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.
SUPPLEMENT: COURSES

Spring 2008: updates since Spring 2007 are in red

AAS
Asian and American American Studies

AAS 221-H China: Science and Civilization
An introduction to ancient Chinese science and technology, including engineering, medicine, mathematics, architecture and military technology. The global, social and historical impact of these inventions on Western civilization and the subsequent decline of the Chinese scientific paradigm will be examined.
Prerequisite: One DEC E course and U2 status or higher
3 credits

AAS 318-J Arts of China
A survey of Chinese art from the Neolithic period to modern-day China. Visual media such as bronze, jade, sculpture, ink painting and pottery as well as their cultural influence on philosophy, literature, religion and politics will be explored. The course will also examine the influence of India and Central Asian on Chinese art and, in turn, China’s influence on Korean and Japanese art.
Prerequisites: One DEC D course and U3 or U4 standing
3 credits

AAS 350 Structure of Mandarin Chinese
Mandarin Chinese is only one of a very few contemporary languages whose history is documented in an unbroken tradition extending back to the second millennium BC. At the same time, it has more speakers than any other language spoken in the modern world. This course, which is taught in English, provides an introduction to the phonology, morphology, syntax, semantics, and writing system of the Mandarin Chinese language. It is designed to familiarize students with some fundamental knowledge of the structure of spoken and written Mandarin Chinese. Specifically, it aims to enable the students to acquire an understanding of basic methods used by linguists to observe and gather Mandarin Chinese data, to delineate structural properties with regard to the sound, tone, word, grammar, and discourse of the language, and to develop a basic typological comparison between Mandarin Chinese and English.
Prerequisite: AAS 220 or previous course in Linguistics
3 credits

AAS 352-H Environmental History of China
The history of interaction between human activities and the natural environment in China, with special attention to ecological consequences of various paradigms of economic development throughout Chinese history. Focus is on the political ecology of state-level societies, and the relationships between cultural ideas, behavioral practices, human health, and environmental change. This course is offered as both AAS 352 and HIS 352.
Prerequisites: U3 or U4 standing; completion of D.E.C. category E
3 credits

AAS 379-J Ethnicity and Nation in China
This course explores issues of ethnic and national identity in China, both past and present, focusing on the material and social contexts 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 constructions of identity, as well as civilizing projects and resistance movements, have been influenced by ecology and culture, social organization and economic livelihood, ritual exchange, religion, and political authority. 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

AAS 386-J Topics in Asian Philosophy
Designed for upper-division students, this course presents in-depth study of a specific topic in an Asian philosophical tradition. Students are expected to demonstrate knowledge through mastery of native terms and concepts from that tradition. Semester supplements to this bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. This course is offered as both AAS 386 and PHI 386.
Prerequisite: One previous course in AAS or PHI
Advisory Prerequisite: Junior or Senior Standing
3 credits

AAS 404 Senior Seminar in China Studies
An intensive in-depth study of key texts and issues relating to China Studies. Emphasizes critical scrutiny of primary source materials and close reading of interpretative commentaries, as well as constructive debate and analytical writing at an advanced level. Focal topic varies with offering, ranging from the literary to the political, from the classical to contemporary social concerns.
Prerequisites: U4 status; completion of upper-division writing requirement for AAS majors; permission for non-AAS majors
3 credits

ANT
Anthropology, Cultural and Archaeology

ANT 379-J Ethnicity and Nation in China
This course explores issues of ethnic and national identity in China, both past and present, focusing on the material and social contexts 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 constructions of identity, as well as civilizing projects and resistance movements, have been influenced by ecology and culture, social organization and economic livelihood, ritual exchange, religion, and political authority. 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

ARS
Art, Studio

ARS 299 Studio Management Workshop
Development of practical skills needed to manage and maintain a studio lab or shop in the art department. Students work under the supervision of a faculty member in an area of interest, such as photography, printmaking, electronic media, or sculpture. May be repeated twice.
Prerequisite: Permission of instructor
1 credit, SU grading

BME
Biomedical Engineering

BME 100 Introduction to Biomedical Engineering
A rigorous introduction to biomedical engineering that provides the historical and social context of BME though contemporary emerging areas within BME. Specific areas covered in depth include: bioelectricity and biosensors (action potentials to signal processing), bioimaging (invasive and non-invasive), genetic engineering (ethical discussions), and biostatistics. Hands-on computational modeling introduces the physiological concept of positive and negative feedback loops in the body. Emphasis is placed on ways engineers view the living system by using design based approaches and computation.
Prerequisites: BME Major, BNG Minor or Departmental Consent
3 credits

AFS
Africana Studies/Social and Behavioral Sciences

AFS 393-K The Caribbean Immigrants in the United States: Dreams and Realities
This course analyzes the forces that shape Caribbean migration to the United States and the pressures that are exerted upon the immigrants to fit into the United States’ social structure. It also explores the immigrants’ responses to these pressures as they choose among the following possibilities: total assimilation into the ranks of the existing ethnic and racial minority groups, multicultural identity, and transnational identity.
Prerequisite: U3 or U4 standing
3 credits
BME 212 Biomedical Engineering Research Fundamentals
Introduction to data collection and analysis in the context of biophysical measurements commonly used by biomedical engineers. 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 MEC 260
Pre or Corequisite: BIO 202 or 203
3 credits

BME 213 Studies in Nanotechnology
The emerging field of nanotechnology develops solutions to engineering problems by taking advantage of the unique physical and chemical properties of nanoscale materials. This interdisciplinary, co-taught course introduces materials and nano-fabrication methods with applications to electronics, biomedical, mechanical and environmental engineering. Guest speakers and a semester project involve ethics, toxicology, economic and business implications of nanotechnology. Basic concepts in research and design methodology and characterization techniques will be demonstrated. Course is cross-listed as BME 213, MEC 213, and EST 213 and is required for the Minor in Nanotechnology Studies (NTS).
Prerequisites: PHY 131 or PHY 125; CHE 131 or ESG 198
3 credits

BME 301 Bioelectricity
Theoretical concepts and experimental approaches used to characterize electric phenomena that arise in live cells and tissues. Topics include excitable membranes and action potential generation, cable theory, equivalent dipoles and volume conductor fields, bioelectric measurements, electrodes and electric stimulation of cells and tissues.
Prerequisites: BME 212; ESE 271; ESG 111 (or ESE 124); BIO 202 or 203
3 credits

BME 303 Biomechanics
Illuminates the principles of mechanics and dynamics that apply to living organisms, from cells to humans to Sequoia trees. The behavior of organisms is examined to observe how they are constrained by the physical properties of biological materials. Locomotion strategies (or the lack thereof) are investigated for the forces and powers of motions required and energy expenditures. Includes the relationship between form and function to illustrate how form dominates behavior. Presents the physiological effects of mechanical stresses on organisms, pathologies that develop from abnormal stress, and how biological growth and adaptation arise as a natural response to the mechanics of living.
Prerequisite: MEC 260; BME 212
Pre or Corequisite: BIO 202 or 203
3 credits

BME 305 Biofluids
The fundamentals of heat transfer, mass transfer, and fluid mechanics in the context of physiological systems. Techniques for formulating and solving biofluid and mass transfer problems with emphasis on the special features and the different scales encountered in physiological systems, from the organism to the tissue level down to the molecular transport level.
Prerequisites: AMS 261 (or MAT 203 or MAT 205); AMS 361 (or MAT 303 or MAT 305); BME 212; MEC 260 or MEC 262
Pre or Corequisite: BIO 202 or 203
3 credits

BME 381 Nanofabrication in Biomedical Applications
Theory and applications of nanofabrication. Reviews aspects of nanomachines in nature with special attention to the role of self-lubrication, intracellular or interstitial viscosity, and protein-guided adhesion. Discusses current nanofabricated machines to perform the same tasks and considers the problems of fabrication, compliance, and adhesion. Selvesynthesizes and nanosystems of nanofabrication with emphasis on cutting-edge discovery to overcome current challenges associated with nanofabricated machines.
Prerequisites: CHE 132; BME 100
Pre or Corequisite: BIO 202 or 203
3 credits

BME 499 Research in Biomedical Engineering
An independent research project with faculty supervision.
Prerequisites: B average in all science courses, permission of instructor and department
0-3 credits

BUS 214 Managerial Accounting
Introduces and explores fundamental income taxation concepts for individuals. Basic concepts in federal income taxation are explored, including gross income, exclusions, adjusted gross income, deductions, exemptions, and credits. Introductory tax concepts including cash and accrual methods, like-kind exchanges, and passive loss rules are covered. Additionally, students will familiarize themselves with the preparation of various individual income tax forms and schedules.
Prerequisites: BUS 110 or 115; BUS 210; BUS major or IS major
3 credits

BUS 311 Federal Income Taxation I
Introduces and explores fundamental income taxation concepts for individuals. Basic concepts in federal income taxation are explored, including gross income, exclusions, adjusted gross income, deductions, exemptions, and credits. Introductory tax concepts including cash and accrual methods, like-kind exchanges, and passive loss rules are covered. Additionally, students will familiarize themselves with the preparation of various individual income tax forms and schedules.
Prerequisites: BUS 110 or 115; BUS 310; BUS major
3 credits

BUS 314 Federal Income Taxation II
Introduces and explores fundamental income taxation concepts for corporations, S corporations, and partnerships. Further introduces the student to gift and estate taxes, trusts and estates, and the administration of the Internal Revenue Service. Introductory tax concepts are explored, including corporate organizational structures, corporate organization, dividend issues, liquidation issues, reorganization, partnership organizations, taxation of partnerships, and fiduciary income taxation for estates and gifts. Additionally, students will familiarize themselves with the preparation of various corporate, partnership and fiduciary income tax forms and schedules.
Prerequisites: BUS Major; BUS 110 or BUS 115; BUS 511
3 credits

BUS 347 Business Ethics
An introduction to traditional ethical theories and their application to business. A basis for understanding how ethical issues in business arise, and some strategies to control or resolve them, are derived from an examination of the work of philosophers and other writers relating to business ethics. The course enables students to develop their own perspectives.
Prerequisites: BUS 115 or BUS 110 or BUS 111; U3 or U4 standing; BUS Major or Minor or ECO or IS or MTD major
3 credits

BUS 351 Human Resource Management
Major trends in personnel management, including problems and issues faced by organizations and individuals in times of change. Responsibilities of the human resources department and the roles that every manager plays, both as a supervisor and as a client of the human resources department, are studied. Topics include human resources forecasting and planning job design, employee selection, test development and validation, equal employment opportunity laws and judicial rulings, performance appraisal, compensation, benefits, career development, safety, and labor relations.
Prerequisites: BUS 110 or 111 or U3 or U4 standing; BUS major or minor or MTD or CME major
3 credits

BUS 357 Principles of Sales
Pre or Corequisite: BIO 202 or 203
3 credits

BUS 366 Money and Financial Institutions
Prerequisites: BUS 110 or 115; BUS 330 or ECO 389; BUS Major or Minor; ECO or IS or MTH major
3 credits

BUS 376 Operations Management
Prerequisites: BUS Major or Minor; ECO or ISE or MTH major
3 credits

CME 301 Engineering Thermodynamics I
First and second laws of thermodynamics, PVT behavior of pure substances, equations of state for gases and liquids, phase equilibrium, 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; CSE 130 or ESG 111 or CHE 132 or ESE 124
3 credits

CME 304 Chemical Engineering Thermodynamics II
Prerequisite: CME major; CME 304; B- or better in CME 304
Pre or Corequisite: CME 300
2 credits

