2007-2009 Undergraduate Bulletin Supplement

Changes, Additions, and Deletions to Course Offerings

The courses below have been added to the curriculum or have been changed in some way since the publication of the 2007-2009 Undergraduate Bulletin. If a course has been revised, only the revisions to the course information in the Bulletin are included here, highlighted in red. If prerequisite(s) have been modified, the modified prerequisite(s) are highlighted in red. Courses are arranged alphabetically by course designator. A course listed under a given semester heading will not necessarily be offered during that semester.

This list is continually being updated. Twice during the year (roughly November 1 and April 1) the entire Bulletin (including this Supplement) is archived. That is, a "snapshot" of the Bulletin is taken and saved for reference. These dated archives serve as official records of the Bulletin as it changes semester by semester.

Spring 2009
Fall 2008
Spring 2008
AAS
Asian and Asian American Studies

AAS 219-J Introduction to Chinese History and Civilization
This introductory course examines key concepts and significant themes in Chinese history. Topics include Confucianism, popular religion, government, foreign policy, economy, Western influences, Chinese revolution, and modernization. This course is offered as both AAS 219 and HIS 219.

AAS 341-J 20th-Century China
This course explores the history of China from the collapse of the monarchy to the triumph of communism, emphasizing the revolutionary, political, social, and economic changes in Chinese society. Special attention is given to the theory and practice of Chinese politics. This course is offered as both AAS 341 and HIS 341.

AAS 345-J Women and Gender in Chinese History
This course explores gender roles and values and the 20th-century changes in Western and Asian societies that have brought about significant shifts in women’s lives, their relations with men, and their interaction with Western influences, and shifts in social and political roles. This course is offered as AAS 345, HIS 345, and WST 345.

AAS 351-J Revolutionary China: Politics, Culture, and Power
This course examines the history of revolutionary nation building efforts in 20th-century China, focusing on social, cultural, economic, and political developments during the "Republic" and "Mao" periods. Focuses on key terms and concepts used by agents and analysis of revolutionary experiences, debates on interdisciplinary scholarly studies, government documents, media reports, auto biographical accounts, and popular fiction to assess the consequences of major historical and sociopolitical changes, including market and gender relations. This course is offered as both AAS 351 and HIS 351.

AAS 379-J Ethnicity and Ecology in China
This course explores issues of ethnic and national identity in the context of the social ecology of the Chinese state, both past and present. It focuses on the material and social relationships that have shaped perceptions of, and interactions between, cultural groups in China and along its frontiers. Drawing on case studies from within China and its neighboring regions, students will examine how sustenance strategies, economic organization, and political administration have influenced the construction of ethnic identity. This course is offered as both AAS 379 and ANT 379.

ANT 230-J Peoples of the World
A comparative study of the lifeways of selected types of peoples, defined by adaptation, focusing on their ecology, economy, political organization, and social structure. Recent changes brought about by technological developments and intercultural contact are discussed.
Prerequisite: ANT 102
3 credits

ANT 296-I Anthropology of the European Mediterranean
This course explores the societies and cultures of the southern European countries with emphasis placed on rural/agrarian adaptations, gender relations, ritual, religion and folklore, social stratification and social class, community organization, and rural-urban distinctions. Students will read case studies from Portugal, Spain, Italy, and Greece, as well as background material on “The Mediterranean” as a social and cultural construct. The monographs for this course cover mainly the post-War period, from the 1950s and up to the present, but a brief time is spent on the historical background from classical antiquity to the modern period.
Prerequisite: ANT 102
3 credits

ANT 369-I Ice Age Europe
Current theories about early human adaptations to Ice Age environments in western Eurasia. Major topics include the initial colonization by hominids, the origin and extinction of the Neanderthals, and the dispersal of modern Homo sapiens. This course stresses the reconstruction of early human adaptive strategies (archaeology, ecology, and settlement patterns) in their paleoecological and biogeographic contexts.
Prerequisite: ANT 104
3 credits

ANT 369 Paleolithic Archaeology
A survey of archaeological evidence human behavioral evolution during the Paleolithic Period, ca. 2.5 million to 10,000 years ago. This course examines early human behavior from anthropological and ecological perspectives. Major issues to be examined include the diet of early African hominins, stone tool industries, dispersals out of Africa and into Eurasia, adaptations to glacial climates, behavioral differences between Neandertals and modern humans, the origins of symbolic behavior, and hunter-gatherer precursors to agriculture.
Prerequisite: ANT 104 or ANT 120
3 credits

ANT 379-J Ethnicity and Ecology in China
This course explores issues of ethnic and national identity in the context of the social ecology of the Chinese state, both past and present. It focuses on the material and social relationships that have shaped perceptions of, and interactions between, cultural groups in China and along its frontiers. Drawing on case studies from the Himalayan plateau, Yunnan highlands, Inner Asian steppes, Taiwan, and elsewhere, students examine how sustenance strategies, economic organization, and political administration have influenced the construction of ethnic identity. This course is offered as both AAS 379 and ANT 379.
Prerequisite: U3 or U4 standing
Advisory Prerequisite: AAS 220 or HIS 219 (or the former CNS 249 or 250)
3 credits

ANT 396-I Topics in Anthropology and
European Traditions
Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include: The Mediterranean and Societies and Culture in Scandinavia. Designed for upper division students, this course provides an in-depth study of a specific topic related to Western civilization. Students will be expected to demonstrate knowledge of the development of the distinctive features of the history, institutions, economy, society, and culture of Western civilization, and relate it to that of other regions in the world. May be repeated for credit as the topic changes. 
Prerequisite: ANT 102
3 credits

ANT 405 Cultural Ecology
Using the model of ecological adaptation as a starting point, this course explores the impact of the natural and social environment upon human culture. By the latter is meant the way of life of a particular society: its politics, religion, ways of thought, moral standards, rituals and ceremonies, gender ideals and sex roles, and other aspects of ideology and belief. The course uses two anthropological texts that provide background concepts and terminologies, then exposes students to empirical case studies of ecological adaptation, both in pre-literate and literate societies. 
Prerequisite: ANT 102
Advisory prerequisite: 200 level or higher ANT course
3 credits

ARH

ARH 334-G Performance Art I: The European Avant-Guard
This course explores the history and theory of avant-garde performance from its inception in the early 20th century through Surrealism. Questions addressed focus on the choices made by artists, and the forces within the culture that encourage the forms they use. Course projects include a performance that reconstructs an event from one of the periods studied and a term paper. This course is offered as both ARH 334 and THR 334.
Prerequisites: U3 or U4 standing; one ARH, ARS, MUS, or THR course
Advisory Prerequisite: ARS/MUS/THR 208
3 credits

ARH 336-G Digital Visual Culture
An investigation of historical and theoretical issues in digital visual culture. Students will build the critical literacy necessary to interrogate the images, text and sound of contemporary digital culture. Emphasis is on examining the history of information technologies, their theoretical implications, and cultural ramifications. 
Prerequisite: ARS/MUS/THR 208 or ARS 225 or ARS 205 or CCS 101
3 credits

ARH 337-I Northern Renaissance Art
Painting and graphic art in the Netherlands and Germany in the 15th and 16th centuries are studied with special emphasis on the major figures of this period, from van Eyck and van der Weyden to Durer, Holbein, and Bruegel. 
Prerequisite: ARH 101 or 102
3 credits

ARH 344-G Performance Art II: World War II to the Present
This course explores the history and theory of performance art from World War II to the present, using an international perspective to identify different forms and practices from Happenings to Body Art and the introduction of new technologies. Questions addressed focus on the choices made by artists, and the forces within the culture that encourage the forms they use. Course projects include developing a site specific performance and a term paper. This course is offered as both ARH 344 and THR 344.
Prerequisite: U3 or U4 standing; one ARH, ARS, MUS, or THR course
Advisory Prerequisite: ARH/THR 334
3 credits

ARH 345-G The Moving Image in 20th Century Art
A survey of the use of cinematic technologies within modern and contemporary art practice, from the historical avant-garde to contemporary multifaceted video installation. Situates the history and theory of this work in relation to the evolution of modern art and media culture. 
Prerequisites: ARH 102 or CCS 101
Advisory Prerequisite: ARH 342
3 credits

ARH 392-I Topics in European Art
Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Mythology in Art; European Popular Art, and Italian Renaissance Sculpture. Designed for upper division students, this course provides an in-depth study of a specific topic related to Western civilization. Students will be expected to demonstrate knowledge of the development of the distinctive features of the history, institutions, economy, society, and culture of Western civilization, and relate it to that of other regions in the world. May be repeated for credit as the topic changes. 
Prerequisites: U3 or U4 standing; additional prerequisites when topic is announced
3 credits

ARH 490 Senior Seminar: Topics in Art History, Museum Studies, and Criticism
An advanced seminar for juniors and seniors that prepares students for continued study or work in the fields of art history, criticism, museum studies and other related areas. Topic will change each year depending on the topics chosen by the instructor. 
Prerequisites: U3 or U4 standing; additional prerequisites when topic is announced
3 credits

ARS

ARS 208 Introduction to Digital Media Technology
A survey and hands-on introduction to digital media. Students are introduced to the practical, conceptual, and historical use of computers and related imaging tools in the visual arts through lecture, labs, readings, and project critiques. 
Prerequisite: ARS/MUS/THR 208 or ARS 225 or ARS 205 or CCS 101
3 credits

ARS 230 Foundations of Two-Dimensional Design
Introduction to basic design principles and their application on the two-dimensional surface, with investigation into different functions and properties of the formal elements of line, value, texture, shape, space and their organizational use of basic relational elements and principles. Emphasis on graphic and systematic approaches to visual problem solving. Primary media are pencil, charcoal, ink, tempera, and cut paper in black and white. 
Prerequisite: ARS 154
3 credits

ARS 317 Interactive Media, Performance, and Installation
An investigation of the relationship between music and film and video. Students script, shoot, edit, and create short videos with soundtracks, exploring different aspects of visuals and music. All editing is done digitally. Works may be made for screen, installation, or performance. Also examines historical and contemporary artistic exploration with such media. This course is offered as ARS 317, MUS 317 and THR 317.
Prerequisite: One ARS, CCS, CSE, ESE, MUS, or THR course
Advisory Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

ARS 318 Movie Making: Shoot, Edit, and Score
An investigation of the relationship between music and film and video. Students script, shoot, edit, and create short videos with soundtracks, exploring different aspects of visuals and music. All editing is done digitally. Works may be made for screen, installation, or performance. Also examines historical and contemporary artistic exploration with such media. This course is offered as ARS 318, MUS 318, and THR 318.
Prerequisite: ARS/MUS/THR 208 or ARS 225 or CCS 101
3 credits

ARS 328 Theory and Practice of Digital Arts: Animation
An investigation into the practice, theory, and history of animation within art and independent media through labs, lecture, readings, and project critiques. Animation production will cover computer based stop-motion as well as some 2D and 3D computer animation. Emphasis is on creative content, experimentation and critical thinking. Students work with computer based 2D and 3D animation tools to create several short assignments and one significant project using one or more techniques. 
Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

ARS 330 Foundations of Three-Dimensional Design
An introduction to the basics of three-dimensional design concepts and processes. Through studio problems, students become familiar with fundamental three-dimensional design concepts, vocabulary, materials and skills applicable to advanced study in a variety of visual and applied disciplines. 
Prerequisite: ARS 205
3 credits

ARS 341 Sound Design
An investigation into the scientific, formal and artistic qualities of sound developed for students who may or may not have had formal musical training. Students will write reviews of sound pieces, create film or game soundtracks, and create sound-based art-works in response to course content, and write a paper on acoustic or psycho-acoustic phenomena. Emphasis is on studio production techniques, history of sound art and basic acoustics. Students will work on Macintoshes in the SINC site and LTA. This course is offered as ARS 341, MUS 341, and THR 341.
Prerequisite: One ARS, CCS, CSE, ESE, MUS, or THR course
Advisory Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

http://www.stonybrook.edu/ugbulletin
ARS 420 Studio Art Senior Seminar
An advanced seminar and critique course for seniors to develop a body of work in their individual area, particularly designed for students who wish to continue study and/or work in the visual arts. Where applicable, includes field trips and assignments of special lectures, panels, seminars, and other events and practices of the professional art world. A group exhibition in a public on-campus venue will be strongly encouraged.

Prerequisite: U3 or U4 standing; ARS major or minor

3 credits

BIO

Biology

BIO 111-E The Aquatic World
An introduction to the natural history of the animals and plants of the sea, rivers, and lakes, along with a consideration of water-land transitions. Weekly on-campus exhibits, to which students attend in addition to the regularly scheduled sessions. Not for major credit.

Prerequisite: High school biology

3 credits

BIO 204 Fundamentals of Scientific Inquiry in the Biological Sciences I
First in the foundational laboratory sequence for all biology students, and students in related fields. Students will experience the laboratory process, research process, a wide range of laboratory tools, methods, skills, learn to read and write scientific presentations, and collaborate in formal inquiry.

Pre- or Corequisites: BIO 201, 202, or 203; CHE 123 or 129 or 131 or 141

2 credits

BIO 312 Bioinformatics and Computational Biology
This course uses computational methods to analyze current problems and solutions in molecular biology research. Students are exposed to algorithms and tools available for both single gene and larger scale genome research. Emphasis is on practical application. Laboratories allow students to apply their knowledge to real life molecular biology problems.

Prerequisites: BIO 202; BIO 204; BIO 205; MAT 126 or 132 or 134 or 142 or 171 or AMS 161

2 credits

BIO 340 Zoology
Aspects of the natural history, morphology, and evolution of selected marine invertebrates, arthropods, and vertebrates. Three hours of lecture and one three-hour laboratory per week. Not for credit in addition to BIO 343 or 344 or 346 if passed with C or higher.

Prerequisite: BIO 200 or 201 or MAR 104; BIO 204 and 205

4 credits

BIO 344 Chordate Zoology
Introduction to the diversity, natural history, and evolution of chordates, emphasizing the living vertebrates. Three hours of lecture or discussion and one three-hour laboratory per week. Not for credit in addition to BIO 244 if passed with C or higher.

Prerequisite: BIO 201 (as offered prior to fall 2007) or BIO 203 (as offered beginning fall 2007) and BIO 204 and 205

4 credits

BIO 346 Aquatic Arthropods and Vertebrates
Aspects of the diversity, comparative and functional morphology, natural history, and evolution of arthropods and vertebrates. Water body transitions are examined, along with field and laboratory techniques. Three hours of lecture and one three-hour laboratory per week. Not for credit in addition to BIO 244 if passed with C or higher.

Prerequisite: BIO 201 or MAR 104; BIO 204 and 205

4 credits

BIO 356 Applied Ecology and Conservation Biology Laboratory
A computer laboratory course introducing students to ecological risk analysis and conservation biology. Laboratories are based on interactive software. Computer simulation techniques for addressing problems in applied ecology are emphasized.

Prerequisites: BIO 201 or 202 or 203 (as offered prior to fall 2007) or BIO 201 or 202 or 203 (as offered beginning fall 2007) and BIO 204 and 205; MAT 126 or higher

2 credits

BME

Biomedical Engineering

BME 120 Programming Fundamentals for Biomedical Engineering
This course will introduce the theory and fundamentals of computer programming specifically designed for the applications in biomedical engineering. Students will learn the basic computer architecture and the interaction between the computer hardware, operating system and application software. The course focus will be on the programming control logic and style critical to all programming languages including C and MATLAB. Several core and elective courses in biomedical engineering use MATLAB as a key programming language, and therefore MATLAB will be the primary language used to teach the above-mentioned programming principles. This course will also serve as the foundation where the students can pursue further advanced programming skills.

