

AAS

Asian & Asian American Studies

AAS 102- B: Eastern Religions

An historical introduction to Hinduism, Buddhism, Confucianism, and Taoism. Attention is given to the cultural background, art, literature, philosophy, and institutional development of each tradition. This course is offered as both AAS 102 and RLS 102.

3 credits

AAS 110- G: Appreciating Indian Music

An introduction to the basic elements of Indian classical music, such as "raga" and "tala", "gharanas" (schools) and styles. Vocal and instrumental masterpieces are studied. Topics include: the roles of stringed and percussion instruments; the intimate relationship between music and religion, and music and ethnicity; and the influence of Indian classical music on contemporary art forms such as films and folk music. No previous musical training is required.

3 credits

AAS 201- J: Introduction to the Civilization of the Indian Subcontinent

Key concepts in South Asian civilization in art, architecture, religion, philosophy, science, society, literature, and politics from the Indus Valley to the present. Topics include evolution of Hinduism, Buddhism, yoga, classical and modern languages, the caste system and reform movements, Asoka, Akbar and great emperors, impact of Islam and Western colonization, and Gandhi and the impact of South Asia on the world.

3 credits

AAS 209- D: Indian Classical Dance: Bharatanatyam

Introduction to the basics of Bharatanatyam (South Indian classical dance) technique. Includes primary postures and basic steps, or adavus. Class also covers the theory of Bharatanatyam including hand gestures, head, neck and eye movements, as delineated in Nandikeswara's Abhinaya Darpana. Students will gain a well-rounded knowledge of the dance by studying Bharatanatyam's form, content, basic history, music, and repertoire. By the end of the class, students will learn and present short dance pieces including a Jathi (string for adavus) and a Shloka (poem).

Advisory Prerequisite: Any dance class

3 credits

AAS 211- F: Asian and Asian American Studies Topics in the Social Sciences

Using the methodologies of the social sciences disciplines of history, political science, sociology, and economics, this course provides an introductory overview of important topics in Asian and Asian American studies. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

3 credits

AAS 212- G: Asian and Asian American Studies Topics in the Humanities

Using methodologies of the Humanities disciplines, such as literature, linguistics, classics, cultural studies, philosophy, religious studies, art history and criticism, this course provides an introductory overview of important topics in Asian and Asian American Studies. Topics may range from Women in Japanese fiction to Mahatma Gandhi's impact on politics and ethics. Semester supplements to this Bulletin contain specific description of topic and when course is offered. May be repeated as the topic changes.

3 credits

AAS 215- D: Classical Performing Arts of India

An introduction to the stories, histories, and aesthetics of Indian classical performing arts. The course focuses on Bharatanatyam, the solo dance form from South India. Kathakali, Manipuri, Odissi, and Kathak will be introduced to compare and contrast dance-theatre forms of South Asia. Students will be introduced to each performance form by studying its ancient and modern history, practitioners, technique, stage presentation, and aesthetics. The course explores the commonalities of all these performing art forms including: mythology, the classic text: Natya Shastra, abhinaya (mime) and the theory of rasa. Lessons will be accompanied by suitable reading material and visual demonstrations either on video or by a practitioner of the art form.

Prerequisite: Completion of D.E.C. A

3 credits

AAS 216- J: Introduction to Japanese Studies

An introduction to Japanese culture as a foundation for understanding Japan. The changing historical experiences of the Japanese people are examined, exposing students to the diversity of backgrounds, values, and opinions in Japan. Japanese history and culture are also explored in relation to other countries and peoples, especially Korea and China.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

AAS 217- J: Introduction to Korean Culture

A general survey of Korean culture from the earliest recorded periods to the 20th century, including painting, music, dance, ceramic art, sculpture, architecture, literature, and folklore. These are discussed in relation to the intellectual, philosophical, and religious movements of their time. Previously offered as KRH 240. Not for credit in addition to KRH 240.

3 credits

AAS 220- J: China: Language and Culture

A survey of regional languages and cultures of China. Addresses issues of diversity and standardization in the world's most populous country, particularly the role of language as both a system of spoken and written signs as well as a resource for cultural reproduction and social change. Explores discourse norms, key cultural concepts, and the unique problems posed by cross-cultural translation and interpretation.

3 credits

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.

Prerequisites: One DEC E course and U2 status or higher

3 credits

AAS 232- G: Introduction to Asian American Fiction and Film

The course is an introductory survey of Asian American fiction (short stories and novels) and films (narratives and documentaries). A central premise of the course is that the histories of racial segregation in the U.S., immigrant exclusion acts, colonial and contemporary wars in Asia, and global migrations are the political and historical contexts of Asian American narratives.

3 credits

AAS 240- J: Confucianism and Taoism

An introduction to the basic philosophies and doctrines of Confucianism and Taoism, such as the concept of Tao, non-action, benevolence, and propriety. The course explores both the similarities and the differences between these two traditions. This course is offered as both AAS 240 and RLS 240.

3 credits

AAS 246- J: Korean and Japanese Religions

An introduction to Korean and Japanese religious history from earliest recorded periods to the 19th century. Emphasis is given to Buddhism, Confucianism, Taoism, Korean Shamanism, and Japanese Shintoism. Relationships between the Korean variant of religious traditions and those of China and Japan are also investigated. Crosslisted with AAS 246.

3 credits

AAS 250- K: Languages and Cultures of Asian Americans

Study of language use and cultural accommodation in selected Asian American communities in relation to the changing roles of Asians in U.S. society from the early democracy to the present. Issues include linguistic and cultural diversity of Asia and Asian Americans; comparison of Asian and European immigration patterns; struggle for equality and acceptance; cultural factors in assimilation; patterns of Asian language use and maintenance in various domains; the role of language in ethnic identity; attitudes toward English and bilingualism; bilingualism as a problem and as a resource. This course is offered as both AAS 250 and LIN 250.

3 credits

AAS 256- J: Hinduism

Survey of the principal religious and philosophical currents of Hindu civilization in India from the time of the Vedas and Upanishads through the development of the major devotional ways and schools of thought current in India today. These include the polytheism of Hindu mythology, the theism of various forms of devotional practice, and the monotheism and nondualism of Hindu philosophy. This course is offered as both AAS 256 and RLS 256.

3 credits

AAS 260- J: Buddhism

An introduction to the basic philosophy and doctrines of Buddhism, beginning with a survey of lives and works of major historical figures of Buddhism. The principal issues

of Buddhist thought, drawing from Indian, East Asian, and Western sources, are treated. Particular attention is paid to the meaning of faith, practice, and enlightenment in Buddhism. This course is offered as both AAS 260 and RLS 260.

3 credits

AAS 271- J: Religion in Ancient Mesopotamia

Presents a picture of religion in ancient Mesopotamia based on archaeological data and ancient texts. A major contribution of the Mesopotamian civilization was the development of a special spiritual life of the people. Since the sixth millennium BC, these beliefs were the way they explained un-known and un-seen experiences. Set rules, traditions and special architecture were developed around these beliefs. These will be discussed, including the incorporation of these beliefs by other cultures. Not for credit in addition to AAS 212, Religion of Ancient Mesopotamia.

3 credits

AAS 280- J: Islam

An introduction to the main features of Islamic revelation as contained in the Koran and its impact on the major spiritual, intellectual, legal, and social teachings and institutions of the Islamic world. The course concludes with an examination of Islam in the modern world. This course is offered as both AAS 280 and RLS 280.

3 credits

AAS 300- G: Intellectual History of East Asia

Study of the historical development of major intellectual traditions of East Asia (China, Japan, Korea). Topics include the Political Thoughts of the Ancient World (Formations of Confucianism, Taoism, and Yin Yang and Correlative Thinking), Era of Metaphysics (Introduction and Development of Buddhism and East Asian Mysticism), Ethics and Nationalism (Neo-Confucianism and Encounter of the Western Civilization), and East Asia's Modern Transformation (Modernization, Socialism, and Westernization).

Prerequisite: One 200-level course in Asian Studies

3 credits

AAS 313- J: Asian Theatre and Drama

A comprehensive overview of Asian theatre with special emphasis on drama, theatrical aesthetics, conventions of production, and actor training in India, China, Korea, and

Japan. This course is offered as both AAS 313 and THR 313.

Prerequisites: Completion of D.E.C. categories A, B, and D

3 credits

AAS 317- J: Islamic Art

Art and architecture in the Islamic world from ca. 600 A.D. to the present, introducing the varied traditions of the arts of the Islamic world, from Spain and Morocco to the Indian subcontinent. Consideration of both religious and secular art and architecture in their historical and cultural contexts with emphasis on the development of Islamic forms of visual representation. This course is offered as both AAS 317 and ARH 317.

Prerequisites: U3 or U4 standing; one ARH course

3 credits

AAS 319- 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.

Prerequisite: One DEC D course and U3 or U4 standing

3 credits

AAS 320- G: Literature of India

Introduction to selected classics of Indian literature in English translation. Classical and modern works are discussed, representing Sanskrit (the Vedas, the Upanishads, the epics Ramayana and Mahabharata, classical drama of Kalidasa and Bhasa), Tamil, Kannada, Hindi-Urdu, and Indian English. Western and Indian literary theories and critical approaches are compared and evaluated.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AAS 201 (or the former SAS 240)

3 credits

AAS 321- G: Korean Literature

An introduction in English to the literary tradition of Korea. Representative literary texts chosen from various periods are studied with attention to their historical background and the aesthetic and cultural values that inform them. Previously offered as KRH 251. Not for credit in addition to KRH 251.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AAS 217 (formerly KRH 240)

3 credits

AAS 322- G: Literature of Japan

An introduction in English to the literary tradition of Japan. Representative texts chosen from various periods are studied with attention to their historical background and the aesthetic and cultural values that formed them.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AAS 216 (formerly JNH 240)

3 credits

AAS 326- G: Indian Mythology

Study of the major themes in Indian mythology and their evolution, including the relation of these myths to philosophy and religions such as Hinduism, Buddhism, and Jainism. Myths are traced from the Vedas of 1500 B.C. to the modern Indian myths. The course will consider the impact of myths on classical Indian literature and art forms, as well as their impact on contemporary art forms such as film, television, and theatre.

Prerequisite: AAS 201 or 212

3 credits

AAS 327- G: Great Epics of India: Ramayana and Mahabharata

The themes, characters, and plots of Ramayana and Mahabharata are analyzed in detail. The moral dilemmas presented and their sometimes controversial solutions are explored in the context of "dharma", or righteousness--the central concept of Hinduism. The course will compare the two epics with each other.

Prerequisite: AAS 201 or 212

3 credits

AAS 328- K: Race, Comedy and Asian America

This comparative ethnic American cultures course examines how contemporary American comedians, fiction writers, visual artists, independent filmmakers, feminist and transgendered comics deploy the language of comedy to invoke serious social matters in contemporary American life such as racism, immigration, homophobia, class biases against the poor and the undocumented, misogyny, war and other burning issues of the day. We will explore how the ends of comedy are more than laughter and how comedy confronts political issues that are constitutive of and threatening to the U.S. body politic.

Prerequisite: 100-level course in AAS, AMR, or AST

3 credits

AAS 330- J: Language and Society in South Asia

Study of the evolution, structure, and role of representative languages in South Asia. Focus is on multilingualism, lingua francas, national language, contact, convergence, and use, especially in education, administration, business, religion, literature, and the media. Topics may also include language, ethnic identity, and conflict; English in India; globalization and localization; and India's impact on linguistics.

Advisory Prerequisite: LIN 101

3 credits

AAS 338- J: Contemporary India: History, Politics, and Diplomacy

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

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

3 credits

AAS 339- J: Contemporary China: History, Politics, and Diplomacy

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

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

3 credits

AAS 340- J: Topics in Asian History

Past topics have included titles such as Late Imperial China; The Chinese Diaspora; and Overseas Chinese and Chinatowns. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May

be repeated as the topic changes. This course is offered as both AAS 340 and HIS 340.

3 credits

AAS 346: Philosophy of Education in Korea and Japan

An examination of the philosophical and religious principles of traditional education in Korea and Japan and the way in which these are reflected in actual practice. Since Confucius provides the basic framework for the discussion, special attention is paid to his teachings and the ways in which they were adapted and modified by his followers over the centuries.

Prerequisite: One 200-level course in Asian religion or philosophy

3 credits

AAS 347- J: South Asia Before Colonialism

The South Asia region (contemporary India, Pakistan, Bangladesh, Sri Lanka, Nepal and Afghanistan) has been a crossroads of diverse people, ideas and commodities for millennia. This course covers key themes and developments in the subcontinent from antiquity to the rise of British colonialism. We will begin by covering major issues in early South Asia, and proceed to consider closely the medieval and early modern periods. Central themes include pre-modern dimensions of the Hindu-Muslim encounter, emergence of South Asian regions, the subcontinent in global networks, and early presence of European powers. This course is offered as both AAS 347 and HIS 347.

3 credits

AAS 348- J: Colonial South Asia

Colonial South Asia comprised much of what is now India, Pakistan and Bangladesh, and was dubbed 'the jewel in the crown' of the British Empire at its height. The Subcontinent's status as the most populous and lucrative colony of the world's largest empire profoundly shaped the world of both colonized and colonizer there. The readings, lectures and discussions call upon students to consider the political, social, economic and cultural and religious effects of Britain's rule in the South Asia during the period of British colonial domination (from about 1700 to 1950). This course is offered as both AAS 348 and HIS 348.

3 credits

AAS 351- J: Revolutionary China: Politics, Culture, and Power

Explores the history of revolutionary nation-building efforts in 20th century China, examining social, cultural, economic and political developments during the "Republican" and "Maoist" periods. Focuses on key terms and concepts used by agents and analysts of revolutionary change. Draws on interdisciplinary scholarly studies, government documents, media reports, auto-biographical accounts, and popular fiction to assess the consequences of major events on people's lives, livelihoods, worldviews, and personal relationships. This course is offered as both AAS 351 and HIS 351.

Prerequisite: One AAS or HIS course

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 in 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 357- J: India's Foreign Policy

A critical analysis of the foreign policy of India since Independence in 1947, especially Non-alignment and relations with major powers. The factors behind India's entry into the nuclear club and its impact on her international relations within the subcontinent and beyond. Analysis of issues such as Kashmir, terrorism, India's quest for a permanent seat in the U.N. Security Council, economic reforms, and role of Indian diaspora to the country's relations with the countries of their adoption.

Prerequisite: U3 or U4 standing or permission of instructor

Advisory Prerequisites: AAS 201 and 348

3 credits

AAS 366- G: Feminine Spirituality

The role and destiny of human beings as envisaged by the world's great traditions, especially the Chinese and the Islamic. The course focuses on the concept of femininity as a principle in the realms of theology, metaphysics, cosmology, and spiritual psychology; and the theoretical and practical applications of the feminine principle to the

place of both men and women in society. Topics include feminine and masculine as metaphysical and cosmological principles; woman and religious law; woman's role in symbolism, mythology, and literature; and the feminine aspects of the self that both women and men need to develop on the path of achieving spiritual perfection. Previously offered as RLS 426, this course is now offered as RLS 366. Not for credit in addition to the former RLS 426. This course is offered as both AAS 366 and RLS 366.

Prerequisite: any 200-level or higher RLS course

3 credits

AAS 367- J: Meditation and Enlightenment

A critical analysis of the traditions, practices, and literature of Zen and other traditions of Buddhism, with particular attention paid to the meaning of enlightenment and the practice of meditation. Previously offered as RLS 341, this course is now offered as both AAS 367 and RLS 367. Not for credit in addition to the former RLS 341.

Prerequisite: AAS/RLS 102 or 260

3 credits

AAS 368- J: Yoga: Theory and Praxis

In this course we investigate Yogic systems of philosophy and self-transformation in their many forms throughout history. Topics include the origins of Yoga in ancient India, the philosophy of the Yoga Sutras and its commentarial traditions, Buddhist Yoga, Hatha Yoga, Tantric Yoga, and the medicalization and globalization of Yoga in the modern period. Students are encouraged to supplement class discussions by participating in Yoga classes at the Stony Brook University Wellness Center. This course is offered as both AAS 368 and RLS 368.

Prerequisite: One previous course in AAS or RLS

Advisory Prerequisite: Junior or Senior standing

3 credits

AAS 370- J: Intercultural Communication

Through combination of theory and research from discourse linguistics and linguistic anthropology, this course examines (i) how culture shapes ways of speaking; (ii) how language constructs identities, dispositions, role relations; and (iii) what challenges people from different cultures may face when they communicate with each other. The following analytical perspectives will be presented: speech act theory, ethnography

of communication, linguistic politeness, and sequential organization of turn taking. This course is offered as both AAS 370 and LIN 370.

Prerequisite: One previous course in D.E.C. J or one previous course in Linguistics

3 credits

AAS 371- J: Ancient China

Explores the development of social, economic, political, and cultural systems in ancient China, from the neolithic period through the Han dynasty. Draws on archaeological data and historical texts to examine the emergence of state-level polities and their subsequent unification under imperial authority. Analytical focus is on political economy, social organization, ritual exchange, and notions of power and rulership expressed in philosophical thought. This course is offered as both AAS 371 and ANT 371.

Prerequisites: U3 or U4 standing; completion of D.E.C. category F

3 credits

AAS 372- J: Family, Marriage, and Kinship in China

Examines forms and dynamics of social organizations in Chinese society, focusing on cultural, social, and economic aspects of family, marriage, and extended kinship relations such as lineages, clans, and sworn brotherhoods. Particular attention is paid to how gender, generation, class, and ritual exchange shape identity, status, and power. This course is offered as both AAS 372 and ANT 372.

Prerequisite: ANT 102

Advisory Prerequisites: AAS 220 and ANT 354

3 credits

AAS 379- J: Ethnicity and Ecology in China

This course explores issues of ethnic and national identity in the context of the social ecology of the Chinese state, both past and present. It focuses on the material and social relationships that have shaped perceptions of, and interactions between, cultural groups in China and along its frontiers. Drawing on case studies from the Himalayan plateau, Yunnan highlands, Inner Asian steppes, Taiwan, and elsewhere, students examine how sustenance strategies, economic organization, and political administration have influenced construct of ethnic identity. This course is offered as both AAS 379 and ANT 379.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AAS 220 or HIS 219 (or the former CNS 249 or 250)

3 credits

AAS 380- G: Islamic Classics

A study in depth of Islamic texts in translation. Selections may be made from the Qur'an, the Hadith, the Law, and from one or more of the major intellectual schools, such as Kalam (scholastic theology), Peripatetic philosophy, illuminationist theosophy, Sufism, and the "transcendent theosophy" of the School of Isfahan. May be repeated as the topic changes. Previously offered as RLS 408, this course is now offered as both AAS 380 and RLS 380.

Prerequisite: AAS/RLS 280

3 credits

AAS 382- G: Japanese Buddhism

An introduction to the teachings and practices of two major schools of Japanese Buddhism: Zen and Pure Land. The course focuses on the writings of the founders of the important lineages within these schools. Formerly offered as RLS 406, this course is now offered as both AAS 382 and RLS 382. Not for credit in addition to the former RLS 406.

Prerequisite: AAS/RLS 260

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. May be repeated as the topic changes. This course is offered as both AAS 386 and PHI 386.

Prerequisites: One previous course in AAS or PHI

Advisory Prerequisite: Junior or Senior Standing

3 credits

AAS 387- J: Islam and Confucianism

The goal of this course is to compare the basic teachings of Islam and Confucianism concerning the correct way to achieve true human status. Special stress will be placed on books that Muslim scholars wrote in Chinese beginning in the seventeenth century. These books employed Neo-Confucian language to introduce Chinese Muslims to their own theology, cosmology, and spiritual psychology, thus providing a rare pre-modern example of inter-religious dialogue. This course is offered as both AAS 387 and RLS 387.

Prerequisites: AAS 260 or RLS 260 or AAS 280 or RLS 280; U3 or U4 standing

3 credits

AAS 391- G: Humanities Topics in Asian and Asian American Studies

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

Prerequisite: U3 or U4 standing

3 credits

AAS 392- F: Social Science Topics in Asian and Asian American Studies

Topics may include titles such as Indian Grammatical Tradition, English in Asia, and Indian Economics. Designed for upper-division students, this course provides an in-depth study of a specific topic within social sciences disciplines such as history, economics, political science, and linguistics. Students will be expected to demonstrate an understanding of the methods social scientists use to explore social phenomena, and knowledge of the major concepts, models, and issues of the social science discipline(s) studied. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

3 credits

AAS 394- J: Topics in Asian Art

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

Prerequisites: U3 or U4 standing; one ARH course

3 credits

AAS 400: Seminar in Korean Studies

A seminar for upper-division students in the Korean studies minor, exploring in depth a single theme chosen to illustrate the relations among literary, religious, philosophical, historical, and cultural aspects of Korean life. Use of original texts and other materials is emphasized. May be repeated once as topic changes.

Prerequisites: U3 or U4 standing; one 200-level course in Korean Studies

3 credits

AAS 401: Senior Seminar in Asian and Asian American Studies

An intensive study of the theoretical and methodological issues in Asian and Asian American Studies, examining the intellectual histories and political contexts of 'area' and 'ethnic' studies and their relationship to broader interdisciplinary research and public discourse. Possible topics may include history, memory, and representation; Asian American social activism; global/local interactions; and the politics of national identity and security.

Prerequisites: U4 standing; AAS major

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 original 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 canon to contemporary social concerns.

Prerequisite: U4 status; completion of upper-division writing requirement for AAS majors; permission of instructor for non-AAS majors or non-CNS minors

3 credits

AAS 447: Directed Readings in Asian and Asian American Studies

Independent readings in advanced topics in Asian and Asian American studies. May be repeated.

Prerequisites: U3 or U4 standing; permission of instructor

1-6 credits

AAS 475: Undergraduate Teaching Practicum I

Students assist instructors in Asian and Asian American studies courses with large enrollments. Under the supervision of the course instructor, they are responsible for conducting discussion and review sections

and helping students with course readings and assignments.

Prerequisites: U3 or U4 standing; permission of instructor

3 credits, S/U grading

AAS 476: Undergraduate Teaching Practicum II

Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites: AAS 475; permission of instructor

3 credits, S/U grading

AAS 487: Supervised Research in Asian and Asian American Studies

Independent research under the supervision of a faculty member. May be repeated to a limit of 6 credits.

Prerequisites: U3 or U4 standing; permission of instructor

0-3 credits

AAS 488: Internship

Participation in a local, state, or federal governmental agency or community organization. Students are required to submit progress reports to their department sponsor and a final report on their experience to the department faculty. May be repeated up to a limit of 12 credits.

Prerequisites: Permission of instructor and undergraduate program director

0-6 credits, S/U grading

AAS 495: Senior Honors Project in AAS

This is a course for AAS majors who are candidates for the degree with honors. The project involves independent readings or research and the writing of a thesis. Not for major credit.

Prerequisite: Admission to the AAS Honors Program; permission of department

3 credits

ACH

Arts, Culture and Humanities

ACH 101: Introduction to Stony Brook

A seminar intended to integrate students into the Undergraduate Arts, Culture, and Humanities and into the University community by providing information about Stony Brook and a forum for discussion of values,

intellectual and social development, and personal as well as institutional expectations.

Required for all first year students. Not for credit in addition to ADV 101, LDS 101, GLS 101, HDV 101, ITS 101, SSO 101, SBU 101, SCH 101, or LSE 101.

Prerequisite: Admission to the ACH Undergraduate College

1 credit, S/U grading

ACH 102: Undergraduate College Seminar: Arts, Culture, and Humanities

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

Prerequisite: Admission to the ACH Undergraduate College

1 credit, ABC/U grading

ACH 275: Undergraduate College Fellows Seminar

Creates a curricular component for the second year of the Undergraduate College Experience. College fellows will enroll in ACH 275 in the spring semester of their freshman year and ACH 276 in the fall semester of their sophomore year. 275 (spring) engages students in four main content areas: student development theory, scholarship on mentoring and leadership development, concepts of teaching and learning, and programming and event planning. These areas prepare students for supervised learning and teaching experiences that will occur primarily in the fall 276 course.

Prerequisites: Grade of "S" in ACH 101 and a strong desire to help other students. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

ACH 276: Undergraduate College Fellows Practicum

The second semester in the sequence following ACH 275. Students assume higher responsibility and are given opportunities to apply teaching theories and concepts as learned in ACH 275. Students act as a TA for ACH 101.

Prerequisites: A grade of "S" in ACH 275. Enrollment in the corresponding

Undergraduate College; permission of the instructor.

1 credit, S/U grading

ACH 475: Undergraduate College Teaching Practicum

The purpose of this course is to allow upper-division students the opportunity to work with a faculty member as an assistant in one of the faculty member's scheduled Undergraduate College seminars. 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. May be repeated up to a limit of 6 credits.

Prerequisite: Permission of the instructor and department

1 credit, S/U grading

ACH 488: Undergraduate College Internship

Students learn about contemporary issues in higher education, community building, and teaching at a research university through hands-on work with faculty mentors. Work assigned will include participation in the planning and operation of events and initiatives sponsored by the Undergraduate Colleges. Students are required to submit written reports on their experiences to the Undergraduate Colleges office and Faculty Directors. May be repeated up to a limit of 6 credits.

Prerequisite: Permission of the instructor and department

0-3 credits, S/U grading

ADV

Advising

ADV 101: Advising 101: Transfer Seminar

A seminar intended to integrate transfer students into the University community by sharing information about Stony Brook and creating a forum to develop intellectual, social, writing, and communication skills. The course emphasizes institutional expectations to promote student success. Recommended for first semester transfer students entering with less than 57 earned credits. Required for all first semester international transfer students. Not for credit in addition to ACH 101, GLS 101, HDV 101, ITS 101, LDS 101, LSE 101, SBU 101, SCH 101, or SSO 101.

Prerequisite: New transfer student

1 credit, S/U grading

ADV 201: Preparing for Medical School

This course provides a broad survey of pre-medical studies, preparation for medical school admission, and the medical profession. The course will review medical school admission requirements and procedures, the academic coursework at both the undergraduate and professional school levels, the residency training of the physician, the typical routines of a medical practice, and other issues affecting the training of a medical doctor in the United States. In addition, the class will provide students opportunities for continual self-evaluation of personal motivations to enter the health profession. The course follows the chronological sequence taken by the traditional student to become a licensed medical doctor, and examines how this sequence of events plays an integral role in the development of a capable physician.

Prerequisites: U2 or higher standing.

Completion of at least one pre-medical science sequence and permission of the instructor.

1 credit, S/U grading

ADV 488: Academic Peer Advisor Internship

This two semester internship offers outstanding juniors and seniors an opportunity to gain advising experience, improve personal and professional skills, and explore career aspirations while providing assistance to others. Responsibilities include a teaching assistantship for a first semester transfer student seminar, provide support to undergraduates on making the academic and personal transition to Stony Brook, conducting oral presentations with other Academic Peer Advisors to students, and serving as a role model and mentor for other Stony Brook undergraduates. Interns are required to attend a weekly Academic Peer Advisor seminar, complete a set number of outreach hours, assist with events across campus and work in the advising center.

Prerequisite: Students are selected for the course based on an application which may be obtained from the advising office. Students must have earned 45 credits and a 3.0 cumulative GPA by the application date.

0-4 credits, S/U grading

AFH

Africana Studies/Humanities

AFH 206- B: Great Books of the Black Experience

An exploration of some of the key writings from autobiographies to novels, etc., important to becoming familiar with central lines of thought and interpretation in the larger Black Experience. Focus and readings vary depending on each semester's emphasis.

Advisory Prerequisite: U2 standing

3 credits

AFH 249- K: African-American Literature and Music in the 19th and 20th Centuries

A detailed look at African-American literature and music and their importance for American literature and music of the 19th and 20th centuries. An examination of the literature with attention to the special stylistic devices, tones of literary voice, and characterization that writers use in their efforts to match the music experience with the written word. Selections from the recordings of African-American and African-American inspired musicians -- from Bessie Smith and Louis Armstrong to Jimi Hendrix and the Rolling Stones. This course is offered as both AFH 249 and EGL 249.

Advisory Prerequisite: One D.E.C. category B or D course

3 credits

AFH 329- J: Pan-African Literature I

An examination of the cultural themes of Pan-Africanism and negritude, drawing on a selection of writers from the United States, Africa, and the Caribbean. The course treats the development, diffusion, and significance of these themes. It involves intensive consideration of selected literary works of African and African-American expression. This course is offered as both AFH 329 and HUF 318.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

AFH 330- J: Pan-African Literature II

An examination of the cultural themes of Pan-Africanism and negritude, drawing on a selection of writers from the United States, Africa, and the Caribbean. The course treats the development, diffusion, and significance of these themes. It involves intensive consideration of selected literary works of African and African-American expression.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

AFH 339- G: Arts of the African Diaspora

A study of the arts of the African Diaspora from the African continent to Brazil, Surinam, the Caribbean, and the United States. Emphasis is on the full range of art forms, including not only sculptural and performance traditions, but also textiles, basketry, and other crafts. Cultural continuities, spiritual belief, and significant changes in context, meaning, style, and technology are examined. This course is offered as both AFH 339 and ARH 329.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: ARH 201

3 credits

AFH 368- G: Caribbean and American Connections in Literature

An exploration of the connections between writers from the French-speaking and English-speaking Caribbean and from the African-American community, who share a similar cultural heritage, historical heritage, and historical experience, but differ in geopolitical situations. Special attention is paid to spirituality, gender, and identity motifs in the literature. This course is offered as both AFH 368 and EGL 368.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

AFH 379- K: Philosophy of Race (III)

Examination of our assumptions about race and the impact of those assumptions on issues concerning gender, class, and sexuality throughout American history. Readings include critical race theory, feminist theory, and critical legal theory. Students examine racial issues from a philosophical perspective and consider the ways in which representations of race may reinforce patterns of power and privilege. This course is offered as both AFH 379 and PHI 379.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One course in philosophy

3 credits

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

AFH 385- J: French Caribbean Literature

A study of representative texts from the French Caribbean translated into English, focusing on literary manifestations of a search for a specific identity by writers from Martinique, Guadeloupe, French Guiana, and Haiti. This course is offered as both AFH 385 and HUF 385.