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CME 312 Material and Energy Balance
Introduces analysis of chemical processes using the laws of conservation and energy as they apply to non- reacting and reacting systems. Integration of the con- cepts of equilibrium in physicochemical systems, and utilization of basic principles of thermodynamics. Numerical methods used in the design an optimization of chemical engineering processes. Solution of complex chemical engineering problems.
Prerequisites: CME major; CME 310
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 equilibrium to chemical reactions; Gibbs-Duhem and chemical potential for reacting systems; liquid/liquid, liquid/solid, solid/vapor, and liquid/vapor equilibria; adsorp- tion 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 com- puter-based programs: (1) Executing numerical cal- culus and solving numerical equations using a mathe- matical program (Mathematica); (2) Process using a simulation for typical chemical engineering processes (unit operation, distillation, etc.) using a simulation program (Lab-view).
Prerequisite: CME major Pre- or Corequisite: AMS 361
3 credits
CME 318 Chemical Engineering Fluid Mechanics
Introduces fluid mechanics. Dynamics of fluids in motion; laminar and turbulent flow, Bernoulli’s equa- tion, friction in conduits; flow through fixed and flu- idized beds. Study of pump and compressor perfor- mance and fluid metering devices. Includes introduc- tion to microfluids.
Prerequisite: CME major; AMS 261 (or MAT 203 or 205); PHY 131 (or 125 or 141)
3 credits
CME 320 Chemical Engineering Lab II: Chemical and Molecular Engineering
Prerequisite: CME major; CME 310
2 credits
CME 322 Chemical Engineering Heat and Mass Transfer
Heat transfer by conduction, principles of heat flow in fluids with and without phase change, heat transfer by radiation, heat-exchange equipment. Principles and theory of diffusion, mass transfer between phases, dis- tillation, leaching and extraction, fixed-bed membrane separation, crystallization.
Prerequisite: CME major; CME 318, CME 304, B- or better in CME 304
3 credits
CME 327 Molecular Modeling for Chemical Engineers
Molecular modeling techniques and simulation of com- plex 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 MEC 112; AMS 261 or MAT 203; AMS 361 or MAT 303, CME 304, B- or better in CME 304
3 credits
CME 370 Cell Biology for Chemical Engineers
The course is intended to describe and introduce cel- lular and biological concepts and principles for chemi- cal engineers. The course will provide details on the cellular processes, structures and regulations of the cellular homeostasis as response to internal and exter- nal changes and stimuli.
Prerequisite: CME major
3 credits
CME 371 Biomedical Polymers
This course focuses on the clinical performance of polymers and discusses the chemical, physical, mechanical and biological questions raised by the unique use of these materials within the human body. The chemistry and properties of key biomedical poly- mers will be studied and their biomedical applications will be discussed. The biomaterial’s response to the various components of its biological environment will be addressed, followed by the response of the host to the presence of the implanted polymer. Special atten- tion will be given to the interaction of the system with two fundamental phenomena: the Foreign Body Response and the Coagulation Cascade. Applications of bio-polymers to tissue engineering and the rele- vance of nanoscale phenomena are discussed.
Prerequisite: CME major
Pre- or Corequisite: CHE 321 or permission by the instructor.
3 credits
CME 375 Fundamentals of Professional Chemical and Molecular Engineering
Preparatory class that provides an overview of profes- sional licensure testing procedures for the Fundamentals of Engineering exam. This class reviews subject areas on the general section of the test as well as the profession-specific section covering chemical engineering. Course is designed to be com- pleted in time for registration for the April FE. Exam date.
Prerequisite: CME major
1 credit
CME 410 Chemical Engineering Laboratory III: Instrumentation, Material Design and Characterization
Students research a topic and together with the course instructor and undergraduate program direc- tor, select an advisor and thesis committee. The stu- dent, with the advisor, drafts a course of preliminary experiments and the student presents a written thesis proposal, with an oral defense, to his/her committee.
Prerequisite: CME 320
2 credits
CME 475 Undergraduate Teaching Practicum
May be used as an open elective and repeated once. Students must have U4 standing as an undergraduate major within the college, a minimum GPA of 3.00 in all courses and a grade of “B” or better in the course in which the student is to assist; permission of the department is required. May be repeated only once.
Prerequisites: U4, standing in major, grade of “B” or better in course in which assisting; 3.0 gpa
3 credits
CSE 113-C Foundations of Computer Science I
deleted
CSE 213 Foundations of Computer Science II
deleted
CSE 215 Foundations of Computer Science
Introduction to the logical and mathematical founda- tions of computer science. Topics include functions, relations, and sets; recursion and functional program- ming; elementary logic; and mathematical induction and other proof techniques.
Prerequisite: AMS 151 or MAT 125 or MAT 131
3 credits
CSE 301-H History of Computing
A study of the history of computational devices from the early ages through the end of the 20th century. Topics include needs for computation in ancient times, development of computational models and devices through the 1800’s and early 1900’s, World War II and the development of the first modern computer, and early uses in business. Creation of programming lan- guages and the microchip. Societal changes in com- puter usage due to the microcomputer, emergence of the Internet, the World Wide Web, and mobile com- puting. Legal and social impacts of modern comput- ing. Cannot be used as a technical elective for the CSE major or minor.
Prerequisite: U2 standing or higher
Advisory Prerequisite: one course in computing
3 credits
CSE 303 Introduction to the Theory of Computation
Prerequisites: CSE 214 and (CSE 213 or CSE 215)
CSE 308 Software Engineering
Prerequisite: CSE 219 or ISM 305
CSE 310 Data Communication and Networks
Prerequisites: CSE 214 and 220
Advisory Prerequisite: AMS 310
CSE 323 Human-Computer Interaction
A survey course designed to introduce students to Human-Computer Interaction and prepare them for further study in the specialized topics of their choice. Students will have the opportunity to delve deeper in the course through a course project, and through a two-three week special topic selected at the instruc- tor’s discretion.
Prerequisites: CSE 214 or 230
3 credits
CSE 371 Logic
A survey of the logical foundations of mathematics: development of propositional calculus and quantification theories, the notions of a proof and of a model, the com- pleteness theorem, Gödel’s incompleteness theorem. This course is offered as both CSE 371 and MAT 371.
Prerequisites: CSE 150 or CSE 215 or MAT 200
3 credits
CSE 381 Advanced Game Programming
This course explores the concepts and technologies behind making 3D, networked games. This will include the examination of game engine creation as well as the use of middleware to build graphically sophisticated game systems.
Prerequisite: CSE 214 or CSE 230
3 credits
EEO 315 Electronics Circuits I
Introduction to electronics, concentrating on the fundamental devices (diode, transistor, operational amplifier, logic gate) and their basic applications; modeling techniques; elementary circuit design based on devices.
**Prerequisite:** Circuits and Digital Logic
3 credits

EEO 323 Electromagnetics
Fundamentals of electromagnetic fields, Maxwell's Equations, plane waves, reflections. Application to transmission lines, propagation, electromagnetic sensors and transducers. *Prerequisites:* Courses in circuits, signals, and vector calculus.
**Prerequisite:** Calculus III, Physics I and II
Circuits
3 credits

EEO 340 Nanotechnology, Engineering and Science
The course is targeted at undergraduate students on their early stage of education. Through the examples, exercises, and educational Java applets the course will cover electromagnetic waves and quantum mechanics including the quantum-mechanical origin of the electrical and optical properties of materials and nanostructures, biomolecules, traditional and nontraditional methods of nanolithography, interactions between electronic and optical properties, as well as the forefront topics such as organic heterostructures, nanotubes, and quantum computing.
**Prerequisite:** Physics I, II
Calculus III
3 credits

EEO 352 Electronics Laboratory I
Electronics Laboratory I provides students with a hardware-based learning environment for hands-on experimentation with computer-based instrumentation and the construction, diagnosis, characterization of a variety of analog and digital electronic circuits. Devices used include resistors, capacitors, diodes, SCR, MOSFET, BJT, opamp, and digital ICs. Students also practice how to communicate effectively through writing reports.
**Prerequisite:** Circuits
3 credits

EEO 353 Electronics Laboratory II
Electronics Laboratory II provides students with an advanced hardware-based learning environment for hands-on experimentation with computer-based instrumentation and the construction, diagnosis, characterization of a variety of analog and digital electronic circuits. Devices used include resistors, capacitors, diodes, SCR, MOSFET, BJT, opamp, and digital ICs. Students also practice how to communicate effectively through writing reports.
**Prerequisite:** Circuits, Electronics Lab I
3 credits

EEO 363 Fiber Optic Communications
Design of single and multi-wavelength fiber optic communications systems. Topics include analysis of optical fibers, optical transmitter 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
3 credits

EEO 401 RF Microwave Circuits
This course introduces the concepts of impedance matching in radio frequency (RF) circuits, Separators and S-matrix, and Smith-Chart. Also, it deals with the theory and principle of various RF components such as transmission lines, waveguides, couplers, and resonators. Students learn how to design and analyze those components using analytical formulas and numerical simulation tools.
**Prerequisite:** Circuits
3 credits

EEO 415 Intro to Microelectromechanical Systems
This course is designed as an elective for senior students. Silicon-based integrated MEMS promise reliable performance, miniaturization and low-cost production of sensors and actuator systems with broad applications in data storage, biomedical systems, inertial navigation, micromanipulation, optical display and microfluid systems. This course covers such subjects as materials properties, fabrication techniques, basic structure mechanics, sensing and actuation principles, circuit and system issues, packaging, calibration and testing.
3 credits

EEO 425 Electrical Devices
This class is a survey of energy conversion and electronic systems, with the foundation being in machines and related topics. Topics include but are not limited to magnetic circuits, per unit analysis, and ac and dc machines, including both motors and generators. The course culminates in a paper design project which accounts for 50% of the course grade.
**Prerequisite:** Electromagnetism
3 credits

EEO 482 Power Systems Engineering I
This class is a survey of modern energy systems, with the foundation being classical electrical power and related power electronics. Topics include complex power, per unit analysis, transmission lines parameters and modeling, and compensation. Students also study alternative energy systems. The course also includes use of a Power Simulation Program in which modeling can be done. The simulation program is used for the final system design project paper which accounts for 50% of the course grade.
**Prerequisite:** Circuits II or Electromagnetism
3 credits

ESE 356 Digital System Specification and Modeling
Introduces concepts of specification and modeling for design at various levels of abstraction. High Level specification language is used for executable models creation, representing possible architecture implementations. Topics include design space exploration through fast simulation and re-use of models and implementation.
**Prerequisites:** ESE 124 and ESE 380
3 credits

ESE 360 Network Security Engineering
An introduction to computer network and telecommunication network security engineering. Special emphasis on building security into hardware and software working with software. Topics include encryption, public key cryptography, authentication, intrusion detection, digital rights management, Trust Computing, encrypted computing, intruders and viruses. Not for credit in addition to ESE 408.
**Prerequisite:** ESE/CSE 346 or CSE/ESE 310
3 credits

SUPPLEMENT: COURSES

CSE 408 Network Security
CSE 408 cannot be taken for credit in addition to ESE 360.