Prerequisite: BME Majors only

3 credits

BME 353 Biomaterials: Manufacture, Properties, and Applications
This engineering characterization of materials involves metals, ceramics, polymers, composite coatings, and adhesives that are used in the human body. Emphasizes the need of materials that are considered for implantation 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., porous, nonporous, resistant to blood clotting in the cardiovascular system). This course is offered as both ESM 353 and BME 353.

Prerequisite: BME 203

3 credits

BME 420 Computational Biomechanics
Introduces the concepts of skeletal biology; mechanics of bone, ligament, and tendon; and linear and non-linear properties of biological tissues. Principles of finite differences method (FDM) and finite elements method (FEM) to solve biomedical problems. Both FDM and FEM are applied to solve equations and problems in solid and porous media. Requires knowledge of Fortran or C programming.

Prerequisites: BME 303; BIO 203

3 credits

CCS

Cinema and Cultural Studies

CCS 311-G Gender and Genre in Film
Examination of the notion of genre as a category of analysis and its often confrontational relationship to gender in the context of specific genres (the western, film noir, the horror film) and film story. Attention is paid to a particular genre’s appeal to men and/or women as well as its relationship to larger social, cultural, and political issues.

Prerequisite: U3 or U4 standing; completion of DEC B Advisory prerequisite: CCS 101, HUM 201, or HUM 202

3 credits
CHE

Chemistry

CHE 198, 199, and 221 will no longer be offered. Pre- and co-requisites were adjusted to reflect this change.

CHE 129-E General Chemistry IA
CHE 129 may not be taken for credit in addition to CHE 131 or 141.

CHE 132-E General Chemistry II
A continuation of either CHE 129 or 131, introducing 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 equilibria 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 inadequate for students who have completed two or more years of chemistry in high school; such students should take CHE 141, 142. Three lecture hours and one 80-minute workshop per week. May not be taken for credit in addition to CHE 142.
Prerequisite: C or higher in CHE 129 or 131
Pre- or Coreq: MAT 125 for those who took CHE 129 or 130; MAT 126 or higher for all others

CHE 133 General Chemistry Laboratory I
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.
Pre- or Coreq: CHE 129 or 131
1 credit

CHE 134 General Chemistry Laboratory II
Designed to familiarize students with (1) some chemical and physical properties of substances, (2) techniques of quantitative chemistry, and (3) scientific methodology. Four hours of laboratory and discussion per week. CHE 133 may not be taken for credit in addition to CHE 143, and CHE 134 may not be taken for credit in addition to CHE 144.
Pre- or Coreq: CHE 133
1 credit

CHE 141-E Honors Chemistry I
The topics covered in this sequence are similar to those in CHE 131, 132, but draw more on students’ previous background in science and mathematics in order to present the material in a more quantitative manner. Recommended for students with strong backgrounds in mathematics and science, especially chemistry and physics. Three lecture hours and one 80-minute workshop per week. CHE 141 may not be taken for credit in addition to CHE 131, and CHE 142 may not be taken for credit in addition to CHE 132. Priority given to students in the University’s honors programs.
Prerequisite: High school chemistry; level 5 on the mathematics placement examination or co-registration in MAT 125 or higher calculus course or AMS 151
4 credits

CHE 142-E Honors Chemistry II
The topics covered in this sequence are similar to those in CHE 131, 132, but draw more on students’ previous background in science and mathematics in order to present the material in a more quantitative manner. Recommended for students with strong backgrounds in mathematics and science, especially chemistry and physics. Three lecture hours and one 80-minute workshop per week. CHE 141 may not be taken for credit in addition to CHE 131, and CHE 142 may not be taken for credit in addition to CHE 132. Priority given to students in the University’s honors programs.
Prerequisite: C or higher in CHE 141
Pre- or Coreq: MAT 126 or higher or AMS 161
4 credits

CHE 143 Honors Chemistry Laboratory I
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. Priority given to students in the University’s honors programs.
Prerequisite: CHE 143
1 credit

CHE 144 Honors Chemistry Laboratory II
Laboratory program similar in content to CHE 133, 134 but conducted at a more intensive and stimulating level. Four hours of laboratory and discussion per week. CHE 143 may not be taken for credit in addition to CHE 133, and CHE 144 may not be taken for credit in addition to CHE 134. Priority given to students in the University’s honors programs.
Prerequisite: CHE 143
1 credit

CHE 198-E Chemistry for Engineers
A quantitative introduction to chemistry, with an emphasis on topics of interest to students in engineering (metals and semiconductors, thermodynamics, electrochemistry and corrosion processes). May not be taken for credit in addition to CHE 132 or 134.
Prerequisite: High school chemistry
Pre- or Corequ: PHY 132 or 134 or 129 or 126 or 127, MAT 127 or 132 or AMS 161
Co-requisites: CHE 199
3 credits

CHE 199 General Chemistry Laboratory for Engineers
A laboratory course in CHEM 198, designed to provide additional laboratory experience in inorganic chemistry and chemical synthesis. Both quantitative and qualitative methods are emphasized. May not be taken for credit in addition to CHE 134 or 144.
Co-requisite: CHE 198
1 credit

CHE 221-Intro to Chemistry of Solids
Introduction to the synthesis, structure, properties, and applications of solid materials. Topics include preparation and characterization of solids, introduction to crystallography, stoichiometry, chemical bonding, and solid-state properties that influence chemical reactivity. This course is offered as both CHE 221 and ECE 221.
Prerequisites: CHE 132 or 199, and CHE 133 or 143, or ECE 111, and (MATH 125 or MATH 126 or MATH 131 and MATH 132 or MATH 161 and MATH 162 or MATH 163 and MATH 221 or PHYS 111 or PHYS 112 or PHYS 141 or PHYS 142 or PHYS 143)
3 credits
SUPPLEMENT: COURSES

Spring 2009: updates since Spring 2007 are in red

CHE 301 Physical Chemistry I
The quantitative study of microscopic and macroscopic chemical systems, covering introductory quantum theory of atoms and molecules (energy levels and states), statistical thermodynamics, and fundamental thermodynamics with application to chemical reactions and simple systems.
Prerequisite: CHE 132 or 142; MAT 132 or 142 or 127 or 171 or AMS 161
Pre- or Corequisite: PHY 121/123 or 125 or 131/133 or 141
3 credits

CHE 303 Solution Chemistry Laboratory
Prerequisite: CHE 134 or 144
Corequisite: CHE 301
2 credits

CHE 312 Physical Chemistry (Short Course)
A one-semester treatment of fundamental concepts of physical chemistry, intended primarily for students of the biological sciences desiring an introduction to physical chemistry. Topics include equations of state, classical thermodynamics and its application to chemical equilibrium in reaction systems, multigaseous systems, and electrochemical cells; kinetic theory of gases; transport properties; chemical kinetics. May not be taken for credit by students who have completed CHE 331. Not for major credit.
Prerequisite: CHE 132 or 142; MAT 132 or 142 or 127 or 171 or AMS 161
Pre- or Corequisite: PHY 121/123 or 125 or 131/133 or 141
3 credits

CHE 342 Organic Chemistry Honors Seminar II
Advanced topics in organic chemistry within the scope but beyond the reach of CHE 322 and CHE 326 (Organic Chemistry II) will be discussed along with topics in contemporary research. Permission to enroll will be granted to students who have demonstrated excellence in CHE 321.
Prerequisites: CHE 321; permission of instructor
Corequisite: CHE 322 or 326
1 credit

CHE 375 Inorganic Chemistry I
A survey of inorganic chemistry covering various classes of inorganic compounds and reactions with emphasis on the structural aspects. Wherever possible, the subject is treated on the basis of modern concepts of chemical bonding. Thermodynamic and kinetic aspects of inorganic reactions are included.
Prerequisites: CHE 322 or 326
3 credits

CHE 378 Materials Chemistry
Our high-technology world is driven forward by advances in materials chemistry. This class will discuss some of the materials that underpin these technologies, as well as some of the novel classes of materials that are being developed for future applications. The course will cover the synthesis, structures, and properties of advanced materials, focusing on a range of topics with current societal importance (e.g., energy, computers, nanoscience, etc.). Specific topics may include batteries, fuel cells, catalysts, metals, semiconductors, superconductors, magnetism, and polymers.
Prerequisite: CHE 375 or ESG 332
3 credits

CHE 482 Senior Laboratory Projects in Chemistry
Laboratory projects, some to be chosen by the student, primarily in the areas of organic, inorganic, and biological chemistry. There are opportunities to learn specialized skills useful for professional employment in quality control, research, or development.
Prerequisites: CHE 375, 384, and 385
2 credits

CME
Chemical and Molecular Engineering

CME 372 Colloids, Micelles and Emulsion Science
This course addresses the fundamental science and chemistry of micro-emulsion and colloid formation, three-component phase diagrams, nanoscale structure and characterization techniques. Specific case studies and issues related to scale-up in the food, cosmetics, and biomedical industries are presented.
Prerequisite: CHE 132, 134
3 credits

CSE
Computer Science

CSE 302 Professional Ethics for Computer Science
Familiarizes students with professional practice in Information Technology. Enables them to identify ethical conflicts, their responsibilities and options, and to think through the implications of possible solutions to ethical conflicts.
Prerequisite: CSE 219 or CSE 260 or ESE 305
1 credit

CSE 310 Data Communication and Networks
Study of communication networks. Local area networks (LAN), integrated voice and data systems (IVDS), and wide area networks (WAN). Their topologies: bus, token passing, tree, point to point. Protocols, speed, and distance limitations: RS232, TCP/IP, MAP/TOP, ONS, OSI. Network design and management will be studied in various environments. May not be taken by students with credit for CSE/ESE 346.
Prerequisites: CSE 214 or CSE 260; CSE 220
Advisory Prerequisite: AMS 310
3 credits

CSE 376 Advanced Systems Programming in UNIX/C
Focuses on several aspects of producing commercial-grade system software: reliability, portability, security, and survivability. Uses Unix and C, heavily used in industry when developing systems and embedded systems code. Emphasizes techniques and tools to produce reliable, secure, and highly portable code. Requires substantial programming as well as a course project.
Prerequisite: CSE 214 or 230 or 260
3 credits

EHI
Ecological Studies Human Impact

EHI 310 Restoration Ecology
Prerequisites: MAT 125 or 131, SBC 207 or BIO 201

ENS
Environmental Studies

ENS 312-H Population, Technology, and the Environment
A study of the biological, social, and economic factors that influence population growth. The development of new technologies and their influence on resource use and the effects that increasing population and changing technologies have on the environment are explored.
Prerequisites: MAR 340; one semester of BIO
3 credits

ESE
Electrical Engineering

ESE 363 Fiber Optic Communications
Design of single and multi-wavelength fiber optic communications systems. Topics include analysis of optical fibers, optical transmitters and receiver design, optical link design, single-wavelength fiber optic networks with analysis of FDDI and SONET/SDH, and wavelength division multiplexing.
Prerequisite: ESE 372
4 credits

ESG
Engineering Science

ESG 300 Writing in Engineering Science
See Requirements for the Major in Engineering Science, Upper-Division Writing Requirement.
Prerequisites: WRT 102; ESG major; U2 standing
Corequisite: ESG 312
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.
Prerequisite: ESG 198; AMS 161
Advisory Prerequisite: AMS 261
4 credits

ESG 320 Sensor Materials and Devices
Presents concepts in the physical, chemical, and biological detectors necessary for monitoring human health, the environment, and industrial processes. Covers the basic principles of operation, materials selection, and fabrication using nanomaterials.
Prerequisites: ESG 198, ESG 285, and AMS 361
S/U grading

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:** ESG 281 or PHY 251

**Advisory Prerequisite:** ESG 302 or CME 304

### Materials Science

#### ESM 321 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. This course is offered as both CHE 221 and ESM 321.

**Prerequisites:** CHE 122 or 124 or ESG 198, and CHE 122 or 124 or 198, ESG 111 or CHE 114, MAT 122 or 127 or 142 or 171 or AMS 161, PHY 126 or 131/133 or 141.

#### 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 369 Polymer Engineering

An introductory survey of the physics, chemistry and engineering processes of polymers. Topics covered included classification of polymers, structures of polymers, morphology of polymers, thermodynamics of polymers, phase separation and phase transition of polymers, crystallization of polymers. Case studies of commercial polymer production and processing.

**Prerequisite:** ESG 332

**3 credits**

#### ESM 378 Materials Chemistry

Our high-technology world is driven forward by advances in materials chemistry. This class will discuss some of the materials that underpin these technologies, as well as some of the novel classes of materials that are being developed for future applications. The course will cover the synthesis, structures, and properties of advanced materials, focusing on a range of topics with current societal importance (e.g., energy, computers, nanoscience, etc.). Specific topics may include batteries, fuel cells, catalysts, metals, semiconductors, superconductors, magnetism, and polymers.

**Prerequisite:** CHE 375 or Permission of the instructor

**3 credits**

### Geosciences

#### GEO 306 Mineralogy

Topics include basic crystallography, crystal chemistry, and identification of the important rock-forming and ore minerals. Included are the fundamentals of optical crystallography: indices of refraction, isotropic, uniaxial, and biaxial minerals; optical indicatrix theory and interference figures. Laboratory exercises involve work with crystallographic models, mineral samples, refraction oils and the polarizing light microscope. Three hours of lecture and one three-hour laboratory per week.

**Prerequisites:** GEO 102 and 112; CHE 131

**3 credits**

#### GEO 330 The Geology of Mars

Overview of Mars as a planetary system. Evolution of the planet and its atmosphere through time. Detailed discussion of processes that have shaped the martian surface, including erosion, sedimentation, volcanism, impact cratering, physical and chemical weathering. Comparison of geologic processes on Mars and Earth. Discussion of past and future spacecraft missions to Mars.

**Prerequisite:** GEO 102/GE0 122 or GEO 106

**Advisory Prerequisite:** GEO 112

**3 credits**

#### GEO 401 Optical Mineralogy

An introduction to the use of optical crystallography for mineral identification using polarized light microscopy. Topics include indices of refraction of isotropic, uniaxial, and biaxial minerals; optical indicatrix theory, interference figures, and other optical characteristics of minerals. Laboratory exercises provide hands-on experience in using the polarizing light microscope for mineral identification.

**Prerequisite:** GEO 306

**3 credits**

#### GEO 403 Sedimentation and Stratigraphy

The history and practice of defining units of layered rocks and interpreting their spatial relationships. Topics include the basis for the geologic time scale, lithostratigraphic versus chronostratigraphic units, biostratigraphy, magnetostratigraphy, facies patterns, and Walther’s Law, subsurface stratigraphy, and the application of stratigraphy to geological problems. Laboratory emphasizes practical techniques in stratigraphy.

**Prerequisite:** GEO 306

**Corequisite:** GEO 401

**5 credits**

#### GEO 407 Igneous and Metamorphic Petrology

Topics focus on the processes that govern the formation and distribution of igneous and metamorphic rocks and their link to the Earth’s mantle, crust, and tectonic regimes. Emphasis will be placed on integrating assessment of the chemical control on compositional diversity through phase diagrams with the study of natural rock suites through hand sample and thin section analysis. Three hours of lecture and one three-hour laboratory per week.

**Prerequisite:** GEO 306

**5 credits**

### Pathology

#### HBP 394 Special Topics from Pathology

**Literature**

Tutorial readings in pathology, with periodic conferences, reports, and examinations arranged with the instructor. May be repeated.