Prerequisite: U3 or U4 standing

3 credits

AFH 390- G: Topics in Africana Studies

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AFS 101 or 102 or two courses in the humanities

3 credits

AFH 391- G: Topics in Africana Studies

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AFS 101 or 102 or two courses in the humanities

3 credits

AFH 417: Advanced Topics in Africana Studies

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

3 credits

AFH 423- J: Africana Literature in French

An examination of a range of literature in French produced by writers throughout the African diaspora who claim affiliation with Africa. While the course is conducted in French, students will have the option to write papers in either French or English. Competence in reading and speaking French is a requirement for the course. This course is offered as both AFH 423 and FRN 423.

Prerequisite: A 200-level course in literature. For French majors, FRN 395, 396 or Permission of the Instructor.

3 credits

AFH 447: Readings in Africana Studies

Individually supervised reading in selected topics in the Black Experience. May be repeated once.

Prerequisite: Permission of instructor and program director

1-3 credits

AFH 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Students may not serve as teaching assistants in the same course twice. Not for major or minor credit.

Prerequisites: Africana studies major or minor; U4 standing; permission of instructor

3 credits, S/U grading

AFH 476: Undergraduate Teaching Practicum II

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

Prerequisites: AFS 475; permission of instructor

3 credits, S/U grading

AFH 487: Research in Africana Studies

Individual research projects in the Black Experience carried out under the direct supervision of a faculty member. May be repeated to a limit of 6 credits.

Prerequisite: Permission of instructor and program director

0-3 credits

AFS

Africana Studies/Social and Behavioral Sciences

AFS 101- F: Themes in the Black Experience I

An historical survey of the experience of black people against the background of a thorough review of American history and the events which impacted upon the black experience in America. This course also examines the responses of African Americans to the changing historical circumstances that they encountered in the United States. Consideration is also given to the similarities and differences among the lifestyles of people of African descent in America. This course treats themes to 1865.

3 credits

AFS 102- F: Themes in the Black Experience II

An historical survey of the experience of black people against the background of a thorough review of American history and the events which impacted upon the black experience in America. This course also examines the responses of African Americans to the changing historical circumstances that they encountered in the United States. Consideration is also given to the similarities and differences among the lifestyles of people of African descent in America. This course treats themes from 1865 to the present.

3 credits

AFS 221- J: Introduction to Modern African History

Historical themes in 19th- and 20th-century Africa. Topics include social and political relations in African states; slavery and the slave trade in West Africa; the impact of Christianity and Islam on African colonialism; colonialism and its consequences; nationalist movements and de-colonization; pan-Africanism and the politics of African unity;

the postcolonial state project; economic planning in postcolonial Africa; and African states and international politics in the Cold War era. This course is offered as both AFS 221 and HIS 221.

Advisory Prerequisite: One D.E.C. category F course

3 credits

AFS 239- J: Introduction to the Caribbean Experience

An introduction to the political economy of contemporary Caribbean societies with emphasis on the historical roots of their present underdevelopment.

Advisory Prerequisite: One D.E.C. category F course

3 credits

AFS 240- J: Issues in Caribbean Society

An analysis of the process of social change in the English, Spanish, and French Caribbean with special emphasis on those societies undergoing rapid transformation.

Advisory Prerequisites: AFS 101, 102, and 239

3 credits

AFS 277- K & 4: The Modern Color Line

An exploration of the significance of race in 19th- and early 20th-century America. Topics include forms of political organization and collective struggle; the social and psychic consequences of racist subjection; the relationship among race, racism, and culture; and the cultural politics of race and gender. This course is offered as both AFS 277 and HIS 277.

Advisory Prerequisites: AFS 101 and 102; completion of D.E.C. categories I and J

3 credits

AFS 283: Community Service

Through field experience, readings, research, and discussion, students focus on social and educational problems relating primarily to the African-American experience. Specific programs may include working with children from low-income families, educational and cultural enrichment projects, tutoring in various institutional settings, and other projects to be announced. May be repeated once.

Prerequisite: Permission of instructor

3 credits, S/U grading

AFS 300- K: Blacks in the City

The urban experiences of blacks as a force in determining the character, culture, and social climate of the American city. A central theme is that blacks have greatly impacted U.S. urban

life and made important contributions to its sense of vitality and cultural diversity.

Prerequisite: U3 or U4 standing

3 credits

AFS 310- K: American Attitudes Toward Race

An historical examination of the growth and development of racism in America from the arrival of the first Africans to the continent to the present day. The focus is on African Americans and their relationships with the American system, its institutions, and culture. References are made to other ethnic groups in order to give balance to the examination of social conditions and attitudes shaping American society throughout.

Prerequisite: U3 or U4 standing

3 credits

AFS 319- F: The Politics of Race

An analysis of political concepts often associated with racism and the tracing of the origins of the concept of race. Forms in which racism manifests itself today are identified and discussed showing the similarities and differences where they exist.

Prerequisite: U3 or U4 standing

3 credits

AFS 320- K: Black Popular Culture and the Terrain

A study of black popular culture in 20th century America through close readings of text, music, and film. We will examine black cultural production and its relationship to black political activism, particularly in the urban terrain. Enables students to interrogate the relationship between African Americans, culture and American society during the 20th century.

Prerequisite: Successful completion of one D.E.C. category F course.

3 credits

AFS 325- K & 4: The Civil Rights Movement

A detailed study of the movement for civil rights from its origins, examining the establishment of the NAACP, race relations between whites and blacks since 1900, the role of the Supreme Court and the federal government, and the turn to militancy in the 1950s and after. This course is offered as both AFS 325 and HIS 325.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 104 or AFS 101 or 102

3 credits

AFS 337- J: The Politics of Africa

A study of nationalism, political thought, and political institutions in Africa. Consideration is given to the quest for unity, the problems of liberation, and the political implications of social change. This course is offered as both AFS 337 and POL 337.

Prerequisites: Two AFS or POL courses

3 credits

AFS 339- K: Recent African American History

A study of recent African American history. Topics will include the dramatic increase in the number of black elected officials, rise of the black middle-class, the urban crisis, contemporary civil rights struggles, affirmative action, the decline of black radicalism, and the incorporation of black leadership. Enables students to examine the relationship between African Americans and American society during the past 100 years, particularly since 1970. This course is offered as both AFS 339 and HIS 339.

Prerequisite: Successful completion of one D.E.C. category F course.

3 credits

AFS 345- J: Culture and Gender: Women in Africa and the Caribbean

Comparative analysis of the status and role of women in colonial and contemporary societies of Africa and the Caribbean. Exploration of the forces that shape women's lives and the ways in which women have contributed to the development of these societies.

Prerequisite: AFS 239 or 240

3 credits

AFS 346- J: Political and Social History of Africa

An exploration of theoretical perspectives in the historical sociology and comparative politics of Africa. Topics include the crisis of state legitimacy; the patriarchal society; ethnicity, religion, and politics; the politics of modernization; development and the environment; population growth and underdevelopment; globalization, neo-liberal economic policy and the postcolonial state; and the history of state and society relations. This course is offered as both AFS 346 and HIS 346.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two AFS or HIS courses

3 credits

AFS 350- J: Black Women and Social Change: A Cross-Cultural Perspective

A cross-cultural survey of the history of black women in the context of the struggles for social justice in the Caribbean (English- and Spanish-speaking), Africa, and the United States. Several major topics are covered: the slave resistance and the anti-slavery movement; the anti-colonial struggle in Africa and the Caribbean; the trade union movement in the United States and Africa; the struggle against underdevelopment in Cuba, Puerto Rico, and Jamaica; and the anti-apartheid movement in South Africa. This course is offered as both AFS 350 and WST 350.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. category F

3 credits

AFS 355- J: Ancient African Civilizations

The archaeology of Africa's later prehistoric and historic periods offers exciting contributions to global debates on the origins of agriculture and civilization. Covering the last 20,000 years, this course begins by examining the economic underpinnings of Africa's complex societies: intensive hunting and gathering, animal domestication, and early farming. Detailed case studies of six ancient civilizations (Egypt, Kerma, Aksum, Jenne, Swahili, and Great Zimbabwe) then demonstrate distinct processes of prehistoric social change in different parts of Africa. The course concludes by discussing African archaeological heritage conservation, research, and public education. This course is offered as both AFS 355 and ANT 355.

Prerequisites: One 100-level course in AFS or ANT; U3 or U4 status

3 credits

AFS 360- K: African-American Social Commentary

A study of African-American responses to the social order in America. The course concentrates on the various ways African Americans have conceptualized and described their condition since their arrival in America. Discussion of the solutions proposed by African-American spokespersons from the Civil War period to the present day.

Prerequisite: U3 or U4 standing

3 credits

AFS 363- F: Blacks and Mass Media

An historical examination of the major media characterizations of black Americans and the Black Experience, and the impact of these portrayals on American society at large. The roles of newspapers, books, magazines, plays,

radio, movies, television, and advertisements are studied.

Prerequisite: U3 or U4 standing

3 credits

AFS 365- J: Introduction to African Society

Examination of the ways that the slave trade and colonization affected African societies' incorporation into the world economy as well as the development of their social and political institutions. The nature of African institutions, organizations, belief and value systems before the colonial impact and how these histories were understood and experienced by African men and women are considered. The historical continuities and discontinuities in contemporary African societies as well as the effects of globalization and modernization in Africa are examined. This course is offered as both AFS 365 and SOC 365.

Prerequisite: SOC 105 or AFS 101 or 102 or POL 101 or 103

Advisory Prerequisite: AFS 221

3 credits

AFS 370- K: The African-American Family

The African-American family from the early 1800's to the present day. The nature and structure of that family, the obstacles it has faced, and its interrelationships with the African-American community and the diversity of American society.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

AFS 372- K: African-American Political Thought

A critical analysis of the major architects of black political thought and their movements in the context of their distinctive historical development. Emphasis is on the intellectual and ideological ferment of the 19th and 20th centuries.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. categories F, I and J

3 credits

AFS 375- F: Slavery

The historical experience of blacks in slavery from a social and historical perspective with emphasis on the American South and with comparative references to slave systems as they developed in the western hemisphere.

Prerequisite: U3 or U4 standing

3 credits

AFS 380- J: Race and Ethnicity in Latin America and the Caribbean

Concepts and theories of race and ethnicity in Latin American and Caribbean settings. The historical evolution and the contemporary social and cultural significance of racial and ethnic identities within the region are explored. Specific examples of social relations characterized by ethnic or racial conflict are presented. This course is offered as both AFS 380 and ANT 380.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AFS 240 or LAC 200

3 credits

AFS 381- H: AIDS, Race, and Gender in the Black Community

Review of current biological and epidemiological knowledge about the HIV virus, and examination of the virus' social impact on the Black community. This course is offered as both AFS 381 and WST 381.

Prerequisites: U3 or U4 standing; one D.E.C. category E course

3 credits

AFS 388- J: Slavery in Latin America and the Caribbean

The institution of slavery and its impact on plantation societies in the Americas, with particular attention to Brazil and the Caribbean. Topics include conquest and enslavement, the formation of slave communities, African culture in Latin America, resistance and oppression, the process of emancipation, and race relations. This course is offered as both AFS 388 and HIS 388.

Prerequisite: One of the following: AFS 239, AFS 240, AFS 277, HIS 213, HIS 214, or LAC 200

3 credits

AFS 392- K: The Black Power Movement

A study of the Black Power Movement's promotions of racial pride, self-determination, unity, and revolution in American society and abroad from 1955-1975.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One D.E.C. category F course

3 credits

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

AFS 394- K: Black Nationalism in America

A study of the history of black nationalism in America. Centered around racial pride, unity, and self-determination, black nationalism has been a potent strain within African Americans' long struggle for liberation within America's shores and beyond.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One D.E.C. category F course

3 credits

AFS 395- J: Religions of the Caribbean

An ethnographic approach to the relationship among religion, social organization, and identity politics through studying cultural and historical bases of Christianity, Islam, Hinduism, and their related religious manifestations in the Caribbean. Class stratification, ethnic conflict, and fundamentalist movements are explored. This course is offered as both AFS 395 and ANT 395.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: ANT 351

3 credits

AFS 396- K & 4: Topics in African-American History

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

Prerequisite: AFS 101 or 102 or HIS 103 or HIS 104

3 credits

AFS 400: Ancient Egypt (KMT): Historical and Contemporary Views

An exploration of the rise and development of ancient Egypt (KMT) through study of Egyptian peoples, religions, cultural transformations, and monument building. Examines the periods of the Old Kingdom, Middle Kingdom, and New Kingdom and introduces students to the museum culture that has fueled ongoing interest over time. Particular attention to scholarly debates about the nature and composition of Egyptian society, including interpretations of ethnicity and identity.

Prerequisite: U3 or U4 standing

3 credits

AFS 410: Computers and Third World Social Issues

A consideration of significant Third World issues using basic computing skills. The use of computer concepts and word processing skills to evaluate current social issues and their impact. The course encourages use of the computer in problem solving, research, and decision making.

Prerequisites: U3 or U4 standing; permission of instructor

Advisory Prerequisites: Two AFS courses

4 credits

AFS 421: Topics in Africana Studies

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: AFS 101 or 102 or two other courses in the social sciences

3 credits

AFS 422: Topics in Africana Studies

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: AFS 101 or 102 or two other courses in the social sciences

3 credits

AFS 447: Readings in Africana Studies

Individually supervised readings in selected topics in the Black Experience. May be repeated once.

Prerequisite: Permission of instructor

1-3 credits

AFS 475: Undergraduate Teaching Practicum I

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

assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Not for major or minor credit.

Prerequisites: Africana studies major or minor; U4 standing; permission of instructor
3 credits, S/U grading

AFS 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served. Not for major or minor credit.

Prerequisites: AFS 475; permission of instructor

3 credits, S/U grading

AFS 487: Research in Africana Studies

Individual research projects in the Black Experience carried out under the direct supervision of a faculty member. May be repeated to a limit of 6 credits.

Prerequisite: Permission of instructor
0-3 credits

AFS 488: Internship

Participation in public and private agencies and organizations under the supervision of a faculty sponsor. Students are required to submit progress reports and a final written report on their experiences to the faculty sponsor. May be repeated up to a limit of 12 credits.

Prerequisites: Africana studies major or minor; 15 credits in AFS courses; permission of instructor and program director
0-6 credits, S/U grading

AFS 491: Interdisciplinary Seminar in Africana Studies

Exposes students to methods of research and writing within history, anthropology, literature, sociology, etc., important to understanding and producing scholarship related to the African heritage. Exploration of the ways in which past and present research and writing have portrayed Africans. The importance of interdisciplinary approaches and methodologies to understanding Africana Studies is emphasized. Students are required to select topics, conduct in-depth library research

and present their findings in written and oral formats.

Prerequisites: U4 standing; six courses in *Africana Studies*; permission of instructor and department

3 credits

AIM

Advancement on Individual Merit

AIM 102: Expository Writing

The fundamentals of grammar through investigating methods of interpreting various forms of literature with emphasis on the process of writing and re-writing. Does not count toward graduation. A through C/Unsatisfactory grading only. The Pass/No credit option may not be used. Open to EOP/ AIM students only.

Prerequisite: Placement by writing placement examination

Corequisite: WRT 101 or ESL course

3 credits

AIM 104: Literary Analysis and Critical Reasoning

Introduction to literary analysis and critical reasoning through close examination of selected works. Open to EOP/ AIM students only. A through C/Unsatisfactory grading only. The Pass/No credit option may not be used.

Prerequisite: Placement by writing placement examination

3 credits, ABC/U grading

AMR

American Studies

AMR 101- F: Local and Global: National Boundaries and World-Systems

Introduction to the contemporary capitalist world-system as a complex network of unequal power relationships and its inextricable role in our daily lives. Consideration of the ways the Americas have been incorporated into the world-system through colonialism and early capitalist ventures, with emphasis on the 20th century in terms of transnationalism, globalization, and the mobility of capital and labor, especially as this creates racial formations.

3 credits

AMR 102- G: Making American Identities

A chronological representation of some of the ways that the peoples living in the current U.S. have identified themselves collectively as Americans and individually as belonging to distinct groups marked by racial, ethnic, gender, and class differences. Readings include texts of various kinds: historical, fictional, and theoretical. A computer (virtual) classroom is part of the coursework.

3 credits

AMR 301- K: Ethnicity and Race in American History

Overview of the role and place of ethnicity and race in the history of North America through investigation of the ways that ethnic belonging and identity have evolved through the 19th and 20th centuries. Readings and discussion consider how ethnicity is forged through engagement with other "outside" as well as "inside" groups toward an understanding of how and why notions of "ethnicity" and "race" have changed over time. Groups that may be considered include African, Arab, Asian, German, Hispanic, Irish, Italian, Jewish, Native, and South Asian Americans.

Prerequisites: U3 or U4 standing; AMR 101 or 102

3 credits

AMR 390- G: Humanities Topics in American Studies

Selected topics in American studies in the humanities. Topics may include philosophy and drama in the United States, North and South American films, literary trends in the Americas. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

AMR 392- F: Social and Behavioral Sciences Topics in American Studies

Selected topics in American studies in the social and behavioral sciences. Topics may include political history of the United States and Latin America, North and South American economies. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

AMR 395- J: Topics in American Studies

Selected topics in non-Western cultures, societies, traditions, literatures, etc. Topics may include contemporary Indian societies in Central and South America, sociology of Latin and South America. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

AMR 397- K: Topics in American Studies

Topics in U.S. literature, culture, history, etc., placed within a broad historical context, including social, political, economic, and cultural history and institutions. Topics may include, for instance, women and men in the contemporary United States and contemporary U.S. culture. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: To be announced with the topic

3 credits

AMR 401: Senior Seminar in American Studies

Students synthesize the theories, methods, and knowledge gained in previous coursework through in-depth study of a particular issue or question. Discussion is structured around topics that engage the central themes of the histories, cultures, and societies of the Americas from an interdisciplinary perspective.

Prerequisites: U4 standing; AMR major or minor

Advisory Prerequisite: AMR 301

3 credits

AMR 447: Directed Readings in American Studies

Independently supervised readings in selected topics in American Studies. May be repeated.

Prerequisites: Permission of instructor and department

1-6 credits

AMR 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required

to attend all the classes, do all the regularly assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: Permission of instructor and department

3 credits, S/U grading

AMR 476: Undergraduate Teaching Practicum II

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

Prerequisites: AMR 475; permission of instructor and department

3 credits, S/U grading

AMR 487: Independent Research

Intensive readings and research on a special topic undertaken with close faculty supervision. May be repeated.

Prerequisites: Permission of instructor and department

0-6 credits

AMR 488: Internship

Intensive readings and research on a special topic undertaken with close faculty supervision. May be repeated.

Prerequisites: Permission of instructor and department

0-6 credits, S/U grading

AMR 495: Senior Honors Project in American Studies

A one-semester project for seniors. Arranged in consultation with the department, the project involves writing a paper under the close supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors take this course.

Prerequisite: Permission of department

3 credits

AMS

Applied Mathematics and Statistics

AMS 102- C: Elements of Statistics

The use and misuse of statistics in real life situations; basic statistical measures of central tendency and of dispersion, frequency distributions, elements of probability, binomial and normal distributions, small and large sample hypothesis testing, confidence intervals, chi square test, and regression. May not be taken by students with credit for AMS 110, 310, 311, 312; ECO 320; POL 201; PSY 201; or SOC 202. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: Satisfaction of entry skill in mathematics requirement (Skill 1) or satisfactory completion of D.E.C. C

3 credits

AMS 105: 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 Maj/Min, CME Major, or ISE Major. *Advisory Prerequisite:* BUS 110, 111, 112 or 115, or MAT 122.

Advisory Prerequisite for BUS or ISE Major: BUS 210

3 credits

AMS 110: Probability and Statistics in the Life Sciences

A survey of probability theory and statistical techniques with applications to biological and biomedical situations. Topics covered include Markov chain models; binomial, Poisson, normal, exponential, and chi square random variables; tests of hypotheses; confidence intervals; t tests; and analysis of variance, regression, and contingency tables. May not be taken for credit in addition to AMS 310.

Prerequisite: AMS 151 or MAT 125 or 131 or 141

3 credits

AMS 151- C: Applied Calculus I

A review of functions and their applications; analytic methods of differentiation; interpretations and applications of differentiation; introduction to integration. Intended for CEAS majors. Not for credit in addition to MAT 125 or 126 or 131 or 141 or 171. This course has been designated as a High Demand/Controlled Access (HD/CA) course.

Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: B or higher in MAT 123, or level 5 on the mathematics placement examination, or B or higher in MAT 122 and concurrent registration for MAT 130

3 credits

AMS 161- C: Applied Calculus II

Analytic and numerical methods of integration; interpretations and applications of integration; differential equations models and elementary solution techniques; phase planes; Taylor series and Fourier series. Intended for CEAS majors. Not for credit in addition to MAT 126, MAT 127, MAT 132, MAT 142, or MAT 171. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in AMS 151 or MAT 131 or 141, or level 7 on the mathematics placement examination

3 credits

AMS 201: Matrix Methods and Models

Basic properties of matrix algebra, matrix norms, eigenvalues, solving systems of equations; applications to economics, growth models, Markov chains, regression, linear programming. Computer software packages used. May not be taken by students with credit for MAT 211 or AMS 210.

Prerequisite: AMS 151 or MAT 122, 123, 125, 131 or 141

3 credits

AMS 210: Applied Linear Algebra

An introduction to the theory and use of vectors and matrices. Matrix theory including systems of linear equations. Theory of Euclidean and abstract vector spaces. Eigenvectors and eigenvalues. Linear transformations. May not be taken for credit in addition to MAT 211.

Prerequisite: AMS 151 or MAT 131 or 141 or corequisite MAT 126

3 credits

AMS 261: Applied Calculus III

Vector algebra and analytic geometry in two and three dimensions; multivariable differential calculus and tangent planes; multivariable integral calculus; optimization and Lagrange multipliers; vector calculus including Green's and Stokes's theorems. May not be taken for credit in addition to MAT 203 or 205.

Prerequisite: AMS 161 or MAT 127 or 132 or 142 or 171

4 credits

AMS 300: Writing in Applied Mathematics

See Requirements for the Major in Applied Mathematics and Statistics, Upper Division Writing Requirement.

Prerequisites: WRT 102; AMS major; U3 or U4 standing

1 credit, S/U grading

AMS 301: Finite Mathematical Structures

An introduction to graph theory and combinatorial analysis. The emphasis is on solving applied problems rather than on theorems and proofs. Techniques used in problem solving include generating functions, recurrence relations, and network flows. This course develops the type of mathematical thinking that is fundamental to computer science and operations research.

Prerequisite: AMS 210 or MAT 211 or AMS 361 or MAT 303

3 credits

AMS 303: Graph Theory

Paths and circuits, trees and tree based algorithms, graph coloring, digraphs, network flows, matching theory, matroids, and games with graphs.

Prerequisite: AMS 301

3 credits

AMS 310: Survey of Probability and Statistics

A survey of data analysis, probability theory, and statistics. Stem and leaf displays, box plots, schematic plots, fitting straight line relationships, discrete and continuous probability distributions, conditional distributions, binomial distribution, normal and t distributions, confidence intervals, and significance tests. May not be taken for credit in addition to ECO 320.

Prerequisite: AMS 201 or 210 or MAT 211

3 credits

AMS 311: Probability Theory

Probability spaces, random variables, moment generating functions, algebra of expectations, conditional and marginal distributions, multivariate distributions, order statistics, law of large numbers.

Prerequisites: AMS 301 and 310 or permission of instructor

Corequisites: MAT 203 or 205 or AMS 261

3 credits

AMS 312: Mathematical Statistics

Estimation, confidence intervals, Neyman Pearson lemma, likelihood ratio test, hypothesis testing, chi square test, regression, analysis of variance, nonparametric methods.

Prerequisite: AMS 311

3 credits

AMS 315: Data Analysis

Statistical analysis of data. Exploratory data analysis. Estimation. Parametric and nonparametric hypothesis tests. Power. Robust techniques. Use and interpretation of statistical computer packages, such as SPSS.

Prerequisite: AMS 102 or 310

3 credits

AMS 316: Introduction to Time Series Analysis

Trend and seasonal components of time series models, autoregressive and moving average (ARMA) models, Box-Jenkins methodology, Portmanteau test, unit-root, generalized autoregressive conditionally heteroskedasticity (GARCH) models, exponential GARCH, stochastic volatility models. This course is offered as both AMS 316 and AMS 586.

Prerequisite: AMS 311 and AMS 315

3 credits

AMS 318: Financial Mathematics

This course will focus on accumulation functions, yield rates, annuities, loan repayment, term structure of interest rates/spot rates/forward rates, options, duration/convexity. This course follows the syllabus for the Financial Mathematics (FM) Exam of the Society of Actuaries and prepares students to pass the FM Exam.

Prerequisite: AMS 310

3 credits

AMS 321: Computer Projects in Applied Mathematics

The simulation methodology for a variety of applied mathematical problems in numerical linear and nonlinear algebra, statistical modeling, and numerical differentiation and integration. Graphical representation of numerical solutions.

Prerequisites: AMS 210 or 261 or MAT 203; prior programming experience in C, FORTRAN, or Java

3 credits

AMS 326: Numerical Analysis

Direct and indirect methods for the solution of linear and nonlinear equations. Computation of eigenvalues and eigenvectors of matrices. Quadrature, differentiation, and curve fitting.

Numerical solution of ordinary and partial differential equations.

Prerequisites: AMS 210 or MAT 211; programming experience in Pascal, FORTRAN, or C

3 credits

AMS 333: Mathematical Biology

This course introduces the use of mathematics and computer simulation to study a wide range of problems in biology. Topics include the modeling of populations, the dynamics of signal transduction and gene-regulatory networks, and simulation of protein structure and dynamics. A computer laboratory component allows students to apply their knowledge to real-world problems.

Prerequisites: AMS 161 or MAT 132; BIO 202; U3 or U4 standing; or permission of the instructor

3 credits

AMS 335: Game Theory

Introduction to game theory fundamentals with special emphasis on problems from economics and political science. Topics include strategic games and Nash equilibrium, games in coalitional form and the core, bargaining theory, measuring power in voting systems, problems of fair division, and optimal and stable matching. This course is offered as both AMS 335 and ECO 355.

Prerequisites: MAT 126 or 131 or 141 or AMS 151; C or higher in ECO 303

3 credits

AMS 341: Operations Research I: Deterministic Models

Linear programming with a view toward its uses in economics and systems analysis. Linear algebra and geometric foundations of linear programming; simplex method and its variations; primal dual programs; formulation and interpretation of linear programming models, including practical problems in transportation and production control. Optional computer projects. AMS 341 and 342 may be taken in either order, though it is recommended that AMS 341 be taken first.

Prerequisites: AMS 210 or MAT 211

3 credits

AMS 342: Operations Research II: Stochastic Models

Methods and techniques for stochastic modeling and optimization, with applications to queueing theory, Markov chains, inventory theory, games, and decisions. AMS 341 and 342 may be taken in either order, though it is recommended that AMS 341 be taken first.

Prerequisites: AMS 210 or MAT 211; AMS 311

3 credits

AMS 345: Computational Geometry

The design and analysis of efficient algorithms to solve geometric problems that arise in computer graphics, robotics, geographical information systems, manufacturing, and optimization. Topics include convex hulls, triangulation, Voronoi diagrams, visibility, intersection, robot motion planning, and arrangements. This course is offered as both AMS 345 and CSE 355.

Prerequisites: AMS 301; programming knowledge of C or C++ or Java

3 credits

AMS 351: Applied Algebra

Topics in algebra: groups, informal set theory, relations, homomorphisms. Applications: error correcting codes, Burnside's theorem, computational complexity, Chinese remainder theorem. This course is offered as both AMS 351 and MAT 312.

Prerequisite: AMS 210 or MAT 211

Advisory Prerequisite: MAT 200 or CSE 113

3 credits

AMS 361: Applied Calculus IV: Differential Equations

Homogeneous and inhomogeneous linear differential equations; systems of linear differential equations; solution with power series and Laplace transforms; partial differential equations and Fourier series. May not be taken for credit in addition to the equivalent MAT 303.

Prerequisite: AMS 161 or MAT 127 or 132 or 142 or 171

4 credits

AMS 410: Actuarial Mathematics

Integrates calculus and probability with risk assessment and insurance in a quantitative manner to prepare students for the first actuarial examination.

Prerequisites: AMS 261 or MAT 203 or 205; AMS 310; AMS 311 or 315

3 credits

AMS 441: Business Enterprise

Explores the strategy and technology of business enterprises. Integrates the practice of engineering and quantitative methods with the operations of a business in today's globalized environment, whether in product development, financial management, or e-commerce.

Prerequisite: U3 or U4 standing

3 credits

AMS 475: Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives regularly scheduled supervision from the faculty advisor. May be used as an open elective only and repeated once.

Prerequisites: U4 standing as an undergraduate major within the college; a minimum g.p.a. of 3.00 in all Stony Brook courses and the grade of B or better in the course in which the student is to assist; permission of department

3 credits

AMS 476: Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives regularly scheduled supervision from the faculty advisor. May be used as an open elective only and repeated once.

Prerequisites: U4 standing as an undergraduate major within the college; a minimum g.p.a. of 3.00 in all Stony Brook courses and the grade of B or better in the course in which the student is to assist; permission of department

3 credits

AMS 487: Research in Applied Mathematics

An independent research project with faculty supervision. Permission to register requires a B average and the agreement of a faculty member to supervise the research. May be repeated once. Only 3 credits of research electives (AMS 487, CSE 487, MEC 499, ESE 499, ESM 499, EST 499, ISE 487) may be counted toward engineering technical elective requirements.

Prerequisites: Permission of instructor and department

0-3 credits

AMS 492: Topics in Applied Mathematics

Treatment of an area of applied mathematics that expands upon the undergraduate curriculum. Topics may include applied mathematics, statistics, or operations research and change from semester to semester. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated once, as the topic changes.