Economics

ECON 100-F Economics for Social Studies
Designator changed to SSE 100

EEO

Electrical Engineering Online

EEO 231 Introduction to Semiconductor Devices
The principles of semiconductor devices. Energy bands, transport properties and generation recombination phenomena in bulk semiconductors are covered first, followed by junctions between semiconductors and metal-semiconductor. The principles of operation of diodes, transistors, light detectors, and light emitting devices based on an understanding of the character of physical phenomena in semiconductors. Provides background for subsequent courses in electronics.
**Prerequisites:** AMS 361 or MAT 303, PHY 127 or 152/154 or 142
3 credits

EEO 301 Signals and Systems
Provides an introduction to continuous-time and discrete-time signals and linear systems. Topics covered include time-domain descriptions (differential and difference equations, convolution) and frequency-domain descriptions (Fourier series and transforms, transfer function, frequency response, Z transforms, and Laplace transforms).
**Prerequisite:** Differential Equations and Circuits
1 credits

EEO 306 Random Signals and Systems
Random experiments and events; random variables, probability distribution and density functions, continuous and discrete random processes; Binomial, Poisson, and Gaussian processes; system reliability; Markov chains; elements of queuing theory; detection of signals in noise; estimation of signal parameters; properties and application of auto-correlation and cross-correlation functions; power spectral density; response of linear systems to random inputs.
**Prerequisite:** ESE 305
3 credits

EEO 311 Electronics Circuits II
Differential and multistage amplifiers with bipolar junction transistors (BJT) and field-effect transistors (FET). Biasing in integrated circuits and active loads. Frequency response of common-emitter (common-source), common-base (common-gate), common-collector (common-drain) single BJT (FET) stages. Frequency response of differential-pair, cascode, and multistage circuits. Selection of coupling and bypass capacitors. Analog integrated circuits. Metal-Oxide-Semiconductor (MOS) digital circuits with emphasis on CMOS, LEC/LAB
**Prerequisite:** Electronics Circuits I
3 credits

EEO 315 Intro to Microelectromechanical Systems
This course is designed as an elective for senior students. Silicon-based integrated MEMS promise reliable performance, miniaturization and low-cost production of sensors and actuator systems with broad applications in data storage, biomedical systems, inertial navigation, micromanipulation, optical display and microfluid systems. This course covers such subjects as materials properties, fabrication techniques, basic structure mechanics, sensing and actuation principles, circuit and system issues, packaging, calibration and testing.
3 credits

EEO 425 Electrical Devices
This class is a survey of energy conversion and electronic systems, with the foundation being in machines and related topics. Topics include but are not limited to magnetic circuits, per unit analysis, and ac and dc machines, including both motors and generators. The course culminates in a paper design project which accounts for 50% of the course grade.
**Prerequisite:** Electromagnetism
3 credits

EEO 482 Power Systems Engineering I
This class is a survey of modern energy systems, with the foundation being classical electrical power and related power electronics. Topics include complex power, per unit analysis, transmission lines parameters and modeling, and compensation. Students also study alternative energy systems. The course also includes use of a Power Simulation Program in which modeling can be done. The simulation program is used for the final system design project paper which accounts for 50% of the course grade.
**Prerequisite:** Circuits II or Electromagnetism
3 credits

ESE

Electrical Engineering

ESE 356 Digital System Specification and Modeling
Introduces concepts of specification and modeling for design at various levels of abstraction. High Level specification language is used for executable models creation, representing possible architecture implementations. Topics include design space exploration through fast simulation and re-use of models and implementation.
**Prerequisites:** ESE 124 and ESE 380
3 credits

ESE 360 Network Security Engineering
An introduction to computer network and telecommunication network security engineering. Special emphasis on building security into hardware and software working with software. Topics include encryption, public key cryptography, authentication, intrusion detection, digital rights management, Trust Computing, encrypted computing, intruders and viruses. Not for credit in addition to ESE 408.
**Prerequisite:** ESE/CSE 346 or CSE/ESE 310
3 credits

SUPPLEMENT: COURSES

Spring 2008: updates since Spring 2007 are in red

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EST 310 Design of Computer Games
Fundamental ideas underlying the design of games, which occurs before the programming stage. How games function to create experiences, including rule design, play mechanics, game balancing, social game interaction and the integration of visual, audio, tactile and textual elements into the total game experience. Game design documentation and play testing. Students will design their own game during the semester.

Advisory Prerequisite: Basic Computer Skills

3 credits

EST 323 Human-Computer Interaction
A survey course designed to introduce students to Human-Computer Interaction and prepare them for further study in the specialized topics of their choice. Students will have the opportunity to delve deeper in the course through a course project, and through a two-three week special topic selected at the instructor's discretion.

Prerequisites: CSE 214 or CSE 230

3 credits

HUL
Romance Languages

HUL 324-I Romance Linguistics
An investigation of the linguistic evolution and synchronic grammars of the Romance languages against the backdrop of European culture from ancient times to the present. Examines similarities and differences in the phonology, morphology, syntax, and lexicon of the major Romance Languages (French, Italian, Portuguese, Rumanian, Spanish) and the minor Romance languages (Latin American varieties of Spanish, Catalan, Italian dialects, etc.), as well as the social and cultural implications of major versus minor languages in the western cultural tradition. The course is conducted in English.

Pre-or Co-requisite: One of the following: FRN 312, ITL 312, LAT 112, SPN 312, LIN 101, LIN 201, LIN 211

3 credits

ISE
Information Systems

ISE 305 Database Design and Practice
The design of database applications including Entity-Relationship data modeling, the relational data model, the SQL database query language, application development, and database administration. Students will complete a project that includes designing a database application and implementing it using database development tools. May not be taken for credit in addition to CSE 305.

Prerequisites: CSE 214 or CSE 230

3 credits

ISE 310 Data Communication and Networks
Prerequisites: CSE 214 and CSE 220

Advisory Prerequisite: AMS 310

3 credits

JPN
Japanese Language

JPN 411 Advanced Japanese III
An advanced course designed for the fourth-year students of Japanese to strengthen their ability to understand, speak, read, and write Japanese. Students will read a variety of Japanese texts including newspaper/magazine articles, biographies, and literary works and write creatively and/or professionally using sophisticated vocabulary and advanced kanji characters. Students will also be trained to comprehend authentic spoken Japanese, using a variety of audio-visual materials and to communicate in Japanese, applying appropriate socio-cultural norms. Not intended for international students from Japan who are part of a two-plus-two or exchange program.

Prerequisite: JPN 312 or placement test

3 credits
JPN 412 Advanced Japanese IV
An advanced course designed for the fourth-year stu-
dents of Japanese to strengthen their ability to under-
stand, speak, read, and write Japanese. Students will
read a variety of Japanese texts including newspa-
per/magazine articles, biographies, and literary
works and write creatively and/or professionally
using sophisticated vocabulary and advanced kanji
characters. Students will also be trained to compre-
end authentic spoken Japanese, using a variety of
audio-visual materials and to communicate in Japa-
nese, applying appropriate socio-cultural norms.
Not intended for international students from Japan
who are part of a two-plus-two or exchange program.
Prerequisite: JPN 411 or placement test
3 credits

JRN

Journalism

JRN 110 News I: Basic News Reporting and
Writing
An introduction to reporting and writing the news,
including defining what is newsworthy. This is a foun-
dation for all other courses in the journalism program.
Through weekly assignments students will develop a
mastery of the basic elements of writing a news story
that conforms to standards of clarity, accuracy and
fairness. An emphasis is placed on gaining practical
experience through reporting on classroom, campus
and community events. The development of basic
skills is accompanied by the exploration of the role of
the press in a free society. The course includes a six-
week immersion lab in grammar, punctuation and sen-
tence structure. Students who pass a proficiency test
will be exempt from the lab. All other students must
take the lab and pass the test to advance in the jour-
nalism program. Previously offered as JRN 287. Not
for credit in addition to JRN 287.
Prerequisite: Completion of D.E.C. category A
Pre-or Corequisite: JRN 101 (formerly offered as EGL
390.01 Fall 2005-Spring 2006)
Mandatory Corequisite: JRN 111
3 credits

JRN 111 Writing Immersion Lab
This lab, which must be taken in conjunction with JRN
110, is a writing immersion lab in grammar, punctua-
tion and sentence structure. Students who pass a pro-
ciciency test will be exempt from the attending the lab
but all students enrolled in JRN 110 must register for
JRN 111 for grading purposes. Satisfactory/Unsatisfactory grading only. Students must receive a Satisfactory grade in order to continue in the JRN pro-
gram.
Prerequisite: Completion of D.E.C. A
Mandatory Corequisite: JRN 110
6 credits

JRN 210 News II: Beat Reporting
Building on their work in JRN 110, students select and
develop a news beat, with an emphasis on finding sto-
rries, developing sources, interviewing, and research
methods. Students become better acquainted with
newspaper style, writing to a fixed word-length, using
numbers, accurately and writing on deadline. Previously offered as JRN 387. Not for credit in addi-
tion to JRN 387.
Prerequisite: JRN 110 (formerly JRN 287)
Mandatory Corequisite: JRN 211
3 credits

JRN 211 News II: Quantitative Literacy Lab
This lab, which must be taken in conjunction with JRN
210, is a 'quantitative literacy' immersion lab in the
proper use of numbers and statistics in newswriting.
Students who pass a proficiency test will be exempt
from the attending the lab but all students enrolled in
JRN 210 must register for JRN 211 for grading pur-
poses. Satisfactory/Unsatisfactory grading only. Students must receive a Satisfactory grade in order to
continue in the JRN program.
Mandatory Corequisite: JRN 210
3 credits

JRN 475 Undergraduate Teaching Practicum I
Work with a faculty member as an assistant in one of
the faculty member's regularly scheduled courses.
The student must attend all classes and carry out
tasks assigned by the faculty member to assist in
teaching the course. The student will meet with the
instructor on a regular basis to discuss intellectual and
pedagogical matters relating to the course. Not for
major or minor credit.
Prerequisites: U3 or U4; Permission of instructor and undergraduate program director
3 credits, S/U grading

JRN 476 Undergraduate Teaching Practicum II
Work with a faculty member as an assistant in one of
the faculty member's regularly scheduled courses.
The student must attend all classes and carry out
tasks assigned by the faculty member to assist in
teaching the course. The student will meet with the
instructor on a regular basis to discuss intellectual and
pedagogical matters relating to the course. Not for
major or minor credit.
Prerequisites: JRN 475; permission of instructor and undergraduate program director
3 credits, S/U grading

KOR

Korean

KOR 212 Intermediate Korean II
Intermediate courses in Korean language to develop
audiolingual skills and reading and writing ability.
Through the introduction of complex grammatical
structures and idioms, speaking, reading, and writing
ability in Korean language is further developed.
Prerequisite: KOR 211 or placement test
3 credits

KOR 311 Advanced Korean
An advanced course designed for students who wish
to enhance reading comprehension and writing ability
in Korean. Reading materials are selected from mod-
ern Korean literature, journals, and newspapers.
Students are trained in samples of various writing styles. Emphasis is also placed on the idiomatic usage
of Korean language and the relation of Korean to
Chinese characters.
Prerequisite: KOR 212 or placement test
3 credits

KOR 312 Advanced Korean II
Advanced Korean II is designed for students who have
completed at least two years of Korean instruction at
the undergraduate level or who already possess a suf-
ficiently high level of fluency. Classes are conducted
in Korean. Reading materials, including excerpts
from modern Korean literary works, journals, maga-
zines and newspapers, will be explored and discussed.
Other topics such as ancient Korean literature will
also be discussed. Through this course students are
expected to enhance their ability to grasp the import
of literary and academic texts by learning to identify
essential points and lines of argument as well as
enhance their vocabulary, particularly Sino-Korean
terms, and knowledge of idiomatic usage of Chinese-
Korean graph dictionaries, including a knowledge of
the basic structure of graphs and of the most common
component radicals, in their original and abbreviated
forms. Students will also learn to research in Korean
for their term paper.
Prerequisite: KOR 311 or approval of instructor
3 credits

MAR

Marine Sciences

MAR 384 Diseases of Aquatic Organisms
Fundamental and current issues pertaining to host/pathogen interactions in the aquatic environ-
ment. By the end of this course, students should
have a basic understanding of disease processes in
aquatic organisms; knowledge of the tools used for
disease diagnosis; and an appreciation of disease
management tools available today. This course will
emphasize the role of the environment as an impor-
tant player in infectious and non-infectious diseases.
Prerequisites: BIO 202 and 203
3 credits

MAR 393 Treatment Technology
This course examines technologies such as waste-
water management, solid waste practices, and drink-
ing water treatments that minimize the effects of
human wastes. Pollution prevention, especially for
marine environments, is also discussed.
Prerequisites: Announced when course is scheduled
3 credits

MAR 447 Readings in Marine Science
Tutorial readings in the marine sciences. These
courses may be repeated but not more than 3 credits
may be used toward Marine Science or Marine
Vertebrate Biology major requirements.
Prerequisite: Permission of instructor and SoMAS
undergraduate director
1-3 credits

MAT

Mathematics

MAT 371 Logic
A survey of the logical foundations of mathematics:
development of propositional calculus and quantifi-
cation theory, the notions of a proof and of a model,
the completeness theorem, Gödel's incompleteness
theorem. This course is offered as both CSE 371 and
MAT 371.
Prerequisite: CSE 150 or CSE 215 or MAT 200
3 credits

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MEC

Mechanical Engineering

MEC 262 Engineering Dynamics
Prerequisite: A Grade of "C" or higher in MEC 260

MEC 213 Studies in Nanotechnology
The emerging field of nanotechnology develops solutions to engineering problems by taking advantage of the unique physical and chemical properties of nanoscale materials. This interdisciplinary, co-taught course introduces materials and nano-fabrication methods with applications to electronics, biomedical, mechanical and environmental engineering. Guest speakers and a semester project involve ethics, toxicology, economic and business implications of nanotechnology. Basic concepts in research and design methodology and characterization techniques will be demonstrated. Course is cross-listed as BME 213, MEC 213, and EST 213 and is required for the Minor in Nanotechnology Studies (NTS).