**Prerequisites:** Permission of instructor

**1-2 credits**

#### HBP 398 Research Project in Pathology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. May be repeated. Prerequisite: Laboratory experience.

**Prerequisites:** Permission of supervising instructor

**0-4 credits**

#### HBP 399 Research Project in Pathology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. May be repeated. Prerequisite: Laboratory experience.

**Prerequisites:** Permission of supervising instructor

**0-4 credits**

### History

#### HIS 357 Topics in History

Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes.

**Prerequisite:** U3 or U4 standing and one HIS course

**3 credits**

### Social Welfare

#### HWC 347 Managing Conflict

A major concern for health and human service managers is conflict in organization, community and group settings. The various types of conflicts and the concepts of negotiation and mediation as interventional strategies will be considered. Didactic and experiential learning experiences are utilized. Focus is on understanding conflict situations and selecting appropriate strategies to reduce, contain or heighten the conflict situation. Oppressive conditions, structures and processes are considered major determinants of human suffering and individual and social problems. Students examine how these oppressive conditions are present in conflict situations and consider ways of dealing with them. Coscheduled with HWC 342.

**Prerequisite:** Admission to Undergraduate Health Sciences Center program

**2 credits**

### Information Systems

#### ISE 302 Professional Ethics for Computer Science

Familiarizes students with professional practice in Information Technology. Enables them to identify ethical conflicts, their responsibilities and options, and to think through the implications of possible solutions to...
ethical conflicts.  
Prerequisites: CSE 219 or CSE 280 or ISE 305  
1 credit

**JRN**

**JRN 111 Writing Immersion Lab**  
To progress in the major and minor program, students must pass a grammar proficiency test as part of JRN 111, a grammar course that is co-require with JRN 110. The grammar course includes an eight-week immersion lab in grammar, punctuation, and sentence structure. In the ninth week, all students take a proficiency test. Those who pass are excused from the lab for the rest of the semester. All other students must continue attending the lab and will be required to take a second test on the last day of class. Satisfactory/Unsatisfactory grading only. Students must receive a Satisfactory grade in JRN 111 in order to continue in journalism skills courses.  
Prerequisite: Completion of Departmental Core.  
Mandatory Corequisite: JRN 110  
0 credits

**JRN 210 Advanced Reporting and Writing**  
This course is a continuation of JRN 110, with an emphasis on developing advanced reporting and newswriting skills. Students move beyond the basic wire-service type breaking-news report (speech story, obituary, crime report) and begin writing using more advanced formats: the news feature, the profile, the news analysis, the trend story. Classroom drills include scene-setters and human-interest stories. Emphasis is placed on improving reporting skills, developing story ideas, researching, interviewing, expanding the number and type of sources used and using numbers and statistics accurately and effective-ly. Students are required to write in Associated Press style.  
Prerequisite: JRN 110 and 111  
Mandatory Corequisite: JRN 211  
3 credits

**JRN 211 Digital Photojournalism Lab**  
In this lab, which must be taken in conjunction with JRN 210, students develop an appreciation for photography and fundamental skills, including photo composition, lighting, approaches to subject matter and other aspects of news photography. In addition to being able to illustrate and enhance the stories they produce in JRN 210, students will acquire the ability to apply these skills in many of their subsequent print, broadcast and online journalism courses. Satisfactory/Unsatisfactory grading only. Students must receive a Satisfactory grade in order to continue in journalism skills courses.  
Mandatory Corequisite: JRN 210  
0 credits

**JRN 288 On Campus Internship**  
Prerequisites: JRN 210 and 211 (JRN 310 if broadcast); 12 credits of JRN; permission of intern coordinator  
12 credits

**JRN 310 News III: Reporting and Writing for Broadcast**  
Prerequisite: JRN 210 and 211

**JRN 320 The Promise and Perils of Online Journalism**  
Prerequisites: JRN 210 and 211

**JRN 334 Science and Health Reporting**  
Prerequisites: JRN 210 and 211

**JRN 335 Reporting in New York City**  
Prerequisite: JRN 310 and permission

**JRN 336 Sports Reporting**  
This course is designed to prepare students to report, write and produce sports stories in print, broadcast and online, from sports news to behind-the-scenes issues that resonate in the world of sports. Upon completion of this course, students should be able to cover a government hearing on steroids in professional sports as covering a basketball game.  
Prerequisite: JRN 310  
3 credits

**JRN 340 Beat Reporting**  
This course is designed to develop the ability of students to cover a specific area of news coverage, a beat. Emphasis is placed on developing sources, finding stories, organizing a beat and covering a variety of beat stories from breaking news to profiles and in-depth, enterprise stories. Students will select a beat to follow throughout the semester. Students who took JRN 210 New II: Beat Reporting prior to Spring 2009 are not eligible to receive credit for JRN 340 Beat Reporting.  
Prerequisite: JRN 310  
3 credits

**JRN 360 Techniques of In-Depth Reporting**  
This course explores explanatory, interpretive and issue-based journalism for both print and the Web. Students will produce analytical and explanatory stories that combine material with clarity of writing. In addition to weekly assignments, students will undertake a culminating project designed to showcase their ability to illuminate a compel- 
lent topic on both platforms. Not for credit in addition to JRN 364.  
Prerequisite: JRN 310  
Pre- or Corequisite: JRN 350 or permission  
3 credits

**JRN 361 News Editing and Presentation/Print**  
Prerequisite: JRN 350 or permission  
Pre- or Corequisite: JRN 364

**JRN 362 Magazine Editing**  
Prerequisites: JRN 337 and 350 or permission of instructor

**JRN 363 Magazine Writing**  
Prerequisites: JRN 337 and permission of department

**JRN 364 City Editor**  
Not for credit in addition to JRN 360.  
Prerequisite: JRN 310  
Pre- or Corequisite: JRN 350 or permission

**JRN 370 Advanced Reporting and Writing**  
for Broadcast  
Prerequisite: JRN 310  
Pre- or Corequisite: JRN 350 or permission

**JRN 380 Advanced Editing & Presentation/Web**  
Prerequisite: JRN 320  
Pre- or Corequisite: JRN 350 or permission

**JRN 391 Journalism Workshops**  
Prerequisites: Varies by topic, permission of the department

**JRN 490 Senior Project**  
Prerequisites: JRN 364 or JRN 370 or JRN 380  
Pre- or Corequisites: JRN 363 or JRN 571 or JRN 381

**LIN**

**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. Study of the development of dialects including African-American Vernacular English, and pidgins and creoles such as Hawaiian Pidgin English and Chinook Trade Jargon, within the context of historical developments in the U.S. from colonial times to the present.  
Prerequisite: LIN 101 and LIN 102  
Advisory Prerequisite: Completion of Departmental Core.  
1 and 3 credits
Spring 2009: updates since Spring 2007 are in red

SUPPLEMENT: COURSES

MAR

Marine Sciences

MAR 351 Introduction to Ocean Chemistry
Chemical principles applied to the study of the oceans. How chemical tracers are used to determine the geochemical, physical, and biological characteristics of present and past oceans. Other topics include physical marine chemistry, nutrient and carbon cycling, organic geochemistry, isotopic geochemistry, sediment chemistry and diagenesis, air-sea exchange and controls on carbon dioxide, and estuarine geochemistry.

Prerequisites: CHE 132 and one MAR course

3 credits

MAR 352 Introduction to Physical Oceanography
An introduction to the physical properties, motion of, and forces that drive the movement of fluids (air and water) on the earth. Physical oceanographic processes that range in scale from several nm to 1000s of km will be studied. This course will introduce the student to the physics of the marine environment and the tools (physical, mathematical, scientific) to study these waters. Environments ranging from pelagic to estuarine will be examined. Not for credit in addition to MAR 350.

Prerequisites: MAT 126, 132, or 142; PHY 119, 121, 125, 131 or 141

Corequisite: MAR 353

2 credits

MAT

Mathematics

MAT 318 Classical Algebra

Re-examines algebra from an historical perspective: the Hindu-Arabic number system; mathematics in ancient Egypt and China; the Greek contribution (conics, squaring the circle, solving quadratic equations, division algorithms, polynomials); unsolvability of the three great problems (trisecting the angle, squaring the circle, solving quintics); modern perspectives. Prerequisites: MAT 322 or higher in the following: MAT 126 or 131 or 141 or AMS 151; MAT 318 or AMS 210; MAT 500 or permission of instructor.

Advisory Prerequisite: MAT 125 or 131 or 141

3 credits

MUS

Music

MUS 208 Introduction to Digital Media Technology
A survey and hands-on introduction to digital media. Students are introduced to the general, conceptual, and historical use of computers and related imaging tools in the visual arts through lecture, labs, readings, and project critiques. This course serves as preparation for further study in electronic media and as an opportunity for students in the arts to gain basic computer literacy. Students will develop strategies for combining images and text. Students will then distribute these works on the web. Emphasis is on the conceptual and artistic potential of the technology. No prior computer experience is required. This course is offered as MUS 208, ARS 208, and THR 208.

Pre- or Corequisite: One ARS, CCS, CSE, ISE, MUS, or THR course

3 credits

MUS 317 Interactive Media, Performance, and Installation
An investigation of the relationship between music and film and video. Students script, shoot, edit, and create short videos with soundtracks, exploring different aspects of visuals and music. All editing is done digitally. Works may be made for screen, installation, or performance. Also examines historical and contemporary artistic exploration with such media. This course is offered as ARS 317, MUS 317 and THR 317.

Prerequisites: One ARS, CCS, CSE, ISE, MUS, or THR course

Advisory Prerequisite: ARS/MUS/THR 208 or ARS 225

3 credits

MUS 318 Movie Making: Shoot, Edit, and Score
An investigation of the relationship between music and film and video. Students script, shoot, edit, and create short videos with soundtracks, exploring different aspects of visuals and music. All editing is done digitally. Works may be made for screen, installation, or performance. Also examines historical and contemporary artistic exploration with such media. This course is offered as ARS 318, MUS 318, and THR 318.

Prerequisites: ARS/MUS/THR 208 or ARS 225 or CCS 101

3 credits

MUS 341 Sound Design
An investigation into the scientific, formal and artistic qualities of sound. Designed for students who may or may not have had formal musical training. Students will create original sound works, create film or game soundtracks, and create sound-based art-works in response to course content, and write a paper on acoustic or psycho-acoustic phenomena. Emphasis is on studio production techniques, history of sound art and basic acoustics. Students will work on Macintoshes in the SENC lab and LTA. This course is offered as ARS 341, MUS 341, and THR 341.

Prerequisite: One ARS, CCS, CSE, ISE, MUS, or THR course

Advisory Prerequisite: ARS/MUS/THR 208 or ARS 225

3 credits

MEC

Mechanical Engineering

MEC 440 Mechanical Engineering Design I

Part I of the two-semester capstone design project sequence. Senior students select a project, develop the necessary technical background, and write a proposal, progress reports, and a preliminary design report. Includes an oral presentation on the development and progress of the project. Not counted as a technical elective. Laboratory fee required. The final grade will be assigned at the end of the two course sequence MEC 440-441.

Prerequisites: MEC 125, 300, 310, 317, 320, 325, and 329; MEC major; U4 standing

Corequisites: MEC 410 and 411

3 credits

PHY

Physics

PHY 121-E Physics for the Life Sciences I

First part of an introduction to physics with applications to biology, primarily for students majoring in biological sciences or pre-clinical programs. Topics include mechanics, fluid mechanics, and thermodynamics. Strong algebra skills and knowledge of the ideas of calculus are required. Three lecture hours and one recitation hour per week. The Laboratory component, PHY 123, may be taken concurrently; a common grade for both courses will be assigned. PHY 121 may not be taken for credit in addition to PHY 125, 131, or 141.

Prerequisites: MAT 125 or 131 or 141 or AMS 151;
PHY 277 Computation for Physics and Astronomy

An introduction to computing on UNIX/Linux computers. Fundamentals of using UNIX/Linux to control computer programs for numerical algorithms to solve computational physics and astronomy problems. Assignments are carried out in a high-level compiler programming language such as Fortran 90 or C++ and require extensive use of SINC site computers outside the classroom. This course is offered as both AST 277 and PHY 277.
Prerequisite: PHY 125, 126, 127; or PHY 131, 132, 133, 134; or PHY 141, 142; AMS 151 or MAT 126 or 131 or 141
Advisory Prerequisite: AMS 161 or MAT 127 or 132 or 142 or 171
3 credits

PHY 287 Introduction to Research

An opportunity for students, while still early in their studies, to do research commensurate with their level of preparation. Students work alongside faculty, post-doctoral fellows, and graduate students on ongoing research projects. Students must take the initiative to negotiate the opportunity. BNL and other scientists may be allowed as co-supervisors. May be repeated up to a total of 5 credits.
Prerequisite: Permission of department 0-3 credits

PHY 301 Electromagnetic Theory I

The application of Maxwell’s equations to solve time-independent boundary-value problems and to study the interactions of electric and magnetic fields with bulk matter.
Prerequisite: PHY 251 and 277 or permission of department
Advisory Corequisite: MAT 341
3 credits

PHY 303 Mechanics

An in-depth study of classical mechanics, from the Newtonian to the Lagrangian and Hamiltonian formulations. First, Newtonian mechanics is reviewed and applied to more advanced problems than those considered in PHY 131 or 141. The Lagrangian and Hamiltonian methods are then derived from the Newtonian treatment and applied to various problems.
Prerequisite: PHY 251 and 277 or permission of department
MAT 303 or 305 or AMS 361
3 credits

PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics

A study of the laws that govern physical systems in thermal equilibrium. In the first part, the concepts of temperature, internal energy, and entropy are analyzed and the first and second laws of thermodynamics are used to connect various properties that are independent of the microscopic details of the system. The second part is devoted to a microscopic study of a system in thermal equilibrium, from the kinetic theory of gases to statistical mechanics and the relation between entropy and probability, with application to simple examples in classical and quantum statistics.
Prerequisites: PHY 251, 277, and 300
3 credits

PHY 311 Connections in Science

A selection of the interrelations between physics and other scientific and technological fields, using modern examples from engineering, medicine, and applied mathematics, among others. The course is taught as a seminar and includes guest lecturers, tours of laboratories, and discussion of classic and current research projects. Appropriate for physics and non-physics majors alike.
Prerequisite: PHY 122/124 or 126 and 127 or 132/134 or 142
1 credit

PHY 403 Nonlinear Dynamics

One-dimensional dynamical systems with emphasis on the development of perturbative, sections of homoclinic orbits, and dynamical bifurcations and chaos is included through a study of the logistic map and Lorenz equations.
Prerequisites: PHY 251, 277
3 credits

PHY 407 Physics of Continuous Media

An introduction to the dynamic properties of fluids, of special interest to those attracted to astrophysics, geophysics, and plasma physics. Topics covered include compressible fluids, viscosity, and rotational flow; conducting fluids, wave motion in gases; and magnetohydrodynamics.
Prerequisites: PHY 251 and 277
2 credits

PHY 475 Undergraduate Teaching Practicum

An opportunity for selected undergraduates to collaborate with the faculty in teaching at the introductory level. In addition to working as tutors and as laboratory assistants, students meet once a week with a faculty supervisor to discuss problems they have encountered and to plan future activities. Students are generally assigned to assist in courses they have completed and in which they have excelled. Not for major credit and not repeatable. Can be repeated up to a maximum of 6 credits with a maximum of 3 credits per course taught.
Prerequisite: Permission of department 0-3 credits, S/U grading