Prerequisite: Permission of instructor

3 credits

ANP

Biological Anthropology

ANP 120- E: Introduction to Biological Anthropology

An introduction to the evolutionary study of humankind based on a survey of the diversity and evolutionary history of primates. The development of scientific and evolutionary thought and method. The biological basis of inheritance and variation. Human variations and adaptations in relation to the environment. Physical characteristics and behavior of living primates. Evolution of primates and current research on human origins. ANP 121 is the associated laboratory component of ANP 120.

3 credits

ANP 121: Biological Anthropology Laboratory

Laboratory exploration of the fundamentals of Biological Anthropology based on a survey of the diversity and evolutionary history of humans and nonhuman primates. The development of scientific and evolutionary thought and method. The biological basis of inheritance and variation. Human variations and adaptations in relation to the environment. Physical characteristics and behavior of living primates. Evolution of primates and current research on human origins. Two hours of laboratory per week during which students will experience the research process, methods, and skills, and learn to collaborate in formal inquiry. Not for credit in addition to ANP 120 as offered prior to Fall 2010.

Corequisite: ANP 120

1 credit

ANP 201- E: Human Evolution

An overview of the evolution of the human lineage from its origins to the appearance of modern humans. Our evolutionary history involved some dramatic changes in anatomy and behavior, and we will explore both the significance of these changes, and the methods that scientists use to interpret them. The human fossil record is abundant, and will be our central focus. Emphasis will be placed on how we learn things about the past, as well as what we know.

Advisory Prerequisite: ANP 120, GEO 102, GEO 103, GEO 109, or any BIO course

3 credits

ANP 220- H: Controversies in Human Biology and Behavior

The study of controversially debated issues in the work of Physical Anthropologists. Surveys general aspects of primate and human behavior, human variation and adaptation, and the evolution of humans and human ancestors exploring previous and recent debates that have centered around issues such as for example the concept of evolution, gender roles and mating systems, role of aggression, and the role of hunting and gathering.

Advisory prerequisite: Introductory Anthropology or Biology course

3 credits

ANP 300- E: Human Anatomy

An introduction to the structure of the human body considered from both systems and regional approaches. Subject matter includes the musculoskeletal, respiratory, nervous, cardiovascular, digestive, and urogenital systems, together with an appreciation of these systems in a regional anatomical context. Laboratory sessions entail examination of plastic models, exercises in living anatomy and computer "dissection." Instructor permission required to repeat ANP 300. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: ANP 120 or one BIO course

4 credits

ANP 305: Vertebrate Paleontology of the Turkana Basin

Vertebrate fossils are important sources of information about the appearance, evolution, and extinction of major organisms. As such, they provide a valuable window into changes in climate and selection pressures, and organisms' diverse adaptive responses to these changes. They are also significant in placing hominid discoveries within a relative local chronology, and helping reconstruct environments associated with hominid finds. This course acquaints students with methods of vertebrate paleontology employed in different chronological contexts of the Turkana Basin, used to solve diverse theoretical questions.

Prerequisite: Permission of the instructor/ Study Abroad office

3 credits

ANP 306: Paleoanthropological Discoveries of the Turkana Basin

The Turkana Basin is home to many paleoanthropological discoveries that fundamentally reshaped ideas about human evolution. Richard, Maeve, and Louise Leakey will share perspectives on eight of these finds, including Nariokotome ("Turkana boy") and

KNM-WT1700 (the "Black Skull"). Lectures and readings for each discovery will cover: 1) the research questions and strategies that led to the find; 2) the kind of analyses that have yielded the most important interpretive conclusions about the find; 3) how this discovery reshaped views of the human past; and 4) what new directions it catalyzed in human evolution research. Class activities consist of lectures by the Leakeys, laboratory exercises (reconstructions, measurements) using casts of the 5 kinds, and field trips to discovery locations.

Prerequisite: Permission of the instructor/ Study Abroad office

3 credits

ANP 321: Primate Evolution

The evolution of the order Primates from its origins to the appearance of the human family. Primate origins; the first primates of modern aspect; origins and adaptive radiations of monkeys; appearance and adaptations of apes and humans. Relevant topics in geology such as geochronology, paleogeography, taphonomy, and paleoecology.

Prerequisite: ANP 120

3 credits

ANP 325- E: Primate Behavior

An introduction to primate social systems and the factors that influence their maintenance and evolution, including foraging strategy, demographic processes, mating and rearing strategies, conflicts and coalitions, and communication.

Prerequisite: ANP 120

3 credits

ANP 340: Field Methods in Biological 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 201 (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.

Prerequisite: ANP 120 or BIO 201 (as offered prior to fall 2007) or BIO 201 (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 201 (as offered beginning fall 2007) and BIO 204

3 credits

ANP 391: Topics in Biological Anthropology

Discussion of a topic of current interest in physical anthropology. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: ANP 120

Advisory prerequisite: One other ANP course

3 credits

ANP 403: Seminar in Biological 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 as the topic changes.

Prerequisite: Permission of instructor

3 credits

ANP 404: Human Osteology

A detailed study of the anatomy of the human skeleton with special emphasis on the interpretation of skeletal remains from archaeological contexts. Consideration is given to the growth, structure, and function of bones, and to forensic aspects such as the determination of age, sex, stature, and pathology from skeletal remains. Students conduct a research project on a human skeleton.

Prerequisites: ANP 300; permission of instructor

3 credits

ANP 447: Readings in Biological Anthropology

Individual advanced readings on selected topics in physical anthropology. May be repeated up to a limit of 6 credits.

Prerequisites: ANP 321 and 330; permission of instructor
3 credits

ANP 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: U3 or U4 standing; anthropology major; 3.00 g.p.a.; permission of instructor; permission of director of undergraduate studies
3 credits, S/U grading

ANP 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served. Not for major or minor credit.

Prerequisites: U3 or U4 standing; anthropology major; 3.00 g.p.a.; permission of instructor; permission of director of undergraduate studies
3 credits, S/U grading

ANP 487: Independent Research in Biological Anthropology

Independent research projects carried out by upper-division students. The student must propose the research project, carry it out, analyze the data, and submit the results in a written form acceptable to the sponsor. May be repeated up to a limit of six credits.

Prerequisites: Two 200- or 300-level ANP courses; permission of instructor and department
0-6 credits

ANP 488: Internship in Biological Anthropology

Participation in state, local, and national public and private agencies and organizations. Students are required to submit written progress reports and a final written report on

their experiences to the faculty sponsor and the department. May be repeated to a limit of 12 credits.

Prerequisites: 15 credits in anthropology; permission of instructor and department
0-6 credits, S/U grading

ANP 495: Senior Honors Project in Anthropology

First course of a two-semester project for anthropology majors who are candidates for the degree with honors. Arranged in consultation with the department through the director of undergraduate studies, the project involves independent readings or research and the writing of a paper under the close supervision of an appropriate faculty member on a suitable topic selected by the student. Students enrolled in ANP 495 are obliged to complete ANP 496 the following semester. Students receive only one grade upon completion of the sequence ANP 495-496.

Prerequisite: Admission to the anthropology honors program
3 credits

ANP 496: Senior Honors Project in Anthropology

Second course of a two-semester project for anthropology majors who are candidates for the degree with honors. Arranged in consultation with the department through the director of undergraduate studies, the project involves independent readings or research and the writing of a paper under the close supervision of an appropriate faculty member on a suitable topic selected by the student. Students receive only one grade upon completion of the sequence ANP 495-496.

Prerequisite: ANP 495; admission to the anthropology honors program
3 credits

ANT

Anthropology, Cultural and Archaeology

ANT 102- F: Introduction to Cultural Anthropology

The analysis of social and cultural topics such as kinship, family, marriage, politics, and religious systems, with an emphasis on their particular expression in non-Western societies.

3 credits

ANT 104- F: Introduction to Archaeology

An introduction to the study of human behavior through the analysis of material residues. Case studies illustrate how archaeologists answer research questions originating in other social sciences, natural history, or humanities disciplines, thereby creating a unique interdisciplinary and long-term perspective on human behavior. The course provides a critical perspective on recent ethical and interpretive controversies about the human past.

3 credits

ANT 200- J: Contemporary and Historical Perspectives on Insular Southeast Asia

The history, politics, and cultures of Indonesia, Malaysia, Singapore, the Philippines, East Timor, and Brunei. Special attention is given to the religious ideas and rituals, and relationships of power throughout the archipelago. The largest country by far in the region, Indonesia, receives most attention.

Prerequisite: ANT 120
Advisory Prerequisite: One other ANT course
3 credits

ANT 201- J: Peoples of South America

A survey of the social, cultural, and historical aspects of South American native peoples. Attention is given to issues of demography and biology, ecology, and cultural evolution. In-depth study of selected cultures and comparative study in selected cultural topics form the core of the course. Particular emphasis is given to topics of culture contact, culture change, tribal cultures in a context of national development, and cultural pluralism.

Advisory Prerequisite: ANT 102
3 credits

ANT 203- J: Native Peoples of North America

The various peoples and cultures of North America are studied with respect to their political, educational, linguistic, social, and cultural patterns. Selected societies are studied in depth.

Advisory Prerequisite: ANT 102
3 credits

ANT 205- J: Ancient Japanese Civilization

This course surveys the emergence of early Japanese civilization from prehistoric times to the Nara period in the 8th century A.D. Analytical focus will be placed on specific topics, including the significance of population movement, the influence of Chinese civilization, the centralization

of political authority, the development of Japanese language and early literacy, and the roles of ancient Japanese religion and mythology. These topics will be examined from archaeological, anthropological, and historical perspectives. The course aims to provide a thorough foundation for further study in Japanese history and culture.

Prerequisite: WRT 102; U2 status or higher
3 credits

ANT 230- J: Peoples of the World

A comparative study of the lifeways of selected types of peoples, defined by adaptation, focusing on their ecology, economy, political organization, and social organization. Groups discussed include the gathering-and-hunting Ju/'hoansi of Africa, the horticultural Kaluli of New Guinea, the pastoralist Basseri of Iran, plus selected peasant and migrant groups. Recent changes affecting indigenes, brought about by technological developments and intercultural contact, are discussed.

Prerequisite: ANT 102
3 credits

ANT 250- J: African Peoples and Cultures

The prehistoric cradle of humankind, Africa is today home to diverse cultures, environments, languages, and economies. Western mass media often generalizes across this immense diversity, or focuses on areas of conflict, famine, or environmental devastation. This course introduces students to Africa via the voices of Africans themselves, or those of anthropologists who have spent many years on the continent.

3 credits

ANT 252- F: Personality and Culture

The role of culture as a factor in personality and character formation and how different cultures handle the basic human drives, especially aggression. The course also discusses cultural influences on gender role, violence and social control, and mental health. Case studies from South America, Oceania, Malaysia, and southern Europe are compared.

Prerequisite: U2 standing or higher
3 credits

ANT 260- K: How We Eat

This course explores how people's food habits are shaped not only by their biological needs, but also by the economic, political, ecological, and social worlds in which they live. The breadth of anthropology (biological anthropology, cultural anthropology, and

archaeology) is brought to bear on issues including the economic and political underpinnings of American as well as other food cultures; the relationship between food habits and health (both over-and under-eating); the environmental impacts of various methods of food production; the relationship between food and social status; gendered food production as well as food consumption; food's role in religion; ethical eating; the limits of current knowledge (e.g., changing dietary recommendations); and the socioeconomic pressures that keep individuals eating according to cultural norms. The class discusses foodways in a variety of present and past cultures, but the emphasis is on modern American food culture and the cultural, economic, ecological, and political realities that shape it. Students will explore how these realities affect their own lives and eating habits.

3 credits

ANT 270- F: Great Archaeological Discoveries

Recent controversies surrounding the most important social transitions in human prehistory. These include the origin of modern human societies, the rise of agrarian communities, and the formation of early states, all examined in cross-cultural perspective. Major theories and models of human sociocultural evolution are tested with evidence from the best-documented archaeological sites in Africa, Eurasia, and the Americas.

Prerequisite: U2 or higher standing
Advisory Prerequisite: ANT 104

3 credits

ANT 290- H: Science and Technology in Ancient Society

Examination of the role of advances in science and technology in societies ranging from the earliest humans to the archaic civilizations of the Old and New Worlds. The course focuses on such innovations as tool making, fire, metallurgy, writing, mathematics, complex architecture, and relates these innovations to changes in sociopolitical organization.

Prerequisite: One D.E.C. category E course
3 credits

ANT 296- I: Anthropology of the European Mediterranean

This course explores the societies and cultures of the southern European countries with emphasis placed on rural/agrarian adaptations, gender relations, ritual, religion and folklore, social stratification and social class, community organization, and rural-

urban distinctions. Students will read case studies from Portugal, Spain, Italy, and Greece, as well as background material on "The Mediterranean" as a social and cultural construct. The monographs for this course cover mainly the post-War period, from the 1950s and up to the present, but a brief time is spent on the historical background from classical antiquity to the modern period. Not for credit in addition to ANT 396 with the topic "The Mediterranean."

Prerequisite: ANT 102
3 credits

ANT 304: Modern and Ancient Environments of Eastern Africa

With the world's longest sequence of datable deposits containing fossils of our ancestors, eastern Africa is the ideal place to examine humans' changing relations with our environment. This course familiarizes students with diverse ecological settings in the region today through tours and field exercises in highland forests, low-altitude grasslands, and lacustrine and riparian settings. Students learn various methods for paleoenvironmental reconstruction, and practice integrating different kinds of paleoenvironmental evidence in the field and laboratory facilities at TBI-Turkwel, Kenya. Examining modern vegetation and fauna in central and northwest Kenya shows students how human actions can degrade or conserve environments and resources in eastern Africa today.

Prerequisite: Permission of the instructor/
Study Abroad office
3 credits

ANT 307: Archaeology of the Turkana Basin

Sites in the Turkana Basin show changes in human technology and social organization from earliest times to today. Class trips to Early Stone Age sites show innovations in lithic technology during the first stages of stone tool production. Practice surveys and excavations focus on the past 10,000 years, when local hunter-gatherers began using pottery and bone harpoons, and eating aquatic resources. Additional site tours highlight 1) early herding in eastern Africa and the construction of stone pillar sites, possibly for ceremonial use, and 2) integration of fishing, herding, farming, and use of iron tools during the past 2000 years. Linking the human evolution finds with the present, class lectures, lab exercises, and field excursions show students how archaeologists document technological innovation, adoption, and transformation through material cultural evidence. Students learn diverse methods of

survey and excavation appropriate for different sites and contexts.

Prerequisite: Permission of the instructor/ Study Abroad office

3 credits

ANT 310- J: Ethnography

A particular cultural area of the world, such as sub-Saharan Africa, Oceania, Mexico and Guatemala, Asia, or the Middle East, is considered in terms of its history and ecology, with a comparative analysis of the cultural systems and social arrangements of representative ethnic groups. The aim of the course is to provide an overview of cultural diversity and uniformity in an area outside of Europe. May be repeated as the topic changes.

Prerequisite: ANT 102

Advisory prerequisite: One other ANT course
3 credits

ANT 311- J: Immersion in Another Culture

A specific world area, such as the highlands of New Guinea or the Nilotic Southern Sudan, or a particularly well-documented people such as the Trobriand Islanders, are considered in detail. Lectures, texts, and films consider ecology, history, social change, language, cultural systems, and social arrangements toward providing students with a comprehensive understanding of another cultural system. May be repeated as the topic changes.

Prerequisite: ANT 102

3 credits

ANT 350- F: Medical Anthropology

An introduction to the cross-cultural study of health, illness, and curing. Topics covered include the human body as cultural construct, theories of illness causation, alternative medical systems, epidemiology, ethnopharmacology, cross-cultural psychiatry, sex and reproduction, nutrition, and the implications of culture for pain perception, stress, and health risk management.

Prerequisite: ANT 102

3 credits

ANT 351- F: Comparative Religion

A survey of religious behavior in cross-cultural perspective. The approach is broadly comparative and eminently anthropological, involving theories of origin and evolution of religious systems, as well as the functioning of religious behavior and institutions within the total culture. Case study material is drawn primarily from preliterate societies, but some reference is made to the large organized

religious systems of complex stratified societies.

Prerequisite: U3 or U4 standing

3 credits

ANT 353: Archaeological Analysis and Interpretation

Laboratory analysis of recently excavated materials from Long Island archaeological sites. Types of prehistoric material analyzed include lithic and ceramic artifacts and the remains of shellfish and vertebrates.

Prerequisites: ANT 321; permission of instructor

Advisory Prerequisite: ANT 363

3 credits

ANT 354- F: Family, Kinship, and Marriage

Concepts of family, kinship, marriage, incest, exogamy: their source in nature and culture and their social implications. Major theories are discussed historically, demographically, and ecologically. Brief case studies are presented to illustrate theories of social anthropology.

Prerequisite: ANT 102

3 credits

ANT 355- J: Ancient African Civilizations

The archaeology of Africa's later prehistoric and historic periods offers exciting contributions to global debates on the origins of agriculture and civilization. Covering the last 20,000 years, this course begins by examining the economic underpinnings of Africa's complex societies: intensive hunting and gathering, animal domestication, and early farming. Detailed case studies of six ancient civilizations (Egypt, Kerma, Aksum, Jenne, Swahili, and Great Zimbabwe) then demonstrate distinct processes of prehistoric social change in different parts of Africa. The course concludes by discussing African archaeological heritage conservation, research, and public education. This course is offered as both AFS 355 and ANT 355.

Prerequisites: One 100-level course in AFS or ANT; U3 or U4 status

3 credits

ANT 357- F: The Agricultural Revolution

The origins and consequences of agrarian (food-producing) adaptations. Examination of the social, technological, and ecological changes that occurred when humans shifted from hunting and gathering to agriculture and pastoralism around 8000 years ago. Current

theories about the origins and consequences of agro-pastoralism are evaluated in light of recent evidence from both Old and New Worlds.

Prerequisite: ANT 104

3 credits

ANT 358- J: Ways to Civilization

A comparative study of processes of cultural evolution from simple agricultural societies to the achievement of civilization in different parts of the world. Emphasis is on current theories of state formation and on how these theories are supported by cultural evidence, especially from the six 'pristine' states of Mesopotamia, Egypt, Indus Valley, China, Meso-america, and Peru.

Prerequisite: ANT 104

3 credits

ANT 359: The Archaeology of Food

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

Prerequisite: ANT 104

3 credits

ANT 360- J: Ancient Mesopotamia

The organization and development of the social, economic, political, and religious systems of ancient Mesopotamia through study of the archaeological and textual records. This course stresses the first two thousand years of this civilization, from 3500 B.C. to 1500 B.C.

Prerequisite: U3 or U4 standing

3 credits

ANT 361- F: Peasants

The concept of peasantry from political, religious, cultural, and social-class perspectives, as well as from the more traditional economic viewpoint. These agricultural peoples are described and analyzed especially in relation to the national societies of which they form a part. Case studies from Latin America, Europe, and Asia are used as illustrations. Special attention is given to the agrarian political movements and revolutions in the Third World.

Prerequisite: ANT 102

3 credits

ANT 362- J: Long Island Archaeology

Life on Long Island from its first settlement by Native Americans 12,000 years ago until the

end of the 17th century. Trends and changes in human behavior are studied in the context of environmental and cultural processes affecting all of northeastern North America.

Prerequisite: ANT 104

3 credits

ANT 363- F: Approaches in Archaeology

A survey of archaeological thought from early antiquarianism through the culture history, processual, and post-processual approaches to the investigation and analysis of past societies. Emphasis is placed on the ways in which changes in archaeological theory reflected changes in ideas within the sister fields of sociology, cultural anthropology and geography. Other topics discussed include ethnographic analogy, systems theory, site formation processes and spatial analysis.

Prerequisite: ANT 104

3 credits

ANT 367- F: Male and Female

A study of the manifestation of sex roles in different cultures. Discussion topics include the impact of social, economic and political organization on gender roles and relationships, sexual orientation in cross-cultural perspective, and contemporary theories of gender inequality. Readings present both the male and female viewpoints.

Prerequisite: ANT 102

3 credits

ANT 368: Archaeology of Human Origins

A survey of the archaeological evidence for behavioral variability and adaptation by early humans during the course of the Pliocene, and Early-Middle Pleistocene epochs (2.7-0.1 million years ago). Topics include early stone tool use, origins of hunting, early fire use, adaptations to glacial climates, behavioral differences among hominins living in Africa, Europe, and Asia.

Prerequisite: ANT 104

3 credits

ANT 371- J: Ancient China

Explores the development of social, economic, political, and cultural systems in ancient China, from the neolithic period through the Han dynasty. Draws on archaeological data and historical texts to examine the emergence of state-level polities and their subsequent unification under imperial authority. Analytical focus is on political economy, social organization, ritual exchange, and notions of power and rulership expressed

in philosophical thought. This course is offered as both AAS 371 and ANT 371.

Prerequisites: U3 or U4 standing; completion of D.E.C. category F

3 credits

ANT 372- J: Family, Marriage, and Kinship in China

Examines forms and dynamics of social organizations in Chinese society, focusing on cultural, social, and economic aspects of family, marriage, and extended kinship relations such as lineages, clans, and sworn brotherhoods. Particular attention is paid to how gender, generation, class, and ritual exchange shape identity, status, and power. This course is offered as both AAS 372 and ANT 372.

Prerequisite: ANT 102

Advisory Prerequisites: AAS 220 and ANT 354

3 credits

ANT 373: Archaeology of Human Dispersals

A survey of the archaeological evidence for the dispersal of Homo sapiens during the Late Pleistocene epoch (128,000-13,000 years ago). Topics include African origin of Homo sapiens, dispersals into Eurasia, Australia, and the Americas, large mammal extinctions, origins of art, music, and symbolic behavior, and emergence of hunter-gatherer. Not for credit in addition to ANT 394 topic "Origin of Modern Humans."

Prerequisite: ANT 104

3 credits

ANT 379- J: Ethnicity and Ecology in China

This course explores issues of ethnic and national identity in the context of the social ecology of the Chinese state, both past and present. It focuses on the material and social relationships that have shaped perceptions of, and interactions between, cultural groups in China and along its frontiers. Drawing on case studies from the Himalayan plateau, Yunnan highlands, Inner Asian steppes, Taiwan, and elsewhere, students examine how sustenance strategies, economic organization, and political administration have influenced construct of ethnic identity. This course is offered as both AAS 379 and ANT 379.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AAS 220 or HIS 219 (or the former CNS 249 or 250)

3 credits

ANT 380- J: Race and Ethnicity in Latin America and the Caribbean

Concepts and theories of race and ethnicity in Latin American and Caribbean settings.

The historical evolution and the contemporary social and cultural significance of racial and ethnic identities within the region are explored. Specific examples of social relations characterized by ethnic or racial conflict are presented. This course is offered as both AFS 380 and ANT 380.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: AFS 240 or LAC 200

3 credits

ANT 381- F: Applied Anthropology

A practical, career-oriented examination of how anthropological theory and method can be put to use in non-academic areas such as economic development, public health, environmental conservation, education, technology development, cultural advocacy, business, and law. Coordinated readings provide case illustrations.

Prerequisite: U3 or U4 standing

3 credits

ANT 382- F: Human Demography

The study of human demography has had a long standing focus in anthropology, archaeology, economics, and sociology for the simple reason that the distribution and density of people fundamentally shapes many other aspects of the human condition. This course gives students an overview of population dynamics both as they change through time and differ across cultures.

Prerequisites: U3 or U4 standing; completion of D.E.C. C

3 credits

ANT 385- J: Prehistoric Peoples of the Americas

Life in the Americas from first settlement at the end of the last ice age until the arrival of the Europeans in the 15th and 16th centuries. The culture, history, and evolution of prehistoric peoples of North, Central, and South America are treated. Specific topics covered include settlement by Native Americans, hunting-gathering lifeways, plant and animal domestication, the origins of village life, and state-level societies.

Prerequisite: ANT 104

3 credits

ANT 390- F: Topics in Social and Cultural Anthropology

May be repeated as the topic changes.

Prerequisite: ANT 102

3 credits

ANT 391- F: Topics in Social and Cultural Anthropology

May be repeated as the topic changes.

Prerequisite: ANT 102

3 credits

ANT 393- F: Topics in Archaeology

Topics in archaeology are taught from a social sciences perspectives. Recent topics have included: Origin of Modern Humans, Advent of the Iron Age, Old World Archaeology, and Ancient Egypt. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisites: ANT 104 and one other anthropology course

3 credits

ANT 394- F: Topics in Archaeology

Topics in archaeology are taught from a social sciences perspectives. Recent topics have included: Origin of Modern Humans, Advent of the Iron Age, Old World Archaeology, and Ancient Egypt. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisites: ANT 104 and one other anthropology course

3 credits

ANT 395- J: Religions of the Caribbean

An ethnographic approach to the relationship among religion, social organization, and identity politics through studying cultural and historical bases of Christianity, Islam, Hinduism, and their related religious manifestations in the Caribbean. Class stratification, ethnic conflict, and fundamentalist movements are explored. This course is offered as both AFS 395 and ANT 395.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: ANT 351

3 credits

ANT 401: Problems in Social and Cultural Anthropology

Research and discussion of a selected topic in social and cultural anthropology. May be repeated as the topic changes.

Prerequisite: ANT 102

Advisory prerequisite: Two other ANT courses at the 200 level or higher

3 credits

ANT 402: Problems in Archaeology

Research and discussion of a selected topic in the prehistory of the Old and New Worlds. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: ANT 104

Advisory prerequisite: Two other archaeology courses

3 credits

ANT 405: Cultural Ecology

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

Prerequisite: ANT 102

Advisory prerequisite: 200 level or higher ANT course

3 credits

ANT 415: Ethnoarchaeology

Ethnoarchaeology uses observations of present-day peoples to inform archaeological inquiry, based on analogies between past and present. Advanced undergraduate and graduate students will develop their ability to construct and evaluate such analogies. Using this skill, they will then explore ways in which ethnoarchaeological data contribute to archaeological research: hypothesis building, survey and excavation strategies, interpretation of site and artifact data, and understanding the causes and processes of human behavioral change. In addition to seminar discussions of theoretical issues and case studies, the course incorporates practical exercises in the surrounding community.

Prerequisite: ANT 104; ANT major or minor

3 credits

ANT 417: Primitive Technology

An introduction to the technology of hunter-gatherers. The course examines how archaeologists use both ethnography and experimentation to shed light on prehistoric human technological adaptations. Techniques for making and using primitive tools are practiced in weekly laboratory sessions.

Prerequisite: Permission of instructor

4 credits

ANT 418: Lithic Technology

A detailed overview of the methods archaeologists use to extract behavioral information from prehistoric stone tools. The course examines raw material economy, technological strategies, tool use, and discard behavior. Analytical methods are practiced through the computer-assisted analysis of tools from simulated archaeological sites.

Prerequisite: Permission of instructor

4 credits

ANT 419: Zooarchaeology

The study of animal bones from archaeological sites. Special emphasis is on the identification of fragmented bone and surface modification, calculation of indexes of abundance, and measurement and metrical analysis of mammal bone. Computer analysis is stressed, and the class seeks a fusion of traditional zooarchaeology and actualistic studies. Three to four hours of computer laboratory work required per week.

Prerequisites: ANT 104 or ANP 120;

permission of instructor

Advisory Prerequisite: One other archaeology course

3 credits

ANT 420: Environmental Analysis Using Remote Sensing and Geographic Information Systems

The use of aerial and satellite imagery in environmental analysis and the manipulation of geographic data sets of all types using Geographic Information Systems. Concentrating on Long Island, each student designs and completes a research project on a particular section of the area, focusing on the habitats of local wildlife, the locations of archaeological sites, coastal regimes, etc. Students should expect to spend approximately 10 hours per week beyond regularly scheduled classes in a University computer laboratory. This course is offered as both ANT 420 and GEO 420.

Prerequisite: Upper-division course in ANT or BIO or GEO or MAR

4 credits

ANT 447: Readings in Anthropology

Individual advanced readings on selected topics in anthropology. May be repeated up to a limit of 6 credits.

Prerequisites: ANT 102; two other ANT courses at the 200 level or higher; permission of instructor and department

3 credits

ANT 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Students may not serve as teaching assistants in the same course twice.

Prerequisites: U3 or U4 standing; anthropology major; 3.00 g.p.a.; permission of instructor; permission of director of undergraduate studies

3 credits, S/U grading

ANT 476: Undergraduate Teaching Practicum II

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

Prerequisites: U3 or U4 standing; anthropology major; 3.00 g.p.a.; permission of instructor; permission of director of undergraduate studies

3 credits, S/U grading

ANT 487: Independent Research in Anthropology

Independent research projects carried out by upper-division students. May be repeated up to a limit of six credits.

Prerequisites: 15 credits in anthropology; permission of instructor and department

0-6 credits

ANT 488: Internship

Participation in local, state, and national public and private agencies and organizations. Students are required to submit written progress reports and a final written report on their experiences to the faculty sponsor and the department. May be repeated up to a limit of 12 credits.

Prerequisites: 15 credits in anthropology; permission of instructor and department

0-6 credits, S/U grading

ANT 495: Senior Honors Project in Anthropology

First course of a two-semester project for anthropology majors who are candidates for the degree with honors. Arranged in consultation with the department through the director of undergraduate studies, the project involves independent readings or research and the writing of a paper under the close supervision of an appropriate faculty member on a suitable topic selected by the student. Students enrolled in ANT 495 are obliged to complete ANT 496 the following semester. Students receive only one grade upon completion of the sequence.

Prerequisite: Admission to the anthropology honors program

3 credits

ANT 496: Senior Honors Project in Anthropology

Second course of a two-semester project for anthropology majors who are candidates for the degree with honors. Arranged in consultation with the department through the director of undergraduate studies, the project involves independent readings or research and the writing of a paper under the close supervision of an appropriate faculty member on a suitable topic selected by the student. Students receive only one grade upon completion of the sequence.

