

Prerequisites: ESG 281 or PHY 251; ESE 271
3 credits

ESE 332 Introduction to Experimental Characterization of Semiconductor Devices

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 LI (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 characteristics, device band diagrams, and device designs. Includes study of modern methods of silicon and compound semiconductor devices and systems technologies.

Prerequisites: ESE 331 or 372
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

342 Digital Communications Systems

Pulse modulation and sampling. All-digital networks. Pulse code modulation. Digital modulation techniques including ASK, FSK, PSK, DPSK. Equalization. Error control coding. Exchange of reliability for rate. Synchronous and asynchronous systems. ARQ schemes.

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 305
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. Crosslisted with CSE 345.

Prerequisite for electrical engineering majors: ESE 380
Prerequisites for computer science majors: CSE 220; ESE 318 or CSE 344
3 credits

ESE 346 Computer Communications

Basic principles of computer communication design and analysis. Technologies covered include packet networks, circuit switched networks, packet radio, local area networks, Aloha channels and protocols. Techniques covered include algorithms for network design and routing as well as statistical models of network links. Crosslisted with CSE 346.

Prerequisite for electrical engineering majors: ESE 271
Prerequisite for computer science majors: CSE 220
3 credits

ESE 347 Digital Signal Processing

A basic course in digital signal processing covering both theory and implementation on signal processing chips. Topics include 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 An Introduction to Fault Diagnosis of Digital Systems

A follow-up to ESE 318 to acquaint students with fault diagnosis of logic circuits. Both combinational and sequential circuits are considered. Concepts of faults and fault models are presented followed by 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 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 engineering majors: ESE 271 and 318

Prerequisites for computer science majors: CSE 114 and ESE 318
3 credits

ESE 360 Reliability Engineering

Introduces theory and practice of reliability engineering. Mathematical and statistical means of evaluating the reliability of systems of components are emphasized. Includes systems analysis, lifetime distributions and models, repairable systems, warranty models, and preventive maintenance and inspection.

Prerequisites: ESE 305 and 306, or AMS 236 or 310, or 311 and 312

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 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

4 credits

ESE 390 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 With Programmable Logic

Digital hardware design using programmable logic devices including simple and complex programmable logic devices (PLDs) and field programmable gate arrays (FPGAs). Topics include review of combinational and sequential design, PLDs, FPGAs, hardware description design process, languages, simulation, and testing.

Prerequisite: ESE 318

3 credits

ESE 390 Special Topics in Digital Systems

A vehicle for new course material of current interest in the area of digital systems. When offered, a specific title and course description is made available at registration time. May be repeated for different topics but only three credits may be counted as technical electives.

Prerequisite: Permission of 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 314, 324, two ESE technical electives (excluding ESE 390 and ESE 499); ESE major, U4 standing

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 grade point average of 3.0 in all Stony Brook courses, and a grade of B in the course in which the student is to assist; permission of department.

3 credits

ESE 488 Internship in Electrical 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; 3.0 grade point average 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 3.0 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, MEC 499, ESM 499, EST 499, ISE 487) may be counted toward non-ESE technical elective requirements.

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 from civil, mechanical, electrical, materials, and environmental engineering. Creativity and problem solving techniques of modern engineering

through participation in a design project including available resources for success as an engineering student.

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. Semiconductor design and microchip packaging are the primary examples used to illustrate interaction of electrical, thermal, and mechanical design constraints.

Prerequisite: U2 standing

4 credits

ESG 281 An Engineering Introduction to the Solid State

Presents an analytical study of the quantum theory of atoms, molecules, and solids. Reviews classical oscillation and waves. Introduces statistical and kinetic theory and quantum mechanics. Ionic and covalent bonding in molecules, splitting of electron energy levels, crystalline solids, metal structures, energy bands, and energy gaps are described and discussed.

Prerequisites: PHY 132 or 142 or 126, 127

3 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: CSE 114 or MEC 111; CHE 198

Pre- or corequisite: AMS 361 or MAT 303

4 credits

ESG 312 Engineering Laboratory

Laboratory exercises and lectures covering the theory, practice, and design of engineering experimentation. The course has three components: error analysis and data message; electrical circuits and experiment control; and mechanical and optical measurement. Laboratory fee required.

Prerequisites: U3 standing; CSE 114 or MEC 111

4 credits

ESG 316 Engineering Science Design II: Methods

Design and design-planning methods are developed from the conceptual stages through the application stages using lecture and laboratory. Includes synthesis, optimization, modeling, and simulation and systems engineering. Case studies illustrate the design process. Students undertake a number of laboratory projects employing various design tools. Laboratory fee required.

Prerequisites: ESG 217 and 312; 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 addressing recent developments in microelectronics, superconductivity, and the surface engineering of bulk alloys. This course includes a design content of one credit, achieved through a design exercise related to thin film fabrication. Crosslisted with ESM 339.

Prerequisite: ESG 332, or ESE 331 for ESE majors

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

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

Same as CHE 221.

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.

Prerequisite: Permission of instructor

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 338 Engineering Ceramics: Properties, Processing, and Microstructures

The development, synthesis, properties, applications, and machining methods of advanced ceramics. Includes the mechanical, electrical, superconducting, magnetic, thermal, chemical, and optical properties and their relationship to processing, to characterization of microstructures, and to technological (including biological) applications.

Prerequisite: CHE 132 or 142 or 198
3 credits

ESM 339 Thin Film Processing of Advanced Materials

Same as ESG 339.

4 credits

ESM 350 Structure and Electronic Properties of Solids

A laboratory course. Crystallographic properties of solids are studied by X-ray and electron-diffraction experiments and microstructural properties by light and electron microscopy. Electronic properties are investigated by conductivity, dielectric, and optical-absorption measurements.

Prerequisites: ESG 332; CHE 199; PHY 132 or 142 or 126, 127; ESM 302

Corequisite: ESG 333
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 grade point average of 3.0 in all Stony Brook courses and the grade of B in the course in which the student is to assist; permission of department

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
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.

1-4 credits

EST

Technology and Society

EST 100 Societal Impact of Computers

A critical assessment of the role that computing and data processing play in contemporary society. Following an introduction to the information management capabilities that automation can provide, a study is made of economic, legal, and moral issues involved in the utilization of these capabilities. May not be taken for credit in addition to CSE 101.

Crosslisted with CSE 100.

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 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 290-H Technology, Society, and Values:**Balancing Risks and Rewards**

An examination of the mechanisms by which society balances risks and benefits of new technologies. The course addresses the nature of science, engineering, and technology; the progression from new scientific discoveries to new technological capabilities; the ways in which individuals and institutions draw attention to technological risks; the challenge of protecting the public from risky technologies while promoting new industries; and the roles of scientists and engineers in legal and regulatory proceedings.

Prerequisite: One D.E.C. category E course
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/CSE 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/CSE 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/CSE 100 or CSE 101

3 credits

EST 307 Computer Modeling of Biological Systems

Same as BIO 307.

3 credits

EST 310 The Exploration of Space

The basic engineering and scientific concepts of the exploration of space. The main topics covered include the role of man in space and space exploration. The course is primarily intended for non-engineering students.

Prerequisites: MAT 123; U3 or U4 standing

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 transfer 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 390 Communication Skills in Engineering and Applied Sciences

Considers writing and speaking skills essential in business and the professions with strong emphasis on presenting technical material to nontechnical audiences such as managers, salespeople, and consumers. Students learn to tailor material to specific audiences and to write memoranda, letters, and resumés, as well as technical descriptions, short reports, and proposals. Includes oral presentations and participation in group discussions and simulations.

Prerequisites: Satisfaction of D.E.C. category A; CEAS major; U3 or U4 standing
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 152; 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 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; ESE, ESG, or MEC major
3 credits

EST 411-H Science, Technology, and Arms Control

Same as POL 411.

3 credits

EST 412 Intelligence Organizations, Technology, and Democracy

Same as POL 412.

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

Prerequisites: U4 standing in the college; a minimum grade point average of 3.0 in all Stony Brook courses and a grade of B in the course in which the student is to assist; permission of department

3 credits

EST 499 Research in Technology and Society

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.

3 credits

ISE

Information Systems

ISE 112-C Fundamentals of Computer Information Systems

An introduction to fundamentals of computer science and information technologies for information systems, engineering, or science majors, and computer science minors. Topics include principles of computer systems; algorithms; problem-solving techniques; and an introduction to the UNIX operating system. This course is designed to be taken concurrently with a computer programming course. Crosslisted with CSE 112. May not be taken for credit in addition to CSE 113.

Prerequisites: MAT 123 or passing the Mathematics Placement Examination at level 4 or higher; previous experience with computers

Advisory Corequisite: CSE 106

3 credits

ISE 300 Writing and Oral Skills in Information Systems

See Requirements for the Information Systems Major, Upper-Division Writing and Oral Skills Requirement.

Prerequisites: ISE major; U3 or U4 standing

1 credit, *SIU grading*

ISE 305 Principles of Database Systems

Same as CSE 305.

4 credits

ISE 308 Software Engineering I

Same as CSE 308.

3 credits

ISE 309 Software Engineering II

Same as CSE 309.