POL 406 Strategic Models of Politics

An introduction to formal political theory. Examination of strategic interaction of political actors in American politics, international relations, and public policy. The course primarily focuses on game theoretic and other quantitative models.
Prerequisite: U3/U4 standing and permission of instructor
3 credits

PSY 344-F Development and Aging in Adulthood

An introduction to the development of personal characteristics, family patterns, intergenerational ties, and cultural themes. Cognitive process, personality, and coping strategies will be integrated into a discussion of biological aging and health maintenance in order to understand the range of individual, ethnic and socioeconomic differences that influence personal choices and challenges in identity formation, work, leisure, and retirement. This course is offered as both CPS 344 and PSY 344.
Prerequisite: U3 standing; CPS 210 or PSY 220
3 credits
THR course
3 credits
Pre-or Corequisite
offered as M US 208,ARS 208,and THR 208.
ceptual and artistic potential of the technology. No
ute these works on the web. Emphasis on the con-
combining images and text. Students will then distrib-
ution for further study in electronic media and as an
opp for students in the arts to gain basic com-
pender literacy. Students will develop strategies for
ng to combine images and text. Students will then distrib-
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SUPPLEMENT: COURSES

Spring 2009: updates since Spring 2007 are in red

SBC
Southampton Block Curriculum

SBC 201 Systems and Models
Prerequisite: MAT 125 or 131

SBC 203 Interpretation and Critical Analysis
An introduction to interdisciplinary inquiry and representation in arts, culture, and theory with emphasis on the roles of analysis, argument, and imagination in multiple media. Requires serious engagement with sophisticated texts.
Pre- or Corequisite: WRT 102
3 credits

SBC 321-G Ecology and Evolution in American Literature
Prerequisite: SBC 203

SBC 325 Environmental Writing and the Media
Prerequisite: WRT 102
Advisory Prerequisite: SBC 203

SBC 330-G Extreme Events in Literature
Prerequisite: SBC 203

SBC 331-G City, Suburb, Sprawl
Prerequisite: SBC 203

SUS
Sustainability Studies

SUS 307 Environmental Economics and Management
Prerequisite: SBC 206, MAT 125 or 131

SUS 308 Economic Development
Prerequisite: SBC 206, MAT 125 or 131

THR
Theatre Arts

THR 208 Introduction to Digital Media Technology
A survey and hands-on introduction to digital media. Students are introduced to the practical, conceptual, and historical use of computers and related imaging tools in the visual arts through lecture, labs, readings, and project critiques. This course serves as preparation for further study in electronic media and as an opportunity for students in the arts to gain basic computer literacy. Students will develop strategies for combining images and text. Students will then distribute these works on the web. Emphasis is on the conceptual and artistic potential of the technology. No prior computer experience is required. This course is offered as MUS 208, ARS 208, and THR 208.
Pre- or Corequisite: One ARS, CCS, CSE, ISE, MUS, or THR course
3 credits

THR 317 Interactive Media, Performance, and Installation
An investigation of the relationship between music and film and video. Students script, shoot, edit, and create short videos with soundtracks, exploring different aspects of visuals and music. All editing is done digitally. Works may be made for screen, installation, or performance. Also examines historical and contemporary artistic exploration with such media. This course is offered as ARS 317, MUS 317 and THR 317.
Prerequisite: One ARS, CCS, CSE, ISE, MUS, or THR course
Advisory Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

THR 318 Movie Making: Shoot, Edit, and Score
An investigation of the relationship between music and film and video. Students script, shoot, edit, and create short videos with soundtracks, exploring different aspects of visuals and music. All editing is done digitally. Works may be made for screen, installation, or performance. Also examines historical and contemporary artistic exploration with such media. This course is offered as ARS 318, MUS 318, and THR 318.
Prerequisite: ARS/MUS/THR 208 or ARS 225 or CCS 101
3 credits

THR 334-G Performance Art I: The European Avant-Guard
This course explores the history and theory of avant-garde performance from its inception in the early 20th century through Surrealism. Questions addressed focus on the choices made by artists, and the forces within the culture that encourage the forms they use. Course projects include a performance that reconstructs an event from one of the periods studied and a term paper. This course is offered as both ARH 334 and THR 334.
Prerequisites: U3 or U4 standing; one ARH, ARS, MUS, or THR course
Advisory Prerequisite: ARS/MUS/THR 208
3 credits

THR 341 Sound Design
An investigation into the scientific, formal, and artistic qualities of sound developed for students who may or may not have had formal musical training. Students will write reviews of sound pieces, create film or game soundtracks, and create sound-based art works in response to course content, and write a paper on acoustic or psycho-acoustic phenomena. Emphasis is on studio production techniques, history of sound art and basic acoustics. Students will work on Macintoshes in the SINC site and LTA. This course is offered as ARS 341, MUS 341, and THR 341.
Prerequisite: One ARS, CCS, CSE, ISE, MUS, or THR course
Advisory Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

THR 344-G Performance Art II: World War II to the Present
This course explores the history and theory of performance art from World War II to the present, using an international perspective to identify different forms and practices from Happenings to Body Art and the introduction of new technologies. Questions addressed focus on the choices made by artists, and the forces within the culture that encourage the forms they use. Course projects include developing a site specific performance and a term paper. This course is offered as both ARH 344 and THR 344.
Prerequisite: U3 or U4 standing; one ARH, ARS, MUS, or THR course
Advisory Prerequisite: ARH/THR 334
3 credits

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Fall 2008: New courses and changes since Spring 2008

AAS

Asian and Asian American Studies

AAS 313-J Asian Theatre and Drama
A comprehensive overview of Asian theatre with special emphasis on drama, theatrical aesthetics, conventions of production, and actor training in India, China, Korea, and Japan. This course is offered as both AAS 315 and THR 315.
Prerequisite: Completion of D.E.C. categories A, B, and D
3 credits

AAS 338-J Contemporary India: History, Politics, and Diplomacy (Post-1947)
Study of the forces shaping India’s post-independence history, domestic politics, and foreign diplomacy. As the world’s largest democracy, second most populous nation, and Asia’s second fastest growing economy, its impact on the international scene in the coming years will be carefully analyzed. The course, taught by a former Ambassador, will also focus on emerging trends in Indo-U.S. relations and impact of the Indian diaspora.
This course is offered as both AAS 338 and POL 338.
Prerequisite: AAS 204 or POL 101; U3 or U4 standing
3 credits

AAS 339-J Contemporary China: History, Politics, and Diplomacy (Post-1949)
This course will analyze the evolution of major events in contemporary China following the communist revolution that led to the establishment of the People’s Republic in 1949. The course, taught by a former Ambassador, will examine major political, economic, and social developments in light of both their general global impact and their particular relationship with the U.S. This course is offered as both AAS 339 and POL 339.
Prerequisite: AAS 219 or POL 101; U3 or U4 standing
3 credits

ARH

Art History

ARH 336-G Digital Visual Culture
An investigation of historical and theoretical issues in digital visual culture. Students will build the critical literacy necessary to interrogate the images, text and sound of contemporary digital culture. Emphasis is on examining the history of information technologies, their theoretical implications, and cultural ramifications.
Prerequisite: U3 or U4 status; ARS/MUS/THR 208 or ARS 225 or ARS 205 or CCE 101
3 credits

ARS

Art, Studio

ARS 208 Introduction to Digital Media Technology
A survey and hands-on introduction to digital media. Students are introduced to the practical, conceptual, and historical use of computers and related imaging tools in the visual arts through lecture, labs, readings, and project critiques. This course serves as preparation for further study in electronic media and as an opportunity for students in the arts to gain basic computer literacy. Students will develop strategies for combining images and text. Students will then distribute these works on the web. Emphasis is on the conceptual and artistic potential of the technology. No prior computer experience is required. This course is offered as MUS 208, ARS 208, and THR 208.
Prerequisite: One 200-level ARS, MUS or THR course
3 credits

ARS 225 Introductory Digital Art
A survey and hands-on introduction to digital media. Students are introduced to the practical, conceptual, and historical use of computers and related imaging tools in the visual arts through lecture, labs, readings, and project critiques. This course serves as preparation for further study in electronic media and as an opportunity for students in the arts to gain basic computer literacy. Students will develop strategies for combining images and text. Students will then distribute these works on the web. Emphasis is on the conceptual and artistic potential of the technology. No prior computer experience is required. Pre- or Co-requisite: ARS 154 or ARS 205
3 credits

ARS 317 Interactive Media, Performance, and Installation
An investigation of the relationship between music and film and video. Students script, shoot, edit, and create short videos with soundtracks, exploring different aspects of visuals and music. All editing is done digitally. Works may be made for screen, installation, or performance. Also examines historical and contemporary artistic exploration with such media. This course is offered as ARS 317, MUS 317, and THR 317.
Prerequisite: At least one 200- or 300-level ARS, MUS, or THR studio or performance course; familiarity with the use of computers
Advisory Prerequisite: ARS/MUS/THR 208 or ARS/MUS/THR 317 or ARS 225
3 credits

ARS 318 Movie Making: Shoot, Edit, and Score
An investigation of the relationship between music and film and video. Students script, shoot, edit, and create short videos with soundtracks, exploring different aspects of visuals and music. All editing is done digitally. Works may be made for screen, installation, or performance. Also examines historical and contemporary artistic exploration with such media. This course is offered as ARS 318, MUS 318, and THR 318.
Prerequisite: One ARS, MUS, or THR course; familiarity with the use of computers
Advisory Prerequisite: ARS/MUS/THR 208 or ARS/MUS/THR 317 or ARS 225
3 credits

ARS 325 Theory and Practice of Digital Art: Print
An examination of the theories and techniques of computer and electronic media through lecture, labs, readings, and project critiques. Digital imaging techniques are combined with layout programs to create image-centered works, such as artist’s books, individual prints, multiples and installations. Hybrid combinations of digital and traditional photography and printmaking techniques are explored.
Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

ARS 326 Theory and Practice of Digital Arts: Video
An introduction to the practice, theory, and history of video within art and independent media through labs, lecture, readings, and project critiques. Video production includes shooting video and editing. Emphasis is on creative content, experimentation and critical thinking. Students will work with computer-based editing and compositing tools to create several short assignments and two significant projects using one or more techniques.
Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

ARS 327-H Theory and Practice of Digital Arts: Web Art, Design, and Culture
An investigation of the practical, historical, and theoretical issues related to art and design on the internet. Students work with images, text, sound, and animation on the web to create web-based artworks, design a portfolio or other information-based site, and write a hypertext research paper. Emphasis is on creative use of web technologies and examining the cultural implications of new technologies. Students will work on Macintoshes in the EMEDIA SINC site.
Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

ARS 328 Theory and Practice of Digital Arts: Animation
An investigation into the practice, theory, and history of animation within art and independent media through labs, lecture, readings, and project critiques. Animation production will cover computer-based stop-motion as well as some 2D and 3D computer animation. Emphasis is on creative content, experimentation and critical thinking. Students work with computer-based 2D and 3D animation tools to create several short assignments and one significant project using one or more techniques.
Prerequisite: U3 or U4 standing; ARS/MUS/THR 208 or ARS 225
3 credits

ARS 341 Life Sound Design
An investigation into the scientific, formal and artistic qualities of sound developed for students who may or may not have had formal musical training. Students will write reviews of sound pieces, create film or game soundtracks, and create sound-based art-works in response to course content, and write a paper on acoustic or psycho-acoustic phenomena. Emphasis is on studio production techniques, history of sound art and basic acoustics. Students will work on Macintoshes in the SINC site and LTA. This course is offered as ARS 341, MUS 341, and THR 341.
Prerequisite: One 200-level ARS, CSE, ISE, MUS, or THR course
3 credits

ARS 390-G Topics in Studio Art
Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Not for major credit.
Prerequisite: ARS 154 or ARS 205
3 credits
Spring 2009: updates since Spring 2007 are in red

SUPPLEMENT: COURSES

ARS 425 Advanced Digital Arts
An advanced investigation of the history, contemporary practice, and techniques of digital/electronic media arts through lecture, labs, readings, project critiques, and exhibition. Student directed projects may involve advanced media techniques, such as imaging, video, sound, 2D/3D animation, performance, and interactivity that take form as prints, movies on dvd, sculptures/installations, and websites. May be repeated once.
Prerequisites: ARS/MUS/THR 208 or ARS 225; permission of instructor after interview and review of portfolio
3 credits

BIO

BIO 319 Landscape Ecology Laboratory
A computer lab course focusing on spatial concepts, methods, and tools for addressing ecological and environmental problems. The course will be based on fundamental concepts in ecology and environmental science and extend that knowledge, as well as teaching technical skills, including the use of geographic information systems (GIS) software, image processing, spatially explicit modeling, and statistical sciences. The lab exercises will introduce a variety of spatial approaches addressing problems in environmental protection, ecotoxicology, natural resource management, conservation biology, and wildlife management.
Pre-or Corequisite: BIO 202
Advisory Prerequisite: MAT 126 or higher
3 credits

BIO 361 Biochemistry I
First course of a two-semester survey of the major chemical constituents of the cell, including carbohydrates, lipids, and proteins. Emphasis is on enzyme structure, enzyme kinetics, reaction mechanisms, and metabolic pathways.
Prerequisites: C or higher in BIO 202 and C or higher in CHE 322 or 332 or permission of instructor
3 credits

BIO 362 Biochemistry II
Second course of a two-semester survey. BIO 362 treats nucleic acid structure, replication, and transcription, both in vivo and in vitro. The machinery of protein synthesis is also covered, including amino acid activation; transfer RNA: ribosomes; the genetic code; and peptide chain initiation, elongation, and termination.
Prerequisites: C or higher in BIO 361
3 credits

BME

BME 212 Biomedical Engineering Research Fundamentals
Introduction to data collection and analysis in the context of biological measurements commonly used by bioengineers. Statistical measures, hypothesis testing, linear regression, and analysis of variance are introduced in an application-oriented manner. Data collection methods using various instruments, A/D boards, and PCs as well as LabView, a powerful data collection computer package. Not for credit in addition to the discontinued BME 309.
Prerequisites: BME major; BME 100 and BME 211
Pre Corequisite: MEC 260; BME 202 or 203
3 credits

BME 300 Writing in Biomedical Engineering
See Requirements for the Major in Biomedical Engineering, Upper-Division Writing Requirement.
Prerequisites: WRT 102; U3 or U4 standing; BME major
Corequisite: Any upper division BME course and permission of the course instructor or Undergraduate Program Director
S/U grading

BME 311 Fundamentals of Macro to Molecular Bioimaging
This course will cover the fundamentals of modern imaging technologies, including techniques and applications within medicine and biomedical research. The course will also introduce concepts in molecular imaging with the emphasis on the relations between imaging technologies and the design of target specific probes as well as unique challenges in the design of probes of each method: specificity, delivery, and amplification strategies. The course includes visits to clinical sites.
Prerequisites: BME 212
3 credits

BME 400 Research and Nanotechnology
This is the capstone course for the minor in Nanotechnology Studies (NTS). Students learn primary aspects of the professional research enterprise through writing a journal-quality manuscript and making professional presentations on their independent research.
Prerequisite: BME 211 and at least one semester of independent research (499 course)
3 credits

BME 430 Engineering Approaches to Drug and Gene Delivery
Introduction to the application of engineering principles and biological considerations in designing drug delivery systems for medical uses. The concept of bio-compatibility and its implications in formulating controlled release devices are illustrated. Emphasis on the use of biodegradable materials to design drug delivery systems for site-specific applications.
Prerequisites: AMS 161 or MAT 132 or 142 or 171; BME 202 or 203; BME 304
3 credits