Prerequisite: ANT 495; admission to the anthropology honors program

3 credits

ARB

Arabic

ARB 111: Elementary Arabic I

An introduction to Modern Standard Arabic, stressing speaking, comprehension, reading and writing. Selected texts are read. Practice in the language laboratory supplements class work. No student who has had two or more years of Arabic in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for ARB 111 without written permission from the supervisor of the course.

3 credits

ARB 112 - S3: Elementary Arabic II

An introduction to Arabic, stressing speaking, comprehension, reading and writing. Selected texts are read. Practice in the language laboratory supplements class work.

Prerequisite: ARB 111

3 credits

ARH

Art History

ARH 101- D: Art in Culture from Prehistoric Times to the Age of the Cathedrals, ca. 1400 A.D.

A survey of the history of painting, sculpture, and architecture from its beginnings in prehistoric times to the end of the Middle Ages. Works of art are studied both as individual monuments with intrinsic aesthetic appeal and as expressions of the needs, ideals, and aspirations of the particular society in which they were created.

3 credits

ARH 102- D: Art in Culture from the Early Renaissance, ca.1400, to Postmodernism

A survey of the history of painting, sculpture, and architecture from the Renaissance to the present day. Works of art are studied both as individual monuments with intrinsic aesthetic appeal and as expressions of the needs, ideals, and aspirations of the particular society in which they were created.

3 credits

ARH 201- D: Arts of Africa, Oceania, and the Americas

An introduction to the arts of Africa, Oceania, and the Americas. Following discussion of basic concepts in studying non-Western art, the course focuses on comparing and contrasting the arts of particular societies in each of these regions from ancient times to the present.

Advisory Prerequisite: U2 standing

3 credits

ARH 205- G: Introduction to Architecture

An introduction to the discipline of architecture through various interpretations of its technological and cultural functions. Focusing on the history of architecture's engagement with engineering, anthropology, sociology, and politics, this course explores changing conceptions of the nature and the task of architecture.

3 credits

ARH 207: Digital Media: History and Theory

An introduction to historical and theoretical issues in digital media. Following discussion of basic concepts in studying digital media, the course focuses on examining the history of computer technologies, and their theoretical

implications and cultural ramifications in the present. This course is offered as ARH 207 and DIA 207.

3 credits

ARH 299: Gallery Management Workshop

Development of practical skills in the business and managerial problems of an art gallery. Assigned readings focus on arts administration, arts conservation, and connoisseurship. May be repeated twice.

Prerequisite: ARH 101 or 102

1 credit

ARH 300- I: Greek Art and Architecture

The study of ancient Greek art and architecture from the earliest beginnings in the geometric period through the archaic, classical, and Hellenistic periods.

Prerequisite: ARH 101

3 credits

ARH 301- I: Roman Art and Architecture

The study of ancient Roman art and architecture from the Republic through the Constantinian period in Italy and the greater Roman world.

Prerequisite: ARH 101

3 credits

ARH 302- J: Ancient Egyptian Art

Survey of art and architecture of ancient Egypt from the development of the first monumental art and architecture (c. 3000 B.C.) through the Early Christian era (c. 300 A.D.) focusing on culturally specific concepts of representation and aesthetics and the status and purposes of ancient Egyptian arts. The role of patronage, the uses of art and architecture in cult, in temples, and in tombs, and the relationship of art and politics are considered, along with the question of the place of Egyptian art within the development of world art and the concept of Egypt as the African origins of Western civilization.

Prerequisite: ARH 101

3 credits

ARH 305- I: Art and Culture of the Middle Ages

A broad examination of the art and architecture of the Middle Ages in the context of medieval history and culture. Topics include relationships to the imperial tradition, monasticism, and feudalism; the interaction and legacy of Roman, Celtic, and Germanic arts; the rise of urban culture and the creative competition between cities.

Prerequisite: ARH 101

3 credits

ARH 306- I: The Early Renaissance in Italy

Art in Italy in from the late 13th through the 15th centuries, with special emphasis on Florence and Siena, and such major figures as Masaccio, Donatello, Piero della Francesca, and Botticelli. This course offered as both ARH 306 and HUI 306.

Prerequisite: ARH 101

3 credits

ARH 307- I: The Age of Michelangelo in Central Italy

An exploration of the works of Michelangelo, Da Vinci and other major masters, including Raphael, Bramante and Pontormo, who inspired, were influenced by or rejected the work and ideals of Michelangelo. This course is offered as both ARH 307 and HUI 307.

Prerequisite: ARH 101

Advisory prerequisite: ARH 306

3 credits

ARH 310- I: Splendors of Renaissance Art in Venice

The special qualities of Venetian art, which blends Byzantine, Islamic, and Western traditions, are explored through the works of such major figures as Giovanni Bellini, Giorgione, Titian, Veronese, and Palladio. Course offered as both ARH 310 and HUI 310.

Prerequisite: ARH 101 and 102

Advisory prerequisite: ARH 307

3 credits

ARH 314- I: Northern Baroque Art and Architecture, 1600-1700

A study structured around the comparison of the art and architecture of urban and court cultures in 17th century Flanders, Netherlands, France, and England. Topics include royal and court portraiture (Rubens, Van Dyck, Le Brun), individual and civic portraiture of the Dutch middle classes (Rembrandt, Hals), genre painting and the marketing of 'low life' imagery (Steen, Brouwer), the production of the domestic sphere in Dutch everyday life scenes (Vermeer, Metsu, Ter Borch), the rise of landscape (Poussin, Lorrain, Hobberma), as well as urban and court spectacle in Antwerp, London, and Versailles.

Prerequisite: ARH 102

3 credits

ARH 316- I: Baroque Art in Italy and Spain, 1600-1700

Examination of the visual culture of Counter Reformation Italy and Spain, focusing predominantly on art and architecture of 17th century Rome and the Spanish court. The painting of Caravaggio and Carracci, as well as the sculpture and architecture of Bernini and Borromini are studied in detail. Topics include genre painting and the emergence of the art market; gender stereotypes and the market for religious images of eroticism, mysticism, and violence in Italy and Spain; secular frescoes and their patrons; papal projects and the transformation of Rome; strategies of self representation for the religious orders; portraiture and art collecting at the Spanish court; and Baroque encounters with the New World.

Prerequisite: ARH 102

3 credits

ARH 317- J: Islamic Art

Art and architecture in the Islamic world from ca. 600 A.D. to the present, introducing the varied traditions of the arts of the Islamic world, from Spain and Morocco to the Indian subcontinent. Consideration of both religious and secular art and architecture in their historical and cultural contexts with emphasis on the development of Islamic forms of visual representation. This course is offered as both AAS 317 and ARH 317.

Prerequisites: U3 or U4 standing; one ARH course

3 credits

ARH 319- 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.

Prerequisite: One DEC D course and U3 or U4 standing

3 credits

ARH 320- I: Art in the Age of Enlightenment

A survey of European art from about 1690 to 1790. Although lectures usually focus on a single artist at a time, the course as a whole stresses artistic attitudes as well as a progression of styles. An effort is made to study art in historical and cultural context, especially in the light of the new philosophies of rationalism, empiricism and individualism that developed and led to both industrial and political revolutions. The three schools

covered are the Venetian, English, and French, from the late Baroque and the Rococo styles to the rise of landscape and early Romantic art. Major artists treated are Tiepolo, Canaletto, Watteau, Chardin, Boucher, Fragonard, Hogarth, Gainsborough, Greuze and David.

Prerequisite: ARH 102

3 credits

ARH 322- G: American Art Since 1947

A survey of painting and sculpture in New York, including abstract expressionism, hard edge painting, pop art, minimal art, earthworks, protest art, and postmodernism.

Prerequisite: ARH 102

Advisory Prerequisite: ARH 342

3 credits

ARH 324- G: Architecture and Design of the 19th and 20th Centuries

A survey of architecture and design from the end of the 18th century to the present. Subjects covered include the crystallization and evolution of Romantic classicism and Romantic naturalism, historicism, the arts and crafts movement, art nouveau, machine aesthetics, the beaux arts tradition, functionalism, the international style, art deco, and postmodernism.

Prerequisite: ARH 102

3 credits

ARH 325- J: Ancient Mesopotamian Art

Survey of the art and architecture of ancient Mesopotamia from the establishment of the first cities and the development of the first monumental architecture (c. 3300 B.C.) through the Hellenistic conquest. Focus on concepts of representation and aesthetics and their uses in politics, private rituals, and state cults.

Prerequisite: ARH 101

3 credits

ARH 326- J: Arts of Ancient Mesoamerica

A survey of the artistic and cultural achievements of the major civilizations of Central America prior to the European conquest. Emphasis is on architectural and sculptural art forms and the ritual, social, and political contexts within which they were created.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: ARH 201

3 credits

ARH 328- J: Arts of West Africa

A study of the arts of West Africa from ancient to contemporary civilizations. Emphasis

is primarily on the history of sculptural traditions, especially figurative sculpture and masquerade. These arts are examined in their political, social, and cultural contexts, as objects of ritual and religious practices, and as evidence of aesthetic choices and achievements.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: ARH 201

3 credits

ARH 329- G: Arts of the African Diaspora

A study of the arts of the African Diaspora from the African continent to Brazil, Surinam, the Caribbean, and the United States. Emphasis is on the full range of art forms, including not only sculptural and performance traditions, but also textiles, basketry, and other crafts. Cultural continuities, spiritual belief, and significant changes in context, meaning, style, and technology are examined. This course is offered as both AFH 339 and ARH 329.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: ARH 201

3 credits

ARH 331- K: American Art to 1870

Issues of the history of American painting, sculpture, and architecture from the early colonial period to the post-Reconstruction era. The course examines the creative accomplishments of both prominent and lesser-known American artists; and promotes a broader perspective of United States art history by highlighting art's relationship to developments in American history.

Prerequisite: ARH 101 or 102

3 credits

ARH 332- K: American Art, 1870-1940

The histories of American painting, sculpture, architecture, and photography from the period spanning Reconstruction and the rise of modern urban commercial culture to the beginning of World War II. The course examines the creative accomplishments of various prominent American artists and promotes a broader perspective of United States art history by highlighting art's relationship to developments in American history.

Prerequisite: ARH 101 or 102

Advisory prerequisite: ARH 331

3 credits

ARH 333- K: Arts for the Public

The history of efforts to develop forms of artistic work that engage broad audiences

of citizens and consumers. Examination of a range of enterprises spanning the century, including monuments, murals, animated cartoons, propaganda, and the Web. Drawing on perspectives from art history, social history, and cultural studies, the course considers developments throughout the 20th century in the United States such as urbanization, political and business expansion, class and racial conflict, war, and technological innovation, in relation to art work.

Prerequisite: ARH 102 or CCS 101

Advisory prerequisite: ARH 332 or 342

3 credits

ARH 334- G: Performance Art I: The European Avant-Guard

This course explores the history and theory of avant-guard performance from its inception in the early 20th century through Surrealism. Questions addressed focus on the choices made by artists, and the forces within the culture that encourage the forms they use. Course projects include a performance that reconstructs an event from one of the periods studied and a term paper. This course is offered as both ARH 334 and THR 334.

Prerequisites: U3 or U4 standing; one ARH, ARS, MUS, or THR course

Advisory Prerequisite: ARS/MUS/THR 208

3 credits

ARH 335- G: History of Photography

A historical survey of the technical, theoretical, and aesthetic development of black-and-white and color still photography and its close interrelationship with the evolution of modern art.

Prerequisite: ARH 102 or CCS 101

Advisory Prerequisite: ARH 332 or 342

3 credits

ARH 336- G: Digital Visual Culture

An investigation of historical and theoretical issues in digital visual culture. Students will build the critical literacy necessary to interrogate the images, text and sound of contemporary digital culture. Emphasis is on examining the history of information technologies, their theoretical implications, and cultural ramifications.

Prerequisite: ARH 102; ARS/MUS/THR 208 or ARS 225 or ARS 205 or CCS 101

3 credits

ARH 337- I: Northern Renaissance Art

Painting and graphic art in the Netherlands and Germany in the 15th and 16th centuries are studied with special emphasis on the major

figures of this period, from van Eyck and van der Weyden to Durer, Holbein, and Bruegel.

Prerequisite: ARH 101 or 102

3 credits

ARH 342- G: Art of the 20th Century

The major movements and individual artists in 20th-century painting and sculpture, including reference to the broader sociocultural context of art.

Prerequisite: ARH 102

3 credits

ARH 344- G: Performance Art II: World War II to the Present

This course explores the history and theory of performance art from World War II to the present, using an international perspective to identify different forms and practices from Happenings to Body Art and the introduction of new technologies. Questions addressed focus on the choices made by artists, and the forces within the culture that encourage the forms they use. Course projects include developing a site specific performance and a term paper. This course is offered as both ARH 344 and THR 344.

Prerequisites: U3 or U4 standing; one ARH, ARS, MUS, or THR course

Advisory Prerequisite: ARH/THR 334

3 credits

ARH 345- G: The Moving Image in 20th century Art

A survey of the use of cinematic technologies within modern and contemporary art practice, from the historical avant-garde to contemporary multiscreen video installation. Situates the history and theory of this work in relation to the evolution of modern art and media culture.

Prerequisites: ARH 102 or CCS 101

Advisory Prerequisites: ARH 342

3 credits

ARH 346- I: Art and Politics in the Age of Revolution

A survey of European art from about 1790 to 1850, stressing artistic attitudes as well as a progression of styles. A special effort is made to view art in historical and cultural context. A principal theme is the development of the modern artistic ideology through ideals such as genius, originality, and the sublime, all of which emerge in the context of a series of political revolutions going from 1789 to 1848. Conflict between the aesthetic and the political, the personal and the public, the traditional and the modern will be explored. Major artists treated are: David, Goya, Fuessli,

Blake, Runge, Friedrich, Constable, Ingres, Gericault, Delacroix, Turner, Courbet. Not for credit in addition to ARH 341.

Prerequisite: ARH 102

Advisory Prerequisite: One or more 300-level ARH courses

3 credits

ARH 347- I: Avant-Garde Art: Realism, Impressionism, Post-Impressionism

An examination of the origins of the avant-garde in European painting and its revolutionary developments from Impressionism through Post Impressionism. The course explores the social, political, and cultural roots of the artists who overturned conservative traditions in favor of modern values and thus established the basis and direction for the art of our time. Conflicts between the aesthetic and the political, the personal and the public, the traditional and the modern will be explored. Social relationships, including those of class and gender, are also embedded in works claiming objective naturalism. Major artists treated are Manet, Degas, Monet, Renoir, Pissarro, Seurat, Van Gogh, Gauguin and Cezanne. Not for credit in addition to ARH 341.

Prerequisite: ARH 102

Advisory Prerequisite: One or more 300-level ARH courses

3 credits

ARH 370- I: Masterpieces of Western Art

In-depth exploration of a select number of major art works central to the Western tradition, e.g., the Parthenon, Chartres Cathedral, the Sistine Chapel. Monuments are analyzed visually, historically, technically, and in terms of their meaning and function for those who commissioned and those who created them. The student develops a critical vocabulary for the analysis, interpretation, and experience of the work of art. Among the issues discussed is the continuing aesthetic and expressive validity or significance of a monument despite changes of context and culture. Not for major credit.

Prerequisites: U3 or U4 standing; Completion of D.E.C. categories B and D

3 credits

ARH 390- I: Topics in European Art

Semester supplements to this Bulletin contain specific descriptions when course is offered. Past topics have included titles such as Mythology in Art; European Popular Art; and Italian Renaissance Sculpture. Designed for upper-division students, this course provides an in-depth study of a specific topic relating

to Western civilization. Students will be expected to demonstrate knowledge of the development of the distinctive features of the history, institutions, economy, society, and culture of Western civilization, and relate it to that of other regions in the world. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; additional prerequisites when topic is announced

3 credits

ARH 391- G: Topics in Global Art

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

Prerequisites: U3 or U4 standing; one ARH course

3 credits

ARH 394- J: Topics in Asian Art

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

Prerequisites: U3 or U4 standing; one ARH course

3 credits

ARH 395- J: Topics in Non-Western Art

Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include such titles as The Art of the Middle East and Balinese Art. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate

either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy, society, and culture of one non-Western civilization. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; one ARH course

3 credits

ARH 396- K: Topics in American Art

Topics in U.S. art, placed within a broad historical context, including social, political, economic, and cultural history and institutions. Topics may include gender issues in art history, American art from colonial to the present.

Prerequisites: U3 or U4 standing; one ARH course

3 credits

ARH 400: Topics in Art History and Criticism

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

Prerequisites: ARH 101 or 102; one other ARH course, varying with topic

3 credits

ARH 420: History and Methods of Art History

Seminar designed to engage students with the history and methods of art history. Through close readings of key texts and discussions, the course explores issues raised by aesthetics, iconography, formalism, the social history of art, as well as the impact of semiotics, feminism, psychoanalysis, and post-modernism on the discipline of art history.

Prerequisites: U3 or U4 standing; ARH 101 and 102

Advisory Prerequisite: One other ARH course

3 credits

ARH 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: Art history/criticism major; preferably U4 standing; sponsorship of an instructor; permission of department

3 credits, S/U grading

ARH 476: Undergraduate Teaching Practicum II

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

Prerequisites: ARH 475; permission of instructor and director of undergraduate studies

3 credits, S/U grading

ARH 485: Projects in Art History and Criticism in New York City

Independent work, under the supervision of a faculty member, investigating work or works from a particular style or period in New York City.

Prerequisites: ARH 101 and 102; two other ARH courses; permission of sponsor and department

0-6 credits

ARH 487: Independent Reading and Research in Art

May be repeated up to a maximum of 12 credits.

Prerequisite: At least four courses in art; sponsorship of a faculty member; permission of department

0-6 credits

ARH 488: Internship

Participation in the work of galleries, museums, arts agencies, and art historical societies. Students are required to submit written progress reports and a final report of their experiences to the faculty coordinator and the department. May be repeated up to a limit of 12 credits, but no more than six credits may count toward the major in art history/criticism and no more than three credits may count toward the major in studio art.

Prerequisite: Fifteen credits in the Art Department, of which at least six shall be in art history/criticism; upper-division standing with preference given to U4 students; permission of instructor and department

0-6 credits, S/U grading

ARH 490: Senior Seminar: Topics in Art History, Museum Studies, and Criticism

An advanced seminar for juniors and seniors that prepares students for continued study or work in the fields of art history, criticism, museum studies and other related areas. Topic will change each year depending on the topic chosen by the instructor.

Prerequisites: U3 or U4 standing; ARH 101 and 102; one additional ARH course

3 credits

ARH 495: Senior Honors Project in Art History and Criticism

A one-semester project for art history and criticism majors who are candidates for the degree with departmental honors.

Prerequisites: Permission of instructor and department

3 credits

ARS

Art, Studio

ARS 154- D: Foundations of Drawing

Fundamentals of drawing using various drawing media and types of paper. Perspective, foreshortening, proportion, anatomy, and basic concepts of drawing are studied. The figure, still life, and landscape are explored as subject matter, and color theory is introduced.

3 credits

ARS 201- D: Photography for Non-Majors

An introductory non-darkroom course on the fundamentals of camera techniques, photographic history, and terminology as well as the visual language of still and moving imagery. Students must own a 35mm camera with manual capability. Books, photographic materials, and field trip expenses are estimated to cost \$200.

Advisory Prerequisite: ARS 154

3 credits

ARS 205- D: Foundations: Idea and Form

An introduction to the basic building blocks for artistic practice and aesthetic analysis. Projects are organized around themes such as line, plane, volume, color, composition, typography, pattern, scale, narrative, performance, light, sound, and monument. These projects, as well as readings, presentations, and discussions, examine the importance of a changing cultural,

environmental, and social context and its impact on meaning and perception in art and visual culture.

3 credits

ARS 208: Introduction to Media Technology

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

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

3 credits

ARS 225: Introductory Digital Art

A survey and hands-on introduction to digital media. Students are introduced to the practical, conceptual, and historical use of computers in the visual arts through lecture, labs, readings, and project critiques. This course serves as preparation for further study in electronic media. It is also an opportunity for students in the arts to gain basic computer literacy through the exploration of various programs including Photoshop, Illustrator, In Design, Dreamweaver and Flash. Students will develop strategies for effectively communicating with images. Emphasis is on the conceptual and artistic potential of the technology. No prior computer experience is required.

Pre- or Corequisite: ARS 154 or ARS 205

3 credits

ARS 255: Introductory Painting

Introductory painting in oils or acrylics. The various media, tools, and techniques of painting and of preparing surfaces for painting are explored. Continues the work of ARS 154 in the traditional areas of landscape, still life, and figure, as well as in perspective, foreshortening, proportion, anatomy, and color theory. One or two field trips to New York City museums and galleries may be required.

Prerequisite: ARS 154

3 credits

ARS 256: Introductory Sculpture

An introduction to sculpture. Students will learn basic skills and concepts relevant to 3-D creation, using a variety of materials and techniques. Specific sequentially organized projects in armature building, modeling, casting, and wood construction to develop technical skills, in conjunction with lectures, group critiques and discussions.

Prerequisite: ARS 154 or ARS 205

3 credits

ARS 264: Ceramics

Investigation of ceramic ware and ceramic sculpture utilizing a wide variety of approaches in earthenware and stoneware clay bodies. The course offers a technical and conceptual foundation for clay construction, low- and high-fire glazing, and multiple finishing techniques using gas and electric firing processes.

Prerequisite: ARS 154

3 credits

ARS 274: Beginning Printmaking

An introduction to printmaking. Demonstrations and lectures treat printmaking techniques and print shop procedures. Students are introduced to intaglio (etching, drypoint, engraving), relief (wood block, line block) monotyping, and if time permits, lithography.

Prerequisite: ARS 154

3 credits

ARS 281: Photography I

An intensive course exploring the techniques and materials of black-and-white photography, employing traditional developing and printing techniques in the darkroom: Students must provide their own 35mm camera with the capability of full manual operation. Estimated cost of supplies is \$450, in addition to the Lab fee.

Prerequisite: ARS 154

3 credits

ARS 299: Studio Management Workshop

Development of practical skills needed to manage and maintain a studio lab or shop in the art department. Students work under the supervision of a faculty member in an area of interest, such as photography, printmaking, electronic media, or sculpture. May be repeated twice.

Prerequisite: Permission of instructor

1 credit, S/U grading

ARS 317: Interactive Media, Performance, and Installation

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

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

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

3 credits

ARS 318: Movie Making: Shoot, Edit, Score

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

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

3 credits

ARS 324: Intermediate Digital Art: Design

This course focuses on the aesthetic, social, political, and ethical issues at stake in the production of design. The course extends beyond two-dimensional graphic design to include critical approaches to the practice and production of architecture, urbanism, environmental design, social life, and fine art.

Prerequisite: ARS/MUS/THR 208 or ARS 225

3 credits

ARS 325: Theory and Practice of Digital Arts: Print

An examination of the theories and techniques of computer and electronic media through lecture, labs, readings and project critiques. Digital imaging techniques are combined with layout programs to create image centered works, such as artist's books, individual prints, multiples, and installations. Hybrid combinations of digital and traditional photography and printmaking techniques are explored.

Prerequisite: ARS/MUS/THR 208 or ARS 225

3 credits

ARS 326: Theory and Practice of Digital Art: Video

An introduction to the practice, theory, and history of video within art and independent media through labs, lecture, readings, and project critiques. Video production includes planning, shooting and editing video. Emphasis is on creative content, experimentation and critical thinking. Students will work with computer based editing and compositing tools to create several short assignments and two significant projects using one or more techniques.

Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

ARS 327- H: Theory and Practice of Digital Arts: Web Art, Design, and Culture

An investigation of the practical, historical, and theoretical issues related to art and design on the Internet. Students write a hypertext research paper, work with images, text, sound, and animation on the web to create web-based artworks in response to course content, and design an information-based site. Emphasis is on examining the history of the Internet, cultural implications of the web, and creative use of web technologies.

Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

ARS 328: Theory and Practice of Digital Arts: Animation

An investigation of the practice, theory, and history of animation within art and independent media through labs, lecture, readings, and project critiques. Animation production will cover computer based stop-motion as well as some 2D and 3D computer animation. Emphasis is on creative content, experimentation and critical thinking. Students work with computer based 2D and 3D animation tools to create several short assignments and one significant project using one or more techniques.

Prerequisite: ARS/MUS/THR 208 or ARS 225
3 credits

ARS 341: Sound Design

An investigation into the scientific, formal and artistic qualities of sound developed for students who may or may not have had formal musical training. Students will write reviews of sound pieces, create film or game soundtracks, and create sound-based artworks in response to course content, and write a paper on acoustic or psycho-acoustic phenomena. Emphasis is on studio production techniques, history of sound art and basic acoustics. Students will work on Apple computers in the SINC site and LTA. This

course is offered as ARS 341, MUS 341, and THR 341.

Prerequisite: One ARS, CCS, CSE, ISE, MUS, or THR course
Advisory Prerequisite: ARS/MUS/THR 208 or ARS 225

3 credits

ARS 350: Life Drawing and Painting

Drawing and painting of the human figure. May be repeated once.

Prerequisite: ARS 255

3 credits

ARS 351: Painting II: Theory and Practice

Painting and drawing studio; practice and theory stressing exploration of media and crafts, historical styles, and individual development.

Prerequisite: ARH 102 and ARS 255

3 credits

ARS 352: Painting III: Theory and Practice

A continuation of ARS 351, stressing the individual development of the student as a maturing artist through critiques of the student's work and discussion of contemporary and historical issues in art.

Prerequisite: ARS 351

3 credits

ARS 359: Theory and Practice of Conceptual Drawing

The further study of different processes and methods of generating drawings, encouraging individual expression. Slide presentations, assigned readings, and gallery visits are part of the student's experience.

Prerequisite: ARH 102 and ARS 255

3 credits

ARS 364: Advanced Theory and Practice of Ceramics

An advanced course in ceramics stressing sophisticated sculptural forms and techniques in earthenware, stoneware, porcelain, and raku clay bodies. Class work is based on individual projects stressing expression of ideas and image making. Additional techniques of mold making, slip casting, and raku firing enlarge the repertoire of construction and surface finishes.

Prerequisites: ARS 264 and ARH 102

3 credits

ARS 365: Theories and Practice of Sculpture: Welding, Construction, and Intermedia

A range of techniques, materials and ways to approach sculpture will be explored. The class will consist of technical demonstrations in wood constructions, plasma cutting, welding, forming, forging in metal, and related concepts and techniques in intermedia. Through lectures, critiques and discussions, the course will also address the various stages of planning, from conceptualizing the idea, gathering materials, to physical and material considerations.

Prerequisite: ARS 256

3 credits

ARS 366: Theory and Practice of Sculpture: Modeling, Casting, and Carving

A historical and philosophical survey of sculpture in expanded fields. Exploration focusing on site as a major component of artwork in both content and form, emphasizing multidimensional work in relation to context, material and intent. The class will consist of technical demonstrations in various materials, lectures, critiques, and discussions. Students will learn creative skills in the design process: site analysis, conceptualization, presentation, and production.

Prerequisite: ARS 256

3 credits

ARS 374: Theory and Practice of Printmaking: Intaglio Processes

Further development of the craft of black-and-white intaglio printing, utilizing various methods including dry point, engraving, etching, soft ground, and aquatint, with an emphasis on the history of printmaking.

Prerequisite: ARS 274

3 credits

ARS 375: Theory and Practice of Printmaking: Lithography

Demonstrations and hands-on work in the basic techniques of direct lithographic printing from limestone, primarily in black and white, with an emphasis on the history of printmaking.

Prerequisite: ARS 154

Advisory prerequisite: ARS 274

3 credits

ARS 381: Photography II

An intermediate course in the theory and practice of photography utilizing various processes: An exploration of black-and-white and color photography as a means of

personal visual expression, and an extensive examination of materials and techniques. Students must provide their own cameras and materials. Estimated cost of supplies is \$300 in addition to the Lab fee.

Prerequisite: ARS 281

Advisory Prerequisite: ARS 225 and/or ARS 208

3 credits

ARS 390- G: Topics in Studio Art

Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated as the topic changes. Not for major credit.

Prerequisite: ARS 154 or ARS 205

3 credits

ARS 420: Studio Art Senior Seminar

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

Prerequisite: U3 or U4 standing; ARS major or minor

3 credits

ARS 425: Advanced Digital Arts

An advanced investigation of the history, contemporary practice, and techniques of digital/electronic media arts through lecture, labs, readings, project critiques, and exhibition. Student directed projects may involve advanced media techniques, such as imaging, video, sound, 2D/3D animation, performance, and interactivity that take form as prints, movies on dvd, sculptures/installations, and websites. May be repeated once.

Prerequisites: ARS/MUS/THR 208 or ARS 225; *permission of instructor after interview and review of portfolio*

3 credits

ARS 452: Advanced Theory and Practice of Painting

Examination of ideas and techniques of painting through studio, lecture, critique, exhibition, and painting assignments. May be repeated once.

Prerequisite: ARS 351 and 352; ARH 342

3 credits

ARS 465: Advanced Theory and Practice of Sculpture: Welding, Construction, and Inter-media

An advanced course in the theory, techniques, and methodology's informed by contemporary studio practice and innovation. The class will consist of technical demonstrations, lectures, critiques and discussions. Emphasis is on creative content, and process, critical thinking, and experimentation. Increased ability in the articulation of three-dimensional form and space will be explored. May be repeated once, for a total of 6 credits.

Prerequisite: ARS 365

3 credits

ARS 466: Advanced Theory and Practice of Sculpture: Installation, Site Specific and Public Art

An advanced investigation of the history, contemporary practice, and techniques of sculpture, installation, and expansions of art in the public realm. Students will explore ideas as research through readings, discussions, and critiques. Emphasis is on the conceptual investigation, and artistic expression through experimentation and production in space/time inquiry. Examinations of ideas through alternative visual processes may be explored. May be repeated once, for a total of 6 credits.

Prerequisite: ARS 365 or ARS 366

3 credits

ARS 471: Advanced Theory and Practice of Printmaking: Intaglio Processes

Continued development of intaglio techniques, emphasizing a variety of multi-plate and single-plate color printing processes, and tailored to the individual requirements of advanced students. May be repeated once.