3 credits

ISE 310 Data Communication and Networks

Study of communication networks. Local area networks (LAN), integrated voice and data systems (IVDS), and wide area networks (WAN). Their topologies: bus, token passing, tree, point to point. Protocols, speed, and distance limitations: RS232, TCP/IP, MAP/TOP, ONS, OSI. Network design and management will be studied in various environments. May not be taken by students with credit for CSE/ESE 346.

Prerequisites: CSE 214 and 220

3 credits

ISE 315 Database Transaction Processing Systems

Theory and practice of design for database applications. Transaction design, schema design, restart and recovery, journaling, distributed databases. Student groups perform design and implementation of significant database application.

Prerequisites: CSE/ISE 305 and 308

3 credits

ISE 325 Principles of Computer-Supported Work

Psychological and organizational aspects of computer-supported cooperative work (CSCW), plus firsthand experience with technologies that can facilitate group-orientated tasks or provide support for group-based management activities such as negotiations or decision making. Technological issues include data management and sharing, computer-mediated communications, networks, video- and teleconferencing, and multimedia. Crosslisted with CSE 325.

Prerequisites: CSE 114; PSY 103 or 104; AMS 310 or ECO 320 or PSY 201; CSE 214 and 220 recommended.
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 visual 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 or 104 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/ISE 333; PSY 260

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 varies, 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 I

Student groups select an appropriate senior design project; analyze application; and produce detailed doc-

umentation for requirements, specification, and high-level design.

Prerequisite: CSE/ISE 305 or ISE 310
3 credits

ISE 441 Information Systems Design II

Continuation of ISE 440. Student groups complete design of project selected in ISE 440; perform coding, testing, and evaluation; and produce a user manual and final design documentation.

Prerequisite: ISE 440
3 credits

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 3.0 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
1-6 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 more than once as 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

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 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: MAT 124 or 125 or 131 or 141; PHY 125 or 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 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
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 131 or 141 or 125
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: AMS 261 or MAT 203; 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 300 Writing in Mechanical Engineering

See Requirements for the Major in Mechanical Engineering, Upper-Division Writing Requirement.

Prerequisites: MEC major; U3 or U4 standing
Corequisite: MEC 317
0 credits, S/U grading

MEC 301 Thermodynamics

Variables that describe the thermodynamic state of a system or control volume, including absolute temper-

ature, 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
4 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; 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 202 and 203 (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: MAT 303 or AMS 361; 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
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: MAT 303 or AMS 361; MEC 309
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; engine operating characteristics. Includes both the relevant fundamental concepts and the extensive practical knowledge base on which engine research, development, and design depend.

Prerequisites: MEC 305 and 398
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
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 cogeneration 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 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: AMS 361 or MAT 303; MEC 262 and 363
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 305, 363, and 364
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 305 and 317
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

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. 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.

Prerequisites: MEC 305 and 364; permission of instructor
Corequisite: MEC 398
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 309, 310, 317, and 320; MEC major; U4 standing
Corequisite: MEC 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 363
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 grade point average of 3.0 in all Stony Brook courses and the 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.

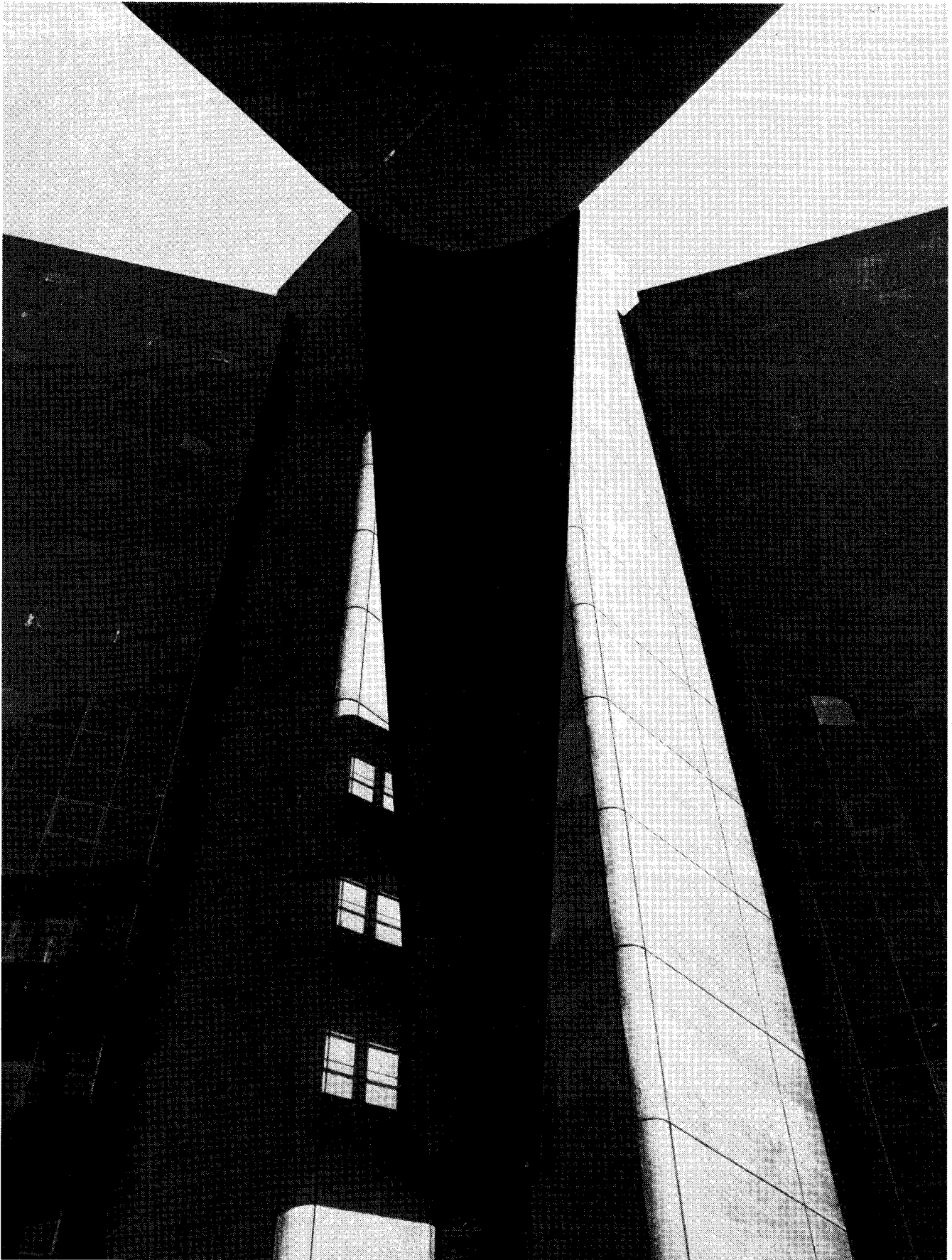
Prerequisites: U3 or U4 standing in a B.E. degree major; permission of department (course prerequisites vary with topic)

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 a 3.0 average 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.

1-4 credits





Approved Courses: Health Sciences Center



All prerequisites are mandatory unless otherwise noted in the course description.

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

HAT

Respiratory Care

HAT 210 Introduction to Respiratory Care

An introduction to the science of Respiratory Care. Current trends in professional practice will be discussed and students will 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.

1 credit

HBA

Anatomical Sciences

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 class

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
2-4 credits per class

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. Modules 3 through. *Prerequisites:* U3 or U4 standing; BIO 151, 152 or 171, 172; 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.

Prerequisites: 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. Open to juniors and seniors. May be repeated.

Prerequisites: U3 or U4 standing; permission of instructor
1-2 credits per class

HBP 398, 399 Research Project in Pathology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. Open to juniors and seniors. May be repeated.

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor
2-4 credits per class

HBY

Physiology and Biophysics

HBY 350 Physiology

The normal functioning of human tissues and organs and their regulation by the nervous and endocrine systems. Special emphasis is given to physiological control systems and the preservation of the constancy of the internal environment. Lectures, conferences, demonstrations. 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

HBY 393, 394 Special Topics from Physiology and Biophysics Literature

Tutorial readings in physiology and biophysics and periodic conferences, reports, and examinations arranged with the instructor. May be repeated.

Prerequisites: U3 or U4 standing; permission of instructor
1-2 credits per class

HBY 398, 399 Research Project in Physiology and Biophysics

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. May be repeated.

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor
2-4 credits per class

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 (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.

Prerequisite for HDO 320: U3 standing; permission of the Department prior to registration
Advisory Prerequisite: BIO 152 or 172 and CHE 132 and 134 or 142 and 144

Prerequisite for HDO 321: HDO 320
4 credits per class

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.

Prerequisite for HDO 420: U4 standing; permission of department prior to registration

Advisory Prerequisite: BIO 152 or 172 and CHE 132 and 134 or 142 and 144

Prerequisite for HDO 421: HDO 420
4 credits per class

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 and 134 or 142 and 144; BIO 152 or 172; permission of instructor
1-4 credits per class

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
2-4 credits per class

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 class

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
1-6 credits per class

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 will be covered. Satisfies the microbiology requirement for admission to most allied health, nursing, optometry, and veterinary medicine professional schools.