Prerequisites: PHY 131 or PHY 125, CHE 131 or ESG 198
3 credits

MEC 214 Probability and Statistics for Mechanical Engineers
Foundations of probability and statistics as applied to mechanical measurements and experimentation. Basic statistical analysis of data and assessing likelihood of future events based on past history. Concept of random sampling. Uncertainty analysis and error propagation, using both analytical and graphical tools. Assessing dominant sources of error in measurements.

Prerequisite: MAT 126 or 131 or 141 or AMS 151; MEC major or permission of instructor
Corequisite: MAT 127 or 132 or 142 or 171 or AMS 161
1 credit

MEC 301 Thermodynamics
Prerequisites: MEC Major, AMS 261 or MAT 203, PHY 125 or 131/133 or 141

MEC 363 Mechanics of Solids
Prerequisite: A Grade of "C" or higher in MEC 260

MEC 364 Introduction to Fluid Mechanics
Prerequisite: MEC Major, MEC 262
Pre-or Corequisite: MEC 301

MEC 391 Introduction to Automotive Engineering I
Prerequisites: MEC Major, MEC 262 and 363

MEC 392 Introduction to Automotive Engineering II
Prerequisite: MEC Major, MEC 391

PHI

Philosophy

PHI 382-H The Quantum Moment: Quantum Mechanics in Philosophy, Culture, and Life
This course explores the implications and influence, real and alleged, of quantum mechanics on fields other than physics. What does quantum mechanics mean, if anything, for philosophy, ethics, and social behavior? At the same time, we shall look into how social and cultural influences may have affected the way that quantum mechanics was formulated, and how it has evolved. We shall review the early history of quantum mechanics, and discuss some of the important debates at the founding of quantum mechanics. Students will not be expected to learn the mathematics in depth, only the introduction provided by the instructors aimed at non-science students. Besides readings, the course will also involve plays, films, and guest speakers. Students will be expected to work on a final project, to be presented in class.

This course is offered as both PHI 382 and PHY 382.

Prerequisite: 100-level Physics or Philosophy course and U3 or U4 standing
3 credits

PHI 386-J Topics in Asian Philosophy
Designed for upper-division students, this course presents in-depth study of a specific topic in an Asian philosophical tradition. Students are expected to demonstrate knowledge through mastery of native terms and concepts from that tradition. Some supplement to this bulletin contain specific descriptions when course is offered. May be repeated for credit as the topic changes. This course is offered as both AAS 396 and PHI 396.

Prerequisite: One previous course in AAS or PHI
Advisory Prerequisite: Junior or Senior Standing
3 credits

MEC 391 Thermodynamics
Prerequisites: MEC Major, AMS 261 or MAT 203, PHY 125 or 131/133 or 141

MEC 363 Mechanics of Solids
Prerequisite: A Grade of "C" or higher in MEC 260

MEC 364 Introduction to Fluid Mechanics
Prerequisite: MEC Major, MEC 262
Pre-or Corequisite: MEC 301

MEC 391 Introduction to Automotive Engineering I
Prerequisites: MEC Major, MEC 262 and 363

MEC 392 Introduction to Automotive Engineering II
Prerequisite: MEC Major, MEC 391

PHY

Physics

PHY 122-E Physics for the Life Sciences II
Second part of a calculus-based introduction to physics with applications to biology, primarily for students majoring in biological sciences or pre-clinical programs. Topics include electromagnetism, optics, acoustics, and radiation phenomena. Three lecture hours and one recitation hour per week. Laboratory component, PHY 124, must be taken concurrently; a common grade for both courses will be assigned. PHY 122 may not be taken for credit in addition to PHY 126, 127, 152, or 142.

Prerequisite: C or higher in PHY 121/123
Corequisite: PHY 124
3 credits

PHY 126-E Classical Physics B
Second of a three-part sequence for physical-sciences or engineering majors. It focuses on the mechanics of rigid bodies, on fluids, waves, thermodynamics, and optics. Three lecture hours, one recitation hour, and two laboratory hours per week. Not for credit in addition to PHY 122/124, 132/134, or 142.

Prerequisite: C or higher in PHY 125 or 131/133 or 141
Corequisite: MAT 126, 132, 142, 171 or AMS 161 or level 7 or higher on math placement exam
5 credits

PHY 127-E Classical Physics C
Third of a three-part sequence for physical-sciences or engineering majors. It focuses on electromagnetism using the concepts of vector fields and scalar potentials, and on DC and AC electric circuits. Calculus is used concurrently with its development in MAT 126. Three lecture hours, one recitation hour, and two laboratory hours per week. Not for credit in addition to PHY 122/124, 132/134, or 142.

Prerequisite: C or higher in PHY 125 or 131/133 or 141
Corequisite: MAT 126, 132, 142, 171 or AMS 161 or level 7 or higher on math placement exam
5 credits

PHY 132-E Classical Physics II
Second part of a two-semester physics sequence for physical-sciences or engineering majors with a strong mathematics background and are ready for a fast learning pace. It covers electromagnetism, electric circuit theory, and optics. Calculus is used concurrently with its development in MAT 132. Three lecture hours and one recitation hour per week. Laboratory component, PHY 134, must be taken concurrently; a common grade for both courses will be assigned. Not for credit in addition to PHY 122/124, 126, 127, or 142.

Prerequisite: C or higher in PHY 131/133 or 141
Corequisite: PHY 134; MAT 132 or 142 or 127 or 171 or AMS 161
3 credits

PHY 142-E Classical Physics II: Honors
Second part of a demanding two-semester sequence for students with the strongest background, interests and abilities in science and mathematics. The topics covered in PHY 142 are similar to those in PHY 132, but are treated in more depth in a small-class setting. Students may transfer to PHY 132 at any time during the first half of each semester without penalty. Three lecture hours, one recitation hour, and one-two hour laboratory per week. PHY 142 may not be taken for credit in addition to PHY 122/124, 126, 127, or 132.

Prerequisite: C or higher in PHY 141 or permission of department
Corequisite: MAT 132 or 142 or 127 or 171 or AMS 161
3 credits

PHY 315-E Hands-On Science with Cosmic Rays: Experimental Research for Non-Physics Majors (course name change)
Cosmic rays are a ubiquitous source of background radiation here on Earth, constantly replenishing short-lived radioactive materials (like Carbon 14) and perhaps providing the engine that has driven evolution over the ages. This seminar will provide an interactive opportunity to study the properties of cosmic rays using modern particle detectors and cyberinfrastructure as an introduction to the scientific method, experimental techniques, and data analysis. Classes will integrate group discussions with hands-on investigation in small teams, and then joint brainstorming sessions to analyze and understand the data to further improve the experimental measurements. Students will use computers to take and analyze data, to post their results, and to interact with each other and the course staff. Intended for non-Physics majors.

Prerequisites: DEG C, U2 standing or higher
3 credits

PHY 382-H The Quantum Moment: Quantum Mechanics in Philosophy, Culture, and Life
This course explores the implications and influence, real and alleged, of quantum mechanics on fields other than physics. What does quantum mechanics mean, if anything, for philosophy, ethics, and social behavior? At the same time, we shall look into how social and cultural influences may have affected the way that quantum mechanics was formulated, and how it has evolved. We shall review the early history of quantum mechanics, and discuss some of the important debates at the founding of quantum mechanics. Students will not be expected to learn the
SUPPLEMENT: COURSES

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POL

Political Science

POL 310-F Immigration and Refugee Politics
Provides an introduction to the politics of immigration and refugees by considering the impact of the movement and resettlement of foreigners across international borders on states, societies, and international relations. We will address several themes that generate heated debate within the topic of migration including, why people move, the impact of ethnic and religious diversity, state control over its borders, racism and xenophobia, immigrant integration strategies, citizenship policies, refugee movements, globalization, security and human smuggling.
Prerequisite: U3 or U4 standing or approval of professor.
3 credits

POL 345 Changes in the World Order: International Politics Since 1945
An analysis and discussion of such terms and concepts as sovereignty, power, diplomacy, ideology, imperialism, containment, detente, disarmament, and pre-emptive defense, and how these terms can be useful in understanding international politics since the end of World War II. Students will use these concepts along with case studies, research projects, and presentations to make generalizations concerning events that have affected the international system of states since 1945.
Prerequisites: U3 or U4 standing and POL 101 or 103
3 credits

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: POL 201 or equivalent and U3 or U4 status. Students should be comfortable with high school algebra.
Advisory Prerequisites: MAT 126 or 131 or 141 or AMS 151
3 credits

WST

Women's Studies

WST 310-F Contemporary Feminist Issues
An analysis of major issues affecting women in today's society. Reproductive rights, women's employment, and political power are among the topics discussed.
Prerequisites: 12 credits in the social and behavioral sciences, or WST major or minor, or WST 102 or 103 or 301 or WST/PHI 284, or 6 credits of departmentally approved courses.
3 credits

SSE

Social Studies Education

SSE 100-F Economics for Social Studies Teachers
An introduction to the principles of micro- and macroeconomics for students planning to become social studies teachers. The course will focus on economic concepts and reasoning with the goal of teaching prospective teachers how to apply these ideas to important public policy issues. Not for economics major credit. Formerly ECO 100. Not for credit in addition to ECO 100.
Prerequisite: Admission to the teacher preparation program in social studies.
3 credits

SBC

Southampton Block Curriculum

SBC 201 Systems and Models
Introduction to the dynamic modeling of complex systems with feedbacks. Students will learn to use simulation software that facilitates the visualization, formulation, and analysis of systems. Students will learn about systems with positive and negative feedbacks, the effects of lags on system performance, and the difference between stocks and flows. Systems studied will include ecological models, economic models, chemical models, population models, epidemiological models, and models that include the interactions between population, economic development, and the environment.
Prerequisite: MAT 125/126 or MAT 131
1 credit

WSE

Women in Science and Engineering

WSE 242-H Society & Gender in Science & Engineering
A study of the social and gender dimensions of science and engineering, the social context in which modern science and engineering operates, and the role of women in these fields. The course focuses on (1) women's historic and current participation in Science, Mathematics and Engineering disciplines, including why so few women are involved in these fields, and (2) the relationship of social forces and scientific knowledge, by considering the role of ethics, politics, and economics.
Prerequisite: One of the following: BIO 201, BIO 202, CHE 131, CHE 141, GEO 102/112, GEO 122, PHY 125, PHY 131/133, or PHY 141
3 credits

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AFH

Africana Studies/Humanities

AFH 382-G Black Women's Literature of the African Diaspora
Black women's literature presents students with the opportunity to examine through literature the political, social, and historical experiences of Black women from the African Diaspora. The course is structured around five major themes commonly addressed in Black women’s writing: Black female oppression, sexual politics of Black womanhood, Black female sexuality, Black male/female relationships, and Black women and defining self. This course is offered as AFH 382, EGL 382, and WST 382. Prerequisite: U3 or U4 standing 3 credits