Prerequisite: ARS 374

3 credits

ARS 472: Advanced Theory and Practice of Printmaking: Lithography

Continued development of lithographic techniques, emphasizing methods of stone and plate lithography and leading to the production of printed single- and multi-colored editions. May be repeated once.

Prerequisite: ARS 375

3 credits

ARS 475: Undergraduate Teaching Practicum I

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

assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: Studio art major; preferably U4 standing; sponsorship of an instructor; permission of department

3 credits, S/U grading

ARS 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Students assume greater responsibility in such areas as assisting in demonstrations and critiques, only under direct supervision of the instructor. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served.

Prerequisite: ARS 475; permission of department

3 credits, S/U grading

ARS 481: Photography III

Advanced photography, stressing the theory and practice of the medium as a tool for individual expression and communication: Emphasis will be on refining production and presentation of prints. Estimated cost of supplies is \$300 in addition to the Lab fee.

Prerequisites: ARS 381; *permission of instructor after interview and review of portfolio*

3 credits

ARS 482: Photography IV

Advanced photography, stressing the theory and practice of communicative skills and presentation, aimed at enabling the serious photography student to follow and develop his or her personal objectives. Emphasis will be on the preparation of a portfolio to reflect each student's future goals. Estimated cost of supplies is \$300 in addition to the Lab fee. May be repeated once, for a total of 6 credits.

Prerequisites: ARS 481 and permission of the instructor after interview and review of portfolio

3 credits

ARS 487: Advanced Directed Projects in Studio Theory and Practice

Advanced independent projects for outstanding students under the supervision of a faculty

member. May be repeated once for a maximum of six credits.

Prerequisites: Advanced status in one of the studio areas; sponsorship of a faculty member; permission of department

0-6 credits

ARS 488: Internship

Prerequisites: U3 or U4 standing; 15 credits in art department courses; permission of department

0-6 credits, S/U grading

ARS 491: Special Topics in Studio Theory and Practice

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

Prerequisite: Permission of department
3 credits

ARS 492: Special Topics in Studio Theory and Practice

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

Prerequisite: Permission of department
3 credits

ARS 495: Senior Honors Project in Studio Art

A one-semester project for studio art majors who are candidates for the degree with departmental honors.

Prerequisites: Permission of instructor and department

3 credits

AST

Astronomy

AST 100: Astronomy Today

Seminar designed to introduce students to the excitement of modern astronomy, focusing on the most recent discoveries, as reported in the media. The course provides sufficient scientific background to enable students to understand the impact of these discoveries.

1 credit

AST 101- E: Introduction to Astronomy

Description of planets, stars, galaxies, black holes, pulsars, quasars, supernovae, and white dwarfs. Man's place in the cosmos. Cosmological theories. Students with better science preparation are encouraged to take

AST 203. Not for major credit. Not for credit in addition to AST 203

Prerequisite: Satisfaction of entry skill in mathematics requirement (Skill 1) or satisfactory completion of D.E.C. C

3 credits

AST 105- E: Introduction to the Solar System

A general survey of present knowledge of the planets, satellites, interplanetary medium, comets, asteroids, and outer regions of the sun. Begins with a historical introduction and discussion of the methods of science. Emphasizes current NASA deep-space exploration missions and other modern astronomical methods. Not for major credit. Not for credit in addition to AST 205 or GEO 106.

3 credits

AST 112: Astronomy Laboratory

An introduction to observational activities in astronomy. Students make astronomical measurements using simple instruments such as a quadrant, cross-staff, spectrometer, and telescope; analyze measurements; examine how quantities of interest and their errors are derived from the measurements and how they are properly reported. Not for major credit.

Pre- or Corequisite: AST 101 or 105 or 248
1 credit

AST 200: Current Astronomical Research at Stony Brook

Seminar designed to introduce students to astronomical research currently underway at Stony Brook. Faculty actively engaged in cutting edge research using facilities such as the Hubble space telescope, the CHANDRA X-Ray Observatory, the Keck and Gemini telescopes, or supercomputers give presentations on their own research. Appropriate for students considering undergraduate research in astronomy as well as students interested in current astronomy.

1 credit

AST 203- E: Astronomy

A survey of the physical nature of the universe for the student with some background in physics and mathematics. May not be taken for credit in addition to AST 101. Optional evening observing sessions will be held during the semester.

Prerequisite: PHY 125 or 131/133 or 141
4 credits

AST 205: Introduction to Planetary Sciences

An introduction to the solar system for the student with a background in mathematics or physical sciences. A survey of the planets, comets, asteroids, and interplanetary medium, based upon the latest scientific discoveries. Not for credit in addition to AST 105 or GEO 106.

Prerequisite: PHY 125 or 131/133 or 141
3 credits

AST 248- H: The Search for Life in the Universe

A study of the role of science in modern society through investigation of the question: Does life exist elsewhere in the universe? Topics include a review of the astronomical and biological settings; the origin of life on the earth and possibly elsewhere; the evolution of life and the development of intelligence and technology. Also discussed are the ramifications of the development of life and intelligence for the atmosphere and the biosphere.

Prerequisite: One D.E.C. category E course
3 credits

AST 287: Introductory Research in Astronomy

Independent research under the supervision of a faculty member, at a level appropriate for lower-division students. May be repeated.

Prerequisites: Permission of instructor and departmental research coordinator
Advisory Prerequisites: U1 or U2 standing; one AST course
0-3 credits

AST 301- H: Collisions in the Solar System

A discussion of the evidence that comet and asteroid impacts have played a significant part in the evolution of the Earth, and other planets of the solar system, as well as an assessment of the actual and perceived hazard posed by terrestrial impacts and discussion of what can be done about it. The course follows an interdisciplinary approach and is not for major credit.

Prerequisites: A lower-division 3-4 credit AST course; MAT 125 or 131 or 141 or AMS 151; PHY 121/123 or 125 or 131/133 or 141
3 credits

AST 304: The Universe

The origin, evolution, and ultimate fate of the universe. The course begins with a historical approach with emphasis on the evolution of cosmological ideas from geocentric universes to the Big Bang. Consideration of the evolution of the universe from the earliest

moments after the Big Bang to the distant future, including the formation of the galaxies, stars, and planets. Not for major credit.

Prerequisites: A lower-division 3-4 credit AST course; MAT 125 or 131 or 141 or AMS 151; PHY 121/123 or 125 or 131/133 or 141

3 credits

AST 341: Stars and Radiation

An introduction to, and development of, a firm physical understanding of the observed properties of stars. Topics include the structure of the interior and atmosphere of stars, the transfer of energy by radiation in plasmas, the evolution of stars, and the end stages of stellar evolution, including white dwarfs, neutron stars, black holes and supernovae, with careful attention to the comparison of the predictions with observations.

Prerequisites: AST 203; PHY 251/252; MAT 203 or 205 or 211 or AMS 261

3 credits

AST 345: Undergraduate Research in Astronomy

Student participation in faculty-directed research projects.

Prerequisite: Permission of instructor
0-1 credits

AST 346: Galaxies

An introduction to the properties of galaxies, including the Milky Way and others.

Examination of the physical processes that govern the stars, dust, and gas in galaxies. Stellar constituents of galaxies, equilibria of collisionless systems, gas dynamics, and radiative processes.

Prerequisites: AST 203; PHY 251/252; MAT 203 or 205 or 211 or AMS 261

3 credits

AST 347: Cosmology

An introduction to physical cosmology.

Examination of the physical properties that govern the galaxies and intergalactic matter in the universe. Expansion of the universe and the Friedmann equations, microwave background variation, thermal history of the universe, and nucleosynthesis.

Prerequisites: AST 203; PHY 251/252; MAT 203 or 205 or 211 or AMS 261

3 credits

AST 389- H: Science Fiction

The literary genre called Science Fiction enables us to explore our nature, and that of the universe we inhabit, by postulating worlds, cultures and technologies that do not (yet) exist, but could, and the consequences thereof.

This course focuses on the sub-genre called hard science fiction, in which the science/technology is more or less plausible. Students should be prepared to address the genre from both its scientific and literary sides. This course is offered as both AST 389 and EGL 389.

3 credits

AST 443: Observational Techniques in Optical Astronomy

An introduction to modern astronomical instrumentation and data handling and to the use of telescopes. Emphasis on techniques and equipment appropriate for wavelengths shorter than one micron. Extensive laboratory and observing exercises are required.

Prerequisite: AST 203

4 credits

AST 447: Senior Tutorial in Astronomy

Independent readings in advanced topics to be arranged prior to the beginning of the semester. Weekly conferences are held with a faculty member. May be repeated once.

Prerequisites: U4 standing; permission of instructor

1-3 credits

AST 475: Teaching Practicum in Astronomy

Supervision of laboratory or recitation sections under the close guidance of the course instructor. Includes regular meetings with the instructor for purposes of planning and evaluation; supplementary reading in preparation for laboratory or recitation sessions; and opportunities to make oral presentations, provide individual or innovative instruction, and reinforce previously acquired knowledge.

Prerequisites: U4 standing; permission of instructor

3 credits, S/U grading

AST 487: Senior Research in Astronomy

Under the supervision of a faculty member, a major in the department may conduct research for academic credit. A research proposal must be prepared by the student and submitted to the department chairperson for approval before the beginning of the semester in which credit is to be given. A written report must be submitted before the end of the semester. May be repeated.

Prerequisite: Permission of instructor

0-6 credits, S/U grading

ATM

Atmospheric and Oceanic Studies

ATM 102- E: Weather and Climate

Introduces the nature and causes of common meteorological phenomena, severe weather occurrences, and climatic patterns. Topics include formation and movement of air masses and large-scale storms; techniques for weather prediction; weather satellites; hurricanes, tornadoes, and thunderstorms; cloud and precipitation types; the climatic history of the earth; and actual and potential effect of human activities on weather and climate, and of weather and climate on humans. This course is offered as both ATM 102 and EST 102.

3 credits

ATM 201- E: Introduction to Climate and Climate Change

An introduction to the earth's climate system as it exists today, how the climate system has changed in the past, and what future climates may look like in the future. Topics include the causes of climate change, the response times of different parts of the climate system, interactions and feedbacks between the atmosphere, oceans, ice, continents, and vegetation, and the role of carbon as it moves within the climate system on different time-scale

3 credits

ATM 205- E: Introduction to Atmospheric Sciences

A study of the nature and causes of atmospheric phenomena, along with basic physical and chemical processes and energetics. Topics include composition and structure of the atmosphere, atmospheric thermodynamics, hydrostatics, solar and terrestrial radiation, cloud and precipitation processes, elementary dynamics, atmospheric wind and pressure patterns, and severe storms.

Prerequisites: ENS/PHY 119 or PHY 121/123 or 125 or 131/133 or 141; MAT 125 or 131 or 141 or AMS 151

3 credits

ATM 237- H: Current Topics in World Climate and Atmosphere

An exploration of current concerns about the greenhouse effect, acid rain, and global ozone loss, in a format accessible to non-science majors. The social and political steps being taken to limit global atmospheric pollution and climate change are discussed. Not for major

credit. This course is offered as both ATM 237 and PHY 237.

Prerequisites: One D.E.C. category E course; satisfaction of entry skill in mathematics requirement

3 credits

ATM 247: Atmospheric Structure and Analysis

Real-world applications of basic dynamical principles to develop a physical understanding of various weather phenomena. Topics include the hypsometric equation, structure and evolution of extratropical cyclones, fronts, hurricanes, and convective systems, surface and upper air analysis techniques, radar and satellite interpretation, and introduction to operational products and forecasting. Two hours of lecture and one two-and-one-half hour laboratory per week. Laboratories include weather discussions and case study analysis.

Prerequisite: ATM 205

3 credits

ATM 305- E: Global Atmospheric Change

An application of chemical principles to the analysis and prediction of climate changes on earth. The course analyzes climates that have occurred in the earth's past and uses this information to infer climate changes that are likely to occur in the near and distant future. Topics covered include atmospheric chemistry, paleoclimates, greenhouse warming, ozone changes, and urban pollution.

Prerequisites: MAT 125 or 131 or 141 or AMS 151; CHE 131 or 141

Advisory Prerequisite: One of the following: ENS/PHY 119, 132/134, 142, or 127

3 credits

ATM 320: Spatial Data Analysis Using Matlab

Provides a working knowledge of the multivariate analysis methods used in the earth and atmospheric sciences and the Matlab programming tool. Topics include regression, eigenvalue, principal component analysis, and objective mapping.

Prerequisite: CSE 130 or ESG 111 or PHY 277; MAT 127 or MAT 132

3 credits

ATM 345: Atmospheric Thermodynamics and Dynamics

A quantitative introduction to the thermodynamical and dynamical processes of Earth's atmosphere. Topics include moist and dry thermodynamical processes, hydrostatic stability, external forces of atmospheric

motion, equations of atmospheric motions on a rotating planet, coordinate transformations, and horizontal motions under balanced forces.

Prerequisites: ATM 205; MAT 203 or MAT 205 or AMS 261; PHY 126/PHY 127 or PHY 132/PHY 134 or PHY 142; CSE 130 or ESG 111 or PHY 277

3 credits

ATM 346: Advanced Atmospheric Dynamics

Advanced concepts of mid-latitude and tropical atmospheric motions, wave dynamics, and numerical methods. Topics include circulation and vorticity, turbulence and boundary-layer structure, quasi-geostrophic theory, large-scale and buoyancy-driven waves, baroclinic instability and energetics, equatorial wave theory, and barotropic and primitive equation models.

Prerequisites: ATM 345; MAT 303 or AMS 361

3 credits

ATM 347: Advanced Synoptic Meteorology and Weather Forecasting

The application of dynamical and physical meteorology to the analysis and prediction of the atmosphere. Topics include application of numerical and statistical models, diagnosis of vertical motion, development of midlatitude synoptic systems, mesoscale phenomena associated with cyclones, convective systems, and radar applications. Laboratories include extensive practice in forecasting and diagnosis of synoptic and convective systems.

Prerequisites: ATM 346 and 348

3 credits

ATM 348: Atmospheric Physics

The application of the laws of physics to a variety of atmospheric phenomena and processes. Topics include cloud and precipitation processes with emphasis on the microphysics, atmospheric electricity, solar and terrestrial radiation, photochemical processes, and boundary layer heat and mass transfer.

Prerequisite: ATM 345

3 credits

ATM 397: Air Pollution and Its Control

A detailed introduction to the causes, effects, and control of air pollution. The pollutants discussed include carbon monoxide, sulfur oxides, nitrogen oxides, ozone, hydrocarbons, and particulate matter. The emissions of these gases from natural and industrial sources and the principles used for controlling the latter are described. The chemical and

physical transformations of the pollutants in the atmosphere are investigated and the phenomena of urban smog and acid rain are discussed.

Prerequisites: ENS/PHY 119 or PHY 132/134 or 142, or PHY 126 and 127; CHE 131 or 141 or 198; MAT 125 or 131 or 141 or AMS 151; U3 or U4 standing

3 credits

ATM 437: Forecasting Practicum

The course provides students with additional forecasting experience. Students make at least three forecasts per week for either Long Island or a city designated by the National Forecast Contest. Students write a weather discussion for each forecast and verify their forecasts to show their progress during the semester.

Pre- or Corequisite: ATM 347

1 credit

ATM 447: Senior Tutorial in Atmospheric Sciences

Independent readings in advanced topics to be arranged prior to the beginning of the semester. Weekly conferences are held with a faculty member. May be repeated once.

Prerequisite: Permission of instructor and SoMAS Undergraduate Programs Director

1-3 credits

ATM 487: Senior Research in Atmospheric Sciences

Under the supervision of a faculty member, a student majoring in atmospheric and oceanic sciences may conduct research for academic credit. A research proposal must be prepared by the student and submitted to the MSRC Undergraduate Director for approval before the beginning of the semester in which credit is to be given. A written report must be submitted before the end of the semester. May be repeated once.

Prerequisite: Permission of instructor and SoMAS Undergraduate Programs Director

0-6 credits

ATM 488: Internship

Participation in research at off-campus laboratories, including the National Weather Service. Students are required to submit to the department a proposal at the time of registration and a report at the end of the semester. May be repeated up to a limit of 12 credits.

Prerequisites: ATM 347; permission of instructor and SoMAS Undergraduate Program Director

0-6 credits, S/U grading

BCP

Pharmacology

BCP 394- H: Environmental Toxicology and Public Health

Principles of toxicology are presented and problems associated with major classes of toxic chemicals to human and environmental health are examined. Case studies dealing with current waste management issues are also discussed. This course is offered as both BCP 394 and MAR 394.

Prerequisites: BIO 201; CHE 131 or 141

3 credits

BCP 400: Writing in Pharmacology

See requirements for the major in pharmacology, upper-division writing requirement.

Prerequisites: Pharmacology major; U3 or U4 standing; permission of instructor

S/U grading

BCP 401: Principles of Pharmacology

Basic principles and mechanisms of drug distribution, absorption, metabolism, and elimination. Principles of chemical carcinogenesis and tumor promotion. Autonomic, smooth-muscle, and CNS pharmacology. Pharmacology of specific drugs of historical interest including alcohol, antibiotics, aspirin, nicotine, and morphine. Review of anticoagulants and thrombolytic agents, antiparasitics, and drugs for the treatment of allergic conditions and gout.

Prerequisites: BIO 362; CHE 322 and 327; a g.p.a. of 3.00 or higher in these courses and their prerequisites.

Corequisite for pharmacology majors: BCP 403

4 credits

BCP 402: Advanced Pharmacology

Advanced concepts of drug metabolism, pharmacokinetics, biochemical, and molecular mechanisms of drug action, and drug resistance in human disease states. Toxicological agents and environmental pollutants. The pharmacology of autotoxins, anti-inflammatories, immunosuppressants, and antiasthmatics. Rational drug design and drug receptor interactions using computer molecular modeling techniques.

Prerequisites: BCP 401 and 403; minimum of B- in BCP 401

Corequisite: BCP 404

4 credits

BCP 403: Principles of Pharmacology Laboratory

The use of molecular modeling software for the understanding of structure activity relationships. In vivo studies to demonstrate the pharmacological mechanism of action of drugs acting on the autonomic, cardiovascular, and renal systems. Pharmacokinetic studies, using HPLC, to determine the rate of absorption, distribution, and excretion of therapeutic agents. Radio- and enzyme-immunoassays for the detection of circulating hormones. Cell culture techniques for drug determination and evaluation.

Prerequisite: Permission of instructor

Corequisite: BCP 401

2 credits

BCP 404: Advanced Pharmacology Laboratory

The use of molecular modeling software for the understanding of structure activity relationships. In vivo studies to demonstrate the pharmacological mechanism of action of drugs acting on the autonomic, cardiovascular, and renal systems. Pharmacokinetic studies, using HPLC, to determine the rate of absorption, distribution, and excretion of therapeutic agents. Radio- and enzyme-immunoassays for the detection of circulating hormones. Cell culture techniques for drug determination and evaluation.

Prerequisites: BCP 401 and 403; permission of instructor

Corequisite: BCP 402

2 credits

BCP 406: Pharmacology Colloquium

Seminars on research in pharmacology and toxicology presented by faculty and distinguished scientists from academic and industrial institutions. Students are expected to develop an understanding of the scientific principles presented in the colloquium. Speakers meet with the students after the seminar to discuss research concepts and to answer questions. One hour Journal Club/ Discussion followed by one hour seminar. May be repeated.

Prerequisites: BIO 202 and 203; CHE 322; a g.p.a. of 3.00 in these courses and their prerequisites

2 credits

BCP 475: Undergraduate Teaching Practicum in Pharmacology

Prerequisites: Pharmacology major; U4 standing; permission of department

3 credits, S/U grading

BCP 487: Research in Pharmacology

Completion of an individual student research project under the supervision of a faculty member. Previously acquired laboratory course techniques and new procedures are utilized. Experimental results must be submitted to the department for grade evaluation in the format of a research report. Not for credit in addition to HBH 396, 398, and 399. May be repeated.

Prerequisites: BIO 202 and 203; CHE 322 and 327; a g.p.a. of 3.00 in these courses and their prerequisites; permission of instructor and department

0-6 credits

BCP 488: Internship

Research participation in off-campus laboratories, the pharmaceutical industry, and other academic and public agencies. Repeatable up to 12 credits.

Prerequisites: BIO 361; CHE 322; g.p.a. of 3.00 or higher in these courses and their prerequisites; permission of department

0-6 credits, S/U grading

BIO

Biology

BIO 101- E: Human Biology

The major concepts of biology are presented from historical, contemporary, and critical viewpoints. These concepts include the cell, the gene, molecular biology, development, and evolution. The human implications or values associated with each concept are emphasized. Not for major credit.

3 credits

BIO 103- E: Introduction to Biotechnology

Gene therapy, genetic modification, cloning, stem cells, and vaccines are covered in this course. Lectures and four supplemental laboratory activities use modern equipment and techniques to illustrate core concepts which class discussions relate to health, society, and public policy. Not for biology major credit.

3 credits

BIO 104- E: How Science Works

The course aims at expanding students' knowledge about the methods of the natural sciences and to develop the critical thinking abilities to understand scientific claims presented by the media. Students will learn about scientific discoveries as well as the differences between science and

pseudoscience. The course includes lectures and discussions based on textbook material, examination of case studies in science, and discussion of items in the news.

3 credits

BIO 113- E: General Ecology

A survey of the principles of ecology in the context of finding solutions to local, national, and global environmental problems. Not for major credit.

3 credits

BIO 115- E: Evolution and Society

The historical development of evolutionary thought, the evolutionary diversification of life, and the mechanisms of evolution are presented. The geological, genetic, and other biological principles necessary to comprehend evolutionary concepts are introduced as background. Current controversies over the evidence for evolution are reviewed. Human evolution, medical and agricultural applications of evolutionary theory, and its implications for the development of human and other social systems are considered. Not for major credit.

Advisory Prerequisite: One biology course
3 credits

BIO 150- E: The Living World

An exploration of life from organisms to molecules. The connections between biodiversity, molecules, and evolution are examined. Recitations/laboratories familiarize students with the tools, models, and concepts of modern biology.

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. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: Level 3 or higher on the mathematics placement examination or corequisite MAT 123 or higher MAT course
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. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: Level 3 or higher on the mathematics placement examination or BME 100

Pre- or Corequisites: CHE 129 or 131 or 141; MAT 125 or higher or AMS 151

3 credits

BIO 203- E: Fundamentals of Biology: Cellular and Organ Physiology

The fundamentals of cell and organ physiology in mammalian and non-mammalian organisms. The structure and function of cell membranes and the physiology of cell to cell signaling, cellular respiration, and homeostasis of organs and organisms are examined with an emphasis on the comparative physiology of vertebrates and invertebrates. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: Level 3 or higher on the mathematics placement examination or BME 100

Pre- or Corequisites: CHE 129 or 131 or 141; MAT 125 or higher or AMS 151

3 credits

BIO 204: Fundamentals of Scientific Inquiry in the Biological Sciences I

First in the foundational laboratory sequence for all biology students, and students in related fields. Students will experience the laboratory process, research process, a wide range of laboratory tools, methods, skills, learn to read and write scientific presentations, and collaborate in formal inquiry. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

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

2 credits

BIO 205: 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. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: BIO 204

Pre- or Corequisites: BIO 201, 202, or 203

2 credits

BIO 208- H: Cell, Brain, Mind

An introduction to the human brain and how it is the target of diseases, drugs, and psychological disturbances. The course explores these topics through a knowledge of basic cell neurobiology. The implications of brain science for human behavior in society are also considered. Not for major credit.

Prerequisite: Any BIO course

Advisory prerequisite: High school chemistry

3 credits

BIO 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 100 or ESG 198 or CHE 131; and upper division status

3 credits

BIO 310: Cell Biology

The cell is studied as the unit of structure, biochemical activity, genetic control, and differentiation. The principles of biochemistry and genetics are applied to an understanding of nutrition, growth, and development.

Prerequisites: C or higher in BIO 202 and 203; CHE 321 or CHE 341

3 credits

BIO 311: Techniques in Molecular and Cellular Biology

Techniques used in recombinant DNA and cell biology research. Topics include DNA

manipulation and analysis, protein expression and analysis, and advanced microscopy.

Prerequisites: BIO 202; BIO 204 and 205 (beginning in fall 2008); CHE 132 or 142; MAT 125 or higher or AMS 151; or permission of instructor

3 credits

BIO 312: Bioinformatics and Computational Biology

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

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

3 credits

BIO 314: Cancer Biology

An examination of the biology of cancer. Emphasis is on molecular and cellular events, such as regulation of gene expression, genome maintenance, cell growth and death, differentiation, cell-cell recognition, signaling and homeostasis, that are frequently disrupted in cancer. Recent advances in diagnosis and therapy will also be discussed.

Prerequisite: BIO 202

3 credits

BIO 315: Microbiology

The organization, structure, energetics, and reproduction of microorganisms. Interactions of bacteria and viruses are discussed. This course has been designated as a High Demand/ Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisites: BIO 202; CHE 132

3 credits

BIO 316: Molecular Immunology

Structure, function, and organization of the immune response at the molecular and cellular levels. Molecular mechanisms of immunological responses to microorganisms and various disease states are explored.

Prerequisites: BIO 202 and 203

Pre- or Corequisite: CHE 322 or 326

3 credits

BIO 317: Principles of Cellular Signaling

Basic principles of cellular signaling and maintenance of cellular and organismic

homeostasis through intra- and intercellular signaling mechanisms. Emphasis is on relationships between nuclear events and ongoing processes of the cell. The roles of membrane receptors and second-messenger pathways in mediating such diverse events as bacterial chemotaxis, protozoan locomotion, and secretion are discussed.

Prerequisites: C or higher in BIO 202 and 203

3 credits

BIO 319: Landscape Ecology Laboratory

A computer lab course focusing on spatial concepts, methods, and tools for addressing ecological and environmental problems. The course will be based on fundamental concepts in ecology and environmental science and extend that knowledge, as well as teaching technical skills, including the use of geographic information systems (GIS) software, image processing, spatially explicit modeling, and spatial statistics. The lab exercises will introduce a variety of spatial approaches addressing problems in environmental protection, ecotoxicology, natural resource management, conservation biology, and wildlife management.

Pre- or Corequisite: BIO 201 and BIO 204 and 205

Advisory Prerequisite: MAT 126 or higher

3 credits

BIO 320: General Genetics

An advanced course in genetics for biology majors. General areas to be discussed include transmission genetics, cytogenetics, immunogenetics, molecular genetics, population genetics, and quantitative genetics.

Prerequisite: BIO 202

Pre- or Corequisite: CHE 131 or 141

3 credits

BIO 325: Animal Development

An overview of animal embryonic development, emphasizing molecular mechanisms regulating embryonic growth and differentiation. General areas to be discussed include: molecular basis of human birth defects, cloning, identification of developmental genes, establishing polarity in *Drosophila* and vertebrates, regulation of cell differentiation, morphogenesis and organ development, development of cancer.

Prerequisite: C or higher in BIO 202

3 credits

BIO 327: Developmental Genetics Laboratory

Exploration of the fundamental concepts in developmental biology and genetics through a combination of classical and modern molecular genetic approaches. Experiments are conducted using *Xenopus* and *Drosophila*, two important animal models for research in developmental biology and genetics. Students gain hands-on experience with the approaches used to investigate processes that control embryonic development on these two model systems, including the use of modern molecular methods for examining the regulation of gene expression during development. Exposure to the genetic approaches that are available in the *Drosophila* system will include participation in a genetic screen for new mutations.

Prerequisite: BIO 325; BIO 204 and 205 (beginning fall 2008)

Pre- or Corequisite: BIO 320

3 credits

BIO 328: Mammalian Physiology

The basic principles of mammalian physiology. The subject matter includes circulation, respiration, nutrition, excretion (and their control by the nervous and endocrine systems), and sensation and coordination. May not be taken for credit in addition to HBY 350.

Prerequisite: BIO 203

Advisory Prerequisite: CHE 132 or 142

3 credits

BIO 334: Principles of Neurobiology

The ionic basis of nerve potentials, the physiology of synapses, sense organs and effectors, and the integrative action of the nervous system are discussed.

Prerequisites: BIO 203; CHE 131 or 141

3 credits

BIO 335: Animal Physiology Laboratory

Laboratory exercises designed to illustrate principles learned in BIO 328. Topics include muscles and hormones, physiological activities of nerves, circulation, respiration, excretion, digestion, sensory function, and central processes of coordination. One hour of lecture, one hour of recitation, and one three-hour laboratory per week.

Prerequisites: CHE 132, 133; BIO 204 and 205 (beginning fall 2008)

Pre- or Corequisite: BIO 328

3 credits

BIO 336- H: Conservation Biology

Society and individual lives are increasingly affected by environmental degradation at different scales. From the decline of local

fisheries to global climate change, multiple crises threaten the biodiversity and ecosystems that sustain us humans. This course introduces the scientific foundations of conservation biology, along with examples from real-world conservation. The course reviews the biological concepts that underlie conservation including habitat requirements, population dynamics, biogeography, and population genetics. Analysis of case studies on the effects of human activities on biological diversity and ecosystem services will be used to explore the interdisciplinary nature of the practice of conservation. This course will prepare students for careers in environmental sciences and ecology.

Prerequisite: BIO 201

Advisory Prerequisites: BIO 351, BIO 320

3 credits

BIO 338: From Synapse to Circuit: Selforganization of the Brain

Exploration of basic neural and synaptic mechanisms and the operation of representative brain circuits, using both theoretical approaches and experimental evidence. Particular attention is given to Hebb's Rule, its cellular basis, its consequences for circuit selforganization, and its limits. A solid background in a mathematical, physical, or biological science is desirable, but most relevant background material is covered in the course.

Prerequisite: BIO 203 or CHE 132 or PHY 122

Advisory Prerequisite: BIO 334

3 credits

BIO 339: Molecular Development of the Nervous System

An introduction to the molecular events that underlie development and plasticity of both the peripheral and central nervous systems, with a focus on neuronal mechanisms. Molecular and genetic approaches to the analysis of neural induction, neuronal differentiation, neuronal death and survival, neurotrophic factors, synapse formation and plasticity are presented.