CCS

CCS 312-I Cinema and the Ancient World
A reading of Classical Texts alongside their representation in the cinema. Readings will include classical literature, contemporary treatments of the classics, and film theory. We will pay special attention to how filmmakers are much more attentive to ideas from the past than from the present.
Prerequisite: U3 or U4 standing; completion of DEC D Advisory prerequisite
CCS 101, HUM 201, or HUM 202
3 credits

CCS 313-H Television Studies
This course maps the social, cultural, and technologi cal changes that the medium/media of television has experienced from its early ties to radio models of broadcast to the changes in reception wrought by the iPod.
Prerequisite: U3 or U4 standing; 1 DEC F course
Advisory prerequisite: CCS 101, HUM 201, or HUM 202
3 credits

CCS 390-J Latin American Cinema
This course studies a variety of aspects connected with the production, distribution, and reception of cinema in Latin America. Course includes a representative sample of films produced in everyone of the major Latin American film producing nations (Argentina, Brazil, Mexico, and Cuba). It will also review a short selection of minor Latin American cinematographies and of indigenous film productions. All films will always be studied within the social, political and artistic context in which these works are produced. Readings include works by Latin American film directors and theorists that have contributed to the study of the films in the region and of film as a world art form.
Prerequisite: U3 or U4 standing; completion of DEC D Advisory prerequisite
CCS 101, HUM 201, or HUM 202
3 credits

CCS 391-J Contemporary African Cinema and Cultural Studies
This course will examine African traditions of graphic writing in their theoretical, literary, and cinematographic application. The emphasis will be placed on the visual arts and their political significance in contemporary African debates, and of particular interest will be the production of contemporary artists, the strategies they use, and their impact in both global and local discussions. The artifacts will additionally serve as tools to investigate the modalities of a contemporary African self-understanding through the lenses of images and graphic design.
Prerequisite: U3 or U4 standing; completion of DEC D Advisory prerequisite
CCS 101, HUM 201, or HUM 202
3 credits

CCS 392-K American Cinema and Cultural Studies
The history of cinema as art has been directly linked to the evolution and increment of multicultural societies. This course studies the ways in which film has either included or excluded representations of multiculturalism in the United States, and how films have discussed and participated in the different debates about cultural, ethnic, racial, sexual, gender and class difference within the United States. The course studies theoretical concepts such as difference, ethnicity, migration, incorporation and cultural contact zones.
Prerequisite: U3 or U4 standing; completion of DEC D Advisory prerequisite
CCS 101, HUM 201, or HUM 202
3 credits

CCS 393-J European Cinema and Cultural Studies
A comparative study of European cinema in a historical, cultural, and political context. The course will concentrate on those films and movements that achieved a major impact in their country of origin as well as received international critical attention.
Prerequisite: U3 or U4 standing; completion of DEC D Advisory prerequisite
CCS 101, HUM 201, or HUM 202
3 credits

CCS 394-J Asian Cinema and Cultural Studies
This course is an overview of the history of Asian cinema, with an emphasis on the geopolitical study of China, Hong Kong, India, Japan, and Taiwan. By focusing on issues relating to nationalism, cultural production, gender relations, and the impact of colonialism and globalization, the course will explore the modernities, and/or particularities between the various cinemas, based on a set of overlapping themes and cultural aesthetics.
Prerequisite: U3 or U4 standing; completion of DEC D Advisory prerequisite
CCS 101, HUM 201, or HUM 202
3 credits

CCS 395-H Digital Cultural Studies
This course critically examines how digital media and technology assist in the rede of our political, economic, social, and cultural worlds. Special attention is paid to theories of digital media and historical devel-
opments of new technologies, as well as cultural practices with emergent technology.  

**Prerequisite:** U3 or U4 standing; 1 DEC F course  

**Advisory prerequisite:** CCS 101, HUM 201, or HUM 202  

3 credits

### CLT

#### Comparative Literature

**CLT 220-J Literature Beyond European Traditions**

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. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.  

**Prerequisite:** Completion of DEC D  

**Advisory Prerequisite:** CCS 101, HUM 201, or HUM 202  

3 credits

**CLT 335-G Interdisciplinary Study of Film**

As China, Taiwan, Japan, and Korea, the course will cover novels that address the shifting boundaries of the African continent, both in terms of ideology and of geo-political reality. As such, Ancient Egyptian texts will be confronted with literary productions from the Classical Romance culture, and with slave narratives, to address the way through which literature is influenced by the general politics of mobility.  

**Prerequisite:** U3 or U4 standing; completion of DEC B  

3 credits

**CLT 391-G African Comparative Literature**

Intensive study of some of the most important literary productions from the African continent. The course will cover novels that address the shifting boundaries of the African continent, both in terms of ideology and of geo-political reality. As such, Ancient Egyptian texts will be confronted with literary productions from the Classical Romance culture, and with slave narratives, to address the way through which literature is influenced by the general politics of mobility.  

**Prerequisite:** U3 or U4 standing; completion of DEC B  

3 credits

**CLT 392-K Multicultural Comparative Literature**

This course will examine the various strategies deployed by U.S. writers to incorporate languages and dialects other than English and non-W.A.S.P. cultural experience into their literary work. In their different ways, these authors celebrate the intellectual diversity of the U.S. and resist the temptations of monolingual culture.  

**Prerequisites:** U3 or U4 status; completion of DEC B  

3 credits

**CLT 393-I European Comparative Literature**

European literature developed through constant interaction across frontiers rather than through discrete national histories. Poetry, fiction, and drama in every nation were heavily influenced by those of other nations, which they helped shape in their turn. The course examines this reciprocal impact on different genres in different countries across the centuries.  

**Prerequisites:** U3 or U4 status; completion of DEC B  

3 credits

**CLT 394-J Asian Comparative Literature**

This course is an overview of the development of Asian literatures and thoughts, spanning across the early 20th century to the present. By covering short stories, novels, and poems from Asian traditions, such as China, Taiwan, Japan, and Korea, the course will examine how modernity, coloniality, and war contribute to the shaping of national, and cultural identities. A comparative study of narratives from the various traditions will be engaged to explore the influence and implications of social categories such as gender, class, race, and ethnicity.  

**Prerequisites:** U3 or U4 status; completion of DEC B  

3 credits

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### CME

#### Chemical and Molecular Engineering

**CME 304 Chemical Engineering Thermodynamics I**

First and second laws of thermodynamics, PVT behavior of pure substances, equations of state for gases and liquids, phase equilibria, mass and energy balances for closed and open systems, reversibility and equilibrium, application of thermodynamics to flow processes, heat effects during chemical reactions and combustion.  

**Prerequisites:** PHY 132, CHE 132, CME 130 or ESG 111 or ESG 112  

3 credits

**CME 314 Chemical Engineering Thermodynamics II**

Equilibrium and the Phase Rule; VLE model and K-value correlations; chemical potential and phase equilibria for ideal and non-ideal solutions; heat effects and property changes on mixing; application of equilibria to chemical reactions; Gibbs-Duhem and chemical potential for reacting systems; liquid/liquid, liquid/solid, solid/vapor, and liquid/vapor equilibria; adsorption and osmotic equilibria, steady state flow and irreversible processes. Steam power plants, internal combustion and jet engines, refrigeration cycle and vapor compression, liquefaction processes.  

**Prerequisite:** CME major; CME 304, B- or better in CME 304  

3 credits

**CME 315 Numerical Methods for Chemical Engineering Analysis**

Critical analysis of experimental data development of engineering models by integrating a variety of computer-based programs: (1) Executing numerical calculus and solving numerical equations using a mathematical program (Mathematica); (2) Process simulation for typical chemical engineering processes (unit operation, distillation, etc.) using a simulation program (Lab-view).  

**Prerequisite:** CME major  

**Pre- or Corequisite:** AMS 361 or MAT 303 or MAT 305  

3 credits

**CME 327 Molecular Modeling for Chemical Engineers**

Molecular modeling techniques and simulation of complex chemical processes. Use of Monte Carlo methods and Molecular Dynamics methods. Emphasis on the simulation and modeling of biopolymeric systems.  

**Prerequisites:** CME major; PHY 132; ESG 111 or ESG 112; AMS 261 or MAT 203; AMS 361 or MAT 363; CME 304, B- or better in CME 304  

3 credits

**CME 330 Principles of Engineering for Chemical Engineers**

This course focuses on the basic principles required for functioning in an engineering environment. Includes equilibrium and dynamics of rigid bodies, analysis of simple structures, conservation of energy, vectorial kinematics, collisions, general circuit analysis, fundamentals of AC power, CAD programs, introduction to market analysis, and discussion on ethics in engineering management.  

**Prerequisite:** CME major; U3 or U4 standing  

3 credits

**CME 333 Business Economics for Engineers**

The course focuses on critical business concepts as they relate to engineering practices. Survey of general business environment and business functions, with an emphasis on ethics and law, economics, finance, and marketing. Project management of cost, risk and alternatives. Quality management: Six Sigma concept.  

3 credits

**CME 369 Polymer Engineering**

An introductory survey of the physics, chemistry and engineering processes of polymers. Topics covered include classification of polymers, structures of polymers, morphology of polymers, thermodynamics of polymers, phase separation and phase transition of polymers, crystallization of polymers. Case studies of commercial polymer production and processing.  

**Prerequisite:** B- or higher in CME 304 or ESG 302 or equivalent course; AMS 281 or MAT 203 or MAT 205  

3 credits

**CME 401 Separation Technologies I**

Fundamentals of separations. Introduction to standard classical and advanced separation methods and their relative merits and limitations. Distillation, crystallization, filtration, centrifugation, absorption and stripping methods. Includes fundamentals of chromatography.  

**Prerequisites:** CME major; U3 or U4 standing; CME 203  

3 credits

**CME 402 Separation Technologies II**


**Prerequisites:** CME 401  

2 credits

**CME 420 Chemical Engineering Laboratory IV: Senior Thesis Directed Research**

Directed laboratory research. At the end of the junior year, in consultation with an advisor, the CME student will write a 1-2 page abstract describing proposed research. This abstract must be approved by the Undergraduate Program Committee (UPC). Through work accomplished in CME 420, the student will expand the research proposal into a senior thesis written in the format of a paper in a scientific journal. The student will defend his/her thesis in front of the UPC prior to the end of the senior year. After the defense, three copies of the finished thesis must be presented to the student's advisor at least 21 days before the date of graduation. The advisor then submits the thesis for final approval to the other UPC members.  

**Prerequisite:** CME 410  

2 credits

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### Computer Science

#### CSE

**CSE 150 Foundations of Computer Science: Honors**

Introduction to the logical and mathematical foundations of computer science for computer science honors students. Topics include: functions, relations, and sets; recursion and functional programming; basic logic; and mathematical induction and other proof techniques.  

**Prerequisites:** One MAT course that satisfies DEC category C or score of level 4 on the math placement exam; admission to the Computer Science Honors Program or the Honors College or WISE or permission of the instructor  

4 credits

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CSE 302 Professional Ethics for Computer Science
Familiarizes students with professional practice in Information Technology. Enables them to identify ethical conflicts, their responsibilities and options, and to think through the implications of possible solutions to ethical conflicts.
Prerequisite: CSE 219 or CSE 260
1 credit

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 219 or CSE 260, CSE 220, and CSE 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. May not be taken for credit in addition to CSE 305.
Prerequisites: CSE 219 or CSE 260 and CSE 220
3 credits

CSE 306 Operating Systems
Students are introduced to the structure of modern operating systems. Topics include virtual memory, resource allocation strategies, concurrency, and protection. The design and implementation of a simple operating system are performed.
Prerequisites: CSE 219 or CSE 260, CSE 220 or ESE 308
3 credits

CSE 307 Principles of Programming Languages
Presents examples of important programming languages 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 programming language constructs such as binding, binding times, data types and implementation, operations (assignment, data abstraction, 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 219 or CSE 260 and CSE 220
3 credits

CSE 308 Software Engineering
Introduces the basic concepts and modern tools and techniques of software engineering. Emphasizes the development of reliable and maintainable software via system requirements and specifications, software design, methodologies including object-oriented design, implementation, integration, and testing; software project management; life-cycle documentation; software maintenance; and consideration of human factor issues. This course is offered as both CSE 308 and ISE 308.
Prerequisite: CSE 219 or CSE 260 or ISE 305
3 credits

CSE 310 Data Communication and Networks
Study of communication networks. Local area networks (LAN), integrated voice and data systems (IVDS), and wide area networks (WAN). Their topology (bus, token passing, tre, point to point), Protocols, speed, and distance limitations: RS232, TCP/IP, MAP/TOP, ONS, OSL. Network design and management will be studied in various environ-
ments. May not be taken by students with credit for CSE/ESE 346. Students may receive credit for both CSE 310 and ESE 310.
Prerequisites: CSE 214 and 220
Advice Prerequisite: AMS 310
3 credits

CSE 311 Systems Administration
This course covers practical techniques to manage information systems, also known as IT Systems Administration. Students will learn how to install computers for assorted hardware and software platforms (Windows, Unix/Linux, OSX). Install networking equipment and configure it. Install server software on several systems (e.g., web, database, mail) and configure it. Secure the network, hosts, and services, and apply system patches. Set up redundant computing services, virtual machines/services, and hardware so that services can survive some hardware/software failures. Evaluate the performance, reliability, and security of the overall system.
Prerequisites: CSE 214 or CSE 230 or ISE 208
3 credits

CSE 315 Database Transaction Processing Systems
Theory and practice of design for applications involving transactional access to a database. Transaction design, schema design, restart and recovery, journaling, concurrency control, distributed databases. Student groups perform design and implementation of significant database application. This course is offered as both CSE 315 and ISE 315.
Prerequisite: CSE/ESE 305
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 cali
graphic and raster displays; two-dimensional, geometric transfor-
mations; introduction to three-dimensional graphics; graphics standards; and input devices, inter-
action handling, and user-computer interface.
Prerequisites: CSE 219 or CSE 260, CSE 220, permission of instructor
3 credits

CSE 333 User Interface Development
Survey of user interface systems, including topics such as command language, windowing, multiple input/output devices, architecture of user interface management systems, and tool kits for designing user interfaces. Additional topics may include human fac-
tors, standards, or visual languages. Students participate in a project involving the design and implementation of a user interface system.
This course is offered as both CSE 333 and ESE 333.
Prerequisite: CSE 219 or CSE 260
3 credits

CSE 334 Introduction to Multimedia Systems
Survey of technologies available for user interfaces. Discussion of hypertext; voice, music, and video together with tools and models for capturing, editing, presenting, and retrieving information and data. Capabilities and characteristics of a range of peripheral devices including devices based on posture, gesture, head move-
ment, and touch. Case studies of academic and commer-
cial multimedia systems including virtual reality systems. Students participate in laboratory exercises and build a multimedia project. This course is offered as both CSE 334 and ESE 334.
Prerequisites: 12, U3 or U4 standing
3 credits

CSE 336 Internet Programming
Introduces the design and development of software for Internet commerce. Topics include extended markup language, servlets, cookies, sessions, Internet media types, Web protocols, digital signatures, certifi-
cates, encryption, and the wireless Internet. This course is offered as both CSE 336 and ESE 336.
Prerequisite: CSE 219 or CSE 260
3 credits

CSE 352 Artificial Intelligence
Prerequisites: CSE 219 or CSE 260; CSE 303
3 credits

Career Skills and Leadership

CSK 302 Technical Writing and Communication
A course devoted to the presentation of technical information to different audiences. Styles of writing to be covered will include grant proposals, reports, and journal articles; principles of oral presentation will include elements of design and graphics.
Prerequisite: WRT 102
3 credits