AMS

Applied Mathematics and Statistics

AMS 316 Introduction to Time Series Analysis
Linear time series models, moving average (MA), autoregressive (AR), ARMA and ARIMA models, estimation and forecasting, interval predictions, forecast errors, stationary processes in the frequency domain, state-space models. This course is offered as both AMS 316 and AMS 584. Prerequisites: AMS 301 and 310 or permission of instructor. Corequisites: MAT 203 or 205 or AMS 261 3 credits

ANP

Anthropology, Physical and Primatology

ANP 340 Field Methods in Physical Anthropology
Methods, problems, and experience in field techniques. The course focuses on field methods such as fossil excavation, reconstruction of skeletal and dental remains, anthropometry, craniometry, and field behavioral ecology of primates. Prerequisites: ANP 120 or BIO 201 (as offered prior to fall 2007) or BIO 204 (as offered beginning fall 2007) and BIO 204; permission of instructor. 3-6 credits

ANP 350 Methods in Studying Primates
Introduction to the concepts and practical skills needed to conduct scientific work, particularly in the study of primates, including how to collect and analyze data focusing on habitat description, primate densities, use of space, and social interactions. Topics include design and presentation of research; ecological field methods; behavioral observations and other techniques. Students are required to plan a small research study and to present their proposal in class. Some computer work outside class required. Prerequisites: ANP 120 or BIO 201 (as offered prior to fall 2007) or BIO 204 (as offered beginning fall 2007) and BIO 204 3 credits

ANP 360-H Primate Conservation
Review of endangered species of primates and case histories of conservation programs in Asia, Africa, South America, and Madagascar, highlighting different problems and solutions. Advisory Prerequisite: ANP 120 or BIO 201 (as offered prior to fall 2007) or BIO 204 (as offered beginning fall 2007) and BIO 204 3 credits

ANP 403 Problems in Physical Anthropology
Research and discussion of selected topics in physical anthropology. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for credit as the topic changes. Prerequisites: ANP 120 or BIO 201 (as offered prior to fall 2007) or BIO 204 (as offered beginning fall 2007) and BIO 204 3 credits

BIO

Biology

BIO 150-E The Living World
An exploration of life from organisms to molecules. The connections between biodiversity, molecules, and evolution are examined. Recitations/labortories familiarize students with the tools, models, and concepts of modern biology. Two two-hour recitations/laboratories per week. Prerequisites: High school biology and chemistry; satisfaction of entry skill in mathematics requirement. 3 credits

BIO 201-E Fundamentals of Biology: Organisms to Ecosystems
An introduction to the major groups of living organisms. Structure, functions, the ecological roles of organisms in communities and ecosystems, and their evolutionary history are covered. Genetics and demography are discussed in the context of evolution by natural selection. Prerequisites: Level 3 or higher on the mathematics placement examination. Advisory Prerequisite: High school Biology. 3 credits

BIO 202-E Fundamentals of Biology: Molecular and Cellular Biology
The fundamentals of cell biology, biochemistry, and genetics. The biochemical and molecular bases of cell structure, energy metabolism, gene regulation, heredity, and development in living organisms from bacteria to man are discussed. Prerequisites: Level 3 or higher on the mathematics placement examination. 3 credits

BIO 205 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 Corequisite: BIO 201, 202, or 203. 2 credits

BIO 206 Fundamentals of Scientific Inquiry in the Biological Sciences II
Second course 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. 2 credits

BIO 207 Fundamentals of Scientific Inquiry in the Biological Sciences III
Third course 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. 2 credits

BIO 301 Techniques in Molecular and Cellular Biology
Techniques used in recombinant DNA and cell biology research. Topics include DNA manipulation and analysis, protein expression and analysis, and advanced microscopy. Prerequisites: BIO 202; BIO 204 and 205 (beginning in fall 2007); CHE 132 or 142; MAT 125 or higher or AMS 151; or permission of instructor. 3 credits

BIO 313 Applications of Molecular and Cellular Biology Techniques
The BIO 313 Laboratory course is a continuation of BIO 311, Techniques in Molecular and Cellular Biology. BIO 311 is designed to provide novice undergraduates with hands-on experience in modern molecular and cellular techniques during the course of a full semester. BIO 313 is an intersession laboratory course for undergraduates who have an excellent working knowledge of the lab techniques after having taken BIO 311. The course will provide these students a three-week opportunity to work full-time on an individualized research module. Prerequisites: BIO 202, BIO 203, BIO 311. Advisory Prerequisite: CHE 322. 3 credits

BIO 327 Developmental Genetics Lab
Exploration of the fundamental concepts in developmental biology and genetics through a combination of classical and modern molecular genetic approaches. Experiments are conducted using Xenopus and Drosophila, two important animal models for research in developmental biology and genetics. Students gain hands-on experience with the approaches used to investigate processes that control embryonic development on these two model systems, including the use of modern molecular methods for examining the regulation of gene expression during development. Exposure to the genetic approaches that are available in the Drosophila system will include participation in a genetic screen for new mutations. Prerequisites: BIO 325; BIO 204 and 205 (beginning fall 2008) Pre-or Corequisite: BIO 320. 3 credits

BIO 335 Animal Physiology Laboratory
Laboratory exercises designed to illustrate principles learned in BIO 328. Topics include muscles and hormones, physiological activities of nerves, circulation, respiration, excetration, digestion, sensory function, and central processes of coordination. One hour of lecture, one hour of recitation, and one three-hour laboratory per week. Prerequisites: CHE 132, 133; BIO 204 and 205 (beginning fall 2008). Pre-or Corequisite: BIO 328
SUPPLEMENT: COURSES

Spring 2008: updates since Spring 2007 are in red

BUS 341 Plant Diversity
An introduction to the study of plants, especially green plants, including the origin and evolution of land plants. Topics include cellular structure and function, photosynthesis and respiration, gross anatomy, taxonomy and the diversity of organisms, plant ecology, agriculture. Three hours of lecture and one three-hour laboratory per week.
Prerequisites: BUS 201 and 202 (as offered prior to fall 2007) or BUS 301 and 302 (as offered beginning fall 2007) and BUS 203 and 205.
3 credits

BUS 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 346 if passed with C or higher.
Prerequisite: BUS 201 (as offered prior to fall 2007) or BUS 301 (as offered beginning fall 2007) and BUS 204 and BUS 205.
4 credits

BUS 346 Aquatic Arthropods and Vertebrates
Aspects of the diversity, comparative and functional morphology, natural history, and evolution of arthropods and vertebrates. Water-land transitions are considered. Three hours of lecture and one three-and-one-half hour laboratory per week. Not for credit in addition to BIO 344 if passed with C or higher.
Prerequisite: BUS 201 or MAR 104; BUS 204 and BUS 205.
4 credits

BUS 352 Ecology Laboratory
Stresses the collection, analysis, and interpretation of ecological data, mostly in terrestrial settings. Laboratory and field exercises demonstrate the operation of general ecological principles in specific populations and communities. One lecture, one three-hour field trip or laboratory, and one hour of recitation per week. Three all-day Saturday field trips.
Prerequisite: BUS 204 and 206
Pre- or Corequisite: BUS 351; or permission of instructor.
3 credits

BUS 365 Biochemistry Laboratory
A series of laboratory experiments and discussions designed particularly to complement BIO 351 and 362. This laboratory covers such topics as enzyme kinetics, spectrophotometry, recombinant DNA technology, the polymerase chain reaction and genotyping, cellular function (5’ to 3’), DNA, RNA, and proteins, and analytical biochemistry. Four hours of laboratory and discussion per week.
Prerequisite: BUS 204 and 205 (beginning fall 2008)
Pre- or Corequisite: BIO 310 or 361.
2 credits

BUS 375 Molecular Diversity Laboratory
Hands-on experience with methods to detect and analyze molecular (DNA, RNA, proteins) variation to study ecology, adaptation, and evolutionary history using natural populations of Drosophila, plankton, and other locally available species.
Prerequisites: BUS 201 and BUS 202 (as offered prior to fall 2007); and BIO 320 or BIO 351 or BIO 354; or BUS 201 and BUS 202 (as offered beginning fall 2007) and BIO 204 and 205, and BIO 320 or BIO 351 or BIO 354.
3 credits

BUS 380 Entomology
A survey of the anatomy, development, classification, biogeography, physiology, ecology, and evolution of the insects. The laboratory stresses a knowledge of insect diversity and morphology. Three hours of lecture and three hours of laboratory per week.
Prerequisites: BUS 201, 202 (as offered prior to fall 2007) or BUS 301 and 302 (as offered beginning fall 2007) and BUS 204 and BUS 205.
3 credits

BUS Management

BUS 110 Business in the 21st Century
 deleted

BUS 111 Introduction to Business for Non-Business Majors
Introduces students to major business topics that influence today’s business practices. Explores contributions over the last century from Henry Ford to Bill Gates, showing how the Industrial Revolution became the Information Revolution. Provides knowledge of how business works and a perspective on its evolution into the next millennium. Integrates both introduction to business and management principles into one course.
Prerequisite: Non Business Majors
3 credits

BUS 115 Introduction to Business for Business Majors
Introduces business majors to critical business thinkers who have influenced today’s business practices. Allows students to utilize material learned in class to demonstrate their research and writing abilities by tracking specific companies throughout the semester. Written and verbal reports required weekly to show how companies operate in contemporary business environment.
Prerequisite: BUS Major
Pre- or Corequisite: Completion of D.E.C. Category A or WRT 102.
3 credits

BUS 210 Financial Accounting
Introduction to basic accounting fundamentals. Includes the recording, summarization and adjusting of financial transactions and the basic accounting cycle. Explores the preparation and presentation of the basic financial statements; income statement, retained earnings statement, balance sheet and the statement of cash flows. Includes accounting principles and concepts, asset and liability valuation.
Prerequisites for BUS major: BUS 110 or BUS 115
Prerequisites for BUS minor or MTD or ECO or ISE major: BUS 110 or BUS 111
3 credits

BUS 214 Managerial Accounting
A study of cost concepts, theories, and the implementation and evaluation of an accounting system as a source of information for decision making, planning, control, and evaluation of the organization by management. Includes cost-volume-profit analysis, overhead rates, budgeting and variance analysis, statement of cash flows and financial statement ratio analysis.
Prerequisites: BUS 115 or BUS 110; BUS 210; BUS major
3 credits

BUS 215 Introduction to Business Statistics
The application of current statistical methods to problems in the modern business environment. Topics include probability, random variables, sampling techniques, confidence intervals, hypothesis testing, and regression. Students analyze real data sets using standard statistical software, interpret the output, and write extensively about the results.
Prerequisite: BUS major: BUS 110 or BUS 115; MAT 122 or 125 or higher
Pre or Corequisite for BUS minor or CME major: MAT 122 or 125 or higher; BUS 110 or BUS 111
3 credits

BUS 220 Introduction to Decision Sciences
Familiarizes students with a variety of quantitative methods applicable in managing both the service and manufacturing sectors. Basic concepts of quantitative modeling are applied and tested in various examples supporting decision making in business settings. Topics include: optimization via linear, integer, and goal programming; simulation; decision and break-even analysis; and forecasting.
Prerequisites for BUS major: BUS 110 or BUS 115; BUS 215; MAT 122 or 125 or higher
Prerequisites for BUS minor or MTD or ECO or ISE major: BUS 110 or BUS 111; BUS 215; MAT 122 or 125 or higher
3 credits

BUS 301 Corporate Communications
Examines the role of communications in the corporation using case studies. Topics include: corporate identity, image, reputation, advertising, media relations, employee communications, investor relations, government relations, crisis communications, leadership and corporate responsibility.
Prerequisites for BUS major: BUS 110 or BUS 115; U3 or U4 standing.
Prerequisites for BUS minor: BUS 110 or BUS 111; U3 or U4 standing.
3 credits

BUS 310 Intermediate Accounting I
Expands upon the basic financial accounting framework and explores the theoretical and analytical applications of Generally Accepted Accounting Principles (GAAP) in a business environment. Emphasis on asset and liability valuation, external reporting issues dealing with the presentation and interpretation of financial data, and the measurement of operational performance. The student will gain an understanding of financial reporting criteria and the reliance placed upon financial information by management and external users.
Prerequisites: BUS major: BUS 110 or BUS 115; BUS 214.
3 credits

BUS 311 Federal Income Taxation
Introduces and explores fundamental income tax concepts for corporations and partnerships. Basic federal tax rules of the Internal Revenue Code are examined and their interpretation and application in relation to tax reporting entities are discussed. Various tax forms will be prepared and/or analyzed along with tax planning and reporting considerations.
Prerequisites: BUS major; BUS 110 or BUS 115; BUS 310.
3 credits

BUS 312 Financial Statement Reporting and Analysis
A review of corporate annual reports and related footnote disclosures from the perspective of the various users of financial statements including management, investors, and creditors. The analysis and assessment of operational business performance, trends, and decision making through the use of financial statements are discussed. Specific review of the income statement, balance sheet, and statement of cash flows, financial ratios, budgeting forecasts and analysis.
Prerequisites: BUS major; BUS 110 or BUS 115; BUS 310.
3 credits

BUS 313 Intermediate Accounting II
Prerequisites: BUS major: BUS 110 or BUS 115; BUS 310.
3 credits

BUS 330 Principles of Finance
Focus on understanding how firms meet and manage

http://www.stonybrook.edu/ugbulletin
their financial objectives. Today's financial environment, the fundamental trade-off between risk and return, the time value of money, and valuing future cash flows will be discussed. Explanation of financial tools and techniques which can be used to help firms maximize value by improving decisions relating to capital. Bond options are introduced.  