Prerequisite: BIO 202 or BIO 203

3 credits

BIO 340: Zoology

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

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

4 credits

BIO 341: Plant Diversity

An introduction to the study of plants, especially green plants, including the origin and evolution of land plants. Topics include cellular structure and function, photosynthesis and respiration, gross anatomy, taxonomy and the diversity of organisms, plant ecology, agriculture. Three hours of lecture and one three-hour laboratory per week.

Prerequisites: BIO 201 and 202 (as offered prior to fall 2007) or BIO 201 and 202 (as offered beginning fall 2007) and BIO 204 and BIO 205

4 credits

BIO 343: Invertebrate Zoology

Aspects of the diversity, comparative and functional morphology, natural history, evolution, and water-land transitions of invertebrate animals. Three hours of lecture and one three-and-one-half hour laboratory per week.

Prerequisites: BIO 201 or MAR 104; BIO 204 and BIO 205 (beginning fall 2008)

4 credits

BIO 344: Chordate Zoology

Introduction to the diversity, natural history, and evolution of chordates, emphasizing the living vertebrates. Three hours of lecture or discussion and one three-hour laboratory per week.

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

4 credits

BIO 348: Diversity and Evolution of Reptiles and Amphibians

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

Prerequisite: BIO 201

3 credits

BIO 350- H: Darwinian Medicine

The ecology and evolution of disease, including evolution of human resistance to

infection by pathogens, pathogen evolution in response to natural and technological defenses, and the ecological context of disease. Evolutionary phenomena are treated from molecular, organismal, populational, and environmental perspectives.

Prerequisites: BIO 201 and 202

3 credits

BIO 351- H: Ecology

An examination of the interactions of living organisms with their physical and biological environments. Special attention is given to population dynamics and the interactions among organisms that determine the structure, function, and evolutionary development of biological communities.

Prerequisite: BIO 201 or permission of instructor

3 credits

BIO 352: Ecology Laboratory

Stresses the collection, analysis, and interpretation of ecological data, mostly in terrestrial settings. Laboratory and field exercises demonstrate the operation of general ecological principles in specific populations and communities. One lecture, one three-hour field trip or laboratory, and one hour of recitation per week. Three all-day Saturday field trips.

Prerequisite: BIO 204 and 205 (beginning fall 2008)

Pre- or Corequisites: BIO 351 or permission of instructor

3 credits

BIO 353: Marine Ecology

A survey of biotic responses to ecological challenges in different marine realms. Controls of diversity and trophic structure in the marine ecosystem, historical aspects of marine realms, productivity in the oceans, plankton, soft-bottom communities, intertidal habitats, coral reefs, deep-sea environments, and effects of pollution in the ocean are discussed. This course is offered as both BIO 353 and GEO 353.

Prerequisite: BIO 201 or MAR 104

Advisory Prerequisite: BIO 343

3 credits

BIO 354: Evolution

A detailed discussion of the mechanisms of evolution, focusing on the ways in which genetic changes in populations lead to adaptation, speciation, and historical patterns of evolutionary change.

Prerequisite: BIO 201 and 202, or BIO 320

3 credits

BIO 356: Applied Ecology and Conservation Biology Laboratory

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

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

2 credits

BIO 358- H: Biology and Human Social and Sexual Behavior

Major features of human social and sexual behavior are examined from a biological perspective. Insights from ethology, evolutionary biology, and neurobiology are synthesized into a picture of human nature and behavior. Implications of this picture for human sexual and social behavior are considered. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisites: U3 or U4 standing; one of the following: BIO 101, 201, 202, or 203

3 credits

BIO 359: Behavioral Ecology

A consideration of the patterns of animal behavior in relation to ecological circumstances and evolutionary history. Vertebrate examples are emphasized.

Prerequisites: BIO 201 and 203

3 credits

BIO 361: Biochemistry I

First course of a two-semester survey of the major chemical constituents of the cell, including carbohydrates, lipids, and proteins. Emphasis is on enzyme structure, enzyme kinetics, reaction mechanisms, and metabolic pathways.

Prerequisites: C or higher in BIO 202 and C or higher in CHE 322 or 326 or permission of instructor

3 credits

BIO 362: Biochemistry II

Second course of a two-semester survey. BIO 362 treats nucleic acid structure, replication, and transcription, both in vivo and in vitro. The machinery of protein synthesis is also covered, including amino acid activation; transfer RNA; ribosomes; the genetic code;

and peptide chain initiation, elongation, and termination.

Prerequisites: C or higher in BIO 361

3 credits

BIO 364: Laboratory Techniques in Cancer Biology

This course will introduce contemporary concepts of cancer initiation, progression, metastasis and therapy. The lectures and recitations will include discussions of appropriate review articles, textbook readings and research articles. In the laboratory, students will be introduced to and recapitulate key techniques used in the selected research articles. This course will require significant work on computers outside of class time (more than 3 hours per week).

Prerequisite: BIO 314 with a grade of C or better, BIO 204; BIO 205

3 credits

BIO 365: Biochemistry Laboratory

A series of laboratory experiments and discussions designed particularly to complement BIO 361 and 362. This laboratory covers such topics as enzyme kinetics, spectrophotometry, recombinant DNA technology, the polymerase chain reaction and genotyping, cellular extraction of DNA, RNA, and proteins, and analytical biochemistry. Four hours of laboratory and discussion per week.

Prerequisites: BIO 204 and 205 (beginning fall 2008)

Pre- or Corequisite: BIO 310 or 361

2 credits

BIO 367: Molecular Diversity Laboratory

Hands-on experience with methods to detect and analyze molecular (DNA, RNA, protein) variation to study ecology, adaptation, and evolutionary history using natural populations of *Drosophila*, plankton, and other locally available species.

Prerequisites: BIO 201 and BIO 202 (as offered prior to fall 2007); and BIO 320 or BIO 351 or BIO 354; or BIO 201 and BIO 202 (as offered beginning fall 2007) and BIO 204 and 205, and BIO 320 or BIO 351 or BIO 354

3 credits

BIO 371: Restoration of Aquatic Ecosystems

A field and laboratory course designed to introduce students to field methods in assessing the long-term effects of pollution and restoration of aquatic and marsh systems. Students will work in teams to collaborate on measuring exchange of pollutants between a

restored Superfund site and adjacent areas, the long-term effects of ecological restoration, habitat assessment, aquatic community structure in restored and adjacent systems, and long-term evolutionary effects on aquatic pollutants. Other restoration systems will be compared.

Prerequisites: BIO 201, 202, 204, 205

Advisory Prerequisite: BIO 353

4 credits

BIO 380: Entomology

A survey of the anatomy, development, classification, biogeography, physiology, ecology, and evolution of the insects. The laboratory stresses a knowledge of insect diversity and morphology. Three hours of lecture and three hours of laboratory per week.

Prerequisites: BIO 201, 202 (as offered prior to fall 2007) or BIO 201 and 202 (as offered beginning fall 2007) and BIO 204 and BIO 205

4 credits

BIO 385- H: Plant Ecology

Basic ecological principles as applied to the biology of individual plants, plant populations, communities, and ecosystems in relation to their environments. Examples from Long Island pine barrens, tropical rain forests, beaches, deserts, and other plant communities are studied. Examination of the connections between human societies and plant communities, which are rapidly being altered or destroyed worldwide.

Prerequisite: BIO 201

Advisory Prerequisite: BIO 351

3 credits

BIO 386- H: Ecosystem Ecology and the Global Environment

Ecosystem ecology with an emphasis on biogeochemical cycling in oceans and on land, as well as on biosphere-atmosphere interactions. Topics include earth system processes such as climate and atmospheric composition, the hydrological cycle, cycling of chemicals such as nutrients and metals in the oceans, the soil cycle, and the fate and transport of materials in the atmosphere. Natural and perturbed systems are discussed. This course is offered as both BIO 386 and ENS 311.

Prerequisites: BIO 201; CHE 131 or 141

Advisory Prerequisite: MAR 104

3 credits

BIO 401: Seminar in Biology

Discussions of a specific area of current interest in biology. The work of each semester

covers a different area of biology. Semester Supplements to this Bulletin contain topic description when standard course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
2-3 credits

BIO 402: Seminar in Biology

Discussions of a specific area of current interest in biology. The work of each semester covers a different area of biology. Semester Supplements to this Bulletin contain topic description when standard course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
2-3 credits

BIO 403: Seminar in Biology

Discussions of a specific area of current interest in biology. The work of each semester covers a different area of biology. Semester Supplements to this Bulletin contain topic description when standard course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
2-3 credits

BIO 404: Seminar in Biology

Discussions of a specific area of current interest in biology. The work of each semester covers a different area of biology. Semester Supplements to this Bulletin contain topic description when standard course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
2-3 credits

BIO 405: Seminar in Biology

Discussions of a specific area of current interest in biology. The work of each semester covers a different area of biology. Semester Supplements to this Bulletin contain topic description when standard course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor
2-3 credits

BIO 407: Colloquium in Ecology and Evolution for Biology Majors

Students attend the weekly departmental colloquia in ecology and evolution. The content of each session is discussed during a separate class meeting. Conducted as a seminar.

Prerequisites: BIO 201, 202 and 203; at least one course from biology major areas 4 or 5 with grades of B or higher; CHE 132; U3 standing as a biology major
2 credits

BIO 444: Readings in Biology and Society

Tutorial readings in the biological sciences. These courses may be repeated, but not more than two credits may be used toward biology major requirements. Limit of one topic per semester.

Prerequisites: Written permission of instructor and undergraduate studies committee
1-2 credits, S/U grading

BIO 446: Readings in Neurobiology and Physiology

Tutorial readings in the biological sciences. These courses may be repeated, but not more than two credits may be used toward biology major requirements. Limit of one topic per semester.

Prerequisites: Written permission of instructor and undergraduate studies committee
1-2 credits, S/U grading

BIO 447: Readings in Molecular, Cellular, and Developmental Biology

Tutorial readings in the biological sciences. These courses may be repeated, but not more than two credits may be used toward biology major requirements. Limit of one topic per semester.

Prerequisites: Permission of instructor and Department of Biochemistry and Cell Biology
1-2 credits, S/U grading

BIO 449: Readings in Ecology and Evolution

Tutorial readings in the biological sciences. These courses may be repeated, but not more than two credits may be used toward biology major requirements. Limit of one topic per semester.

Prerequisites: Written permission of instructor and undergraduate studies committee
1-2 credits, S/U grading

BIO 475: Undergraduate Teaching Practicum in College Biology I

Study of the literature, resources, and teaching strategies in a field of biology, coordinated with a supervised clinical experience in instruction. Not for major credit. Students may not serve as teaching assistants in the same course twice.

Prerequisites: Permission of instructor and undergraduate studies committee
0-3 credits, S/U grading

BIO 476: Undergraduate Teaching Practicum in College Biology II

Study of the literature, resources, and teaching strategies in a field of biology, coordinated with a supervised clinical experience in instruction. Not for major credit. Students may not serve as teaching assistants in the same course twice.

Prerequisites: BIO 475; permission of instructor and undergraduate studies committee
0-3 credits, S/U grading

BIO 484: Research in Biology and Society

In these courses, the student works under the supervision of a faculty member in developing an individual project that makes use of the knowledge and techniques acquired in previous courses. The student prepares an appropriate report on the project. Any of the courses may be taken for more than two semesters, but no more than four credits of research and internship may be used for biology major requirements. Limit of one topic per semester.

Prerequisite: Written permission of instructor and undergraduate studies committee. Request for committee approval must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar.
0-6 credits, S/U grading

BIO 486: Research in Neurobiology and Physiology

In these courses, the student works under the supervision of a faculty member in developing an individual project that makes use of the knowledge and techniques acquired in previous courses. The student prepares an appropriate report on the project. Any of the courses may be taken for more than two semesters, but no more than four credits of research and internship may be used for biology major requirements. Limit of one topic per semester.

Prerequisite: Written permission of instructor and undergraduate studies committee. Request for committee approval must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar.
0-6 credits, S/U grading

BIO 487: Research in Molecular, Cellular, and Developmental Biology

In these courses, the student works under the supervision of a faculty member in developing an individual project that makes use of the knowledge and techniques acquired in previous courses. The student prepares an appropriate report on the project. Any

of the courses may be taken for more than two semesters, but no more than four credits of research may be used for biology major requirements. Limit of one topic per semester.

Prerequisite: Permission of instructor and Department of Biochemistry and Cell Biology
0-6 credits, S/U grading

BIO 488: Internship in Biological Sciences

May be repeated up to a limit of 12 credits. Not for biology major credit.

Prerequisites: BIO 201, 202, 203; CHE 132; permission of faculty sponsor and biology internship committee

0-6 credits, S/U grading

BIO 489: Research in Ecology and Evolution

In these courses, the student works under the supervision of a faculty member in developing an individual project that makes use of the knowledge and techniques acquired in previous courses. The student prepares an appropriate report on the project. Any of the courses may be taken for more than two semesters, but no more than four credits of research may be used for biology major requirements. Limit of one topic per semester.

Prerequisite: Written permission of instructor and undergraduate studies committee. Request for committee approval must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar.

0-6 credits, S/U 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 (with 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 or BNG minor or departmental consent

3 credits

BME 120: Programming Fundamentals in Biomedical Engineering

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

Prerequisite: BME Major

3 credits

BME 201- H: Biomedical Engineering and Society

How engineers interact with others in the development of solutions to societal problems, with emphasis on engineering problems arising in the biological realm. In-depth evaluations of both successful and unsuccessful technologies illuminate the role of biomedical engineers in supporting the well-being of urban and rural populations throughout the world, through developments in medical engineering, biotechnology, environmental engineering, and ergonomic design. Not for credit in addition to BME 100.

Prerequisite: One D.E.C. category E course

3 credits

BME 212: Biomedical Engineering Research Fundamentals

Introduction to data collection and analysis in the context of biophysical measurements commonly used by bioengineers. Statistical measures, hypothesis testing, linear regression, and analysis of variance are introduced in an application-oriented manner. Data collection methods using various instruments, A/D boards, and PCs as well as LabView, a powerful data collection computer package. Not for credit in addition to the discontinued BME 309.

Prerequisites: BME major; BME 100

Pre- or Corequisite: MEC 260; 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).

3 credits

BME 300: Writing in Biomedical Engineering

See Requirements for the Major in Biomedical Engineering, Upper-Division Writing Requirement.

Prerequisites: WRT 102; U3 or U4 standing; BME major

Corequisite: Any upper division BME course; perm. of instructor or Undergraduate Director
S/U grading

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; BIO 202 or 203; ESE 271; and ESG 111 (or ESE 124)

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 range of motions required and energy expenditures. Includes the relationship between form and function to illustrate how form dominates behavior. Presents the physiological effects of mechanical stresses on organs, pathologies that develop from abnormal stress, and how biological growth and adaptation arise as a natural response to the mechanics of living.

Prerequisite: MEC 260, BME 212

Pre- or Corequisite: BIO 202 or 203

3 credits

BME 304- H: Genetic Engineering

An introduction to the realm of molecular bioengineering with a focus on genetic engineering. Includes the structure and function of DNA, the flow of genetic information in a cell, genetic mechanisms, the methodology involved in recombinant DNA technology and its application in society in terms of cloning and genetic modification of plants and animals (transgenics), biotechnology (pharmaceutics, genomics), bioprocessing (production and process engineering focusing on the production of genetically engineered products.), and gene therapy. Production factors such as time, rate, cost, efficiency, safety, and desired product quality are also covered. Considers societal issues involving ethical and moral considerations, consequences of regulation, as well as risks and benefits of genetic engineering.

Prerequisites: BME 100; 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 organ and 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 and MEC 262

Pre- or Corequisite: BIO 202 or 203

3 credits

BME 311: Fundamentals of Macro to Molecular Bioimaging

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

Prerequisite: BME 212

3 credits

BME 313: Bioinstrumentation

Basic concepts of biomedical instrumentation and medical devices with a focus on the virtual instrumentation in biomedical engineering using the latest computer technology. Topics include basic sensors in biomedical engineering, biological signal measurement, conditioning, digitizing, and analysis. Advanced applications of LabVIEW, a graphics programming tool for virtual instrumentation. Helps students develop skills to build virtual instrumentation for laboratory research and prototyping medical devices.

Prerequisite: BME 212

Pre- or Corequisite: ESE 271

3 credits

BME 353: Biomaterials: Manufacture, Properties, and Applications

The engineering characteristics of materials, including metals, ceramics, polymers, composites, coatings, and adhesives, that are used in the human body. Emphasizes the need of materials that are considered for implants to meet the material requirements specified for the device application (e.g., strength, modulus, fatigue and corrosion resistance, conductivity) and to be compatible with the biological environment (e.g., nontoxic, noncarcinogenic, resistant to blood clotting if in the cardiovascular system). This course is offered as both ESM 353 and BME 353.

Prerequisite: ESG 332

3 credits

BME 371: Biological Microfluidics

This one semester course will outline theory and applications of special fluid handling conditions associated with living systems. Microfluidics will be examined with respect to aquaporin channels (single file molecular water movement), intercellular fluid transport mechanisms, microvascular convective fluid movement (2 phase flow), and transvascular fluid movement (3 pore theory) with reference to the similarity of each to flow in fabricated microchannels.

Prerequisite: BME 305

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 lubrication, compliance, and adhesion. Self-assembly mechanisms 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 400: Research and Nanotechnology

This is the capstone course for the minor in Nanotechnology Studies (NTS). Students learn primary aspects of the professional research enterprise through writing a journal-quality manuscript and making professional presentations on their independent research (499) projects in a formal symposium setting. Students will also learn how to construct a grant proposal (a typical NSF graduate fellowship proposal), methods to search for research/fellowship funding, and key factors in being a research mentor.

Prerequisite: BME 213; at least one semester of independent research (499) level

3 credits

BME 402: Contemporary Biotechnology

This course will provide an introduction into the realm of modern biotechnology and its applications. This course introduces the historical development of biotechnology and its contemporary applications, including, bioproducts and biofuels, microbial fermentation/bioprocessing, aerobic bioreactors, modeling and simulation, metabolism and enzyme kinetics, metabolic engineering, bioremediation and environmental sustainability and human medicine. Further, societal issues involving ethical and moral implications, perceptions and fears, intellectual property, safety, risks and regulatory issues, as well as economics of biotechnology will be discussed.

Prerequisite: BME 304

3 credits

BME 404: Essentials of Tissue Engineering

Topics covered are: developmental biology (nature's tissue engineering), mechanisms of cell-cell and cell-matrix interactions, biomaterial formulation, characterization of biomaterial properties, evaluation of cell interactions with biomaterials, principles of designing an engineered tissue. Considers manufacturing parameters such as time, rate, cost, efficiency, safety and desired product quality as well as regulatory issues.

Prerequisites: BIO 202 or 203; CHE 132

3 credits

BME 420: Computational Biomechanics

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

Prerequisites: BME 303; BIO 203

3 credits

BME 430: Engineering Approaches to Drug Delivery

Introduction to the application of engineering principles and biological considerations in designing drug delivery systems for medical uses. The concept of biocompatibility and its implications in formulating controlled release devices are illustrated. Emphasis on the use of biodegradable materials to design drug delivery systems for site-specific applications.

Prerequisites: AMS 161 or MAT 132 or 142 or 171; BIO 202 or 203; BME 304

3 credits

BME 440: Biomedical Engineering Design

Introduction to product development from the perspective of solving biomedical, biotechnological, environmental, and ergonomic problems. Teamwork in design, establishing customer needs, writing specifications, and legal and financial issues are covered in the context of design as a decision-based process. A semester-long team design project follows and provides the opportunity to apply concepts covered in class.

Prerequisites: BME major; U4 standing; BME 301 and 305

3 credits

BME 441: Senior Design Project in Biomedical Engineering

Formulation of optimal design problems in biomedical and physiological settings. Introduces optimization techniques for engineering design and modeling for compact and rapid optimization of realistic biomedical engineering problems. Necessary conditions for constrained local optimum with special consideration for the constraints in which the product designed should function in terms of the settings (corporate, ex-corporate, biological, etc.) and the safety considerations involved which are unique to biomedical engineering. Students carry out the detailed design of projects chosen early in the semester. A final design report is required.

Prerequisite: BME 440

3 credits

BME 461: Biosystems Analysis

Fundamentals of the linear time series analyses framework for modeling and mining biological data. Applications range from cardiorespiratory; renal blood pressure, flow, and sequence; to gene expression data. Tools of data analysis include Laplace and Z transforms, convolution, correlation, Fourier transform, transfer function, coherence function, various filtering techniques, and time-invariant and time-varying spectral techniques.

Prerequisites: BME 212 and 301

3 credits

BME 475: Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives regularly scheduled supervision by the faculty instructor. May be used as an open elective and repeated once.

Prerequisites: BME major; U4 standing; a minimum g.p.a. of 3.00 in all Stony Brook courses and a grade of B or better in the course in which the student is to assist; or permission of the department

3 credits

BME 481: Biosensors

A comprehensive introduction to the basic features of biosensors. Discusses types of most common biological agents (e.g. chromophores, fluorescence dyes) and the ways in which they can be connected to a variety of transducers to create complete biosensors for biomedical applications. Focus on optical biosensors and systems (e.g. fluorescence spectroscopy, microscopy), and fiberoptically-based biosensing techniques. New technologies such as molecular beacons, Q-dots, bioMEMs, confocal microscopy and multiphoton microscopy, and OCT will be referenced.

Prerequisites: BIO 202 or 203; ESE 271

3 credits

BME 488: Biomedical Engineering Internship

Participation in off-campus biomedical engineering practice. Students are required to submit a proposal to the undergraduate program director at the time of registration that includes the location, immediate supervisor, nature of the project, and hours per week for the project. One mid-semester report and one

end of semester report are required. May be repeated up to a limit of 12 credits.

Prerequisites: BME 212 and permission of undergraduate program director

3-6 credits, S/U grading

BME 499: Research in Biomedical Engineering

An independent research project with faculty supervision.

Prerequisites: Permission of instructor

0-3 credits

BUS

Business Management

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. This course may not be taken for credit in addition to BUS 112.

Prerequisite: Non Business Majors Only

3 credits

BUS 112: Introduction to Business and Environmental Sustainability

A lecture and applications oriented course that introduces major topics influencing today's business practices relative to environmental sustainability. The evolution of the field over the last century is explored, showing (1) how the Industrial Revolution completely ignored environmental and socially responsible business practices and (2) the somewhat more environmentally friendly atmosphere of the Information Age. The course also examines how businesses work, in view of the global need for sustainable decisions and positioning, and integrates an introduction to business and management principles, public health issues, ethical and socially responsible behavior, and ecological issues. May not be taken for credit in addition to BUS 111.

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 co-requisite: 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.

Prerequisite: Business Major or Minor or MTD or ECO or ISE Major
Advisory Prerequisites: BUS 110, 111, 112, or 115
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.

Prerequisite: BUS or ISE Major.
Advisory Prerequisite: BUS 210
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 Maj/Min, CME Major, or ISE Major. Advisory Prerequisite: BUS 110, 111, 112 or 115, or MAT 122.
Advisory Prerequisite for BUS or ISE Major: BUS 210
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. (Formerly Management Science)

Prerequisite: BUS Maj/Min, MTD, ECO, ISE, or CME major; BUS 110, 111, 112, or 115; BUS 215; MAT 122 or higher
3 credits

BUS 294: Principles of Management

An analysis and application of the basic principles of management. Subjects include management by objectives, supervisory leadership styles, current managerial problems, motivational techniques, organizational problems, communications, planning techniques and management control systems. We will closely examine case studies that focus on real world problems involving major corporations and closely look at the relationships that led to the issues.

Prerequisites: BUS Major or Minor; BUS 110, BUS 111, BUS 112 or BUS 115; U1 or U2 standing or permission of instructor
3 credits

BUS 300: Writing for Business Management

In order to meet the upper-division writing requirement for the BUS major, the student must complete a portfolio of written work consisting of three documents: his/her resume; a letter of application for a real job advertised in a newspaper or other medium; and a two-page memorandum describing the results of an analysis or similar issue appropriate to a business organization.

Prerequisites: BUS major; U3 standing
S/U grading

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.

Prerequisite: BUS maj/min.
Advisory Prerequisite: BUS 110, 111, 112, or 115
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.

Prerequisite: BUS major
Advisory Prerequisite: BUS 214
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.

Prerequisite: BUS major
Advisory Prerequisite: BUS 214
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.

Prerequisite: BUS major
Advisory Prerequisite: BUS 214
3 credits

BUS 313: Intermediate Accounting II

A continuation of BUS 310. Covers valuation, measurement, presentation, and analysis of accounting information and financial statements. Includes study of advanced accounting theory and opinions issued by the Accounting Principles Board and its successor, the Financial Accounting Standards Board. Selected topics include revenue recognition, investments, stockholders equity, changes in capital, pensions, leases, accounting for

income taxes, accounting changes, error analysis, and related contemporary financial accounting issues.

Prerequisite: BUS major

Advisory Prerequisite: BUS 311

3 credits

BUS 314: Federal Income Taxation II

Introduces and explores fundamental income taxation concepts for C corporations, S corporations, and partnerships. Further introduces the student to gift and estate taxes, trusts and estates, and the administrative procedures 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.

Prerequisite: BUS Major

Advisory Prerequisite: BUS 311

3 credits

BUS 315: Accounting for the Small Business Entrepreneur

This course is designed to introduce the student to accounting and other financial concept as that the small business entrepreneur needs to know in order to be successful. The course will reinforce accounting concepts already introduced in the Financial Accounting course with an emphasis on the small business. Students will study and utilize QuickBooks and Peachtree accounting software programs. Other business/financial concerns such as bank reconciliations, payroll preparation, payroll and sales tax compliance, maintenance of installment debt, and utilization of sales and purchase discounts will be reviewed.

Prerequisites: BUS Major; BUS 210

3 credits

BUS 330: Principles of Finance

Focus on understanding how firms meet and manage 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 and Stock valuations are introduced.

Prerequisite: BUS major/minor, AMS, MTD, ISE, or ECO major.

Advisory Prerequisite: BUS 110, 111, 112, or 115, BUS 210

3 credits

BUS 331: International Finance

Course will focus on understanding how firms meet and manage their financial objectives. Today's international 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, such as international capital budgeting, which can be used to help firms maximize value by improving decisions relating to capital.

Prerequisites: BUS 110 or BUS 115; BUS major or Minor or AMS or ISE or MTD or ECO major.

Advisory Prerequisite: BUS 330

3 credits

BUS 334: Consumer Advertising and Promotion

Stages and processes involved in developing an integrated marketing communications campaign. A range of marketing activities, including a situation analysis of the company, competition, and business environment, communications audit of a brand and its competitors, budgetary considerations, creative strategy and media planning will be covered. Apply learning to a team project that will walk through various stages of developing an integrated marketing communications campaign.

Prerequisites: BUS major and U3 or U4 standing.

Advisory Prerequisite: BUS 348 or 349

3 credits

BUS 335: Business Advertising and Promotion

Business to business marketing focus with an emphasis on Integrated Marketing Communications. Covering advertising agency and in-house specific issues. Marketing activities include advertising purchase, public relations, trade show promotion, direct marketing, interactive/Internet marketing, and touching upon relationship building through personal selling. Apply learning to a team project that will emphasize a comprehensive trade specific integrated marketing communications campaign.

Prerequisites: BUS major and U3 or U4 standing

Advisory Prerequisite: BUS 348 or BUS 349

3 credits

BUS 340: Information Systems in Management

An introductory course in management information systems (MIS). Its objectives are to develop a basic understanding of the concepts and techniques needed in analyzing, designing, and managing these systems, and to explore the applications of computers and information technology to improve the efficiency and effectiveness of individuals, groups, and organizations.

Prerequisite: BUS Major/Minor, ISE Major, or CME Major; U3 or U4 standing.

Advisory Prerequisite: BUS 348, BUS 215, and MAT 122

3 credits

BUS 343: Expert Systems in Business

Examines the technology of expert systems, with special attention to business applications, including manufacturing and service facilities. Included are the history of expert systems; issues in knowledge acquisition, implementation and validation; actual applications in the world of business; hands-on development of a simple expert system.

Prerequisites: BUS or ISE Major; BUS 110, BUS 112 or BUS 115; BUS 340

3 credits

BUS 344: Decision Support Systems

Focuses on the interrelationship between management information systems and management science. Students apply knowledge from these fields to develop a decision support system. They identify an appropriate business application, build the required information system, and implement the suitable management science methodology. At the end of the course, students demonstrate how their decision support system addresses the stated management problem and describe how their system works.

Prerequisites: BUS, AMS, or ISE Major: BUS 110, BUS 111, BUS 112 or BUS 115; BUS 220; BUS 340

3 credits

BUS 346: Management and Operations

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

Prerequisites: BUS Major/Minor or ISE Major.

Advisory Pre or Co-requisite: BUS 110, 111, 112, or 115

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. This course may not be taken for credit in addition to BUS 349.

Prerequisite: BUS Major/Minor or ISE Major.
Advisory Pre or Co-requisite: BUS 110, 111, 112, or 115

3 credits

BUS 349: Principles of Marketing and Sustainable Products and Services

Provides an understanding of marketing principles, including the "4 P's" of marketing: Products, Promotion, Price and Place (distribution channels), as they relate to new environmentally responsible marketing activities and ways of marketing to environmental sustainability industries. Foci include (1) how real world trends will affect marketing planning and decisions as we moved into a "greener" 21st century global community and (2) how to achieve profitability through customer satisfaction and utilizing environmentally sustainable best practices. Students will be required to demonstrate their understanding of the readings and class discussions via their own analyses of how this information relates to specific marketing issues of their choosing. May not be taken for credit in addition to BUS 348.