Electrical Engineering Online

EE 331 Introduction to Electromagnetic Fields and Waves
Fundamental aspects of electromagnetics. Topics include: mathematical foundation of inte-
gral, law and field potential; and physical interpretation of differential Maxwell equations in free space; interaction of electromagnetic sources and fields; engineering applications; and substantial discussion of generation of electromagnetic fields and waves in unbounded media by known sources; transmission and scattering by conducting objects.
Prerequisite: ESE 271
4 credits

EE 339 Electromagnetics and Transmission Line Theory
Fundamental aspects of electromagnetics wavepropagation and radiation, with application to the design of high-speed digital circuits and communications systems.
Prerequisites: Solutions of Maxwell’s equa-
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tions for characterization of EM wave propagation in unbounded and lossy media; radiation of EM energy; guided wave propagation with emphasis on transmission lines theory.  
Prerequisite: ESE 271  
3 credits

ESG

Engineering Science

ESG 198 Fundamentals of Engineering Chemistry  
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; corrosion; polymers). Labs include 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 131/133, 141/143 or 105/105D.  
Prerequisites: PHY 132 or 142 or 126 or 127; MAT 127 or 152 or 142 or AMS 161  
4 credits

ESG 302 Thermodynamics of Materials  
The basic laws and concepts of thermodynamics are elucidated, and the important thermodynamic relationships are systematically developed with reference to the behavior of materials. The thermodynamics of solids is discussed, including the thermodynamics of solutions and the calculation of reaction-free energies and equilibria in condensed phase reactions such as phase transformations, oxidation, and diffusion.  
Prerequisite: ESG 198  
Pre- or Corequisite: AMS 261 or MAT 203  
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: PHY 126 and 127 or PHY 132/134; U2 standing  
Pre- or Corequisite: ESG 332  
Corquisite: ESG 300  
3 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-Penny 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 photocconductors, lasers, magnetic materials, and superconductors are also discussed. (ESG 332 is not a prerequisite.)  
Prerequisite: ESG 281 or PHY 251  
Advisory Prerequisite: ESG 302 or CME 304  
3 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; permission of the department  
3 credits

EST

Materials Science

ESM 221 Introduction to Chemistry of Solids  
Introduction to the synthesis, structure, property, 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. This course is offered as both CHE 221 and ESM 221.  
Prerequisites: CHE 132 or ESG 198, and CHE 133 or 143 or 199; ESG 111 or CHE 114 or AMS 141; PHY 112/113/114  
MAT 127 or 127 or 142 or 171 or AMS 161; PHY 126 or 131/133 or 141  
4 credits

ESM 369 Polymers  
An introductory survey of the physics, chemistry and engineering processes of polymers. Topics covered included characterization of polymers, structures of polymers, morphology of polymers, thermodynamics of polymers, phase separation and phase transition of polymers, crystallization of polymers. Case studies of commercial polymer production and processing.  
Prerequisite: ESM 332  
3 credits

ESM 400 Research and Nanotechnology  
This is the capstone course for the minor in Nanotechnology Studies (NTS). Students learn pram -ary aspects of the professional research enterprise through writing a journal-quality manuscript and mak -ing professional presentations on their independent research (499) projects in a formal symposium setting. Students will also learn how to construct a grant propo -sal (a typical NSF graduate fellowship proposal), methods to search for research/fellowship funding, and key factors in being a research mentor.  
Prerequisite: EST 213; at least one semester of independent research (499 course)  
3 credits

EST 192 Introduction to Modern Engineering  
Familiarizes students with systems and decision-mak -ing concepts of modern engineering and technology. The conceptual areas to be studied include an engi -neering approach to problem solving and design, model -ing 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.  
Prerequisite: Course is for students without prior engi -neering experience, permission of the department required  
3 credits

EST 194-C Patterns of Problem Solving  
A survey of techniques and methods of problem solv -ing as developed by the engineer and applied scientist. Applications drawn from a broad range of fields. Intended for non-engineering majors.  
Prerequisite: Course is for students without prior engi -neering or natural science experience, permission of the department required  
3 credits

EST 341 Waste Treatment Technologies  
This course will examine technologies such as water -water management, solid waste disposal, and drinking water treatments that minimize the effects of human wastes. Pollution prevention will be emphasized.  
3 credits

EST 400 Research and Nanotechnology  
This is the capstone course for the minor in Nanotechnology Studies (NTS). Students learn pram -ary aspects of the professional research enterprise through writing a journal-quality manuscript and mak -ing professional presentations on their independent research (499) projects in a formal symposium setting. Students will also learn how to construct a grant propo -sal (a typical NSF graduate fellowship proposal), methods to search for research/fellowship funding, and key factors in being a research mentor.  
Prerequisite: EST 213; at least one semester of independent research (499 course)  
3 credits

EST 488 Internship in Technology and Society  
Participation in a private enterprise, public agency, or nonprofit institution. Students are required to submit a proposal to the department at the time of registration that included the location, immediate supervisor, nature of the project and hours per week for the pro -ject. One mid-semester report and one end of semes -ter report are required. May be repeated up to a limit of 12 credits but only 3 credits of EST 488 may be used for either TSM major credit or specialization credit.  
Prerequisites: EST major; permission of the department  
1-3 credits

GEO

Geosciences

GEO 440 Geological Applications of Remote Sensing  
An introduction to the fundamental principles of remote sensing, with emphasis on geological and envi -ronmental applications. Discussion of the physical basis for remote sensing techniques. Survey of com -monly used sensors and image analysis methods in earth sciences. Use of remotely sensed data in geo -graphic information systems. Participants gain practi -cal experience in geologic analysis using satellite imagery.  
Prerequisite: GEO 102 or GEO 122  
Advisory Prerequisite: PHY 122 or PHY 132 or PHY 142 or PHY 126, 127  
3 credits

HIS

History

HIS 202-I Ancient Greece  
In many important ways, our culture traces its origins back to the people of ancient Greece: basic features of our way of life, including democracy, philosophy, the -ater, and more, began among the ancient Hellenes. Who were these people? What enabled them to achieve so much, and why has their influence lasted so long? This course will try to answer these questions.  
3 credits

HIS 203-I Ancient Rome  
In many important ways, our idea of Western Civilization traces its origin back to the ancient Roman Empire: basic features of our way of life, the legal and religious foundations of our heritage, were shaped by the people of ancient Rome. How could the inhabitants of one city achieve so much, and why has their influ-

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ence lasted so long? This course will try to answer these questions. 3 credits

HIS 302-H Environmental History in Global Perspective
An exploration of human-caused transformations in natural environments and in ideas about nature from prehistory to the present. Examining topics from agriculture and deforestation in classical antiquity to the Columbian encounter, from problems of environmental management in imperial India to the emergence of environmentalism as a global movement today, the course focuses on case studies from several regions, including the Mediterranean, the Caribbean, New England, and South Asia. Prerequisite: U3 or U4 standing; 1 DEC E course Advisory Prerequisite: DEC F and Bio 113 or ENS 101 3 credits

HIS 303-I The Crusades and Medieval Society
This course examines the various medieval military conflicts known collectively as The Crusades. We will investigate specific episodes such as the Latin conquest of Jerusalem, the Children's Crusade, the Shepards' Crusade, and the Albigensian Crusade. We will also explore such issues as the origins of the idea of crusade, the feudal developments underlying the crusades, crusading culture and propaganda, the European encounter with the Muslim world, and the long term effects of the crusades on European society, politics, culture, and economy. Prerequisite: U3 or U4 status Advisory prerequisite: HIS 101 or HIS 236 3 credits

HIS 304-I Religion, Magic and Witchcraft in Early Modern Europe
An exploration of the ways in which, from the late Middle Ages through the Renaissance and Reformation to the Enlightenment, Europeans struggled to define their identity and beliefs. The course will investigate such topics as medieval reactions to magic and heresy, the rise of the witch hunts, the split-up of Christendom into warring Catholic and Protestant empires, and the emergence of modern ideas of skepticism and toleration. Prerequisite: HIS 101 or 102 and U3 or U4 standing 3 credits

HIS 305-I Victorian Britain
This course explains the social, cultural and political history of Britain in the nineteenth century. It pays particular attention to the context of empire, industrialization and major constitutional reform and revolution on domestic politics, social attitudes and intellectual and cultural life in Britain. Topics to be explored include industrialization and class, Reform Acts; the gospel of work; the condition of England question; urban anthropology and the discovery of poverty; the cult of true womanhood, feminism and the public sphere; the impact of the Indian Mutiny of 1857; Africa and the Victorians; the regime of sexuality; Jack the Ripper and the others within. We explore these issues through lectures, reading, films, discussion exams and essays. Prerequisite: HIS 101 or 102 and U3 or U4 standing 3 credits

HIS 306-I Post-1945 Britain: Postcolonial Disruptions
This course on post-1945 Britain will examine the 'great events' of the post World War period and the patterns of social, economic, and political change through the lens of British experience. In particular, we will attend to the impact of decolonization on issues of race, class and gender within British domestic culture. The second half of the twentieth century marked the successes and failures of the triumvirate projects of socialism and decolonization, while also producing new kinds of mass cultural exports that continue to shape global culture. These narratives of changing configurations of empire, class, race, gender and politics are the subject of this course. Prerequisite: HIS 102 and U3 or U4 standing 3 credits

HIS 308-I Britain and France in the Age of Revolution
This course examines the social, intellectual, cultural and political life of Britain, France and their overseas colonies from the death of the Sun King to the Battle of Waterloo. We will examine the sources and consequences of related developments, focusing on: the structure of the ancient regime states; the impact of war and empire; women, race and public culture in the Enlightenment; Paris and London as global cities; exoticism and exploration; the emergence of popular radicalism, and the transatlantic circuits of revolution. Prerequisite: HIS 102 and U3 or U4 standing 3 credits

HIS 315-F The Healer and the Witch in History
Female healers from the Middle Ages to the present were often associated with the development of a mechanism for repression and control and how they related to their societies. This course also traces the development of organized medicine and provides information on women. This course is offered as both HIS 316 and WST 316. Prerequisite: U3 or U4 standing Advisory Prerequisite: One HIS or WST course 3 credits

HIS 320-F International Law and Human Rights
An examination of the historical evolution of the concept of human rights, including its incorporation into the international legal regime developed at the close of World War Two. The time frame ranges from the origin of classical rights philosophy in the 17th and 18th centuries to the present, and the geographic focus is placed on modern human rights movements, beginning with the international campaign to end slavery. Prerequisite: U3 or U4 status Advisory prerequisite: HIS 102 or 104 3 credits

HIS 335-K&4 Women at Work in Twentieth-Century America
Women have always worked but as Americans entered the 20th century the conditions of labor—and workers' relationship to their work—changed. This course will explore the various changes as they directly affected American women economically, socially, and politically and will open up discussions of the impact of race and class as well as gender. This course is offered as both HIS 335 and WST 335. Prerequisite: U3 or U4 status Advisory prerequisite: HIS 104 3 credits

HIS 338-K Asian American History
Asian American History is an examination of the historical factors that have molded Asian American life in the United States. Strongly emphasized themes include imperialism/colonialism, immigration, gender/sexuality, second generation, and images/media. Prerequisite: U3 or U4 status 3 credits

HIS 368-K Dutch Golden Age
This course delves into the dynamics by which wealth has been created in an American economy dominated by large corporations, and the changing patterns of inequality that have followed. Ever since big companies came to dominate the economy in the late nineteenth century, American affluence has come in sports or culture. Each period has had its characteristic new technologies and companies and their entrepreneurs, which part of the course will chart, from the robber barons to the dot.comers. We will then explore impacts on the work, most Americans did, on wealth distribution and political economy, and on the changing ways in which many Americans remained poor. Prerequisites: U3 or U4 standing Advisory prerequisite: HIS 103 or 104 3 credits

HIS 371-K&4 Law and Society in American History, 1620-1877
This course examines the interaction between law and society in America from the period of European colonization through the mid 19th century. Some of the themes we will examine are: the clash of native and European legal systems and the development of new American law, particularly English law, to the circumstances of the American colonies; the development of the profession of law; changing definitions of crime and penal practices; shifts in women's legal status and their relationship to everyday practices and opportunities for women; the changing legal status of children; and transformations in the law of servitude, slavery, race, and sexuality. With this period, we also focus on the concept of human rights, including its incorporation into the international legal regime developed at the close of World War Two. The time frame ranges from the origins of classical rights philosophy in the 17th and 18th centuries to the present, and the geographic focus is placed on modern human rights movements, beginning with the international campaign to end slavery. Prerequisite: HIS 103 or 104 3 credits

HIS 372-K&4 Constitutional History of the U.S. Civil Rights
An examination of United States law and constitutional history from colonial times to the present. A particular focus is placed on the history of civil rights and the struggles of women and minorities to be fully included in the interpretation of constitutional protections. Prerequisite: U3 or U4 status 3 credits

HIS 373-F History of Crime and Criminal Justice in the U.S.
Study of the development of police, courts, prisons, criminal law and crime in the United States from the 16th century to the present, and the institutions of criminal justice created? How did they change? How have people perceived and responded to crime? Prerequisite: HIS 104 3 credits

HIS 379-K Disease in American History
An examination of disease patterns and their impact on American society from the colonial period to the present. Particular attention is paid to the great epidemics of the 19th century, and how public health measures brought them under control, and the emergence of chronic ailments such as cardiovascular disease, cancer, and diabetes as the leading causes of death in the 20th century. Prerequisite: HIS 103 or 104 3 credits

French Literature and Culture

HUF 475 Undergraduate Teaching Practicum I
Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the

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SUPPLEMENT: COURSES
Supplement: Courses

AAS Asian and Asian American Studies

AAS 338-J Contemporary India: History, Politics, and Diplomacy (Post-1947) new course
Study of the forces shaping India's post-independence history, domestic politics, and foreign diplomacy. As the world's largest democracy, second most populous nation, and Asia's second fastest growing economy, its impact on the international scene in the coming years will be carefully analyzed. The course, taught by a former Ambassador, will also focus on emerging trends in Indo-U.S. relations and impact of the Indian diaspora. This course is offered as both AAS 338 and POL 338. Prerequisites: AAS 201 or POL 101; U3 or U4 standing 3 credits

AAS 339-J Contemporary China: History, Politics, and Diplomacy (Post-1949) new course
This course will analyze the evolution of major events in contemporary China following the communist revolution that led to the establishment of the People's Republic in 1949. The course, taught by a former Ambassador, will examine major political, economic, and social developments in light of both their general global impact and their particular relationship with the U.S. This course is offered as both AAS 339 and POL 339. Prerequisites: AAS 219 or POL 101; U3 or U4 standing 3 credits

AAS 340-J Topics in Asian History revised description
Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Late Imperial China; The Chinese Diaspora; and Overseas Chinese and Chinatowns. Designed for upper-division students, this course provides an in-depth study of a specific topic within social sciences disciplines such as history, economics, political science, and linguistics. Students will be expected to demonstrate an understanding of the methods social scientists use to explore social phenomena, and knowledge of the major concepts, models, and issues of the social science discipline(s) studied. May be repeated for credit as the topic changes.

AAS 391-G Humanities Topics in Asian and Asian American Studies revised description
Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Sikhism; Introduction to Indian Philosophy; Modern Indian Literature; and Appreciating Indian Music. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated for credit as the topic changes.