Prerequisites for BUS major: BUS 110 or BUS 115  
Prerequisites for BUS minor or AMS or MTD or ISE or ECO major: BUS 110 or BUS 111  
Prerequisites for BUS majors: BUS 110 or BUS 115; BUS 220; BUS 340  
Prerequisites for ISE or AMS majors: BUS 110 or BUS 111; BUS 220; BUS 340  
3 credits

BUS 346 Operations Management  
Analysis and design of manufacturing and service systems. Topics include quality management, product and service design, process selection and capacity planning, design of work systems, inventory management, aggregate planning, material requirements planning, and just-in-time systems.  

Prerequisites for BUS major: BUS 110 or BUS 115; BUS 220  
Prerequisites for BUS minor or ISE major: BUS 110 or BUS 111; BUS 220  
3 credits

BUS 347 Business Ethics  
An introduction to traditional ethical theories and their application to business. A basis for understanding how ethical issues in business arise, and some strategies to control or resolve them, are derived from an examination of the work of philosophers and other writers relating to business ethics. Recent business case studies enable students to develop their own perspectives.  

Prerequisites: BUS 115; U3 or U4 standing; BUS or ECO or ISE or MTD major  
3 credits

BUS 348 Principles of Marketing  
Basic marketing concepts and their applications. Issues include strategy, market segmentation, individual consumer behavior, marketing research, promotion, pricing and international marketing. The emphasis is on analysis of the challenges facing business with respect to all relevant constituencies, including the company in general, managerial colleagues across functional areas, consumers, stockholders, and government.  

Prerequisites for BUS major: BUS 110 or BUS 115; BUS 215  
Prerequisites for BUS minor or ISE major: BUS 110 or BUS 111; BUS 215  
3 credits

BUS 350 Internet Marketing  
Examines two intimately related issues: the impact of E-Commerce on businesses and the use of computer-mediated (Internet) marketing. Student develop an awareness and understanding of relevant issues, advantages and disadvantages, and specific techniques involved in using the Internet as a marketing vehicle. Emphasis on using the Internet as a tool for marketers to increase efficiency, efficiency and competitiveness of distribution, advertising, brand building, pricing, promotions, new product development, customer service and market research.  

Prerequisites: BUS Major: BUS 115 or BUS 110; BUS 340; BUS 348  
3 credits

BUS 351 Human Resource Management  
Major trends in personnel management, including problems and issues faced by organizations and individuals in times of change. Responsibilities of the human resources department and the roles that every manager plays, both as a supervisor and as a client of the human resources department, are studied. Topics include human resource forecasting and planning job design, employee selection, test development and validation, equal employment opportunity laws and judicial rulings, performance appraisal, compensation, benefits, career development, safety, and labor relations.  

Prerequisites: U3 or U4 standing; BUS major or minor or MTD major  
3 credits

BUS 352 Electronic Commerce  
Introduction to Internet backbone and security, Business-to-Business (B2B) development and Business-to-Consumer (B2C) marketing.  

Prerequisites: BUS Major; BUS 115 or BUS 110; BUS 340; BUS 348  
3 credits

BUS 355 Investment Analysis  
The theoretical and empirical study of financial market. Topics include portfolio selection and risk pricing, market efficiency, evaluation of fixed income securities, options and futures pricing.  

Prerequisites for BUS major: BUS 110 or BUS 115; BUS 330 or ECO 389  
Prerequisites for BUS minor or AMS or MTD or ISE or ECO major: BUS 110 or BUS 111; BUS 330 or ECO 389  
3 credits

BUS 356 Financial Engineering  

Prerequisites for BUS major: BUS 110 or BUS 115  
Prerequisites for Engineering majors: BUS 110 or BUS 111  
3 credits

BUS 358 Marketing Research  
Introduces marketing research tools that aid managers in marketing decision-making and how the marketing research process can be used to collect and analyze data and information to solve marketing problems. A strong applied orientation exposes students to marketing research in traditional areas such as market segmentation, product positioning, product design, brand perception, and sales forecasting, as well as emerging areas including customer satisfaction, customer relationship management (CRM), and on-line marketing.  

Prerequisites: BUS Major; BUS 110 or BUS 115; BUS 348  
3 credits

BUS 365 Financial Management  
Show managers how to interface with accounting and finance departments, understand how firms meet their financial objectives utilizing financial decision-making. Explanation of financial tools and techniques, which can be used to help firms maximize value by improving decisions relating to capital budgeting, capital structure, and working capital management. Other related topics include multinational financial management, risk management, mergers and acquisitions.  

Prerequisites for BUS major: BUS 110 or BUS 115; BUS 330 or ECO 389  
Prerequisites for BUS minor or AMS or ISE or MTD or ECO major: BUS 110 or BUS 111; BUS 330 or ECO 389  
3 credits

BUS 366 Money and Financial Institutions  

Prerequisites for BUS major: BUS 110 or BUS 115  
Prerequisites for BUS minor or AMS or MTD or ISE or ECO major: BUS 110 or BUS 111  
3 credits

BUS 369 Marketing of New Products  
Techniques for conceptualization, design, development, testing, and launch of new products from marketers perspective. Identification of applicable prod-
products. Focus on new (radical, discontinuous) products versus product extensions.

Prerequisite: BUS Major; BUS 210; BUS 348; BUS 358 3 credits

BUS 391 Management of Sports Organizations
Introduction of fundamental issues pertinent to any business, planning organization, staffing, and controlling. It discusses areas the sports manager is likely to encounter while conducting business, such as federal legislation influencing the sport business, employment related issues, funding and budgeting, risk management, site selection and customer service.

Prerequisites for BUS major: BUS 110 or BUS 115; U3 or U4 standing
Prerequisites for BUS minor: BUS 110 or BUS 111; U3 or U4 standing 3 credits

BUS 401 Negotiation Workshop
Real-time “hands-on” experience in bargaining and negotiating. Students develop expertise in applying techniques for collaborative problem solving and resolving conflicts between parties. Topics include analysis of distributive (zero-sum) and integrative (win-win) bargaining situations, ethical and legal considerations, dealing with contentious and “tricky” negotiating tactics, psychological heuristics and biases, verbal and nonverbal communication, roles of agents in negotiation, mediation, inter-and intra-organizational negotiation, multi party negotiation, and cross-cultural negotiation. Students participate in in-class role-play situations involving negotiating with each other in a variety of realistic business and personal scenarios.

Prerequisite: BUS 110 or BUS 115 and BUS 247 or BUS 348 or BUS 351 or BUS 353 or BUS 440 or BUS 441 3 credits

BUS 440 International Management
The increasing internationalization of markets is forcing firms to develop global strategies that protect profits and enhance value chains. This course will discuss the various aspects of international business including currency exchange, tariffs, BOP, economic parameters, regional labor practices and international channels of distribution. Concepts of cross-border wealth creation and various theories of trade will also be reviewed as well as the International Product Life Cycle. Socio-cultural components will be discussed with emphasis on management choices. Other topics such as location, topography and climate will also be reviewed.

Prerequisites: BUS or ECO or MTD majors; U4 standing 3 credits

BUS 441 Business Strategy
Capstone course that builds on tools and concepts introduced in more specialized business courses and on students’ general business knowledge. Includes: methods for analysis of forces driving competition; identification of strengths, weaknesses, opportunities, and threats faced by individual corporations; and practical strategies for enabling new or existing firms to compete successfully within an industry. Case studies and in-class situations challenge students to develop skills in handling multidimensional business problems.

Prerequisites: BUS Major or Minor or ECO or MTD or CME Major; U4 standing 3 credits

BUS 448 Marketing Strategy
A capstone course for students in the Marketing Specialization in which students apply a wide range of marketing principles to address problems different companies face in areas such as channel distribution, pricing, new product development, communication, promotions, strategic marketing alliances, position-

ing, and target marketing.

Prerequisite: BUS Major; U4 standing; BUS 358; BUS 334 or BUS 357 or BUS 350 or BUS 380 or BUS 369; or BUS 389 or BUS 488 3 credits

BUS 450 Analysis and Design of Business Information Systems
Businesses and organizations develop information systems as a way to solve business problems or to capitalize on business opportunities. Hence, systems analysis is about business problem solving. Emphasis on important skills for the systems analyst such as fact-finding, communications, project management, and cost-benefit analysis. Presents analysis process and business information systems design. Focus on analyst’s tools and techniques to document information systems development. Classical and object-orient-

ed techniques for describing data flow, data structure, and process flow.

Prerequisites: BUS Major; BUS 110 or BUS 115; BUS 340 3 credits

BUS 489, 490 Business Honors Research I
Students apply business research concepts and techniques mastered in honors business management courses by creating and developing a business research project under faculty supervision. This work culminates in a publishable draft for inclusion in a department journal. Research projects are presented at one of several campus research fairs. A grade will be awarded upon completion of BUS 489, and then after completion of BUS 490.

Prerequisite: Permission of department 3 credits

CME 201-H Sustainable Energy - Evaluating the Options
Assessment of current and future energy delivery systems; extraction, conversion, and end-use will be discussed with the emphasis on meeting 21st Century regional and global energy needs in a sustainable manner. Different renewable and conventional energy technologies will be examined and analyzed and their attributes (both positive & negative) described within a framework that takes into account the technical, economic, social, political and environmental objectives associated with a sustainable energy policy. Case studies of specific applications of sustainable energy to societal needs will be analyzed and discussed.

3 credits

CME 310 Chemical Engineering Laboratory I: Unit Operation and Fundamentals

Prerequisite: CME 304, B- or better in CME 304
Corequisite: CME 300 2 credits

CME 312 Material and Energy Balance
Introduces analysis of chemical processes using the laws of conservation and energy as they apply to non-reacting and reacting systems. Integration of the concepts of equilibrium in physicochemical systems, and utilization of basic principles of thermodynamics. Numerical methods used in the design an optimization of chemical engineering processes. Solution of complex chemical engineering problems.

Prerequisites: ESG 111 or MEC 112; CME 132 and 134; AMS 261 or MAT 203; CME 304, B- or better in CME 304 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 nonideal solutions; heat effects and property changes on mixture; application of equilibrium 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 304, B- or better in CME 304 3 credits

CME 315 Numerical Methods for Chemical Engineering Analysis
Mathematical modeling lies at the heart of chemical engineering. Understanding, predicting, designing, optimizing, and controlling chemical processes and phenomena all require the development of good mathematical models. This course provides students with the concepts, processes, and tools for an introduction to such chemical engineering calculations with a mathematical software package (MATLAB).