Prerequisites: BIO 152; 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 152; 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 class

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

2-4 credits per class

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

Introduces students to some of the major ethical and legal doctrines that affect health care professionals. The doctrines are discussed by addressing specific problem situations. Some of the topics are the right to refuse medical, mental, and social care; the right to life and its limits (e.g., suicide, euthanasia, abortion); the right to receive care; and access to and evaluation of health care delivery. Since the goal of the course is to sensitize professionals to legal and ethical issues like those they will be called upon to resolve, students are expected to take part in class discussions and do readings.

Prerequisites: U3 or U4 standing; one D.E.C. category B course or equivalent

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 are considering a career in nursing. The student is oriented to the nature and scope of the profession of nursing, settings where nursing is practiced, and selected skills basic to nursing practice.

2 credits

HWC

Social Welfare

HWC 349 Overview of Gay and Lesbian Issues

Examines the status of homoerotic individuals and groups within the United States in order that the students may assess and intervene toward the goal of liberating lesbian women and gay men. Covers historical and current attitudes, the range of cultural oppression, special concerns of subgroups, relationship and sexual issues, and problems and needs of lesbians and gay men.

Prerequisites: U3 or U4 standing; permission of instructor and of 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. Focuses on the implication for effective practice of 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 and of 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 it a major social problem.

Prerequisites: U3 or U4 standing; permission of instructor and of School of Social Welfare Office of Student Services

3 credits

STATE UNIVERSITY OF NEW YORK

General Statement

State University's 64 geographically dispersed campuses bring educational opportunity within commuting distance of virtually all New York citizens and compose the nation's largest centrally managed system of public higher education.

When founded in 1948, the University consolidated 29 state-operated, but unaffiliated, institutions. In response to need, the University has grown to a point where its impact is felt educationally, culturally, and economically the length and breadth of the state.

More than 400,000 students are pursuing traditional study in classrooms or are working at home, at their own pace, through such innovative institutions as Empire State College, whose students follow individualized and often nontraditional paths to a degree. Of the total enrollment, approximately 36 percent of the students are 25 years of age or older, reflecting State University's services to specific constituencies, such as refresher courses for the professional community, continuing educational opportunities for returning service personnel, and personal enrichment for more mature persons.

State University's research contributions are helping to solve some of modern society's most urgent problems. It was a State University scientist who first warned the world of potentially harmful mercury deposits in canned fish, and another who made the connection between automobile and industrial exhaust combining to cause changes in weather patterns. Other University researchers continue important studies in such wide-ranging areas as immunology, marine biology, sickle-cell anemia, and organ transplantation.

More than 1,000 public service activities are currently being pursued on State University campuses. Examples of these efforts include special training courses for local government personnel, state civil service personnel, and the unemployed; participation by campus personnel in joint community planning or project work; and campus-community arrangements for community use of campus facilities.

A distinguished faculty includes nationally and internationally recognized figures in all the major disciplines. Their efforts are recognized each year in the form of such prestigious awards as Fulbright-Hayes, Guggenheim, and Danforth fellowships.

The University offers training in a wide diversity of conventional career fields, such as business, engineering, law, medicine, teaching, literature, dairy farming, medical technology, accounting, social work, forestry, and automotive technology. Additionally, its responsiveness to progress in all areas of learning and to tomorrow's developing societal needs has resulted in concentrations that include the environment, urban studies, computer science, immunology, preservation of national resources, and microbiology.

SUNY programs for the educationally and economically disadvantaged have become models for delivering better learning opportunities to a once forgotten segment of society. Educational Opportunity Centers offer high school equivalency and college preparatory courses to provide young people and adults with the opportunity to begin college or to learn marketable skills. In addition, campus-based Educational Opportunity Programs provide counseling, developmental education, and financial aid to disadvantaged students in traditional degree programs.

Overall, at its EOCs, two-year colleges, four-year campuses, and university and medical centers, the University offers more than 4,000 academic programs. Degree opportunities range from two-year associate programs to doctoral studies offered at 12 senior campuses.

The 30 two-year community colleges operating under the program of State University play a unique role in the expansion of educational opportunity. They provide local industry with trained technicians in a wide variety of occupational curricula, and offer transfer options to students who wish to go on and earn advanced degrees.

The University passed a major milestone in 1985 when it graduated its one-millionth alumnus. The majority of SUNY graduates pursue careers in communities across the state.

State University is governed by a board of trustees, appointed by the governor, that directly determines the policies to be followed by the 34 state-supported campuses. Community colleges have their own local boards of trustees whose relationship to the SUNY board is defined by law. The state contributes 33 to 40 percent of their operating costs and 50 percent of their capital costs.

The State University motto is "To Learn—To Search—To Serve."

Campuses

University Centers

State University of New York at Albany
State University of New York at Binghamton
State University of New York at Buffalo
State University of New York at Stony Brook

Colleges of Arts and Science

State University College at Brockport
State University College at Buffalo
State University College at Cortland
State University of New York Empire State College
State University College at Fredonia
State University College at Geneseo
State University College at New Paltz
State University College at Old Westbury
State University College at Oneonta
State University College at Oswego
State University College at Plattsburgh
State University College at Potsdam
State University College at Purchase

Colleges and Centers for the Health Sciences

State University of New York Health Science Center at Brooklyn
State University of New York Health Science Center at Syracuse

State University of New York College of Optometry at New York City

Health Sciences Center at SUNY at Buffalo*
Health Sciences Center at SUNY at Stony Brook*

Colleges of Technology and Colleges of Agriculture and Technology

State University of New York College of Technology at Alfred

State University of New York College of Technology at Canton

State University of New York College of Agriculture and Technology at Cobleskill

State University of New York College of Technology at Delhi

State University of New York College of Technology at Farmingdale

State University of New York College of Agriculture and Technology at Morrisville

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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Program Index (with HEGIS codes)

Undergraduates at the State University of New York 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 Undergraduate Bulletin are approved unless otherwise indicated.)

	Page
Actuarial Science (complementary to degree program)	201
Africana Studies, 2211, (Interdisciplinary Major), B.A. (see also <i>Minors</i>)	84-85
American Sign Language (complementary to degree program)	282
Anatomical Sciences (complementary to degree program)	308
Anthropology, 2202, B.A. (see also <i>Minors</i>)	86-87
Applied Environmental Science	200-201
Applied Mathematics and Statistics, 1799, B.S. (see also <i>Minors</i>)	194, 195, 199-201
Arabic (complementary to degree program)	154, 236
Art History and Criticism, 1003, B.A. (see also <i>Minors</i>)	89-90
Astronomy/Planetary Sciences, 1911, B.S.	92-93
Astrophysics (see <i>Physics</i>)	
Atmospheric and Oceanic Sciences, 1913, B.S.	228-30
Bachelor's/Master's Degree Programs	
Applied Mathematics and Statistics	196-97
Chemistry/Materials Science and Engineering	196-97
Engineering Chemistry/Materials Science and Engineering	118, 196-97, 214-15
Engineering Science/Marine Sciences	196-97, 214-15
Engineering Science/Materials Science and Engineering	196-97, 214-15
Geological Oceanography (Geology/Marine Sciences)	113
Physics/Materials Science and Engineering	214-15
Political Science/Public Affairs	174
Biochemistry, 0414, B.S.	94-96
Biology*, 0401, B.S. (see also <i>Minors</i>)	94, 97-99
Biomedical Engineering (complementary to degree program)	213

	Page
Biophysics (complementary to degree program)	308
Business Management, 0506, B.S. (see also <i>Minors and Harriman School</i>)	194, 195, 202-204
Certification (see <i>Teacher Preparation</i>)	
Chemistry*, 1905, B.A., B.S.	100-103
Child and Family Studies (Minor)	104
Chinese Studies (Minor)	105
Classical Civilization (Minor)	106
Classics (complementary to degree program)	245
Clinical Laboratory Sciences, 1223, B.S. (See also <i>Health Sciences Center Bulletin</i>)	223
Comparative Studies in Literature (Interdisciplinary Major), 1503, B.A. (see also <i>Minors</i>)	107-109
Computer Engineering (Major Concentration)	210-11
Computer Science, 0701, B.S.	194, 195, 205-209
Cytotechnology, 1223, B.S. (See also <i>Health Sciences Center Bulletin</i>)	222-23
Dance (Minor)	110
Dental Health (complementary to degree program)	226, 308
Design (Minor)	91
Diversified Education Curriculum (general education program)	67-68
Earth and Space Sciences*, 1999, B.A.	111-14
East European Languages (complementary to degree program)	247
Economics, 2204, B.A.	115-17
Electrical Engineering, 0909, B.E.	209-211, 214
Engineering Chemistry, 1999 (Interdisciplinary Major), B.S.	118-19
Engineering Geology	113
Engineering Science, 0901, B.E.	194, 195
English*, 1501, B.A. (see also <i>Minors</i>)	120-22
English as a Second Language (complementary to degree program)	250
Enrichment Courses	79
Environmental Geoscience	112-13
Environmental Studies (Living/Learning Center)	74
Federated Learning Communities	75
Foreign Languages	
Arabic	154, 236
Chinese	105, 245
French	123-25
German	128-29
Greek (Ancient)	106, 253
Hebrew	143, 154, 253
Italian	123, 125-27, 193