AAS 392-F Social Science Topics in Asian and Asian American Studies revised description
Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include titles such as Indian Grammatical Tradition, English in Asia, and Indian Economics. Designed for upper-division students, this course provides an in-depth study of a specific topic within social sciences disciplines such as history, economics, political science, and linguistics. Students will be expected to demonstrate an understanding of the methods social scientists use to explore social phenomena, and knowledge of the major concepts, models, and issues of the social science discipline(s) studied. May be repeated for credit as the topic changes.

AAS 394-J Topics in Asian Art revised description
Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as The Art of India and The Art of the Silk Road. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May be repeated for credit as the topic changes. This course is offered as both AAS 394 and ARH 394.

A CH Arts, Culture, and Humanities

ACH 101 Introduction to Stony Brook revised description
A seminar intended to integrate students into the Undergraduate Arts, Culture, and Humanities and into the University community by providing information about Stony Brook and a forum for discussion of values, intellectual and social development, and personal as well as institutional expectations. Required for all first year students. Not for credit in addition to LDS 101, GLS 101, HDV 101, ITS 101, SSO 101, SBU 101, LHD 101, and LSE 101. 1 credit, S/U grading

ACH 102 Undergraduate College Seminar: Arts, Culture, and Humanities revised description
A seminar for all students in the Undergraduate College of Arts, Culture, and Humanities. The seminar covers various topics under the general scope of the arts, culture, and humanities. Seminars vary by section and include examination of topics such as performance, philosophy, language arts, cultural studies, theatre arts, dance, music, art, filmmaking, and communications. Required for all first year students. Not for credit in addition to GLS 102, HDV 102, ITS 102, LDS 102, or SSO 102. Prerequisite: Admission to the ACH Undergraduate College. 1 credit, ABC/U grading

AFH Africana Studies in Humanities

AFH 390-391-G Topics in Africana Studies revised description
Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Black Women Writers; Autobiography and Biography as Black History; and The African Novel: Origins and Development. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated for credit as the topic changes.

AFS Africana Studies in Social and Behavioral Sciences

AFS 396-K Topics in African American History revised description
Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include titles such as Urban African-American history Since 1865; and Slavery, Abolition, and Emancipation 1600-Present. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to American history. Students are expected to demonstrate knowledge of: 1) a basic narrative of American history, political, economic, social, and cultural, including knowledge of unity and diversity within American society; 2) knowledge of common institutions in American society and how they have affected different groups; and 3) an understanding of America’s evolving relationship with the rest of the world. May be repeated for credit as the topic changes.

Spring 2008: New courses and changes since Fall 2007

http://www.stonybrook.edu/ug bulletin
AMS

Applied Mathematics and Statistics

AMS 373 Analysis of Algorithms

deleted

ANT

Cultural Anthropology and Archaeology

ANT 359 The Archaeology of Food

new course

Explores the archaeological study of food and foodways. The emphasis is on the social aspects of food, particularly its roles in past power structures, social relationships, conceptions of identity, ritual practices, and gender roles. Also covers the theoretical and methodological approaches archaeologists use to study food in the past.

Prerequisite: ANT 104

3 credits

ANT 396-I Topics in Anthropology and European Traditions

Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include titles such as The Mediterranean, and Society and Culture in Scandinavia. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to Western civilization. Students will be expected to demonstrate knowledge of the distinctive features of the history, institutions, economy, society, and culture of Western civilization, and relate it to that of other regions in the world. May be repeated for credit as the topic changes.

ARH

Art History

ARH 330-G Public Art and Urban Design in New York City

revised D.E.C.

ARH 390-I Topics in European Art

Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Mythology in Art; European Popular Art; and Italian Renaissance Sculpture. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to Western civilization. Students will be expected to demonstrate knowledge of the distinctive features of the history, institutions, economy, society, and culture of Western civilization, and relate it to that of other regions in the world. May be repeated for credit as the topic changes.

ARH 391-G Topics in Global Art

Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include titles such as The Art of India or The Experience of Contemporary Art. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated for credit as the topic changes.

ARH 392-I Topics in European Art

Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Mythology in Art; European Popular Art; and Italian Renaissance Sculpture. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to Western civilization. Students will be expected to demonstrate knowledge of the distinctive features of the history, institutions, economy, society, and culture of Western civilization, and relate it to that of other regions in the world. May be repeated for credit as the topic changes.

ARH 394-J Topics in Asian Art

Semester supplements to this Bulletin contain specific description when course is offered. Past topics have included titles such as The Art of India and The Art of the Silk Road. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May be repeated for credit as the topic changes. This course is offered as both AAS 394 and ARH 394.

ARH 395-J Topics in Non-Western Art

Semester supplements to this Bulletin contain specific description when course is offered. Past topics have included titles such as The Art of the Middle East and Balinese Art. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May be repeated for credit as the topic changes.

ARS

Studio Art

ARS 390-G Topics in Studio Art

Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Web Art and Design; Public Art; and 2-D and 3-D Animation. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated for credit as the topic changes. Not for major credit.

BIO

Biology

BIO 348 Diversity and Evolution of Reptiles and Amphibians

new course

The course will survey the diversity and natural history of the major groups of reptiles and amphibians, including snakes, lizards, turtles, crocodilians, frogs, and salamanders. Extinct groups (such as dinosaurs and pterosaurs) will also be covered. Furthermore, the course will showcase how studies of reptiles and amphibians have increased our general understanding of evolution and ecology, and will illustrate how diverse aspects of organismal biology (such as physiology, ecology, behavior, morphology) evolve and are interconnected.

Prerequisite: BIO 201

3 credits

BME

Biomedical Engineering

BME 212 Biomedical Engineering Research Fundamentals

revised title and prerequisites

Prerequisites: BME 100 and MEC 260

Pre- or Corequisite: BIO 202 or 203

BME 301 Bioelectricity

revised prerequisites

Prerequisites: ESE 271; ESG 111 (or CSE 130 or ESE 124 or MEC 111 or MEC 112); BIO 202 or 203; BME 212

BME 303 Biomechanics

revised prerequisites

Prerequisites: MEC 260; BIO 202 or 203; ESG 111 (or CSE 130 or ESE 124 or MEC 111 or MEC 112); BME 212

BME 404 Essentials of Tissue Engineering

addition of advisory prerequisites

Prerequisites: BIO 202 or 203; CHE 132

Advisory prerequisites: CHE 321 and 322

CHE

Chemistry

CHE 477 Undergraduate Teaching Practicum III

new course

Work with a faculty member as an assistant in one of the faculty member’s regularly scheduled classes. Students may participate only in courses in which they have excelled. May be repeated.

Prerequisites: CHE 476; permission of instructor and department

0 credits, S/U grading

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SUPPLEMENT: COURSES

Spring 2009: updates since Spring 2007 are in red

CSE

Computer Science

CSE 300 Writing in Computer Science
revised grading basis; now letter-graded
1 credit

CSE 373 Analysis of Algorithms
revised description
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. This course is offered as CSE 373 and MAT 373.

CSE 378 Introduction to Robotics
revised description, prerequisites
Introduces basic concepts in robotics including coordinate transformation, kinematics, dynamics, Laplace transforms, equations of motion, feedback and feed-forward control, and trajectory planning. Covers simple and complex sensors (such as cameras), hybrid and behavior based control and path planning. Concepts are illustrated through laboratories using the LEGO Robot Kit. Not for credit in addition to MEC 460.
Prerequisites: AMS 161 or MAT 127 or 132 or 142; AMS 210 or MAT 211 or MEC 262
Advisory prerequisite: CSE 130 or equivalent

CSE 380 Computer Game Programming
new course
An introduction to the fundamental concepts of computer game programming. Students design and develop original games for PCs applying proven game design and software engineering principles.
Prerequisite: CSE 214 or 230
3 credits

DAN

Dance

Many THR courses now use the new DAN designator.

DAN 102-D Introduction to World Dance Cultures
An introduction to the properties and elements of dance in order to understand and appreciate it in a variety of contexts. Dance is considered as art, recreation, social interaction, and entertainment through investigation of societal attitudes, cultural norms, and creative styles of individuals. Formerly offered as THR 102. Not for credit in addition to THR 102.
3 credits

DAN 164-D Tap Technique and History
The fundamentals, technique, and history of tap dance. Basic technique, time step, and combinations are covered. The historical component traces the development of tap from its roots in the music of jazz to present-day expressions. Various traditional styles, individual artists, and current trends are discussed. Formerly offered as THR 164. Not for credit in addition to THR 164.
3 credits

DAN 165-D Contemporary Dance I
The fundamentals, technique, and history of modern dance. Basic principles of alignment, centering, placement, and modern technique are introduced. The historical component includes various styles within the field of modern dance, individual artists who have contributed to the field, and the place of modern dance in society and culture at large. Formerly offered as THR 165. Not for credit in addition to THR 165.
3 credits

DAN 166-D Ballet Technique I
The fundamentals, technique, and history of ballet. The course covers the development of body alignment through stretching and strengthening exercises; simple barre exercises, center floor combinations, and movement phrases to music. The historical component includes the development of ballet from the 15th century to the present day. Various styles, companies, techniques, and individual artists are discussed. Formerly offered as THR 166. Not for credit in addition to THR 166.
3 credits

DAN 167-D Jazz Dance Technique I
The fundamentals, technique, and history of jazz dance. Basic principles of alignment, centering, placement, and jazz technique are covered. The historical component includes various styles within the field of jazz dance, individual artists who have contributed to the field, and the place of jazz dance in society and culture at large. Formerly offered as THR 167. Not for credit in addition to THR 167.
3 credits

DAN 168-D World Dance I
An introduction to dance traditions around the globe. Cultural values, religious beliefs, and social systems are investigated for their influence on the dance. Formerly offered as THR 168. Not for credit in addition to THR 168.
3 credits

DAN 264-D Movement Awareness and Analysis
A course covering the fundamentals of movement, linking theory and techniques from the disciplines of dance and theatre. Using anatomical principles to understand the effective use of the skeletal and muscular systems, students are guided, through an interplay of theory and practical work, toward efficient posture and movement habits and test the presence, action, and performance necessary for effective communication and the development of a physical language. Formerly offered as THR 264. Not for credit in addition to THR 264.
3 credits

DAN 353 Special Topics in Dance Performance
A concentration in one aspect of dance. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. Formerly offered as THR 353. Not for credit in addition to THR 353.
Prerequisites: THR 105; permission of instructor
3 credits

DAN 365 Contemporary Dance II
Further development of modern dance training, devoted to improvement of style, technique, and physical and mental focus. Formerly offered as THR 365. Not for credit in addition to THR 365.
Prerequisite: DAN 165 (or the former THR 165)
3 credits

DAN 366 Ballet Technique II
Further development of ballet training, devoted to improving style, technique, and physical and mental focus. Formerly offered as THR 366. Not for credit in addition to THR 366.
Prerequisite: DAN 166 (or the former THR 166)
3 credits

DAN 367 Jazz Dance Technique II
Further development of jazz dance training, devoted to improvement of style, technique, and physical and mental focus. Formerly offered as THR 367. Not for credit in addition to THR 367.
Prerequisite: DAN 167 (or the former THR 167)
3 credits

DAN 368 Dance Improvisation
The practice of dance and movement investigation through discipline, spontaneity, and awareness. Skills in improvisation will be developed through creative projects and experiments in dance. Formerly offered as THR 368. Not for credit in addition to THR 368.
Prerequisite: DAN 165, 166, or 167 (or the former THR 165, 166, or 167)
3 credits

DAN 369-J World Dance II
The fundamentals, technique, and history of a specific non-Western dance style. Lectures cover the origins of the dance form, the people who perform the dance, and the place of the dance in society and culture. Studio training includes the physicality of the dance. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes. Formerly offered as THR 369. Not for credit in addition to THR 369.
Prerequisites: Completion of D.E.C. categories A, B, and D
3 credits

DAN 400 Performance Dance Ensemble
Concentrated development of dance technique and performance skills through rehearsal and presentation of choreography. May be repeated once. Formerly offered as THR 400. Not for credit in addition to THR 400.
Prerequisites: Audition; permission of instructor
3 credits

DAN 465 Contemporary Dance III
Advanced study in modern dance techniques, combining dance training, compositional skills, and performance technique. Formerly offered as THR 465. Not for credit in addition to THR 465.
Prerequisite: DAN 365 (or the former THR 365)
3 credits

DAN 467 Jazz Dance Technique III
Advanced study of jazz techniques, combining dance training, compositional skills, and performance technique. Formerly offered as THR 467. Not for credit in addition to THR 467.
Prerequisite: DAN 367 (or the former THR 367)
3 credits

DAN 468 Choreography
Training in the craft of choreography, the creation of dance, using applied dance techniques, improvisational tools, perceptual skills, and investigations. Students create studies and original dance compositions and critique the various developmental stages to modify and expand their creations. The theory presented contains basic aesthetic concepts that contribute to the structure and form of dance. Formerly offered as THR 468. Not for credit in addition to THR 468.
Prerequisite: DAN 463 or 467 (or the former THR 465 or 467)
3 credits
DAN 475, 476 Undergraduate Teaching Practica I, II new course

Work with a faculty member as an assistant in one of the faculty member’s regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. In DAN 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. Not for major credit.

Prerequisites to DAN 475: Dance minor; U3 or U4 standing; permission of instructor and department.

Prerequisites to DAN 476: DAN 475; permission of instructor and department.

3 credits per course, S/U grading

DAN 487 Independent Research new course

Design and develop a research project selected by the student in consultation with a faculty member. May be repeated.

Prerequisite: Permission of department.

6-9 credits

DAN 488 Internship new course

Participation in a professional organization that creates and presents public performances, creates and presents, to the public, works in the media arts, or concerns itself with the management or funding of arts organizations. Students are required to submit written progress reports to their department sponsors and a final written report to the department faculty. Supplementary reading may be assigned. May be repeated up to a limit of 12 credits.

Prerequisites: Permission of instructor and department.

6-9 credits, S/U grading

EGL 320-G, 321-G, 322-G Modern and Contemporary Literature revised title, description, and prerequisites

The study of literature in English from the year 1900 to the present; material may be drawn from British literature, American literature, or any other area that produces literature written in English.

Pre- or Corequisite: EGL 204

Advisory Prerequisite: EGL 218, 224, or 226

EGL 369-G Topics in Ethnic American Studies in Literature revised description

Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Italian American and Native American Women Writers, and African American Humor. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated for credit as the topic changes.

EGL 390-G, 391-G, 392-G, 393-G Topics in Literary and Cultural Studies revised description

Semester supplements to this Bulletin contain specific descriptions when course is offered. Possible topics include Black Women’s Literature and Literature and the Arts. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated for credit as the topic changes.

EGL 395-I Topics in Literary and Cultural Studies of Europe revised description

Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Modern European Drama; War Poetry; and Ancient to Modern Fictional Narrative. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to Western civilization. Students will be expected to demonstrate knowledge of the development of the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May be repeated for credit as the topic changes.

EGL 396-J, 397-J, 398-J Topics in Literary and Cultural Studies in Asia, Africa, and Latin America revised description

Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include titles such as South African Women Writers; Contemporary Latin American Fiction; and Haitian in Japanese society. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May be repeated for credit as the topic changes.

ESE 224 Computer Techniques for Electronic Design II new course

Introduces C++ programming language for problem solving in electrical and computer engineering. Topics include C++ structures, classes, abstract data types, and code reuse. Basic object-oriented programming concepts as well as fundamental topics of discrete mathematics and algorithms are introduced.