Pre or Corequisite: AMS 361 3 credits

CME 322 Chemical Engineering Heat and Mass Transfer
Heat transfer by conduction, principles of heat flow in
fluctuations and without phase change, heat transfer by
radiation, heat-exchange equipment. Principles and
theory of diffusion, mass transfer between phases, dis-
tillation, leaching and extraction, fixed-bed membrane
separation, crystallization.
Prerequisite: CME 318, CME 304, B- or better in CME
304
3 credits
CME 327 Molecular Modeling for Chemical
Engineers
Molecular modeling techniques and simulation of com-
plex chemical processes. Use of Monte Carlo methods and
Molecular Dynamics methods. Emphasis on the
simulation and modeling of biopolymeric systems.
Prerequisites: PHY 132, ESG 111 or MEC 112; AMS
261 or MAT 203; AMS 261 or MAT 303; CME 304; B-
or better in CME 304
3 credits
CME 420 Chemical Engineering Laboratory
IV: 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 writ-
ten 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
CME 470 Polymer Synthesis: Theory and
Practice, Fundamentals, Methods, Experiments
This course teaches general methods and processes for
the synthesis, modification, and characterization of
macromolecules. This includes general techniques for
purification, preparation and storage of monomers;
general synthetic methods such as bulk, solution, and
heterogeneous polymerization; addition and condensa-
tion polymerization; methods of separation and
analysis of polymers.
Prerequisites: PHY 132, PHY 134, CHE 322
3 credits
CME 488 Industrial Internship in Chemical
Engineering
Research project in an industrial setting under joint
supervision of an industrial mentor and chemical engi-
neering faculty. Project to cover some or all of the fol-
lowing chemical engineering principles of product
synthesis: experiment design, data collection, data
analysis, process simulations, and report writing relat-
ed to an industrial production facility. May be repeated
but a maximum of 3 credits of research electives can
be counted towards technical elective requirements.
Prerequisites: CME courses; permission of supervising faculty member
0-3 credits
CME 499 Research in Chemical
Engineering
Independent research project under the supervision of a
chemical engineering or interdisciplinary faculty
member. Project to cover some or all of the following
chemical engineering principles: experiment design,
data collection, data analysis, process simulations, and
report writing. May be repeated but a maximum of 3
credits of research electives can be counted towards
technical elective requirements.
Prerequisites: CME courses; permission of supervising faculty member
0-3 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 imple-
mentation of a database system. May not be taken for
credit in addition to ESE 305.
Prerequisites: CSE 219 and 220
3 credits
CSE 307 Introduction to Artificial
Intelligence
Artificial intelligence includes the construction of
machines that exhibit intelligent behavior. This course
will cover symbolic representation of knowledge
and methods of performing logical inference.
Prerequisites: CME 318, CME 304, B- or better in CME
304 or CSE 219
3 credits
EGL 382-G Black Women's Literature of the
African Diaspora
Black women's literature presents students with the
opportunity to examine through literature the politi-
cal, social, and historical experiences of Black women
from the African Diaspora. The course is structured
around five major themes commonly addressed in
Black women's writing: Black female oppression, sex-
ual politics of Black womanhood, Black female sexual-
ity, Black male/female relationships, and Black
women and defining self. This course is offered as
AFH 382, EGL 382, and WST 382.
Prerequisite: U3 or U4 standing
3 credits
ENS 380 Stony Brook in Tanzania: Lake
Victoria Environment and Human Health
This course investigates the relationship between
environmental quality, human health and welfare. The
focus is on Lake Victoria environment and the ways in
which people have perceived, used/misused, and con-
served it from pre-colonial times to the present.
Students will examine changes in attitudes and behav-
iors toward nature and the interplay between environ-
ment and human health. This will be done through
interviews and collection of basic environmental and
health data, e.g., energy source and consumption,
agricultural practices, malnutrition prevalence, and
public health records. The class will also evaluate the
effectiveness of the disease control activities and their
effects on the environment. By course's end students
will have gained a deeper understanding of the
interaction between environment and health.
Prerequisites: U3 or U4 standing
3 credits
ESE 231 Introduction to Semiconductor
Devices
The principles of semiconductor devices. Energy
bands, transport properties and generation recombi-
nation phenomena in bulk semiconductors are cov-
ered first, followed by junctions between semicon-
ductors and metal-semiconductor. The principles
of operation of diodes, transistors, light detectors, and
light emitting devices based on an understanding of
the character of physical phenomena in semicon-
ductors. Provides background for subsequent cours-
es in electronics.
Prerequisites: AMS 361 or MAT 203; PHY 127 or
132/134 or 142
3 credits
ESE 306 Random Signals and Systems
Random experiments and events; random variables,
probability distribution and density functions, continu-
ous and discrete random processes; Binomial, Bernoulli,
Poisson, and Gaussian processes; system reliability;
Markov chains; elements of queueing theo-
ry; detection of signals in noise; estimation of signal
parameters; properties and application of auto-corre-
lation and cross-correlation functions; power spectral
density; response of linear systems to random inputs.
Pre- or Corequisite: ESE 305
3 credits
ESE 341 Introduction to Wireless and
Cellular Communication
Basic concepts of wireless cellular communications,
radio frequency, spectrum reuse, radio channel char-
acterization, path loss and fading, multiple access
techniques, spread spectrum systems, channel cod-
ing, specific examples of cellular communication sys-
tems.
Pre- or Corequisite: ESE 340
3 credits
ESE 356 Digital System Specification and
Modeling
Introduces concepts of specification and modeling for
design at various levels of abstraction. High Level
specification language is used for executable models
creation, representing possible architecture imple-
mentations. Topics include design space exploration
through fast simulation and re-use of models and
implementation.
Prerequisites: ESE 124 and 380
3 credits
ESE 366 Design using Programmable
Mixed-Signal Systems-on-Chip
This course focuses on development of mixed-signal
embedded applications that utilize systems on chip
(SoC) technology. The course discusses design issues
such as implementation of functionality; realizing new
interfacing capabilities; and improving performance
through programming the embedded microcontroller
and customizing the reconfigurable analog and digital
hardware of SoC.
Prerequisites: ESE 380, ESE 372 and ESE 224 or CSE 230
3 credits
ESE 198 Fundamentals of Engineering
Chemistry
A quantitative introduction to chemistry (stoichiome-
try, bonding, states of matter, equilibrium) with empha-
sis on topics of interest to students in engineering (met-
als and semiconductors; thermochimistry, electro-
chemistry and corrosion; polymers). Labs include an
introduction to analytical techniques, electrochemistry
and chemical synthesis. Both quantitative and qualita-
tive methods are emphasized. May not be taken for
credit in addition to CHE 131/133, 141/143 or 198/199.
Prerequisites: PHY 132 or 142 or 126 and 127; MAT 127
or 132 or 142 or AMS 161
3 credits
ESE 201-H Engineering Responses to
Society
Strong engineering skills alone are not sufficient to
guarantee professional success in today's global econ-
ony. Industry requires that engineers also understand the business side of the organization, helping to ensure that products are quickly developed, brought to market and meet the ever increasing needs of the consumer. This class will introduce both engineering as well as non-engineering students to a host of business management practices including effective team building, communication, leadership and product development techniques. 
Prerequisite: One D.E.C. category E course
3 credits

**ESG 301-H Sustainability of the Long Island Pine Barrens**
The ecologically diverse Long Island Pine Barrens region provides a habitat for a large number of rare and endangered species, but faces challenges associated with protection of a natural ecosystem that lies in close proximity to an economically vibrant urban area that exerts intense development pressure. In this course we will consider the interaction of the ecological, developmental and economic factors that impact the Pine Barrens and the effectiveness of decision support systems in promoting sustainability of the Pine Barrens. This course is offered as BIO 301, GEO 301, ECO 301, and ESG 301.
Prerequisites: BIO 201 or ECO 108 or GEO 101 or 102 or ESG 198 or ESG 198 or CHE 131; and upper division status
3 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 361 or MAT 303
3 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; U3 standing
Pre- or Corequisite: ESG 332
Corequisite: ESG 300
3 credits

**ESG 320 Sensor Materials and Devices**
Sensors serve as 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 281, and AMS 361
3 credits

**ESG 332 Materials Science I: Structure and Properties of Materials**
A study of the relationship between the structure and properties of engineering materials and the principles by which materials’ properties are controlled. The structure and structural imperfections in simple crystalline materials and the role that these factors play in defining electrical conductivity, chemical reactivity, strength, and ductility are considered. The molecular structure of polymers is discussed and related to the behavior of plastics, rubbers, and synthetic fibers. The principles of phase equilibria and phase transformation in multiphase systems are developed. These principles are applied to the control of the properties of semiconductors, commercial plastics, and engineering alloys by thermomechanical treatment. Corrosion, oxidation, and other deterioration processes are interpreted through the interaction of materials with their environment.
Prerequisites: ESG 198 or CHE 131 or 141
5 credits

**ESM Materials Science**

**ESM 212 Introduction to Environmental Materials Engineering**
Multidisciplinary, materials-oriented approach to environmental and civil engineering, incorporating the concept of sustainable development: basic principles, including pollutant transport, water quality, waste and waste water treatment, energy systems and energy efficiency, use of sustainable building materials, 'green' manufacturing and pollution prevention, engineering materials issues unique to construction. Use of field and laboratory sensors and analytical tools will be discussed and demonstrated. Project and problem-based approach to design of structures and materials engineering, incorporating environmental considerations.
Prerequisites: ESG 100 or ESG 201; ESG 198 or equivalent; PHY 199 or 121 or 125 or 131 or 141
3 credits

**ESM 221 Introduction to Chemistry of Solids**
Introduction to the synthesis, structure, properties, and applications of solid materials. Topics include preparation and characterization of solids (introduction to X-ray diffraction), thermal decomposition, crystal structure, crystal defects, and solid-state properties that influence chemical reactivity. This course is offered as both CHE 221 and ESM 221.
Prerequisites: CHE 135 or 142 or ESG 198, and CHE 133 or 143 or 199; ESG 111 or CSE 114 or MEC 111 or MEC 112; MAT 132 or 127 or 142 or 171 or AMS 161; PHY 128 or 131/133 or 141
3 credits

**ESM 335 Strength of Materials**
The mechanical behavior of materials, assuming a basic knowledge of elasticity, plasticity, fracture and creep. Provides treatment of these topics across size scales. Continuum mechanics, advanced phenomena in mechanics of materials, and case studies and measurement techniques.
Prerequisites: AMS 261 or MAT 203; ESG 302
5 credits

**ESM 450 Engineering Systems Laboratory**
A systems approach will be taken to understand the fundamental properties of materials and their implications on engineering design and applications. The advanced gas turbine engine is used as the main test bed for this laboratory class. Results from mechanical testing and phase analysis will be analyzed in the context of real-world system construction, operation and reliability.
Prerequisite: ESG 332
3 credits

**EST Technology and Society**
**EST 326 Management for Engineers**
This course will introduce all the principals and theories in the area of operation management and quality control. The important issues relating to management of innovation and project management will also be included.
3 credits

**EST 327 Marketing for Engineers**
This course will introduce the important principles and theories of marketing, especially for new product design and development, for technical and e-Commerce industries. The preparation and evaluation of a marketing plan will also be covered.
3 credits

**GRK Greek**

**GRK 111 Elementary Ancient Greek I**
An introduction to the language and culture of ancient Greece. The course focuses on grammar, syntax, and techniques of translation. Development of reading skills is stressed.
Prerequisite: Permission of instructor
3 credits

**GRK 112 Elementary Ancient Greek II**
A continuation of GRK 111: the grammar and syntax of Ancient Greek, with emphasis on reading comprehension.
Prerequisite: GRK 111
3 credits

**ISE Information Systems**

**ISE 305 Database Design and Practice**
revised title, course description, and prerequisites
The design of database applications including Entity-Relationship data modeling, the relational data model, the SQL database query language, application development, and database administration. Students will complete a project that includes designing a database application and implementing it using database development tools.
Prerequisites: CSE 214 or 230
3 credits
JRN

Journalism

JRN 103-G News Literacy

How do you know if you’re getting the truth from the news media? This course is designed to prepare stu-
dents to become more discerning news consumers. It will examine standards of reliability and accuracy in news gathering and presentation, and seek to establish the difference between news and propaganda, assertion and verification, bias and fairness, and infodain-
ment and journalism. Students will be encouraged to critically examine news broadcasts, newspaper articles and Web sites. Visiting journalists will be questioned about the journalistic process and decision-making. Previously offered as a topic to ECL 390-G (spring 2006). Not for credit in addition to ECL 390 with that topic. JRN 101 and JRN 103 are mutually exclusive; JRN 101 cannot be taken for credit in addition to JRN 103 or vise versa.