	Page
Japanese	141, 261
Korean	144, 261
Latin	106, 262
Portuguese	278
Russian	128, 129-31
Sanskrit	282
Spanish	132-34
Uncommonly Taught Languages (see <i>Linguistics</i>)	
Foreign Languages Teacher Preparation	71-72
French Language and Literature*, 1102, B.A. (see also <i>Minors</i>)	124-25
Geological Oceanography	113
Geology, 1914, B.S. (see also <i>Minors</i>)	112-114
Germanic Languages and Literature*, 1103, B.A. (see also <i>Minors</i>)	128-29
Greek (see also <i>Classics</i>)	106, 253
Health and Society (complementary to degree program)	309
Health Care Policy and Management (see also <i>Health Sciences Center Bulletin</i>)	223-24
Hebrew (complementary to degree program)	143, 253
Hispanic Languages and Literature (see <i>Spanish Language and Literature, Foreign Languages</i>)	
History, 2205, B.A. (see also <i>Minors</i>)	135-37
Honors College (complementary to degree program)	72-73, 257
Human Sexual and Gender Development (Minor, Langmuir Living/Learning Center)	74
Humanities, 4999, (Interdisciplinary Major), B.A.	138-40
Information Systems, 0702, B.S.	217-18
Interdisciplinary Courses (see <i>Environmental Science, Humanities, Human Sexual and Gender Development, International Studies, Latin American and Caribbean Studies, Science and Engineering, Engineering Science, Women's Studies, Social Sciences, Enrichment Courses</i>)	
Interdisciplinary Arts (Minor) Living/Learning Center	74
International Studies (Minor, Keller Living/Learning Center)	75
Internships (complementary to degree program)	78, 194
Italian Studies*, 1104, B.A. (see also <i>Minors</i>)	125-26
Japanese Studies (Minor)	141
Journalism (Minor)	142
Judaic Studies (Minor)	143
Korean Studies (Minor)	144

	Page		Page		Page
Latin (<i>see also Classics</i>)	106, 262	Latin American and Caribbean Studies	145	Political Science, 2207, B.A. (<i>see also Minors</i>)	173-75
Latin American and Caribbean Studies (Minor)	145	Linguistics	146	Portuguese (complementary to degree program)	278
Linguistics, 1505, B.A. (<i>see also Minors</i>)	146-47	Marine Sciences	229-30	Psychology, 2001, B.A., B.S.	176-79
Manufacturing Engineering (complementary to degree program)	214	Materials Science	215	Religious Studies (Interdisciplinary Major), 1510, B.A. (<i>see also Minors</i>)	181-82
Marine Sciences (Minor)	229	Mathematics	149	Respiratory Care, 1299, B.S. (<i>see also Health Sciences Center Bulletin</i>)	222, 224
Materials Science (Minor)	215	Media Arts	152	Russian Language and Literature*, 1106, B.A. (<i>see also Minors</i>)	129-30
Materials Science and Engineering (complementary to degree program)	212-15	Medieval Studies	153	Sanskrit (complementary to degree program)	282
Mathematics*, 1701, B.S. (<i>see also Minors</i>)	148-51	Middle Eastern Studies	154	Science and Engineering, Interdisciplinary Program in (Living/Learning Center, complementary to degree program)	75
Mathematics Teacher Preparation	69, 70-71	Music	158-59	Science Teacher Preparation	70
Mechanical Engineering, 0910, B.E.	194, 214, 219-20	Optics	160	Social Sciences*, 2201, (Interdisciplinary Major), B.A.	183-184
Media Arts (Minor)	152	Philosophy	165	Social Studies (Secondary Teacher Preparation)	71
Medieval Studies (Minor)	153	Political Science	174-175	Social Work, 2104, B.S. (<i>see also Health Sciences Center Bulletin</i>)	225
Microbiology (complementary to degree program)	309	Quantitative Research in Social and Behavioral Sciences	180	Sociology, 2208, B.A.	185-87
Middle Eastern Studies (Minor)	154	Religious Studies	181-82	Spanish Language and Literature*, 1105, B.A. (<i>see also Minors</i>)	132-34
Minors		Russian	130	Studio Art, 1002, B.A. (<i>see also Minors</i>)	90
Africana Studies	84-85	Spanish Language, Culture, and Literature	133-34	Study Abroad (complementary to degree program)	76-78
Anthropology	87-88	Studio Art	91	Teacher Preparation and Certification in:	
Applied Mathematics and Statistics	201	Technology and Society	216	Biology	70, 99
Art History	90-91	Theatre Arts	189	Chemistry	70, 103
Biology	99	Women's Studies	190-91	Earth Science	70, 112
Business Management	203-204	Mount Wellness Program (Living/Learning Center)	73, 75	English	72, 121
Child and Family Studies	104	Multidisciplinary Studies, 4901, B.A.	155-56	Foreign Languages Secondary	71
Chinese Studies	105	Music, 1005, B.A. (<i>see also Minors</i>)	157-59	French	71, 126
Classical Civilization	106	Nursing, 1203, B.S. (<i>see also Health Sciences Center Bulletin</i>)	222-26	German	71, 131
Comparative Studies in Literature	108-109	Occupational Therapy, 1208, B.S. (<i>see also Health Sciences Center Bulletin</i>)	223	Italian	71, 126
Computer Science	208	Optics (Minor)	160	Russian	71, 131
Dance	110	Oral Biology and Pathology (complementary to degree program)	308	Spanish	72
Design	91	Pathology (complementary to degree program)	308	Mathematics	70
English	121-122	Periodontics (complementary to degree program)	308	Physics	71, 171
Environmental Studies	74	Pharmacological Sciences (complementary to degree program)	308	Social Studies	71
Federated Learning Communities	75-76	Pharmacology, 0409, B.S.	161-63	Teaching English to Speakers of Other Languages	72
French	126	Philosophy, 1509, B.A. (<i>see also Minors</i>)	164-66	Technology and Society (Minor)	216
Geology	113-14	Physical Education (complementary to degree program)	167-68	Theatre Arts, 1007, B.A. (<i>see also Minors</i>)	188-89
German	129	Physical Therapy, 1212, B.S., (<i>see also Health Sciences Center Bulletin</i>)	222, 223	Uncommonly Taught Languages (<i>see Linguistics</i>)	
History	137	Physician Assistant, 1299, B.S., (<i>see also Health Sciences Center Bulletin</i>)	222, 224	Undergraduate Research and Creative Activities Program (complementary to degree program)	78
Human Sexual and Gender Development	74	Physics*, 1902, B.S.	169-72, 214	Women's Studies (Minor)	190-91
Interdisciplinary Studies in the Arts	74	Physics of Materials (<i>see Physics or Materials Science and Engineering</i>)			
International Studies	74	Physiology and Biophysics (complementary to degree program)	308		
Italian	126				
Italian-American Studies	126				
Japanese Studies	141				
Journalism	142				
Judaic Studies	143				
Korean Studies	144				

* Teacher Preparation courses offered

Index

A

Academic Advising	16-17, 58
Academic Advising Center	16
Engineering and Applied Sciences Undergraduate Student Office	16
HSC Office of Student Services	222-23
Undergraduate Academic Affairs	17
Undergraduate Adult and Evening Studies Office	17
Undergraduate Transfer Office	17
Academic Calendars	221-222, 320
Academic Dishonesty	57
Academic Dismissal	53
Academic Grievances	58
Academic Honors	59
Academic Information, General	
Academic Minor	66
Academic Policies and Regulations	49-64
Academic Programs	8
Academic Publications	10
Academic Renewal Policy	62
Academic Standing	53
Academic Standing and Appeals, Committees on	57
Acceptance to College of Engineering and Applied Sciences Programs	28, 195
Access to Student Records	58
DARTS (Degree Audit Report and Tracking System)	58
SOAR (Student On-Line Access to Records)	58
Accreditation	6
Activities, Campus	12
Activities, Student Participation in University-Sponsored	62
Activity-Related Courses, Limits on	83
Actuarial Science	201
ADA (Americans with Disabilities Act)	13, 18
Address, Change of	62
Administration, Officers of (SUNY) Stony Brook	311
Admission	9, 25-30
Acceptance to College of Engineering and Applied Sciences Programs	28
Advanced Placement Credit	29
Advanced Standing by Examination	29
Bachelor's Degree Program, Second	29
Challenge Program for Advanced Credit	29
College-Level Examination Programs	29
Disabled Students	28-29
Dual Degree/Joint Admissions	27
Early Admission from High School	26
Foreign Students	29
Freshman	26-27
Graduate Programs	9
Harriman School for Management and Policy, W. Averell	202-204
Health Sciences Center	221-226
Marine Sciences Research Center	222-230
Medicine, Scholars for	226
Non-Degree Study	30