Prerequisite: Business Major or Minor
Advisory Prerequisites or Corequisite: BUS 110, BUS 111, BUS 112 or BUS 115

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 effectiveness, efficiency and competitiveness of distribution, advertising, brand building, pricing, promotions, new product development, customer service and market research.

Prerequisites: BUS 110, BUS 112 or BUS 115; BUS 340; BUS 348 or BUS 349; BUS major

3 credits

BUS 351: Human Resource Management

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

Prerequisite: BUS Major/Minor or MTD Major.

Advisory Pre or Co-requisite: BUS 110, 111, or 115

3 credits

BUS 352: Electronic Commerce

Introduction to Internet backbone and security. Business-to-Business (B2B) development and Business-to-Consumer (B2C) marketing.

Prerequisites: BUS 110, BUS 112 or BUS 115; BUS 340; BUS 346; BUS 348 or BUS 349; BUS major

3 credits

BUS 353: Entrepreneurship

The essential qualities of new and growing enterprises are examined. Examples of both successful and failed new ventures are given by entrepreneurs. Students develop a business plan for their own business and present it to venture capitalists for their expert analysis.

Prerequisites: Limited to Business and Engineering seniors. *Prerequisites for BUS majors:* BUS 210 and 348. *Corequisite for engineering majors:* enrollment in relevant senior design crs

3 credits

BUS 354: Understanding Business Agreements

Provides students with an understanding of legal documents in business and the business transactions behind them. Students review many types of legal documents likely to be encountered in a business career. Includes: agreements between business partners (stockholders and partnership agreements); technology and employment related agreements (confidentiality, employment, and joint development agreements); and commercial transactions (sales, loan, and acquisition agreements).

Prerequisites: U3 or U4 standing; BUS or CEAS major; BUS 110 or 112

3 credits

BUS 355: Investment Analysis

The theoretical and empirical study of financial markets. Topics include portfolio selection, asset pricing, market efficiency, evaluation of fixed income securities, options and futures pricing.

Prerequisite: BUS, AMS, MTD, ISE, or ECO major

Advisory Prerequisite: BUS 330 or ECO 389

3 credits

BUS 356: Financial Engineering

Financial engineering applied to corporations and investments. The financial mathematics of leveraged buyouts, refinancings, mergers and acquisitions. Modeling and investment analysis of stocks, bonds, commodities, foreign futures, options and other derivatives. Stochastic differential equations for options pricing. Quadratic optimization and portfolio performance attribution.

Prerequisite: BUS, AMS, MTD, ISE, or ECO Major

Advisory Prerequisite: BUS 330 or ECO 389

3 credits

BUS 357: Principles of Sales

Presents the skills to be successful in an extremely competitive business sales environment. Includes customer qualification, prospecting, sales message, sales demonstration, handling objections, closing techniques, and telemarketing and customer service activities.

Prerequisite: BUS major

Advisory Prerequisite: BUS 348 or BUS 349

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.

Prerequisite: BUS major; U3 or U4 standing
Advisory Prerequisite: BUS 348 or BUS 349

3 credits

BUS 359: Consumer Behavior

Examines the basic concepts underlying consumer behavior with the goal of understanding how these concepts can be applied in analyzing and solving marketing problems.

Prerequisites: BUS major; U3 or U4 standing
Advisory Prerequisite: BUS 348 or BUS 349
 3 credits

BUS 360: Business Marketing

Well over half of our economy flows through business-to-business (B2B) transactions but the nature of marketing from business to different organizations receives less attention than consumer marketing. This course examines marketing from business to businesses, government bodies, educational institutions, and non-profit organizations. Frameworks for understanding organizational needs and demands as well as their buying processes are considered. Customer Relationship Management (CRM) for organizational customers is presented and analyzed for implications into a field team approach to both marketing and sales.

Prerequisite: BUS major
Advisory Prerequisite: BUS 348 or BUS 349
 3 credits

BUS 361: Retail Management

This course focuses on the necessary concepts and principles of retailing involved in making retail and wholesale decisions. The course looks at retailing from both a consumer perspective (e.g., why does a consumer shop a particular retail outlet?) and a business-to-business perspective (e.g., how does the retailer decide which supplier to use?) Additionally, the course examines the various methods of retailing (e.g./ bricks and mortar, bricks and clicks) and how these methods have evolved and will evolve in the future. The content of the course is useful for students interested in working in the retail industry, as well as for students interested in working for companies that interface with retailers such as manufacturers of consumer products or for students with a general management or entrepreneurial interest.

Prerequisite: BUS Major
Advisory Prerequisite: BUS 348 or BUS 349
 3 credits

BUS 362: Principles of International Marketing

Course incorporates functions of the marketing organization whose responsibility is to direct and lead the total international marketing enterprise. It addresses the 4 P's of marketing

and other marketing principles and how they apply to global markets.

Prerequisite: BUS Major
Advisory Prerequisite: BUS 348 or BUS 349
 3 credits

BUS 363: Brand Management

This course teaches students fundamental and leading-edge concepts in brand management. It will address the strategic importance of branding, provide theories and strategies for building, leveraging, and defending strong brands, and discuss current opportunities and challenges facing brand managers. The student will learn how to manage key relationships and functions that surround the brand, e.g., advertising, promotion, public relations, licensing, product and package design. A capable brand manager has exceptional strategic, quantitative, interpersonal, and presentation skills, and must be comfortable with decision-making and leadership. The course will focus on the development and application of these skills in brand management via in-class learning, case discussion, and project work.

Prerequisites: BUS major
Advisory Prerequisite: BUS 348 or BUS 349
 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 including multinational financial management, risk management, mergers and acquisitions.

Prerequisite: BUS, AMS, ISE, MTD, or ECO Major
Advisory Prerequisite: BUS 330 or ECO 389
 3 credits

BUS 366: Money and Financial Institutions

The characteristics of money and financial institutions within the financial system. Organization and operations of the Federal Reserve System, U.S. Banks and the U.S. Treasury. Details on how these financial institutions impact on the financial system. Determination of interest rates. Study of the framework and the management of banking and non-bank financial intermediaries.

Prerequisites: BUS 110, BUS 112 or BUS 115; BUS 330 or ECO 389; BUS Major or BUS Minor or AMS or ECO or ISE or MTD Major
 3 credits

BUS 368: Marketing New Sustainable Products

The development of new sustainable products and services represents one of the key processes firms can exploit to maintain and expand their market position in today's dynamic, global, environmentally sensitive world. New sustainable products and services are critical to successful growth and increased profits in many industries. In this course students learn how to use state-of-the-art management and research methods to identify markets, develop new product and service ideas, measure customer expectations and benefits, design profitable products and services, implement market tests, and track the success of new products and services through the life cycle. This course may not be taken for credit in addition to BUS 369.

Prerequisites: BUS Major; BUS 210; BUS 348 or BUS 349; BUS 358
 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 products feature design/positioning for different target markets shown through use of various quantitative and qualitative techniques. Course is equally applicable for physical goods, services, and digital/information products. Focus on new (radical, discontinuous) products versus product extensions. This course may not be taken for credit in addition to BUS 368.

Prerequisite: BUS Major
Advisory Prerequisite: BUS 348 or BUS 349; BUS 358
 3 credits

BUS 370: Lean Practices in Operations

Global competitive forces are driving the adoption of lean practices in service, retail, and production operations. Using examples from diverse industry leaders such as Wal Mart, Dell, McDonald's, and Toyota, this course examines the application of the Seven Deadly Wastes, Just-in-Time, Value Stream Mapping, and Supply Chain Alliances.

Prerequisite: BUS major
Advisory Prerequisite: BUS 346
 3 credits

BUS 371: Supply Chain Management

Analysis of the activities and mechanics of purchasing and materials management. Emphasizes make vs. buy decisions in the private and public sectors, single vs. multiple sourcing, competitive bidding vs. negotiations, delivery system logistics, purchasing ethics and vendor relations, international purchasing, ISO 9000 and computerized inventory systems. This course may not be taken for credit in addition to BUS 373.

Prerequisite: BUS major

Advisory Prerequisite: BUS 346

3 credits

BUS 372: Quality Management

The philosophies, tools, and techniques to identify and meet internal and external customer needs. Emphasis on the importance of satisfying the customer's perception of quality as a strategic necessity in Operations Management. Topics include Total Quality Management (TQM), quality control, statistical process control, and Six Sigma.

Prerequisite: BUS major

Advisory Prerequisite: BUS 346

3 credits

BUS 373: Supply Chain and Environmental Management

The course provides an analysis of the activities and mechanics of purchasing and materials management with emphasis on sustainable practices and their influence on buy-make decisions, including private and public sector and deals with issues of single versus multiple sourcing, competitive bidding versus negotiations, the logistics of delivery systems, purchasing ethics and vendor relations, international purchasing, ISO 9000, ISO 14000 (sustainability standards) and computerized inventory systems, such as radio frequency identification (RFID) and executable internet applications. Sustainability issues include environmental impact in the area of raw material extraction, value-added conversion/treatment, waste management, packaging, distribution, and recycling by the end user/consumer. This course may not be taken for credit in addition to BUS 371.

Prerequisites: BUS Major; BUS 346

3 credits

BUS 374: Environmental Impact of Business

This course provides an overview of standards, methods, and strategies for environmental impact assessment and policy implementation. Areas for analysis include energy consumption, raw materials, recycling, transportation, emissions, waste, and product and service materials and

manufacturing processes. Legal requirements and regulation are examined for the U.S. and other countries. Case studies involving leading-edge companies. are examined. ISO 14000 standards are discussed, as they provide the basis for corporate environmental impact audit and goal setting.

Prerequisite: BUS Major

3 credits

BUS 380: Honors - Research Methods

Prepares students for business research and the honors research project. Practical business applications drawn from a variety of functional areas including strategic management, marketing, operations, finance, and human resource management. Industries include high technology, retail, banking, and manufacturing. Research methodologies include survey design, interviewing, observational methods, and experimental design. Research process includes problem finding, literature review, and proposal writing.

Prerequisites: Admission to the honors program in business management; BUS 110 or BUS 112; BUS 210; BUS 249; and BUS 340

3 credits

BUS 382: Honors - Organizational Behavior Research

Focus on the use of survey and experimental social science methods in developing and empirically testing hypotheses and theories concerning the behavior of individuals and groups in organizations. Theoretical frameworks for analyzing behavior drawn from an array of disciplines including social and cognitive psychology and behavioral decision making. Practical business applications drawn from a variety of functional areas including strategic management, marketing, and human resource management, as well as from industries including high technology, retail, and the law. Research methodologies including survey design, experimental design, analysis of variance, and multiple regression techniques.

Prerequisites: Admission to the honors program in business management; BUS 110 or 112; BUS 210; BUS 249; and BUS 340

Pre or Co-requisite: BUS 380

3 credits

BUS 383: Social Entrepreneurship

Students explore the concept of social entrepreneurship, including motivation and skills for advocacy, entrepreneurship, and leadership. Topics include forms of social entrepreneurship (private, public, and not-for-profit), venture capital and fund raising,

market analysis, marketing, communications, human resources, and human relations, including negotiation and conflict resolution methods. Students will explore models of corporate social responsibility, university service to the community, and grass-roots ventures spawned by perceived need and the will to make a difference. Students work in teams to develop a strategic business plan for their own venture and present their proposals to the class.

Prerequisite: BUS Major or BUS Minor

Advisory Prerequisite: BUS 210, BUS 348, or BUS 349

3 credits

BUS 384: Honors - Operations Research and Management

Familiarizes students with a variety of operations research methods used in order to support effective decision making in business settings and for the development of creative applications of operations research methodology in the business settings of their choice.

Prerequisites: Admission to the honors program in business management; BUS 110 or BUS 112; BUS 210; BUS 249; and BUS 340

3 credits

BUS 386: Honors - Business Statistics

Prepares students to perform appropriate statistical analyses of data relevant to their chosen research projects. Demonstrates the applications of statistical analysis in business practice and research. Students learn to perform standard analyses using a statistical software package and to become educated consumers of statistical analyses performed by others.

Prerequisite: Admission to Honors Program in Business Management; BUS 380

3 credits

BUS 388: Honors - Research in Finance

Focus on understanding how firms meet and manage their financial objectives. Current financial environment, institutions and markets, risk and return, valuing future cash flow, and corporate securities including stocks and bonds. Financial tools and techniques such as capital budgeting, used by firms to maximize value through better decisions relating to capital. Case studies and class discussion seeking an innovative approach to finance concepts and towards integration of concepts for research.

Prerequisites: Admission to the honors program in business management; BUS 110 or BUS 112; BUS 210; BUS 249; and BUS 340

3 credits

BUS 389: Honors Research in Marketing

Introduces students to the research process in marketing and explains how it is used to collect and analyze information to solve marketing issues and problems. Hands-on experience with the marketing research process including design and implementation of a market research project and doing multivariate statistical data analysis. Provides the opportunity to learn a variety of research techniques as well as to use statistical software packages to analyze data, interpret results, and present a final paper.

Prerequisites: BUS 210; BUS 249; BUS 340

3 credits

BUS 390: Special Topics in Business Management

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

Prerequisites: BUS major; U3 or U4 standing

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: BUS Major/Minor and U3 or U4 standing.

3 credits

BUS 393: Principles of Project Management

In both the service and manufacturing sectors, problem solving and decision making play very important roles. A manager needs to concentrate on the data associated with the problem and, more specifically, engage in the quantitative analysis phase of the decision-making process. This course will familiarize students with the quantitative approach used in management sciences so that they can evaluate the sources of recommendations and ultimately make the best possible decision. Special emphasis will be made throughout this course on data analysis using Microsoft Excel.

Prerequisites: BUS Major or Minor

Pre or Co-requisite: BUS 346

3 credits

BUS 400: External Auditing

This course is designed to introduce and explore basic auditing principles, concepts and applications within the context of the audit of an annual financial statement. This course will review the audit process and cover the following: planning (identification of the risks of material misstatement); application of procedures for reducing audit risk below an acceptable level; assessment (based upon documented audit evidence); and, reporting (in accordance with generally accepted auditing standards). This course will also examine professional ethical standards and their relevance to the audit process. Other topics will include auditing financial statements within the SEC and government environments as well as other assurance services.

Prerequisites: BUS Major; BUS 310

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.

Prerequisites: BUS Major and U4 standing.

3 credits

BUS 440: International Management

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

Prerequisite: BUS Major or Minor or ECO or MTD Major; 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.

Prerequisite: BUS or ECO or MTD or CME Major; U4 standing

3 credits

BUS 447: 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 Major or Minor, or ECO, ISE, or MTD 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, positioning, and target marketing.

Prerequisite: BUS Major; U4 Standing; BUS 358; and BUS 334, BUS 357, BUS 359, BUS 360, BUS 369, 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-

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

Prerequisite: BUS Major; U4 Standing
Advisory Prerequisite: BUS 340

3 credits

BUS 460: Senior Business Project I

Business Management students form teams with engineering students to develop a business plan for the engineering senior design project including creating and monitoring a project plan and performing market research for the project. Students also provide input to the design phase to maximize market satisfaction and develop the marketing plan.

Prerequisites: BUS major; U4 standing; cumulative g.p.a. of 3.0 or higher

3 credits

BUS 461: Senior Business Project II

Business Management students form teams with engineering students and prepare a detailed operations and finance plan based on an engineering project designed in the fall semester and the prototype production in the spring semester. The final project consists of written and oral presentations of the plan.

Prerequisites: BUS 460; BUS major; U4 standing; cumulative g.p.a. of 3.0 or higher

3 credits

BUS 468: Risk Arbitrage

This course is designed as a practical approach to analyzing, predicting, and investing in the success or failure of mergers and acquisitions (including all change of control transactions). The course will apply basic financial principles and analytical techniques to solve real world problems facing M&A and Investment Professionals.

Prerequisites: BUS Major, BUS 330, and department consent

3 credits

BUS 475: Undergraduate Teaching Practicum I

The continuation on a more advanced level of training in the techniques of organization and management in the teaching of business management courses. Students are expected to assume greater responsibility in such areas as leading discussions, analyzing results of tests that have already been graded, and observing teaching. Students may not serve as teaching assistants in the same course twice.

Prerequisites: Grade of A or A- in the course in which the student is to assist and permission of undergraduate program director

3 credits, S/U grading

BUS 476: Undergraduate Teaching Practicum II

The continuation on a more advanced level of training in the techniques of organization and management in the teaching of business management courses. Students are expected to assume greater responsibility in such areas as leading discussions, analyzing results of tests that have already been graded, and observing teaching. Students may not serve as teaching assistants in the same course twice.

Prerequisite: BUS 475 and permission of undergraduate program director

3 credits, S/U grading

BUS 487: Independent Research

Provides the opportunity for students to undertake a special independent project entailing advanced readings, reports, and discussion, or research on a topic of their own choosing with the guidance of a faculty member. May be repeated.

Prerequisites: Permission of instructor and undergraduate program director

0-3 credits

BUS 488: Internship

Participation in local, state, national, or international private enterprises, public agencies, or nonprofit institutions.

Prerequisites: BUS major; U4 standing; permission of undergraduate program director

3 credits, S/U grading

BUS 489: 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

BUS 490: Business Honors Research II

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 final grade for both BUS 489 and 490 is assigned upon completion of BUS 490.

Prerequisite: Permission of department

3 credits

CAR

Career Development

CAR 110: Career Development and Decision Making

Introduces students to theories of career decision-making, and the relationship between major choice, academic planning, and career options. Examines two steps in the career decisions process: self-assessment (skills, interests, values, and personality traits) and career exploration.

Prerequisites: Satisfaction of the writing competency skill (D.E.C. A, first course); U1 or U2 standing

2 credits

CAR 210: Career Planning

Focuses on a systematic approach to the career planning process, including goal setting, professional communication, job market trends, and career research strategies. Analyzes the value of extracurricular service, and leadership experiences, and how to convey this value through written and oral presentation. Examines components of successful transition to the workplace.

Prerequisites: Completion of D.E.C. category A; U3 or U4 standing

1 credit

CCS

Cinema and Cultural Studies

CCS 101- B: Introduction to Cinema and Cultural Studies

An examination of the images and texts of film, television, art, photography and advertising, and how they characterize and shape our everyday lives. Students learn how to recognize, read, and analyze culture within a particular social, cultural, or political context, with special attention to race, gender, class, ideology, and censorship. Since this is the first course in our Cinema and Cultural Studies major, primary emphasis will be placed on film.

3 credits

CCS 201: Writing About Culture

The course teaches research methodology, develops critical thinking, and hones argumentative writing skills. A range of cultural artifacts, issues, and approaches are considered along with the ways that various

discourses appropriate or critique them. Students gain extensive training in the methods essential to the use of resources and to critical writing.

Prerequisite: Completion of D.E.C. category A
3 credits

CCS 204- D: The Stony Brook Film Festival: Films and Contexts

We will attend the Stony Brook Film Festival as active participants. Students will be introduced to the history of film festivals and examine issues of film distribution and acquisition and how they relate to both the mainstream and independent film traditions. At the Stony Brook Film Festival, students will see the films, interact with both the organizers and the filmmakers, and engage in lively discussion about the films and the filmmaking process. Students will gain basic cinematic terminology, analytical tools used to interpret cinematic art and a basic understanding of the cinema industry.

3 credits

CCS 301- G: Theorizing Cinema and Culture

Recent trends in critical theory applied to the study of film, television, literature, popular music, and other types of "cultural production." In-depth analyses of specific literary, visual, and musical texts are situated within structures of power among communities, nations, and individuals. Exploration of how identities of locality, gender, ethnicity, race, and class are negotiated through cultural forms.

Prerequisite: CCS 101 or CCS 201

3 credits

CCS 311- G: Gender and Genre in Film

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

Prerequisite: Completion of D.E.C. category B and one course from the following: CCS 101, CCS 201, CCS 204, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUM 201, HUM 202, HUR 241, THR 117

3 credits

CCS 312- I: Cinema and the Ancient World

A reading of Classical Texts alongside their representation in the cinema. Readings will

include classical literature, contemporary treatments of the classics, and film theory. We will pay special attention to how filmmakers are much more attentive to ideas from the present than from the past when they construct their films around ancient texts.

Prerequisite: Completion of D.E.C. category B and one course from the following: CCS 101, CCS 201, CCS 204, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUM 201, HUM 202, HUR 241, THR 117

3 credits

CCS 313- H: Television Studies

This course maps the social, cultural, and technological changes that the medium/media of television has experienced from its early ties to radio models of broadcast to the changes in reception wrought by the iPod.

Prerequisite: Completion of DEC category B; CCS 101 or ARH 207/DIA 207

3 credits

CCS 324- K & 4: Jazz and American Culture

An exploration of African American jazz and its importance and representation in American history and culture. We will consider novels, poems, stories, paintings, and photographs with jazz content as well as films by both Hollywood and documentary filmmakers. Special emphasis will be given to the myths that have dominated representations of jazz artists as well as the ways in which jazz artists have inspired artists and writers. This course is offered as both CCS 324 and MUS 324.

Prerequisite: MUS 308 or one course in CCS, CLT, or HUM

3 credits

CCS 390- J: Latin American Cinema

This course studies a variety of aspects connected with the production, distribution, and reception of cinema in Latin America. Course includes a representative sample of films produced in every one of the major Latin American film producing nations (Argentina, Brazil, Mexico, and Cuba). It will also review a short selection of minor Latin American cinematographies and of indigenous film productions. All films will always be studied within the social, political and artistic context in which these works are produced. Readings include works by Latin American film directors and theorists that have contributed to the study of the films in the region and of film as a world art form.

Prerequisite: Completion of D.E.C. category B and one course from the following: CCS 101, CCS 201, CCS 204, CLL 215, CLT 235, HUF

211, HUG 221, HUI 231, HUM 201, HUM 202, HUR 241, THR 117

3 credits

CCS 391- J: Contemporary African Cinema and Cultural Studies

This course will examine African traditions of graphic writing in their theoretical, literary, and cinematographic application. The emphasis will be placed on the visual arts and their political significance in contemporary African debates, and of particular interest will be the production of contemporary artists, the strategies they use, and their impact in both global and local discussions. The artifacts will additionally serve as tools to investigate the modalities of a contemporary African self-understanding through the lenses of images and graphic design.

Prerequisite: Completion of D.E.C. category B and one course from the following: CCS 101, CCS 201, CCS 204, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUM 201, HUM 202, HUR 241, THR 117

3 credits

CCS 392- K: American Cinema and Cultural Studies

The history of cinema as art has been directly linked to the evolution and increment of multicultural societies. This course studies the ways in which film has either included or excluded representations of multiculturalism in the United States, and how films have discussed and participated in the different debates about cultural, ethnic, racial, sexual, gender and class difference within the United States. The course studies theoretical concepts such as difference, ethnicity, migration, incorporation and cultural contact zones.

Prerequisite: Completion of D.E.C. category B and one course from the following: CCS 101, CCS 201, CCS 204, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUM 201, HUM 202, HUR 241, THR 117

3 credits

CCS 393- I: European Cinema and Cultural Studies

A comparative study of European cinema in a historical, cultural, and political context. The course will concentrate on those films and movements that achieved a major impact in their country of origin as well as received international critical attention.

Prerequisite: Completion of D.E.C. category B and one course from the following: CCS 101, CCS 201, CCS 204, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUM 201, HUM 202, HUR 241, THR 117

3 credits

CCS 394- J: Asian Cinema and Cultural Studies

This course is an overview of the history of Asian cinemas, with an emphasis on the geopolitical study of China, Hong Kong, India, Japan, and Taiwan. By focusing on issues relating to nationhood, cultural production, gender relations, and the impact of colonialism and globalization, the course will explore the commonalities, and/or particularities between the various cinemas, based on a set of overlapping themes and cultural aesthetics.

Prerequisite: Completion of D.E.C. category B and one course from the following: CCS 101, CCS 201, CCS 204, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUM 201, HUM 202, HUR 241, THR 117

3 credits

CCS 395- H: Digital Cultural Studies

This course critically examines how digital media and technology assist in the redesign of our political, economic, social, and cultural worlds. Special attention is paid to theories of digital media and historical developments of new technologies, as well as cultural practices with emergent technology.

Prerequisite: Completion of DEC category B; CCS 101 or ARH 207/DIA 207

3 credits

CCS 396- H: Video and Computer Game History

The course examines video/computer games as historical artifacts while studying the processes of writing/documenting the history of videogames. Students will engage with histories of gaming companies and platforms, game designer memoirs, fiction, criticism, game analysis, theoretical writing, descriptive historical accounts, preservation practices, and ephemeral forms of historic documentation. Students will also have hands-on access to various console games from the 1970s to the present. This course is offered as both CCS 396 and DIA 396.

Prerequisite: CCS 101 or ARH 207/DIA 207; Satisfaction of DEC B or DEC D

3 credits

CCS 397- H: Video and Computer Game Culture

The course critically examines videogames within cultural, social, and political contexts. It will showcase the interaction between technology and culture and society by examining videogames in terms of play and game play, racial and gendered representation, racism and sexism, games in a global context of online play, power-relations between gamers, violence and moral panics, and

military propaganda. This course is offered as both CCS 397 and DIA 397.

Prerequisite: CCS 101 or ARH 207/DIA 207; Satisfaction of DEC B or DEC D

3 credits

CCS 401: Senior Seminar in Cinema and Cultural Studies

Intensive study in a specific area of cinema and cultural studies. Possible topics include a film genre, a focused theoretical perspective, and the life and work of an important director or artist. May be repeated as the topic changes.

Prerequisite: CCS major and U4 standing; CCS 301

3 credits

CCS 475: Undergraduate Teaching Practicum

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: U3 or U4 standing; permission of instructor and department

3 credits, S/U grading

CCS 476: Undergraduate Teaching Practicum II

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

Prerequisites: CCS 475; permission of instructor and chairperson

3 credits, S/U grading

CCS 487: Independent Research in Cinema and Cultural Studies

Intensive readings and research on a special topic undertaken with close faculty supervision. May be repeated.

Prerequisites: Permission of instructor and department

0-6 credits

CCS 488: Internship

May be repeated up to a maximum of 6 credits, but only 3 credits may be applied toward the cinema and cultural studies major.

Prerequisite: Permission of program advisor

0-6 credits, S/U grading

CCS 495: Senior Honors Project in Cinema and Cultural Studies

A one-semester project for cinema and cultural studies majors who are candidates for the degree with departmental honors. The project involves completion of an honors thesis or project under the close supervision of an appropriate faculty member and the written and oral presentation of the thesis or presentation of the project to the program faculty colloquium.

Prerequisites: Permission of instructor and undergraduate program director

3 credits

CEF**School of Professional Development****CEF 347: Principles and Practices of Special Education**

An introduction to special education principles and practices that will include an understanding of the categories of disabilities; identification and remediation of disabilities; the special education process and state and federal special education laws and regulations; effective practices for planning and designing co-teaching and collaboration with peers; individualizing instruction; and applying positive behavioral supports and interventions to address student and classroom management needs. As of Fall 2011, this course meets the NYS special education requirement for all pre-service candidates for teacher certification.

3 credits

CFS**Child and Family Studies****CFS 210- F: Introduction to Human Development: The Family Context**

Theories and research pertaining to stages in the life cycle from infancy to old age. Traditional theories of Freud, Erikson, and Piaget as well as contemporary interaction and ecological models are explored. Each stage is considered from the perspective of developmental tasks and its familial and social implications. Ethnicity, social class, and sex roles are examined with special attention to their effects on the family. May not be taken for credit after PSY 220.

3 credits

CFS 287: Supervised Research in Child and Family Studies

Participation in laboratory and field research in child and family studies under the direct supervision of a faculty member in the Child and Family Studies Program. May be repeated up to a limit of six credits.

Prerequisite: Permission of instructor

0-3 credits, S/U grading

CFS 308: Violence in the Family

Theories and research about physical and sexual abuse in the family. Among the topics to be discussed are rape, incest, and spouse abuse. The approach includes sociological, psychological, and feminist perspectives. Solutions involving the medical and legal systems and the establishment of shelters are also explored.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Nine credits in the social and behavioral sciences

3 credits

CFS 320- F: The Special Child

Social, political, philosophical, and educational issues related to the habitation and integration of children. The course focuses on the interaction between children who have developmental, sensory, communication, behavioral, orthopedic, or other health disorders, as well as those who are gifted, and on community response to their exceptional needs.

Prerequisite: CFS 210 (formerly SSI 210) or PSY 220

Advisory Prerequisite: CFS 322

3 credits

CFS 321- F: Early Childhood Environments

A study of physical and social environments for young children from birth to eight years old. Public, commercial, and private settings are considered, including homes, hospitals, museums, libraries, and both indoor and outdoor play spaces. Alternative, traditional, and innovative child-care, preschool, and school settings are examined.

Advisory Prerequisite: CFS 210 (formerly SSI 210) or CFS 322 or PSY 220

3 credits

CFS 322- F: The Infant and Young Child

Growth and development during the earliest stages of life. Socioeconomic class, ethnicity, and individual differences of infants and young children are explored. Topics include cognitive, socioemotional, and language

development; the at-risk infant; and caregivers' role in health care, safety, and nutrition.

Students conduct periodic systematic observations of infants and young children in a variety of settings.

Advisory Prerequisite: CFS 210 (formerly SSI 210) or PSY 220

3 credits

CFS 339- F: Children's Play

An investigation of the significance of play in human development, familiarizing the student with the psychological and sociological theories of play and considering the application of these theories in educational and clinical settings. The course is especially useful to students who are contemplating professional work with children.

Advisory Prerequisite: CFS 210 or 322 (formerly SSI 210 or 322) or PSY 220

3 credits

CFS 340: Children in Hospitals and Health Care Settings

An examination of the social and emotional needs of children, adolescents, and their families when confronted with illness, medical crisis, and hospitalization. The course focuses on the creation of developmentally appropriate, culturally sensitive, and family-centered health care environments. Topics include preparation for hospitalization and medical intervention, the dynamics of family stress, multicultural perspectives on illness and health care, and children's reactions to parental and sibling illness.

Prerequisite: CFS 210 (formerly SSI 210) or PSY 220.