JRN 330 Investigative and In-Depth Journalism

This course introduces students to the disciplines of investigative and in-depth reporting with a strong emphasis on the press’ watchdog role in a democratic society. Students will work with all three media plat-
forms, studying advanced reporting techniques such as developing confidential sources, conducting confrontational interviews and organizing and analyzing complex data. This course focuses on ethical concerns, and on writing, taping and recording information with precision and clarity. Students also will explore relevant aspects of computer assisted reporting. Field work is involved.

Prerequisite: JRN 310
Advisory prerequisite: AMS 102-C, Elements of Statistics
3 credits

JRN 335 Reporting in New York City

This course, which is offered only in winter and sum-
nner sessions, provides students with an overview of how reporters cover the major institutions in New York City: City Hall, the United Nations, the police depart-
ment, the courts, Wall Street, etc. The course offers a blend of classroom instruction, talks with officials and journalists, and hands-on reporting. On reporting days, the class will be run as a newsgroup. The course will be co-taught by a print journalist and an electronic-news journalist. Students may choose whether to concen-
trate on writing for print and the Web or preparing video packages for broadcast and the Web. It is offered at the university’s Manhattan extension.

Prerequisite: JRN 310
3 credits

JRN 360 Advanced Reporting and Writing for Print and Web

This course explores explanatory, interpretive and issue-based journalism for both print and the Web. Students will produce analytical and explanatory sto-
ries that combine authoritative material with clarity of writing. In addition to weekly assignments, students will undertake a culminating project designed to showcase their ability to illuminate a complicated topic on both platforms.

Prerequisite: JRN 310, JRN 337
Pre-or Corequisite: JRN 350
3 credits

JRN 361 News Editing and Presentation/Print

This course focuses on developing students’ copy edit-
ing and layout skills and is designed for students con-
centrating on newspapers or magazines. Students will be exposed to all phases of copy editing, from news judgment to line editing. Mastery of grammar and of the Associated Press Stylebook is a goal of this course. Headline writing will be discussed and students will practice writing beating a deadline and managing a deadline. Students will also be exposed to layout via Microsoft Publisher. Students will practice pagination on deadline and critique layouts in print publications and online. Students will be exposed to the art of photo selection, placement and cropping, and to the use of graph-
ics and other elements to enhance newspaper story-
telling.

Prerequisite: JRN 350
Pre-or Corequisite: JRN 360
3 credits

JRN 362 Magazine Journalism

This course is designed for students who have an inter-
est in magazine journalism. Students will study editori-
al content, editing, design and production of general interest magazines, the booming market in specialty and niche magazines, and the growing market in sports, lifestyle and entertainment magazines. Magazine journalists will be invited to class to discuss their work. As a semester project, students will work on developing a magazine prototype.

Prerequisites: JRN 337, JRN 350
3 credits

JRN 370 Advanced Reporting and Writing for Broadcast and Web

Building on JRN 310, this course will help students to develop their broadcast writing skills more fully, expand their television reporting skills, strengthen their use of video and audio narratives within television news stories and learn to edit news stories for televi-
sion more effectively. As future journalists, students will be treated as professional reporters/producers and photographers/editors. Story ideas will be discussed as a group with the professor and with the class before assignments are approved. News packages completed in class will be used in newscasts produced by students in JRN 371.

Prerequisite: JRN 310
Pre-or Corequisite: JRN 350
3 credits

JRN 371 Television Production

This course is designed to introduce students to plan-
ning, assembling, producing and performing the ele-
ments of a newscast. Students will be exposed to the roles of key members of a newscast team, including producers, assistant producers, reporters, writers, anchors and video photographers and editors. There will be emphasis on developing decision-making and on-air skills as students complete mini-newscasts and segments for broadcast. Students will be expected to meet strict deadlines and manage critical air time. Newscast segments will be showcased on JRN Web sites.

Prerequisite: JRN 350
Pre-or Corequisite: JRN 370
3 credits

JRN 380 Advanced Editing & Presentation / Web

This course, designed for students interested in spe-
cializing in online news, will focus on content manage-
ment and the presentation of news on the Web. Students will have the opportunity to manage a Web site in real time, with emphasis on around-the-
clock news judgment and presentation. Students will learn how to enhance online news through multi-media integration and reader/viewer interaction. Students also will study information architecture, eye-tracking studies and different ways of making the Web more accessible for readers, including layering information. The course will incorporate material from multi-media courses learned in JRN 350. After completion of course overview material, students will work through three phases designed to simulate a key role in current online newsrooms. The phases will emphasize content management, multimedia integration and harvesting original video. There will be emphasis on building critical thinking skills and devel-
opment team work. By the end of this course, students

are to produce a complete multimedia project and inte-
grate its production into a real-time online news site.

Prerequisite: JRN 320
Pre-or Corequisite: JRN 350
3 credits

JRN 382 Desktop Publishing for Journalists

This one-credit course is designed for JRN students who want to publish, promote or distribute their own work on the World Wide Web. Course work will include a brief examination of the development and structure of the Internet (concepts and terminology), with the bulk of the course devoted to introductory page design and publishing. Students will explore the basic use of HTML (the hypertext markup language), with special emphasis given to tables, forms and cascading style
sheets.

Prerequisite: JRN 320 or permission of instructor
1 credit

JRN 390 Special Topics: Issues in Contemporary Journalism

This special topics course will deal with timely and con-
temporary issues that affect journalists and journalism. The issues could range from the press in wartime, an examination of the press¿ role covering war from World War II to the current war in Iraq, and how the press covers presidential campaigns.

Prerequisite: JRN 101 or 103
3 credits

JRN 391 Journalism Workshops

This 1-credit workshop course is designed to assist stu-
dents in developing skills that will be useful in various journalism courses. Topics will rotate. Anticipated top-
ics include Digital Photography, Databases, FOIL and Sunshine Laws, On-Air Performance, Editing Software.

Prerequisites: JRN 101; JRN 103; permission of the instructor
1 credit

JRN 411 Television Practicum pending approval

This is a capstone course for students specializing in video. This day-long workshop class meets on Fridays from 9 am to 6 pm, with an hour break for lunch. Each week, students will produce and broadcast a half-hour, live newscast that will be broadcast on the Web and on a campus news channel. The class will experience the working conditions of a professional TV newsroom. Over the course of the semester, students will have the opportunity to work in each of they key jobs necessary for a successful newscast: broadcast producer, news director, anchor, field producer, reporter, video editor and member of the studio crew. Following each news-
cast, the news team will gather for a “post-mortem” meeting. At this meeting, work will be critiqued and plans will be made for follow-up stories and the next week’s newscast. The post mortem will serve as a weekly assessment for the students.

Prerequisite: JRN 370, permission of the instructor
Pre-or Corequisite: JRN 371
3 credits

JRN 435 Journalism Without Walls

This course, which will be offered only during winter or
summer sessions, is designed for experienced and enter-
prising journalism students. Students will be assigned as part of a team to travel to a location and using only mobile technology, transmit stories and video from the field. Their work product will be pub-
lished via a special Web site. Students will have one week to research a topic or location before leaving for their destination. (A team of students, for example, might be sent to New Orleans to report on how well the community is recovering from Hurricane Katrina, or to one of the two major political conventions, or to an overseas location.) While on assignment, students will file blogs, gather multimedia and video, write and edit stories, produce a Web site and establish a “mobile newsroom.” One or several instructors will accompany the students. This is a capstone course that combines students’ journalistic skills, judgment and enterprise

Spring 2008: updates since Spring 2007 are in red

http://www.stonybrook.edu/ugbulletin
with knowledge of emerging technology.
Prerequisite: JRN 360 or 370 or 380 and permission of department
A Passport may be required.
3 credits

MEC

Mechanical Engineering

MEC 125 Fundamentals of Machining Practices
Hands-on experience in the fundamentals of machining. Topics include introductions to various metrology tools and devices, as well as metalworking tools and practices including sawing, sheet metal cutting and punching, drilling, reaming, tapping and threading, turning on the lathe, boring, milling, and welding. Prerequisite: MEC major or permission of instructor
1 credit

MEC 214 Probability and Statistics for Mechanical Engineers
Foundations of probability and statistics as applied to mechanical measurements and experimentation. Basic statistical analysis of data and assessing likelihood of future events based on past history. Concept of random sampling. Uncertainty analysis and error propagation, using both analytical and graphical tools. Assessing dominant sources of error in measurements. Prerequisite: MAT 126 or 131 or 141 or AMS 151; MEC major or permission of instructor
Corequisite: MAT 127 or 132 or 142 or 171 or AMS 161
3 credits

MEC 316 Mechanical Engineering Lab I: Sensors and Instrumentation
The spatial and temporal resolution of modern instrumentation and sensors that are particular to mechanical engineering. Concepts of static and dynamic response as well as probability, statistics, and the statistical analysis of data are discussed. Includes basic circuit components, Laboratory safety. Students learn to operate instruments for measuring temperature, pressure, flow velocity, displacement, angle, acceleration, and strain. Design project. Laboratory fee required. Prerequisites: AMS 361 or MAT 303; MEC 363
Corequisites: MEC 301 and 364
3 credits

MEC 325 Manufacturing Processes
Pre- or Corequisites: MEC 125
3 credits

MEC 326 Manufacturing Processes and Machining
deleted

PHY

Physics

PHY 315-E Cosmic Rays: Experimental Research for Non-Physics Majors
Cosmic rays are a ubiquitous source of background radiation here on Earth, constantly replenishing short-lived radioactive materials (like Carbon 14) and perhaps providing the engine that has driven evolution over the ages. This seminar will provide an interactive opportunity to study the properties of cosmic rays using modern particle detectors and cyberinfrastructure as an introduction to the scientific method, experimental techniques, and data analysis. Classes will integrate group discussions with hands-on investigation in small teams, and then joint brainstorming sessions to analyze and understand the data to further improve the experimental measurements. Students will use computers to take and analyze data, to post their results, and to interact with each other and the course staff. Intended for non-Physics majors. Prerequisites: DEC C, U2 standing or higher
3 credits

POL

Political Science

POL 349-F Social Psychology of Politics
deleted

SKT

Sanskrit

SKT 111 Elementary Sanskrit I
An introduction to Sanskrit, the classical language of Indian religion and philosophy, including grammar, translation, and readings from selected texts of Hinduism and Buddhism.
4 credits

SKT 112 Elementary Sanskrit II
An introduction to Sanskrit, the classical language of Indian religion and philosophy, including grammar, translation, and readings from selected texts of Hinduism and Buddhism. Prerequisite: SKT 111
4 credits

WST

Women's Studies

WST 382-G Black Women's Literature of the African Diaspora
Black women's literature presents students with the opportunity to examine through literature the political, social, and historical experiences of Black women from the African Diaspora. The course is structured around five major themes commonly addressed in Black women's writing: Black female oppression, sexual politics of Black womanhood, Black female sexuality, Black male/female relationships, and Black women and defining self. This course is offered as AFH 382, EGL 382, and WST 382. Prerequisite: U3 or U4 standing
3 credits