High School Students: Young Scholars Program	30
Notification of Freshman	27
Nursing, School of	224-225
Part-Time Matriculation	28
Undergraduate Evening Study	28
Special Programs	27-28
AIM	27-28
Returning Students	28
Summer Session	29-30
Transfer	27
Two-Year College Graduates	27
Advanced Credit, Challenge Program for	29
Advanced Placement Credit	29
Advanced Standing by Examination	29
Advancement on Individual Merit (AIM) Program	27-28
Advising, Academic	16-17, 58
Affirmative Action	13
AFH Courses	232
Africana Studies, Program in	84-85
Major	84
Minor	84-85
AFS Courses	232-33
AIM	27-28
AIM Courses	27-28
American Sign Language	147
AMS Courses	294-95
Anatomical Sciences	226
Ancient Greek	106, 253
ANP Courses	233-34
ANT Courses	234-36
Anthropology, Department of	86-88
Major	86-87
Minor	87-88
Application	26
For New Freshmen	26
For Transfer Students	27
Applied Mathematics and Statistics, Department of	199-201
Applied Sciences, Programs in Engineering and	199-220
Arabic	154
ARB Courses	236
Archaeology	88
Areas of Interest	60
Declaration of	60
Selection of	60
ARH Courses	236-37
ARS Courses	237-39
Art, Department of	89-91
Art History and Criticism Major	89-90
Studio Art Major	90
Art History and Criticism Minor	90-91
Arts and Sciences, College of	82-191
Degree Programs	82-191
Degree Requirements	83
Independent Study	82
Majors, Program	84-191
Assistantships, Undergraduate Teaching	9, 82-83
AST Courses	239
Astronomy/Planetary Sciences	92-93
Astrophysics	171
Athletic Fee	32

Athletics	13
ATM Courses	239-40
Atmospheric and Oceanic Sciences	229
Attendance, First Week	50
Auditing	55
Awards, University	44-45
Awards, Departmental	45

B

Baccalaureate, Candidates for Second	29
Bachelor's Degree Credit Options	55-56, 62
Bachelor's Degrees, Sequential	61
Bachelor's Degrees, Two Concurrent	61
Bachelor's/Master's Degree Programs: see <i>Political Science Department, Harriman School, individual listings in the College of Engineering and Applied Sciences, and Undergraduate Courses of Study</i>	
Background	6
BCH	94-96
BCP Courses	240
Behavioral Neuroscience	243
BIO Courses	240-243
Biochemistry and Cell Biology, Department of	94-96
Biochemistry Major	95-96
Biological Sciences	94-99
Biology Major	97-99
Biology Minor	99
Biology Teacher Preparation Program: see <i>Education and Teacher Certification</i>	
Biomedical Engineering	213-14
Biophysics	308
Board of Trustees (SUNY)	311
Books and Supplies	35
Bookstores	19
BUS Courses	295
Business Management	202-204
Major	202-203
Minor	203-204
Bus service on campus	14

C

Calculus Resource Room	16
Calendars, Academic	
Academic years 1997-99	320
Health Sciences Center	221-223
Campus Activities	12
Campus and Community Ties	10-12
Campus Community Advocate (Ombuds Office)	19
Campus Description	6-7
(See also <i>map on Inside Back Cover</i>)	
Campuses (SUNY)	310-11
Campus Life Time	12
Campus Map	Inside Back Cover
Campus Residences	19-20
Campus Telephone Directory	62-63
Career Placement Center	20-21
Caribbean Studies, Latin American and	145
CASA (Committees on Academic Standing and Appeals)	57
CBN Courses	243
Cell Biology, see <i>Department of Biochemistry and Cell Biology</i>	

- Center for Academic Advising 16
- Centers and Institutes, Special 9-10
- Challenge Program for Advanced Credit 29
- Challenge Program for Credit by Examination 29, 62
- Change of Address 62
- Changes in Regulations and Course Offerings 64
- CHE Courses 243-45
- Chemistry, Department of 100-103
- Chemistry Major (B.A., B.S.) 101-102
- Chemistry Teacher Preparation Program, *see Education and Teacher Certification*
- CHI Courses 245
- Child and Family Studies Minor 104
- Child Care Services 17
- Chinese Studies Minor 105
- Classical Civilization Minor 106
- Classics and Classical Languages 106, 245
- CLS Courses 245
- Clubs and Organizations 12-13
- CNH Courses 245
- CNS Courses 245
- College Fee 32
- College-Level Examination Programs 29
- College of Arts and Sciences 81-142
- College of Engineering and Applied Sciences 193-220
- Committees on Academic Standing and Appeals (CASA) 57
- Community Ties 10-12
- Commuter Student Association 17-18
- Comparative Studies, Department of 107-109
- Comparative Studies in Literature Major 107-108
- Comparative Studies in Literature Minor 108-109
- Humanities Major 138-140
- Religious Studies Major 181-182
- Religious Studies Minor 182
- Composition course requirement 67
- Computer Engineering 210-11
- Computer Science, Department of 205-208
- Major 206-207
- Minor 208
- Computing Facilities 206
- Computing Services 16
- Concurrent Degrees 61
- Conduct Code, Student 14
- Cooking Fee, Refund of 34
- Counseling Center 21
- Course Credit and Grading Option Limits 55-56
- Course Load 50, 198
- College of Engineering and Applied Sciences 198
- Course Load and Course Withdrawal 50-51
- Course Numbering System 55
- College of Engineering and Applied Sciences 197
- Course Offerings, Changes in 64
- Course Registration, Change in 50
- Courses, Crosslisted 55
- Courses, Permission to Take, *see Graduate Courses, Permission to Take*
- Courses, Renumbered 55
- Courses, Repeatable 55
- Courses, Retaking 55
- Courses of Study, Undergraduate 312-13
- Creative Writing Courses 120, 247, 249
- Credit Hour Requirement for the B.E. Degree 196
- Credit Options, Bachelor's Degree 62
- Credit Requirement, Upper-Division 66
- Credits, Restrictions on 197
- Restrictions on Transfer 197
- Cross Registration 62
- Crosslisted Courses 55
- CSE Courses 295-97
- CSL Courses 245-46
- Cultural History 88
- D**
- Dance Minor 110
- DARTS (Degree Audit Report and Tracking System) 58
- Day Care, *see Child Care Services* 17
- Dean's List 59
- D.E.C. (Diversified Education Curriculum) 54, 196
- Deferment of Payment 33
- Deferred Enrollment 27
- Degree Audit Report and Tracking System (DARTS) 58
- Degree Programs 312-13
- College of Arts and Sciences 82
- College of Engineering and Applied Sciences 195
- Degree Requirements 66
- College of Arts and Sciences 82
- College of Engineering and Applied Sciences 196
- Marine Sciences Research Center 66
- University 66
- Degrees with Distinction 59
- Summa cum laude 59
- Magna cum laude 59
- Cum laude 59
- Dental Health 226
- Dental Medicine, School of 226
- Departmental Awards 45
- Departmental Honors Programs 59-60
- Departmental Major 60
- Deposit, Housing 32
- Refund of 33
- Deposit, Tuition 32
- Refund of 33
- Deposit Policy, Pre-Enrollment 32
- Refund of 33
- Design Minor 91
- Directories 310-13
- Disabled Student Services 18
- Disabled Students 28
- Admission 28
- Vocational Rehabilitation for 40
- Disciplinary Diversity Requirements 68
- Diversified Education Curriculum (D.E.C.) 67-68
- Disciplinary Diversity Requirements 68
- Expanding Perspectives and 68
- Cultural Awareness Requirements 68
- Modifications for CEAS Students 196
- University Skills Requirements 67-68
- Division of Military and Naval Affairs DMNA Education Incentive Program 39
- Dormitories 19-20
- Double Majors 60
- E**
- Earth and Space Sciences 111-14
- Earth and Space Sciences Major 111-12
- Earth Science Teacher Preparation Program, *see Education and Teacher Certification*
- Geology Major 112-13
- East European Languages 128, 247
- ECO Courses 246-247
- Ecology and Evolution, Department of 94-95
- Economics, Department of 115-17
- Education and Teacher Certification 68-69
- Science, Mathematics, and Technology Education 70-71
- Biology 70
- Chemistry 70
- Earth Science 70
- Mathematics 70-71
- Physics 71
- Social Studies 71
- Foreign Languages 71-72
- French 71
- Italian 71
- German 71-72
- Russian 71-72
- Spanish 72
- TESOL (Teaching English to Speakers of Other Languages) 72
- English 72
- Educational Opportunity Program (EOP) 39
- EEL Courses 247
- EGC Courses 247
- EGL Courses 247-249
- Elective Courses 197
- Open Electives 197
- Technical Electives 197
- Electrical Engineering, Department of 209-211
- Emancipated or Independent Student Status 38
- Employment Opportunities, Student 40
- Engineering, Interdisciplinary Program in Science and 75
- Engineering, Materials Science and, Department of 212-15
- Engineering, Women in Science and (Project WISE) 78
- Engineering and Applied Sciences, College of 193-220
- Acceptance to 28, 195
- Accreditation 194
- Course Prerequisites 197
- Degree Requirements 196
- Diversified Education Curriculum Requirements 196
- Double Majors 195
- Grading 197
- Internships Program 194
- Programs in 199-220
- Restrictions on Credits 197
- Restrictions on Transfer Credits 197
- Simultaneous Bachelor's Degrees 195
- Time Limits 198
- Undergraduate Student Office 194
- Engineering Chemistry 214
- Engineering Geology 113
- Engineering Science 214