Prerequisite: ESE 124

3 credits

ESE 300 Technical Communication for Electrical and Computer Engineers revised title, description, prerequisites, credits, grading basis

Topics include how technical writing differs from other forms of writing, the components of technical writing, technical style, report writing, technical definitions, proposal writing, writing by group or team, instructions and manuals, transmission letters, memoranda, abstracts and summaries, proper methods of documentation, presentations and briefings, and analysis of published engineering writing. Also covered is the writing of resumes and cover letters.

Prerequisite: WRT 102

Pre- or Corequisite: ESE 314 or 324 or 380 or 382

5 credits

GEO Geosciences

GEO 111 Environmental Geology Laboratory deleted

GER German Language and Literature

GER 313 German Vocabulary in Conceptual Groups revised description

The study of German vocabulary in so-called “conceptual groups” that reflect the world of nature (flowers, etc.) and culture (musical instruments, etc.). The objective is primarily to increase our stock of words and practice using them in context, but also to enrich our knowledge of selected words by examining significant moments or developments in their histories.

GER 475 Undergraduate Teaching Practicum in German I new course

Each student conducts a regular problem or tutorial section that supplements a regular language course under the guidance of a master teacher. Responsibilities may include preparing material for discussion and helping students with problems. Not for major or minor credit.

Prerequisites: Fluency in German; permission of instructor and department.

3 credits, S/U grading
Supplement: Courses

Ger 476 Undergraduate Teaching Practicum in German II

New course

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not assist in the same course twice. Prerequisites: Fluency in German; permission of instructor and department. 3 credits, S/U grading.

Global Studies

Global Studies 101 Introduction to Stony Brook

Revised description

A seminar intended to integrate students into the Undergraduate College of Global Studies and into the University community by providing information about Stony Brook and a forum for discussion of values, intellectual and social development, and personal as well as institutional expectations. Required for all first-year students. Not for credit in addition to ACH 101, LDS 101, HDV 101, IITS 101, SSO 101, SBU 101, LHD 101, and LSE 101. 1 credit, S/U grading.

Global Studies 102 Undergraduate College Seminar: Global Studies

Revised description

A seminar for all first-year students in the Undergraduate College of Global Studies. Seminar topics vary annually by section and cover a variety of subjects under the general scope of Global Studies. Required for all first-year students. Not for credit in addition to ACH 102, HDV 102, IITS 102, LHD 102, or SSO 102. Prerequisite: Admission to the Global Studies Undergraduate College. 1 credit, ABC/U grading.

Human Development

Human Development 101 Introduction to Stony Brook

Revised description

A seminar intended to integrate students into the Undergraduate College of Human Development and into the University community by providing information about Stony Brook and a forum for discussion of values, intellectual and social development, and personal as well as institutional expectations. Required for all first-year students. Not for credit in addition to ACH 101, LDS 101, HDV 101, IITS 101, SSO 101, SBU 101, LHD 101, and LSE 101. 1 credit, S/U grading.

Human Development 102 Undergraduate College Seminar: Human Development

Revised description

A seminar for all first-year students in the Undergraduate College of Human Development. Seminar topics vary annually by section and cover a variety of subjects under the general scope of Human Development. Required for all first-year students. Not for credit in addition to ACH 102, HDV 102, IITS 102, LHD 102, or SSO 102. Prerequisite: Admission to the Human Development Undergraduate College. 1 credit, ABC/U grading.

History

History 330-J Topics in Middle Eastern History

Revised description

Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include titles such as Ancient Near Eastern Culture; Ancient Mesopotamia; and The Politics of the Israeli/Arab Conflict. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May be repeated for credit as the topic changes.

History 340-J Topics in Asian History

Revised description

Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Late Imperial China; The Chinese Diaspora; and Overseas Chinese and Chinatowns. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May be repeated for credit as the topic changes. This course is offered as both AAS 340 and HIS 340.

History 352-H Environmental History of China

Deleted (no longer crosslisted with AAS 352)

History 363-F Topics in American History

Revised description

Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include titles such as American Cars and Highways, Radio and Television, and Disney's America. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to American history. Topics may include titles such as Race, Religion, and Gender; Disease in Modern America; and Early American Commerce and Culture. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes.

Information Systems

Information Systems 300 Writing in Information Systems

Revised grading basis; now letter-graded

1 credit, ABC/U grading

Information and Technology Studies

Information and Technology Studies 101 Introduction to Stony Brook

Revised description

A seminar intended to integrate students into the Undergraduate College of Information and Technology Studies and into the University community by providing information about Stony Brook and a forum for discussion of values, intellectual and social development, and personal as well as institutional expectations. Required for all first-year students. Not for credit in addition to ACH 101, LDS 101, GLS 101, HDV 101, SSO 101, SBU 101, LHD 101, and LSE 101. 1 credit, S/U grading.

Information and Technology Studies 102 Topics in Information and Technology Studies

Revised description

A seminar for students in the College of Information and Technology Studies. Various topics within the scope of information, technology, and engineering studies. Required for all first-year students. Not for credit in addition to ACH 102, GLS 102, HDV 102, LDS 102, or SSO 102. Prerequisite: Admission to the Information and Technology Studies Undergraduate College. 1 credit, ABC/U grading.

Journalism

Journalism 280 History and Future of the American Press

Experimental course; for Spring 2006 only

This course traces the history of the American press from pre-American Revolution to post-internet revolution, and previews the next decade. The course will examine the political, economic, and technological forces that have shaped the news media and how the media, in turn, has shaped American government and society. Topics will include press freedom, the rise of the popular press, war and the press, investigative journalism, and the impact of 24/7 broadcast and online journalism. Considered against this history will be an examination of the ongoing debate over the essential mission of American journalism: to reflect reality or help change it. 3 credits

Journalism 285 Colloquium on the News

Experimental course; for Spring 2006 only

This course is designed to introduce students to the journalistic process and expose them to some of the leading journalists and newsmakers in the area. Students will be expected to do research on timely issues in the news and prepare questions for periodic visits to the class who will conduct a press confer-
ence. Students will be expected to learn basic research and interviewing skills, as well as develop an appreciation for current issues in the news. 1 credits

LAC
Latin American and Caribbean Studies

LAC 380 Topics in Latin American Studies revised description
Semester supplements to this Bulletin contain specific description when course is offered. Topics may include titles such as Literature of the Dominican Republic; and Latinas: History, Society, and Culture. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May be repeated for credit as the topic changes.

LDS
Leadership and Service

LDS 101 Introduction to Stony Brook revised description
A seminar intended to integrate students into the Undergraduate College of Leadership and Service and into the University community by providing information about the LDS UG Undergraduate College of Leadership and Service, and discussing LDS UG values, intellectual and social development, and personal as well as institutional expectations. Required for all first year students. Not for credit in addition to ACH 101, GLS 101, ITS 101, SSO 101, SBU 101, LHD 101, and LSE 101. 1 credit, S/U grading

LDS 102 Undergraduate College Seminar: Leadership and Service revised description
A seminar for all first-year students in the Undergraduate College of Leadership and Service. Seminar topics vary annually by section and cover a variety of subjects under the general scope of Leadership and Service. Required for all first-year students. Not for credit in addition to ACH 102, GLS 102, HDV 102, ITS 102, or SSO 102. Prerequisite: Admission to the LDS Undergraduate College. 1 credit, ABC/U grading

LIN
Linguistics

LIN 356-1 Topics in Language and Life in Europe revised description
Focus will be on the language of a particular country or region in Europe and the relationship between language and the society, culture, history, and politics of the country or region. Semester supplements to this Bulletin contain specific descriptions when course is offered. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to Western civilization. Students will be expected to demonstrate knowledge of the development of the distinctive features of the history, institutions, economy, society, and culture of Western civilization, and relate it to that of other regions in the world. May be repeated for credit as the language examined changes.

MAR
Marine Sciences

MAR 291 Topics in Marine Sciences new course, offered Fall 2005 only
Directed readings in marine sciences to examine the transition of students from the Southampton College Marine Sciences program to Stony Brook. Topic for this semester will be Utilization of Limited Resources, including over-fishing, nutrient limitation/addition, foraging strategies, and related topics. Prerequisite: Permission of instructor 1-2 credits, S/U grading

MAR 303 Long Island Marine Habitats revised credits
3 credits

MAR 350 Introduction to Ocean Physics revised description
An introduction to hydrodynamics, contemporary ideas on ocean circulation, and the application of acoustics and optics to ocean technologies. Not for credit in addition to MAR 353.

MAR 352 Introduction to Physical Oceanography new course
An introduction to the physical properties, motion of, and forces that drive the movement of fluids (air and water) on the earth. Physical oceanographic processes that range in scale from several mm to 1000s of km will be studied. This course will introduce the student to the physics of the marine environment and the tools (physical, mathematical, scientific) to study these waters. Environments ranging from pelagic to estuarine will be examined. Not for credit in addition to MAR 350.

Prerequisite: MAR 126, 128, or 142; PHYS 119, 121, 125, 131 or 141 2 credits

MAR 353 Physical Oceanography Laboratory new course
An introduction to the measurements, equipment, and data processing techniques used to study the motion of fluids (air and water) on the earth. Students will learn to use scientific instruments, design sampling strategies, and utilize previously collected data sets to study both local and global processes. At-sea collection and analysis of data will be emphasized. Pre or co-requisite: MAR 350 or 352 1 credit

MAR 375 Marine Mammal and Sea Turtle Rehabilitation new course
An intensive hands-on course designed to introduce students to the topics of marine mammal and sea turtle biology as they relate to rehabilitation and research. Students will be exposed to marine mammal and sea turtle ecology, conservation issues, management, and research in the context of wildlife rehabilitation. Through active participation in the rehabilitation activities at the New York State Department of Environmental Conservation, students will gain first-hand experience in the field of marine mammal and sea turtle rehabilitation. Prerequisite: BIO 201 or permission of instructor 4 credits

MAR 388 Tropical Marine Ecology new course
This travel course surveys organisms (invertebrates, fishes and algae) and habitats (coral reefs, sea grass meadows and mangrove forests) within tropical marine coral reef ecosystems. The course consists of formal lectures, demonstrations and instructor-led field trips and involves snorkeling, SCUBA diving, reef-walking and underwater photography. Students will develop individual research projects requiring field observations and collecting data and will write a research proposal and final research papers. Prerequisites: BIO 201 and permission of instructor 4 credits

MAT
Mathematics

MAT 373 Analysis of Algorithms revised description
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. This course is offered as AMS 373, CSE 573 and MAT 373.

MEC
Mechanical Engineering

MEC 460 Introduction to Robotics: Theory and Applications new course
Robot components and mechatronic aspects of robotics (sensors, actuators, end effectors, system integration). Rotation, translation, rigid-body transform. Robotics foundations in kinematics and inverse kinematics, dynamics, serial and parallel manipulators and their duality. Introduction to mobile robots and LEGO Robotics, control theories, motion planning, trajectory generation, grasping and manipulation, robotic programming language, industrial robotics, manufacturing automation, and societal impacts. Hands-on projects. Not for credit in addition to CSE 578. Prerequisites: MEC 262; U4 standing 3 credits

PHI
Philosophy

PHI 391-G Topics in Philosophy revised description
Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included Introduction to Indian Philosophy, and Bergson. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated for credit as the topic changes.

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### Political Science

**POL 338-J Contemporary India: History, Politics, and Diplomacy (Post-1947)**

**new course**

Study of the forces shaping India’s post-independence history, domestic politics, and foreign diplomacy. As the world’s largest democracy, second most populous nation, and Asia’s second fastest growing economy, its impact on the international scene in the coming years will be carefully analyzed. The course, taught by a former Ambassador, will also focus on emerging trends in Indo-U.S. relations and impact of the Indian diaspora. This course is offered as both AAS 338 and POL 338.

**Prerequisites:** AAS 201 or POL 101; U3 or U4 standing

3 credits

**POL 339-J Contemporary China: History, Politics, and Diplomacy (Post-1949)**

**new course**

This course will analyze the evolution of major events in contemporary China following the communist revolution that led to the establishment of the People’s Republic in 1949. The course, taught by a former Ambassador, will examine major political, economic, and social developments in light of both their general global impact and their particular relationship with the U.S. This course is offered as both AAS 339 and POL 339.

**Prerequisites:** AAS 219 or POL 101; U3 or U4 standing

3 credits

**POL 392-I Topics in Political Science and the European Tradition**

**revised description**

Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include, for example, politics during the time of the French Revolution, or contemporary Italian politics. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to Western civilization. Students will be expected to demonstrate knowledge of the development of the distinctive features of the history, institutions, economy, society, and culture of Western civilization, and relate it to that of other regions in the world. May be repeated for credit as the topic changes.

3 credits

### Religious Studies

**RLS 390-G, 391-G Special Topics**

**revised description**

Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included Philosophical Mysticism; Religion and Science; and Islam and Comtianism. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated for credit as the topic changes.

### Russian

**RUS 475 Undergraduate Teaching Practicum in Russian I**

**new course**

Each student conducts a regular problem or tutorial section that supplements a regular language course under the guidance of a master teacher. Responsibilities may include preparing material for discussion and helping students with problems. Not for major or minor credit.

**Prerequisites:** Fluency in Russian; permission of instructor and department

3 credits, S/U grading

**RUS 476 Undergraduate Teaching Practicum in Russian II**

**new course**

Work with a faculty member as an assistant in one of the faculty member’s regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not assist in the same course twice.

**Prerequisites:** Fluency in Russian; permission of instructor and department

3 credits, S/U grading

### Sociology

**SOC 390-F, 391-F, 392-F, 393-F, 394-F Special Topics**

**revised description**

Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Global Trade, Arms, and Human Rights; The Sociology of Aging; and Gender in Africa. Designed for upper-division students, this course provides an in-depth study of a specific topic within social sciences disciplines such as history, economics, political science, and linguistics. Students will be expected to demonstrate an understanding of the methods social scientists use to explore social phenomena, and knowledge of the major concepts, models, and issues of the social science discipline(s) studied. May be repeated for credit as the topic changes.

### Social Studies Secondary Education

**SOC 327 Human Growth and Development in the Educational Context**

**Effective Spring 2006, SOC 327 will be offered as PST 327**

### Science and Society

**SSO 101 Introduction to Stony Brook**

**revised description**

A seminar intended to integrate students into the Undergraduate College of Science and Society and into the University community by providing information about Stony Brook and a forum for discussion of advantages, intellectual and social development, and personal as well as institutional expectations. Required for all first-year students. Not for credit in addition to ACH 101, LDS 101, GLS 101, HDV 101, ITS 101, SBU 101, HHD 101, and LSE 101.

1 credit, S/U grading

**SSO 102 Undergraduate College Seminar: Science and Society**

**revised description**

A seminar for all first-year students in the Science and Society Undergraduate College. The seminar covers various topics under the general scope of science and related topics such as medicine, disease, and human impacts on the environment. Topics vary by section and may include: the traditional scientific disciplines (e.g., chemistry and physics), multidisciplinary scientific subjects (e.g., environmental science, global change, environmental conservation, and human biology, ecology, evolution, and medicine). Required for all first-year students. Not for credit in addition to ACH 102, GLS 102, HDV 102, ITS 102, or LDS 102.

1 credit, ABC/U grading

### Stony Brook University

**SBU 101 Introduction to Stony Brook**

**revised description**

A seminar intended to integrate transfer students into the University community by providing information about Stony Brook and a forum for discussion of values, intellectual and social development, and personal as well as institutional expectations. Required for all first-year students. Not for credit in addition to ACH 101, LDS 101, GLS 101, HDV 101, ITS 101, SBU 101, HHD 101, and LSE 101.

1 credit, S/U grading

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