- English, Department of 120-22
 Major 121
 Minor 121-22
- English as a Second Language 18
- English Center, Intensive 18
- English Teacher Preparation Program,
see Teacher Education and Certification
- Enrichment Courses 79
- ENS Courses 249-50
- Entry Skills Requirements 26
- Environmental Geoscience 114
- Environmental Studies Living/Learning
 Center and Minor 74
- EOP, *see Educational Opportunity Program*
- Equal Opportunity and Affirmative Action 13
- Equivalent Opportunity/Religious
 Absences 63
- ESE Courses 297-99
- ESG Courses 299-300
- ESL Courses 250
- ESM Courses 300-301
- ESS/GEO 111-12
- EST Courses 301-302
- Evening Studies Office 17
 Undergraduate Transfer and 17
- Evolution, Department of Ecology
 and Evolution 94-95
- Expanding Perspectives and Cultural
 Awareness Requirements 196
- Expenses, Other 34-35
- F**
- Faculty and Research 7
- Faculty Student Association 40
- Family Studies, Child and 104
- Federal Programs for Financial Aid
(see also Financial Aid) 35-37
- Federated Learning Communities
 (FLC) Minor 75-76
- Fees *(see also Tuition)* 32-34
 Athletic 32
 Deferral of 33
 Housing 32
 Laboratory 198
 Payment of 32-33
- Fellowships 9
- Final Examinations 51
- Financial Aid *(see also Scholarships
 and Awards)* 35-41
 Federal Programs 35-37
 Federal Parent Loans for Under-
 graduate Students (FPLUS) 37
 Federal Pell Grant 36
 Federal Perkins Loan 36
 Federal Stafford Loans 37
 Federal Supplemental Educational
 Opportunity Grant (FSEOG) 36
 Federal Work-Study Program 36
- State Programs 37-40
 Educational Opportunity
 Program (EOP) 39
 Regents Awards for Children of
 Deceased or Disabled Veterans 40
 Tuition Assistance Program (TAP) 37-39
- Veterans Administration Educational
 Benefits 40
 Montgomery G.I. Bill 40
- Post-Vietnam-Era Veterans Educational
 Assistance Program (VEAP) 40
- Selected Reserve Educational
 Assistance Program 40
- Survivors' and Dependents'
 Educational Assistance 40
- Vocational Rehabilitation for
 Disabled Veterans 40
- Financial Assistance, Other 40-41
- Financial Information 40-41
- First Week Attendance 50
- FLA Courses 250
- Food Expenses 34
- Foreign Language, Entry Skill in 67
- Foreign Languages Secondary Teacher
 Preparation Program, *see Education
 and Teacher Certification*
- Foreign Literature and Culture Courses Offered in
 English *(See also French and Italian, Germanic and
 Slavic Languages and Literatures, Hispanic Language
 and Literature)* 257-59
- Foreign Students 28
 Admission 28
 Regulations 28
- Foreign Student Services, *see
 International Services Office* 18
- Foreign Study, *see Study Abroad*
- French and Italian, Department of 123-27
- French Language and Literature 124-25
 Major 124-25
 Minor 126
- French Teacher Preparation Program
see Education and Teacher Certification
- Freshman Admission 26-27
- Freshman Seminars and Honors Courses 73
- FRN Courses 250-51
- Full-Time/Non-Matriculated Status 30
- Full-Time/Part-Time Status 50
- G**
- General Education
 and University Requirements 66-68
- General Statement (SUNY) 310
- GEO Courses 251-52
- Geological Oceanography Concentration 113
- Geology 112-13
 Major 112-13
 Minor 113
- GER Courses 252-53
- German, *see Germanic and Slavic Languages and
 Literature*
- Germanic and Slavic Languages and
 Literatures, Department of 128-31
- Germanic Languages and Literature 128-29
 Major 128-29
 Minor 129
- Teacher Preparation Program, *see
 Education and Teacher Certification*
- G.I. Bill, *see Montgomery G.I. Bill*
- Golden Key National Honor Society 59
- Government, Student 12
- Grade Point Average 52-53
 Requirement 53
- Grade Reports 59
- Grading System 51
- Graduate Courses, Permission to Take 83, 197
 College of Arts and Sciences 83
- College of Engineering and Applied
 Sciences 197
- Graduate Programs, Admission to 8-9
- Graduate School 9
 Admission 9
- Graduate Study 8
 Financial Assistance 9
- Graduation, Application for 61
- Graduation Requirements, University 51
- Grants from Private Sources 40-41
- Grievances, Academic 58
- GRK Courses 253
- Gymnasium 21-22
- H**
- HAD Courses 308
- Harriman, W. Averell School for
 Management and Policy 202-204
- HAT Courses 309
- HBA Courses 308
- HBH Courses 308
- HBM Courses 309
- HBP Courses 308
- HBW Courses 253
- HBV Courses 308
- HDH Courses 308
- HDO Courses 308
- HDP Courses 308
- Health Insurance 23, 32
- Health Professions Advising 58
- Health Sciences Center 221-26
 Admission to 222
 Overview 222
 Program Offerings 223-26
 Undergraduate Eligibility 222
- Health Service, Student 23
- Health Technology and Management,
 School of 223-24
- Hebrew *(See also Judaic Studies)* 253
- HEGIS Codes 312-313
- High School Students: Young Scholars
 Program 30
- HIS Courses 253
- Hispanic Languages and Literature,
 Department of 132-34
 Major 132-33
 Minor 133-34
- History, Cultural 88
- History, Department of 135-37
 Major 136
 Minor 137
- HMC Courses 309
- HNI Courses 309
- HON Courses 257
- Honors, Freshman Courses 73
- Honors College 72-73
 Acceptance to 72
 Curriculum 72-73
 Scholarships 44
- Honor Societies 59
- Honors Programs, Departmental 59
- Housing 32-33
 Advance Deposit 33
 Refund of 32
 Fees 32
(See also Campus Residences)

Housing Service, Off-Campus	22	Judaic Studies	143	Minor	215
HUE Course	257	Judiciary, Office of the Student	23	Mathematics, Department of	148-51
HUF Courses	257-58	K		Major	149
HUG Courses	258	KOR Courses	261	Minor	149-50
HUI Courses	258	Korean Studies Minor	144	Secondary Teacher Preparation Program, <i>see Education and Teacher Certification</i>	
HUL Course	258	KRH Courses	261-62	Mathematics, Entry Skill in	66-67
Human Sexual and Gender Development Living/Learning Center and Minor	74	KRS Courses	261-62	Mathematics Basic Competence Requirement	66-67
Humanities, Interdisciplinary	138-40	L		Mathematics Learning Center	17
HUM Courses	258-59	Laboratory Animals, Use of in Research or Instruction	64	Meal Plans	34-35
HUR Courses	259	Laboratory Fees	198	Refund of Fee	34
HUS Courses	259	LAC Courses	262	MEC Courses	303-305
HWC Courses	309	LAN Courses	262	Mechanical Engineering, Department of	219-20
I		Late Payment Fee	32	Media Arts Minor	152
Identification Cards	32	Late Registration Fee	32	Medical Clearance for Participants in Physical Education	167-68
Incomplete Grade	51	Late Registration Fee	32	Medical Technology	223-24
Incoming Student Seminars (<i>see also Freshman Seminars and Honors Courses</i>)	73	Latin American and Caribbean Studies Minor	145	Medicine, School of	226
Independent or Emancipated Student Status	38	LAT Courses	262	Medieval Studies Minor	153
Independent Study, College of Arts and Sciences	82	LBR Course	262	Meteorology	229
Limits on	82	Leave of Absence	61	Microbiology	309
Indoor Sports Complex	21	LHD Courses	74, 263	Middle Eastern Studies Minor	154
Infirmiry, <i>see Student Health Service</i>		Libraries	10	Mid-Semester Advisory Grades	52
Information Systems	217-18	LIN Courses	263-64	Minimal Undergraduate Student Responsibilities	56
Institutes and Centers, Special	9	Linguistics	146-47	Minimal Instructional Responsibilities	56-57
Instruction or Research, Use of Laboratory Animals in	64	Major requirements	146-47	Minor, Academic	66
Intensive English Center	18	Minor requirements	147	Declaration of	60
Interdisciplinary Arts Living/Learning Center and Minor	74-75	related courses, other departments	146	Montgomery G.I. Bill	40
Interdisciplinary or Interdepartmental Major	82	LIRACHE	62	Multidisciplinary Studies Major (MTD)	155-56
Interdisciplinary Program in Science and Engineering Living/Learning Center	75	Living/Learning Centers	22, 73-75	Multiple Registration for the Same Course	55
Interdisciplinary Program in Social Sciences	183-84	Environmental Studies	74	Mutually Exclusive Courses	55
Interdisciplinary Program in the Humanities	138-40	Human Sexual and Gender Development	74	Repeatable Courses	55
International Programs	18-19	Interdisciplinary Arts	74-75	Retaking Courses	55
International Relations	174	Interdisciplinary Program in Science and Engineering	75	MUS Courses	268-70
International Studies Living/Learning Center and Minor	75	International Studies	75	Music, Department of	157-59
Internship Programs	78	Wellness	75	Major	157-58
Introduction to Stony Brook	6-14	Loans <i>see Financial Aid</i>		Minor	158-59
ISE Courses	302-303	Loans to Parents <i>see Financial Aid</i>		MVL Course	270
Italian-American Studies Minor	126	Location of campus (<i>see also map on inside back cover</i>)	6	N	
Italian Studies	125	M		National Student Exchange (NSF)	73
Major	126	MAE Courses	264-65	Neurobiology and Behavior, Department of	95
Teacher Preparation Program, <i>see Education and Teacher Certification</i>		Major, Academic	60-61	Non-Degree Study	30
Italian Minor	126	Departmental	60	High School Students: Young Scholars Program	30
ITL Courses	259-60	Double Majors	60	Non-Matriculated Status	30
J		Interdisciplinary or Interdepartmental	82	Full-Time	30
Japanese Studies Minor	141	Limitation of Acceptance into Requirement	60, 195	Part-Time	28
JDH Courses	260	Requirement	66	Visiting Students	30
JDS Courses	260	Selection and Change of	60	No Record Grade (NR)	52
JNH Courses	261	Requirements, fulfillment of	66, 83	Numbering System, Undergraduate Courses	55
JNS Courses	261	<i>See also individual departments</i>		College of Engineering and Applied Sciences	197
Job Locater Service	20	Manufacturing Engineering	214	Nursing, School of	224-25
Journalism Minor	142	Map, Campus	inside back cover	O	
JPN Courses	261	MAP Courses	265	Oceanography, Geological	113
JRN Courses	261	MAR Courses	265-66	Off-Campus Housing Service	22
		Marine Sciences Minor	229-30	Officers of Administration	
		Marine Sciences Research Center	228-30	SUNY	311
		MAT Courses	266-68	Stony Brook	311
		Materials Science and Engineering, Department of	212-15	Ombuds Office, <i>see Campus Community Advocate</i>	
		Bachelor's/M.S. Program	215		
		Major	212-15		

- On-Line Access to Student Records (SOAR) 58
- Open Electives 197
- Optics Minor 160
- Oral Biology and Pathology 226
- Orientation/Academic Advising Program 30
- P**
- Parent Loan for Undergraduate Students (FPLUS), Federal 37
- Parking , permits for 14
- Part-Time/Full-Time Status 50
- Part-Time Matriculation 28
- Part-Time Non-Matriculated Students 28
- Part-Time Non-Matriculated Study for High School Students 30
- Pass/No Credit Academic Record Option 51-52
- Pathology 226
- Payment of Fees and Charges 32
- Deferment of 33
- PEC Courses 270-71
- Pell Grant, Federal 36-36
- Performance Courses, Limits on 83
- Periodontics 226
- Perkins Loan, Federal 36
- Pharmacological Sciences, Department of 161-63
- Pharmacology Major 161-62
- Phi Beta Kappa 59
- PHI Courses 272-74
- Philosophy, Department of 164-66
- Major 165
- Minor 165
- PHY Courses 274-76
- Physical Anthropology 87, 88
- Physical Education
- Department of 167-68
- Facilities 167
- Medical Clearance for Participants 167-68
- Physical Education Courses 168
- Limits on 168
- Physical Therapy 223-24
- Physician Assistant 224
- Physics, Department of 169-72
- Teacher Preparation Program 71, 171
- Physics of Materials 274-75
- Physiology and Biophysics 226
- Planetary Sciences 92-93
- POL Courses 276-78
- Political Science, Department of 173-75
- Major 173-74
- Minor 174-75
- Polity (Student Government) 12
- POR Courses 278
- Portuguese 132
- Post-Vietnam-Era Veterans Educational Assistance Program (VEAP) 40
- Pre-Health Professions, Pre-Law, *see Academic Advising*
- Prerequisites, College of Engineering and Applied Sciences 197
- Prime Time for Students 58-59
- Professional Development and Continuing Studies, School of 9
- Program Index (with HEGIS codes) 312-13
- Project WISE (Women and Science in Engineering) 78-79
- PSY Courses 278-80
- Psychology, Department of 176-79
- Public Affairs, B.A./M.A. Program 174
- Public Order, Maintenance of 13
- Q**
- Q Grade 52
- QRS Courses 280
- Quality Standard 53
- Quantitative Research in Social and Behavioral Sciences Minor 180
- Quantity Standard 53
- R**
- R Grade 52
- Readmission 61-62
- Records, Student Educational 62
- Refund Policy 33-34
- Regents Awards for Children of Deceased or Disabled Veterans 39-40
- Registrar 32
- Registration 50
- Change in 50
- Registrations, Multiple for the Same Course 55
- Regulations, Changes in 64
- Religious Absences 63
- Religious Studies 181-82
- Major 181-82
- Minor 182
- Remedial Courses 67
- Renewal Policy, Academic 62
- Renumbered Courses 55
- Repeatable Courses 55
- Repeating Courses 55
- Research
- and Faculty 7
- Involving Human Subjects 63
- Involving Safety Considerations 63
- Residence Life 19-20
- Residence Requirement 66
- For the B.E. Degree 196
- Respiratory Care 224
- Restrictions on Credits 197
- on Transfer Credits 197
- Retaking Courses 55
- Returning Students 28
- Returning to the University 61
- RLS Courses 280-81
- Romance Languages, *see French and Italian, Spanish Language and Literatures*
- Romance Language Courses in English 258
- RUS Courses 281
- Russian Language and Literature 129-31
- Major 130
- Minor 130
- Teacher Preparation Program 71, 131
- S**
- Sanskrit Courses 182
- SAS Courses 281
- Satisfactory/Unsatisfactory Grading 52
- Scholars for Medicine Program 226
- Scholarships 44
- Freshman 44
- Honors College 44
- Presidential 44
- University 44
- Scholarships and Grants from Private Sources 40
- School of Professional Development and Continuing Studies (SPD), *see Professional Development and Continuing Studies, School of*
- SCI Courses 281-82
- Science and Engineering, Interdisciplinary Program in 75
- Science and Engineering, Women in (Project WISE) 78-79
- Science, Mathematics, and Technology Education 70-71
- Science Teacher Preparation Program 70-71
- Scientific Misconduct 57
- Second Baccalaureate Candidates 29, 61
- Secondary Teacher Preparation, *see Education and Teacher Certification*
- Selected East European Languages 247
- Selected Reserve Educational Assistance Program 40
- Selection of Major, *see Major, Academic*
- Selection of Minor, *see Minor, Academic*
- Semester Grade Reports 59
- Semester Registration 50
- Change in 50
- Sequential Bachelor's Degree 61
- SGE Course 282
- Sigma Beta Honor Society 59
- Sigma Xi Honor Society 59
- Sign Language, *see American Sign Language*
- SKT Courses 282
- Slavic Languages and Literatures 128-31
- SLN Courses 282
- SOAR (Student On-Line Access to Records) 58
- SOC Courses 282-84
- Social and Cultural Anthropology 87-88
- Social Sciences, Interdisciplinary, Program in 183-184
- Social Studies Secondary Teacher Preparation Program 71
- Social Welfare, School of 225
- Sociology, Department of 185-87
- Spanish 132-34
- Secondary Teacher Preparation Program 72
- Spanish Language and Literature Major 132-33
- Spanish Language, Culture, and Literature Minor 133-34
- Special Centers and Institutes 9
- Special Programs 73
- Challenge Program for Credit by Examination 29, 62
- Living/Learning Centers 73-75
- Federated Learning Communities 75-76
- URECA Program 78
- Internship Program 78
- Women in Science and Engineering (Project WISE) 78
- SPN Courses 284-85
- Sports Complex, Indoor 21-22
- SSI Courses 285-86
- Stafford Loans, Federal 37
- State Programs of Financial Aid, *see Financial Aid*
- State University of New York 6

- Board of Trustees 311
 Campuses 310-11
 General Statement 2
 Officers of Administration 311
 Statistics, Applied Mathematics and,
 Department of 199-201
 Stony Brook Council 311
 Stony Brook Union 22
 Student Activity Fee 32
 Refund of 34
 Student Affairs, Vice Presidential
 Executive Area 23
 Student Conduct Code 14
 Student Educational Records 62
 Student Employment Opportunities 40
 Student Government (Polity) 12
 Student Handbook 14
 Student Health Service 23
 Student Judiciary, Office of the 23
 Student Organizations 12
 Student Participation in University-
 Sponsored Activities 62
 Student Publications 12
 Student Services/Registrar 32
 Studio Art 90, 91
 Major 90
 Minor 91
 Studio Courses, Limits on 83
 Study Abroad 19, 76
 Admission 76
 Application 76
 Course Load, Credits, and
 Grading 76
 Expenses of 76
 Program Choice 76
 Registration 76
 Stony Brook Programs 76-78
 Study at Other Institutions 73
 After Matriculation 54-55
 Summer Session 29-30, 32
 Admission 29
 Tuition and Fees 32
 Summer Study Elsewhere 73
 Supplemental Educational Opportunity
 Grant (FSEOG), Federal 36
 Survivors' and Dependents'
 Educational Assistance 40
- T**
- TAP, *see Tuition Assistance Program*
 Tau Beta Pi 59
 Teacher Preparation Programs
see Education and Teacher Certification
 Teaching Assistantships, Undergraduate 82-83
 Teaching Practica, Undergraduate 83
 Technical Electives 197
 Technology and Society, Department of 216
 Minor 216
 Technology, Research, and Industry 10-11
 Telephone Directory, Campus 62-63
 Telephone Registration 50
 TESOL Teacher Preparation Program 72
 Theatre Arts, Department of 188-89
 Major 188-89
- Minor 189
 THR Courses 286-89
 Time Limits for B.E. and B.S. Degrees 198
 Time Option Payment Plan 33
 Tours 33
 Traffic and Parking 14
 Transcripts 58
 Access to 58
 Fees 58
 Requesting 58
 Transfer and Evening Studies Office,
 Undergraduate 17
 Transfer Credits 53-55, 197
 Policies 53-54
 Application of 54-55
 and the Diversified Education
 Curriculum (D.E.C.) 54
 and General Education Requirements 54
 Restrictions on 197
 Transfer Student Admission 27
 Travel Expenses 35
 Tuition (*see also Fees*) 32
 Advance Deposit 33
 Refund of 33
 Deferment of 33
 Payment of 33
 Tuition Assistance Program (TAP) 37-39
 Two-Year College Graduates, Application
 Procedures for 27
- U**
- Uncommonly Taught Languages 146
 Undergraduate Course Numbering System 55
 College of Engineering and
 Applied Sciences 197
 Undergraduate Adult and Evening Studies Office 17
 Undergraduate Research and Creative
 Activities Program (URECA) 78
 Undergraduate Academic Affairs 17
 Undergraduate Teaching 82-83
 Assistantships 82-83
 Practica 83
 Undergraduate Transfer Office 17
 University Counseling Center 21
 University Degree Requirements 66
 University Graduation Requirements 66-68
 University Scholarships 44
 University Skills Requirements 67-68
 University-Sponsored Activities, Student
 Participation in 62
 University Studies 65-79
 Upper-Division Credit Requirement 66
 Upper-Division Writing Requirement 66
 URECA Program 78
 URE Courses 289
 USB Courses 289
- V**
- Veterans, Deceased or Disabled,
 Regents Award for Children of 39-40
 Veterans Administration Educational
 Benefits 40
 Veterans Affairs, Office of 19
 Visiting the Campus 30
 Vocational Rehabilitation for Disabled
 Veterans 40
- W**
- W. Averell Harriman School for
 Management and Policy 8, 202-204
 Wellness Living/Learning Center 75
 Withdrawal 51, 52, 61
 from courses 52
 from the University 61
 WNH Courses 289-90
 WNS Courses 290-91
 Women in Science and Engineering
 (Project WISE) 78
 Women's Studies Minor 190
 Work-Study 36-37
 World Wide Web (WWW) 16
 Writing Center 17
 Writing Competence Requirement,
 Basic 67
 Writing Requirement, Upper-Division 66
 WSE Courses 291
- Y**
- Young Scholars Program 30

Academic Calendar

1997 Summer Session

Term I: June 2 - July 11

Term II: July 14 - August 22

Fall Semester 1997

August

- 25-29** Monday-Friday: Final registration and payment (or proper deferral) of fees for students not previously registered.
- 31** Sunday: Campus Residences new student check-in.

September

- 1** Monday: Labor Day (Classes are not in session).
- 2** Tuesday: Campus Residences continuing student check in.
- 3** Wednesday: Classes begin; Late registration begins with \$30.00 late fee assessed for students who have not registered.
- 5** Friday: Senior Citizen Auditor Program registration (call (516) 632-9493 for information).
- 9** Tuesday: Last day for students to drop a course without tuition liability.
- 16** Tuesday: End of late registration for undergraduate and SPD/GSP students. Last day for undergraduate and SPD/GSP students to add a course. Last day for all students to drop a course without a W (Withdrawal) being recorded. Last day for undergraduate students to change status to or from full-time/part-time. Last day for departments to submit names of advanced doctoral students for degree candidacy.
- 23** Tuesday: End of late registration period for non-SPD/GSP students.
- 30** Tuesday: Last day for graduate students (except SPD/GSP) G1-G5s to add or drop a course.

October

- 1** Wednesday: Classes will follow a Thursday schedule. Classes scheduled to meet after 5:00 PM will not be held due to Rosh Hashanah.
- 2-3** Thursday-Friday: Rosh Hashanah (Classes will not be in session).
- 3** Friday: Last day for students to file applications for December and January graduation. Graduate students should file at the Graduate School, SPD students at the School of Professional Development, and Health Sciences students at the HSC Offices of Student Services.
- 13** Monday: Columbus Day (Classes ARE in session).
- 31** Friday: Last day for undergraduates to withdraw from the University and still be eligible to return next semester. Last day for SPD/GSP students to withdraw from one or all courses. Last day for removal of Incomplete grades from Spring semester and Summer session.

November

- 4** Tuesday: Election Day (Classes are in session.).
- 11** Tuesday: Veterans Day (Classes are in session.).
- 13** Thursday: Mid-semester advisory grades mailed to U1-U2 students in 100-level, 200-level and 300-level courses.
- 19-26** Wednesday-Wednesday: Prime Time for Students (intensive academic advising period; formal student evaluation of instructors and courses.).
- 24** Monday: Telephone registration begins for spring semester (Schedules and instructions for undergraduate students will be announced prior to registration.) G1-G5s begin registering Monday, November 24. Undergraduates begin registering.
- 26** Wednesday: Last day for undergraduates to withdraw from a course or to change courses to or from Pass/No Credit.
- 27-28** Thursday-Friday: Thanksgiving recess begins at the close of classes on Wednesday, November 26.

December

- 1** Monday: Classes resume.
- 12** Friday: Last day of classes. (Last day of class for classes meeting on Saturday is December 13.) Last day to withdraw from the University. (SPD/GSP students must have SPD approval. See October 31 note above.) Last day for graduate students to submit theses and dissertations to the Graduate School for December graduation.
- 15** Monday: Final examinations begin.
- 22** Monday: Final examinations end; fall semester ends. Last day for departments to submit Completion Statements for December master's and doctoral degree candidates.

1998 Spring Semester

January

- 20** Tuesday: Registration and payment (or proper deferral) of fees continues for students not previously registered.
- 21** Wednesday: Classes begin. Late registration begins with a \$30 late fee assessed.
- 23** Friday: Senior Citizen Auditor Program registration (Telephone 632-9493 for information.)
- 27** Tuesday: Last day to drop a course without tuition liability.

February

- 3** Tuesday: End of late registration period for undergraduates and SPD /GSP graduate students. Last day for undergraduates and SPD/GSP graduate students to add a course. Last day for all students to drop a course without a W (withdrawal) being recorded. Last day for undergraduate students to change status to or from full-time/part-time. Last day for May, June, July, and August degree candidates to file for graduation in order to be fully included in the May commencement ceremony to be held Sunday, May 17.

- 10** Tuesday: End of late registration period for undergraduates.
- 17** Tuesday: Last day for graduate students (except SPD/GSP) G1-G5's to add or drop a course.

March

- 13** Friday: Last day for removal of Incomplete grades from the fall semester. Last day for undergraduates to withdraw from the University and still be eligible to return next summer. Mid-semester advisory grades are due from academic departments.
- 18** Wednesday: Mid-semester advisory grades mailed to U1 and U2 students in 100-level and 200-level courses.
- 16-21** Monday -Saturday: Spring Vacation
- 23** Monday: Classes resume.

April

- 6** Monday: Prime Time (intensive academic advising for undergraduates) begins and continues through April 10
- 13** Monday: Telephone Registration begins for fall semester and summer session. (Schedules and instructions will be announced prior to registration.) The Registration Schedule will be available on the Stony Brook Home Page in advance of the class schedule.
- 22** Wednesday: Current students, if necessary, may register In-Person for fall and summer session.
- 23** Wednesday: Last day for undergraduates to withdraw from a course or change a course to or from Pass/No Credit.
- 29** Wednesday: Telephone registration begins for new students, visiting students, and returning students. As of May 6th if necessary, these student may register In-Person for the summer session.

May

- 2** Saturday: Last day of classes for courses held on Saturdays
- 5** Tuesday: Last day of classes for Monday-Friday course offerings. Last day to withdraw from the University,
- 6-7** Wednesday-Thursday: Reading Days (no classes in session)
- 8** Friday: Final examinations begin. Saturday courses will hold their finals on Saturday, May 9th during the regular class time.
- 15** Friday: Final examinations end. Spring semester ends. Last day for departments to submit completion statements for May master's and doctoral degree candidates.
- 17** Sunday: Commencement.

The Health Sciences Center academic calendar is published separately. Health Technology and Management (undergraduate) and Basic Sciences students see HSC academic calendar for modular course dates.