Advisory Pre-req: One of the following: CFS 320, 321, 322, or 327 (formerly SSI courses)

3 credits

CFS 344: Development and Aging in Adulthood

Adult development, aging and death will be examined in the context of family relationships, friendship patterns, intergenerational ties, and cultural themes. Cognitive process, personality, and coping strategies will be integrated into a discussion of biological aging and health maintenance in order to understand the range of individual, ethnic and socioeconomic differences that influence personal choices and challenges in identity formation, work, leisure and retirement. This course is offered as both CFS 344 and PSY 344.

Prerequisite: U3 standing; CFS 210 or PSY 220

3 credits

CFS 345- K: Parental Roles in a Pluralistic Society

An examination of parental roles in family life from a multicultural perspective. Theoretical models of parent education are evaluated, and alternative approaches to service delivery are explored within the context of America's pluralistic society. Specific issues such as ethnic socialization by parents and multiculturalism in child care and school settings are analyzed.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: CFS 210 (formerly SSI 210) or PSY 220 or SOC 304

3 credits

CFS 405: Seminar in Children, Law, and Social Policy

A seminar that examines the social and political factors that determine the legislation affecting children and the evaluation of program effectiveness with an emphasis on developing skills needed to be an effective advocate for children and families. While the history of programs, beginning with the New Deal, is explored. The major focus is on current legislation. The following issues are analyzed: child health, nutrition, education, adoption and foster care, Head Start, child care.

Prerequisite: U3 or U4 standing

3 credits

CFS 417: Senior Seminar in Child and Family Studies

A seminar for advanced students in the minor in child and family studies. A selected topic, chosen from among the following, is explored in depth: children and families at risk, motherhood, parent education, families with disabled members, family and individual development in the later years, families and the media, and cross-cultural perspectives on child care and the parent-child relationship.

Prerequisite: U3 or U4 standing

3 credits

CFS 447: Directed Readings in Child and Family Studies

Individually supervised reading in selected topics in child and family studies. May be repeated, but total credit may not exceed more than six credits.

Prerequisite: Permission of instructor

1-3 credits

CFS 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly

scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisite: CFS minor or SSI major; U4 standing; interview; permission of instructor
3 credits, S/U grading

CFS 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. In CFS 476 (formerly SSI 476), students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded.

Prerequisites: CFS 475 (formerly SSI 475); permission of instructor
3 credits, S/U grading

CFS 487: Independent Project in Child and Family Studies

Interdisciplinary independent projects in child and family studies designed to enable students to complete independent research or to combine academic and fieldwork on a practical or community problem. May be repeated.

Prerequisites: 18 credits in the social and behavioral sciences; permission of program
0-6 credits

CFS 488: Internship

Participation in local, state, or national public or private agencies and organizations. Students are required to submit written progress reports and a final term paper to the faculty sponsor. May be repeated up to a limit of 12 credits.

Prerequisites: 15 credits in the social and behavioral sciences; permission of instructor and program

0-6 credits, S/U grading

CFS 489: Child Life Internship

Prospective Child Life professionals receive supervised experience in action-based research within the pediatric hospital setting, applying their academic, intellectual and technical skills toward assessing the needs of children and families for Child Life services and planning and implementing individualized, age-appropriate educational, play, recreational,

and support activities. May be repeated up to a limit of twelve credits.

Prerequisites: Completion of the Child and Family Studies minor; permission of instructor
0-6 credits, S/U grading

CHE

Chemistry

CHE 115- E: Chemistry, Life, and Environment

This survey course introduces chemical principles by emphasizing the role chemistry plays in everyday life, the natural environment, the built environment, energy production, and in processes leading to environmental degradation. In addition, the role of chemistry in the development of alternative energy sources, remediation technologies, and eco-friendly products is discussed. This course for non-science majors introduces chemical principles using mostly qualitative approaches rather than quantitative approaches. Interactive tools and interactive visualization tools are extensively used to illustrate concepts, reactions, and processes. This course is offered as both CHE 115 and ENV 115.

3 credits

CHE 125: Learning Strategies Essential for Success in Chemistry

Focuses on developing techniques, strategies, and advanced learning skills that are essential for success in college-level chemistry. Real world contexts, issues, and problems are explored from a chemistry perspective. Provides a bridge from high school to college courses and from CHE 131 to CHE 132. A grade of C or higher in CHE 125 satisfies the prerequisite for entry into CHE 132, provided CHE 129 or CHE 131 have been completed with a passing grade (D or higher).

3 credits, ABC/U grading

CHE 129- E: General Chemistry IA

A broad introduction to the fundamental principles of chemistry, including substantial illustrative material drawn from the chemistry of inorganic, organic, and biochemical systems. Basic concepts, problem solving, and factual material are emphasized. This course provides the necessary foundation for students who wish to pursue further coursework in chemistry. CHE 129 is inappropriate for students who satisfy the prerequisites for CHE 131 or 141. Three lecture hours, one 80-minute workshop, and one problem-solving session per week. The content and grading match that of CHE 131 (see course description for

CHE 131), but the math prerequisites differ, and students attend a CHE 130 problem-solving session per week. The problem-solving session provides a structured environment for developing quantitative reasoning and problem-solving skills. CHE 129 may not be taken for credit in addition to CHE 123/124, CHE 131 or 141. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Mandatory co requisites: MAT 123 and CHE 130

4 credits

CHE 130: Problem Solving in General Chemistry

This course provides a structured environment for completing CHE 129 homework assignments and helping students develop the quantitative reasoning and problem solving skills needed in General Chemistry. Satisfactory/Unsatisfactory grading only. Grading is based on attendance and participation. Required for students taking CHE 129 along with MAT 123.

Mandatory corequisites: CHE 129 and MAT 123

1 credit, S/U grading

CHE 131- E: General Chemistry IB

A broad introduction to the fundamental principles of chemistry, including substantial illustrative material drawn from the chemistry of inorganic, organic, and biochemical systems. The principal topics covered are stoichiometry, the states of matter, chemical equilibrium and introductory thermodynamics, electrochemistry, chemical kinetics, electron structure and chemical bonding, and chemical periodicity. The sequence emphasizes basic concepts, problem solving, and factual material. It provides the necessary foundation for students who wish to pursue further coursework in chemistry. This sequence is inappropriate for students who have completed two or more years of chemistry in high school; such students should take CHE 141, 142. Three lecture hours and one 80-minute workshop per week. May not be taken for credit in addition to CHE 129 or CHE 141. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Corequisite: MAT 125 or higher

4 credits

CHE 132- E: General Chemistry II

A continuation of either CHE 129 or 131, introducing the fundamental principles of chemistry, including substantial illustrative material drawn from the chemistry of inorganic, organic, and biochemical systems. The principal topics covered are stoichiometry, the states of matter, chemical equilibrium and introductory thermodynamics, electrochemistry, chemical kinetics, electron structure and chemical bonding, and chemical periodicity. The sequence emphasizes basic concepts, problem solving, and factual material. It provides the necessary foundation for students who wish to pursue further coursework in chemistry. This sequence is inappropriate for students who have completed two or more years of chemistry in high school; such students should take CHE 141, 142. Three lecture hours and one 80-minute workshop per week. May not be taken for credit in addition to CHE 142. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in CHE 129 or CHE 131; or C or higher in CHE 125 and D or higher in CHE 129 or CHE 131. *Pre- or Corequisite:* MAT 125 for those who took CHE 129 or 130; MAT 126 or higher for all others
4 credits

CHE 133: General Chemistry Laboratory I

Designed to familiarize students with (1) some chemical and physical properties of substances, (2) techniques of quantitative chemistry, and (3) scientific methodology. Four hours of laboratory and discussion per week. CHE 133 may not be taken for credit in addition to CHE 143, and CHE 134 may not be taken for credit in addition to CHE 144. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Pre- or Corequisite: CHE 129 or 131
1 credit

CHE 134: General Chemistry Laboratory II

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

Prerequisites: CHE 133
Pre- or Corequisite: CHE 132

1 credit

CHE 141- E: Honors Chemistry I

The topics covered in this sequence are similar to those in CHE 131, 132, but draw more on students' previous background in science and mathematics in order to present the material in a more quantitative manner. Recommended for students with strong backgrounds in mathematics and science, especially chemistry and physics. Three lecture hours and one 80-minute workshop per week. CHE 141 may not be taken for credit in addition to CHE 131, and CHE 142 may not be taken for credit in addition to CHE 132. Priority given to students in the University's honors programs. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: High school chemistry; level 5 on the mathematics placement examination or co-registration in MAT 125 or higher calculus course or AMS 151

4 credits

CHE 142- E: Honors Chemistry II

The topics covered in this sequence are similar to those in CHE 131, 132, but draw more on students' previous background in science and mathematics in order to present the material in a more quantitative manner. Recommended for students with strong backgrounds in mathematics and science, especially chemistry and physics. Three lecture hours and one 80-minute workshop per week. CHE 141 may not be taken for credit in addition to CHE 131, and CHE 142 may not be taken for credit in addition to CHE 132. Priority given to students in the University's honors programs. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in CHE 141
Pre- or Corequisite: MAT 126 or higher or AMS 161

4 credits

CHE 143: Honors Chemistry Laboratory I

Laboratory program similar in content to CHE 133, 134 but conducted at a more intensive and stimulating level. Four hours of laboratory and discussion per week. CHE 143 may not be taken for credit in addition to CHE 133, and CHE 144 may not be taken for credit in addition to CHE 134. Priority given to students in the University's honors programs. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students

registering for HD/CA courses for the first time will have priority to do so.

Corequisite: CHE 141

1 credit

CHE 144: Honors Chemistry Laboratory II

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

Prerequisite: CHE 143

Corequisite: CHE 142

1 credit

CHE 301: Physical Chemistry I

The quantitative study of microscopic and macroscopic chemical systems, covering introductory quantum theory of atoms and molecules (energy levels and states), statistical thermodynamics, and fundamental thermodynamics with application to chemical reactions and simple systems. May not be taken for credit by students who have completed CHE 312.

Prerequisite: CHE 132 or 142; MAT 132 or 142 or 127 or 171 or AMS 161

Pre- or Corequisite: PHY 121/123 or 125 or 131/133 or 141

4 credits

CHE 302: Physical Chemistry II

Applications of thermodynamics to chemical equilibria, electrochemistry, and ideal solutions. Applications of quantum theory to chemical bonding, molecular structure, and spectroscopy.

Prerequisites: CHE 301; MAT 211 or 203 or 205 or AMS 161

Pre- or Corequisite: PHY 122/124 or 132/134 or 142 or PHY 126/127

4 credits

CHE 303: Solution Chemistry Laboratory

Quantitative techniques of solution chemistry. Measurement: accuracy and precision, analysis, computation, and reporting. Spectrophotometry. Solution equilibria and kinetics. Use of computers is introduced. Six hours of laboratory and discussion.

Prerequisite: CHE 134 or 144

Corequisite: CHE 301

2 credits

CHE 304: Chemical Instrumentation Laboratory

Electrochemical and thermochemical measurements. Electronics in chemical instrumentation. Vacuum techniques. Electrical and magnetic properties of materials. Data-handling methods. Six hours of laboratory and discussion.

Prerequisite: CHE 303. *Corequisites:* CHE 302 and 385

Advisory Prereq: Knowledge of computer programming

2 credits

CHE 310- H: Chemistry in Technology and the Environment

Use of chemical principles in understanding processes that occur in the modern technological world and in the natural environment. Certain ecological problems of a chemical nature are analyzed. Methods of controlling these problems are discussed. Not for credit in addition to ENV 320.

Prerequisite: CHE 132 or 142

3 credits

CHE 312: Physical Chemistry (Short Course)

A one-semester treatment of fundamental concepts of physical chemistry, intended primarily for students of the biological sciences desiring an introduction to physical chemistry. Topics include equations of state; classical thermodynamics and its application to chemical equilibrium in reaction systems, multiphase systems, and electrochemical cells; kinetic theory of gases; transport properties; chemical kinetics. May not be taken for credit by students who have completed CHE 301. Not for major credit.

Prerequisite: CHE 132 or 142; MAT 132 or 142 or 127 or 171 or AMS 161

Pre- or Corequisite: PHY 121/123 or 125 or 131/133 or 141

3 credits

CHE 321: Organic Chemistry I

An introduction to the structure, reactivity, and properties of organic compounds is presented using modern views of chemical bonding. These fundamental ideas are applied to topics ranging from synthetic chemistry to complex functional structures such as lipid bilayers. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in CHE 132 or 142

4 credits

CHE 322: Organic Chemistry IIA

Discussion of the structure, reactivity, and properties of organic compounds introduced in CHE 321 is continued. The chemistry of substances important in biology, medicine, and technology is emphasized. CHE 322 may not be taken for credit in addition to CHE 326. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in CHE 321

4 credits

CHE 326: Organic Chemistry IIB

Similar to CHE 322 but providing a more fundamental view of organic compounds, reaction mechanisms, and synthesis, based somewhat more explicitly on thermodynamics and kinetics. Especially for those who may major in chemistry, biochemistry, or another physical science. CHE 326 may not be taken for credit in addition to CHE 322. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in CHE 321

4 credits

CHE 327: Organic Chemistry Laboratory

Techniques of isolating and handling organic substances, including biological materials. A one-semester course that provides a basic organic laboratory experience. It is recommended that students take CHE 327 at the same time as or immediately following CHE 322 or 332. Four laboratory hours and one lecture hour per week. Not for credit in addition to CHE 383.

Prerequisite: CHE 133 or 143; CHE 134 or 144

Pre- or Corequisite: CHE 321

2 credits

CHE 341: Organic Chemistry Honors Seminar I

Advanced topics in organic chemistry within the scope but beyond the reach of CHE 321 (Organic Chemistry I) will be discussed along with an introduction to contemporary research topics. Permission to enroll will be granted to students who have demonstrated excellence in their General Chemistry courses.

Prerequisites: CHE 132 or 142; permission of instructor

Corequisite: CHE 321

1 credit

CHE 342: Organic Chemistry Honors Seminar II

Advanced topics in organic chemistry within the scope but beyond the reach of CHE 322 and CHE 326 (Organic Chemistry II) will be discussed along with topics in contemporary research. Permission to enroll will be granted to students who have demonstrated excellence in CHE 321.

Prerequisites: CHE 321; permission of instructor

Corequisite: CHE 322 or 326

1 credit

CHE 345: Structure and Reactivity in Organic Chemistry

Electronic and stereochemical theories relating to organic structure and reactions. Topics such as bonding, strain, aromaticity, MO theory, molecular rearrangements, pericyclic reactions, and photochemistry are covered.

Prerequisite: CHE 322 or 326

Pre- or Corequisite: CHE 301 or 312

3 credits

CHE 346: Biomolecular Structure and Reactivity

The reactivity and physiological function of biological macromolecules and their monomeric constituents are described at the chemical level. The course reflects the most recent advances at the interface of organic chemistry and biochemistry. Specific topics include catalysis, biomimicry, protein and DNA modification, binding and target recognition, and correlation between three-dimensional structure and reactivity.

Pre- or Corequisites: CHE 322 or 326; CHE 301 or 312

3 credits

CHE 348: Reaction Mechanisms in Organic Chemistry

Important classes of mechanisms of reactions useful in synthesis are explored. The kinetics and thermodynamics of these reactions are analyzed using modern structural theories. Examples of reaction types are substitutions, rearrangements, additions, eliminations, and selected organometallic reactions.

Prerequisite: CHE 322 or CHE 326

3 credits

CHE 351: Quantum Chemistry

Concepts of quantum theory, Schrodinger wave mechanics, and related mathematical techniques illustrated by application to systems of chemical bonding, spectroscopy, molecular structure, and molecular collision phenomena.

Prerequisites: CHE 302; MAT 203 or 205

3 credits

CHE 353: Chemical Thermodynamics

A rigorous development of thermodynamics and its application to systems of interest to chemists, including electrochemical cells, gases, polymers, and homogeneous and heterogeneous equilibrium. An introduction to statistical mechanics is included.

Prerequisites: CHE 302; CHE 321

3 credits

CHE 357: Molecular Structure and Spectroscopy Laboratory

Optical and magnetic resonance spectroscopy are used to investigate the structural, dynamic, and quantum mechanical properties of some basic chemical systems. Emphasis is on the quantitative measurement of molecular parameters and transformations.

Prerequisites: CHE 304 and 383

2 credits

CHE 358: Scientific Computing

The basic methods of numerical analysis and the design of computer programs that use them are discussed within the framework of solving a variety of exciting problems chosen from many areas of science. The presentation makes extensive use of powerful scientific computational environments, such as Mathematica, and Matlab, but guidance to other scientific high-level computer languages is also provided. No previous knowledge of scientific programming is assumed. Extensive use of personal or SINC-site computers outside the classroom is required

Prerequisite: MAT 127 or MAT 132 or MAT 142 or MAT 171 or AMS 161

2 credits

CHE 361: Nuclear Chemistry

Properties of radioactive substances and their use in the study of chemical problems, nuclear stability and structure, nuclear reactions, radioactive decay, interactions of radiation with matter, nuclear medicine, isotope applications, and environmental control. Offered in summer only.

Prerequisites: Four semesters of chemistry; PHY 126 and 127, or 132/134 or 142 or 171; AMS 161 or MAT 127 or 132 or 142; permission of department through application by January 30; permission of instructor

Corequisite: CHE 362

3 credits

CHE 362: Nuclear Chemistry Laboratory

Detection and measurement of radiation, electronic instrumentation, radiation safety, and application of radioactivity to chemical problems. Offered in summer only.

Corequisite: CHE 361

3 credits

CHE 375: Inorganic Chemistry I

A survey of inorganic chemistry covering various classes of inorganic compounds and reactions with emphasis on the structural aspects. Wherever possible, the subject is treated on the basis of modern concepts of chemical bonding. Thermodynamic and kinetic aspects of inorganic reactions are included.

Prerequisite: CHE 322 or 326

3 credits

CHE 376: Inorganic Chemistry II

The chemistry of the elements with an emphasis on the transition metals. Reaction mechanisms, synthesis, and structure are covered. Specific areas of concern include coordination chemistry, organometallic chemistry, bioinorganic chemistry, and selected topics from solid-state and non-transition metal chemistry.

Prerequisite: CHE 375

3 credits

CHE 378: Materials Chemistry

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

Prerequisite: CHE 375 or ESG 332

3 credits

CHE 383: Introductory Synthetic and Spectroscopic Laboratory Techniques

Fundamental laboratory techniques including methods of separation, purification, synthesis, and analysis. Emphasis is on organic with an introduction to inorganic problems. For students who require substantial laboratory skills, such as those planning careers in research. Not for credit in addition to CHE 327.

Prerequisite: CHE 134 or 144

Corequisite: CHE 321

2 credits

CHE 384: Intermediate Synthetic and Spectroscopic Laboratory Techniques

Application of fundamental laboratory techniques to organic and inorganic problems including multistep syntheses and structural and mechanistic determinations. Lectures cover material pertaining to the experimental work, with an emphasis on spectroscopy.

Prerequisite: CHE 383

Corequisites: CHE 322 or 326; CHE 385

3 credits

CHE 385: Tools of Chemistry

A seminar course covering topics common to all areas of chemistry: scientific ethics, chemical literature and information retrieval, scientific writing, and oral presentation. Should be taken concurrently with the student's second 300-level chemistry laboratory course. Satisfactory completion of the course fulfills the Chemistry department's upper division writing requirement. A through C/Unsatisfactory grading only.

Corequisite: CHE 304 or 384

1 credit, ABC/U grading

CHE 386: Professional Skills

Development and refinement of the professional skills used by scientists. The exploration of more sophisticated presentation skills used in oral and poster presentations. The incorporation of collaborative problem solving that mimics real world situations, including simple proposal writing. An exposure to professional societies and meetings. An exploration of career options and employment resources. Tips for resume preparation, and interviews will be presented. Recommended for upper division undergraduates and Masters students.

Prerequisite: CHE 385 or permission of instructor

2 credits, S/U grading

CHE 461: Selected Topics in Chemistry

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

Prerequisite: Varying with topic

1-3 credits

CHE 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty

member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Students may participate only in courses in which they have excelled.

Prerequisite: Permission of department
3 credits, S/U grading

CHE 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may participate only in courses in which they have excelled. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served.

Prerequisite: Permission of department
3 credits, S/U grading

CHE 477: Undergraduate Teaching Practicum III

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

Prerequisites: CHE 476; permission of instructor and department
S/U grading

CHE 487: Research in Chemistry

Students pursue research or tutorial study in specialized areas of chemistry. May be repeated.

Prerequisites: Permission of instructor and department
0-6 credits

CHE 488: Internship

Research participation in off-campus laboratories. Students are required to submit to the department a proposal at the time of registration and a research report at the end of the semester. May be repeated up to a limit of 12 credits.

Prerequisites: CHE 384; permission of instructor and department
0-6 credits, S/U grading

CHE 490: Current Trends in Biological Chemistry

A discussion of current topics of research and methodology in modern biological chemistry. The course includes directed readings, attendance, and discussion at seminars

presented by speakers from various academic and industrial institutions. May be repeated.

Prerequisite: CHE 322 or 326
Pre- or Corequisite: CHE 301 or 312
1 credit

CHE 495: Senior Research

First course of a two-semester research program to be carried out under the supervision of a staff member. The results of this work are to be submitted to the department in the form of a senior research report. The student is given an oral examination in May by a faculty committee consisting of the student's supervisor and three other faculty members. Students receive only one grade upon completion of the sequence CHE 495-496.

Prerequisite: U4 standing; permission of instructor and department
3 credits

CHE 496: Senior Research

Second course of a two-semester research program to be carried out under the supervision of a staff member. The results of this work are to be submitted to the department in the form of a senior research report. The student is given an oral examination in May by a faculty committee consisting of the student's supervisor and three other faculty members. Students receive only one grade upon completion of the sequence CHE 495-496.

Prerequisite: U4 standing; permission of instructor and department
3 credits

CHI

Chinese Language

CHI 101 - S3: Intensive Elementary Chinese

An intensive, 6-credit, elementary-level Chinese language course that provides foundational knowledge and skills including pronunciation, basic everyday conversational proficiency, principles of character formation, basic grammatical rules, and basic cultural norms and preferences that govern language use. Drawing upon a communicative approach, this course situates oral and written language in real-life contexts and promotes learner-centered, interactive classroom activities. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Chinese in high school (or who has otherwise acquired an equivalent proficiency) may not take CHI 101

without written permission from the supervisor of the course. May not be taken for credit after any other course in Chinese.

6 credits

CHI 111: Elementary Chinese I

An introduction to spoken and written Chinese Mandarin, with equal attention to speaking, reading, and writing. Laboratory practice supplements class work. No student who has had two or more years of Chinese in high school or who has otherwise acquired an equivalent proficiency will be permitted to enroll in CHI 111 without written permission from the supervisor of the course.

4 credits

CHI 112 - S3: Elementary Chinese II

An introduction to spoken and written Chinese Mandarin, with equal attention to speaking, reading, and writing. Laboratory practice supplements class work.

Prerequisite: CHI 111
4 credits

CHI 201 - S3: Intensive Intermediate Chinese

An intensive, 6-credit, intermediate-level course on spoken and written Mandarin Chinese. Drawing upon a communicative approach, this course situates oral and written language in real-life contexts and promotes learner-centered, interactive classroom activities. May not be taken for credit in addition to CHI 211 or CHI 212.

Prerequisite: CHI 101, CHI 112, or placement test
6 credits

CHI 210 - S3: Elementary Chinese for Chinese Speakers

An elementary level Chinese language course for students who have had some exposure to the Chinese cultural norms and conventions and who already can communicate in Chinese orally on topics of daily routines, although with grammatical mistakes and non-standard pronunciation, but cannot read or write. The course focuses on reading and writing skills and expands the depth and scope of exposure to the Chinese culture.

4 credits

CHI 211 - S3: Intermediate Chinese I

An intermediate course in Chinese Mandarin to develop audiolingual skills and reading and writing ability. Selected texts serve as the basis for practice in reading comprehension and composition. Intensive exercises in

character writing are required to develop writing technique.

Prerequisite: CHI 212 or 210 or proficiency in Chinese

3 credits

CHI 212 - S3: Intermediate Chinese II

An intermediate course in Chinese Mandarin to develop audiolingual skills and reading and writing ability. Selected texts serve as the basis for practice in reading comprehension and composition. Intensive exercises in character writing are required to develop writing technique.

Prerequisite: CHI 211

3 credits

CHI 301 - S3: Advanced Chinese I

The first part of an advanced course designed for the third-year students of Chinese as a foreign or heritage language to strengthen their ability to understand, speak, read, and write Chinese beyond the intermediate level. Students learn to read and comprehend a variety of texts from Chinese newspaper/magazine articles, TV/films, and literary works and to write creatively and professionally in Chinese using sophisticated vocabulary and advanced Chinese characters. Students will also be trained to comprehend authentic spoken Mandarin Chinese, using a variety of audio-visual materials and to communicate in Mandarin Chinese, applying appropriate socio-cultural norms. This course is not intended for students who already speak Chinese natively.

Prerequisite: CHI 212 or CHI 201 or proficiency in Chinese

3 credits

CHI 302 - S3: Advanced Chinese II

The second part of an advanced course designed for the third-year students of Chinese as a foreign or heritage language to strengthen their ability to understand, speak, read, and write Chinese beyond the intermediate level. Students learn to read and comprehend a variety of texts from Chinese newspaper/magazine articles, TV/films, and literary works and to write creatively and professionally in Chinese using sophisticated vocabulary and advanced Chinese characters. Students will also be trained to comprehend authentic spoken Mandarin Chinese, using a variety of audio-visual materials and to communicate in Mandarin Chinese, applying appropriate socio-cultural norms. This course is not intended for students who already speak Chinese natively.

Prerequisite: CHI 301 or placement test

3 credits

CHI 410: Business Chinese

A course designed for students who wish to expand their Chinese communication skills in a business context and understand socio-economic situations as well as socio-cultural values in China. Upon completing this course, students will be able to hold conversations with correct business vocabulary and with culturally appropriate manners, read authentic materials related to business and economics in China, and write business correspondence in proper styles and formats.

Prerequisite: CHI 312 or equivalent

3 credits

CHI 411- J & 3: Readings in Journalistic Chinese

Narrative readings in Chinese selected from Chinese newspapers and magazines, including news reports and narrations on life styles, people, and landscapes. Students are expected to improve their skills in the analysis and writing of narrative readings. This course is designed for students who already have advanced level proficiency in Chinese, who can read and write everyday vernacular Chinese, but who have not been exposed to more formal language and literary forms. Not for credit in addition to the discontinued CHI 311.

Prerequisite: CHI 302 or placement test

3 credits

CHI 412- J & 3: Readings in Classical Chinese

Introduction to writings in Chinese that appeared before the May 4th Movement (circa 1920), which marked the beginning of modern Chinese. The course introduces students to readings in classical Chinese and to acquaint students with cultures and customs of traditional China. This course is designed for students who already have advanced level proficiency in Chinese, who can read and write everyday vernacular Chinese, but who have not been exposed to more formal language and literary forms. Not for credit in addition to the discontinued CHI 312.

Prerequisite: CHI 302 or placement test

3 credits

CHI 421- J & 3: Chinese Poetry and Short Stories

Selected masterpieces of poetry and short stories written during the first half of the 20th century. Students are expected to improve their skills in literature appreciation and to model their own writings after works read in class. This course is designed for students who already have advanced level proficiency in the Chinese language in all its forms including

reading and writing. Not for credit in addition to the discontinued CHI 395 or CHI 321.

Prerequisite: Advanced level proficiency in Chinese

3 credits

CHI 422- J & 3: Chinese Lyric Prose and Plays

Selected masterpieces of lyric prose and drama written during the first half of the 20th century. Students are expected to improve their skills in literature appreciation and to model their own writings after works read in class. This course is designed for students who already have advanced level proficiency in the Chinese language in all its forms including reading and writing. Not for credit in addition to the discontinued CHI 396 or CHI 322.

Prerequisite: Advanced level proficiency in Chinese

3 credits

CHI 426: 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. Not for credit in addition to AAS 350.

Prerequisite: CHI 302 or permission by instructor

3 credits

CHI 447 - S3: Directed Readings in Chinese

Individually supervised readings in selected topics in Chinese language and literature or, alternatively, for the purpose of developing Chinese vocabulary in a secondary field, in selected topics in the humanities, social sciences, or natural sciences. May be repeated.

Prerequisite: Permission of department

1-6 credits

CHI 487: Independent Research

An individual research project in Chinese, such as translation, analysis of documents or literature, etc., in consultation with the instructor. Students are expected to meet at regular intervals and to present the completed project at the end of the semester. May be repeated.

Prerequisites: Interview; permission of instructor

0-3 credits

CLL

Classics of Literature

CLL 215- I: Classical Mythology

An introduction to ancient Greek religion, literature, and art. Special emphasis will be given to the presentation of myth in Classical Greek literature as well as to the influence of classical mythology on later literature, art, and philosophy. Not for credit in addition to CLS 215.

Advisory Prerequisite: One course in literature
3 credits

CLL 315- I: Gender and Sexuality in Ancient Greek Literature

This course offers a comparative overview of the ways in which the roles of men and women were depicted in the literature and thought of ancient Greece. Major issues will include: the shift from matriarchal to patriarchal pantheons, sanctioned and unsanctioned homoeroticism, the sorceress and the hysteric as dominant tropes in the mythology of the period, and the role of women in the polis, among others. This course is offered as both CLL 315 and WST 315.

Prerequisite: Completion of DEC G
3 credits

CLS

Classics

CLS 113- B: Greek and Latin Literature in Translation

Historical and analytical study of the development of classical Greek and Latin literature. Extensive readings in translation include works illustrating epic, lyric, drama, history, satire, and criticism.

3 credits

CLS 225- I: The Classical Tradition

The literature of Greece and Rome has had a profound impact on the West in terms of

Philosophy, Literature, Political Theory, and Art. The course will explore the writings of Greece and Rome and show how they affected Western literature and thought. Authors will include Homer and Hesiod, and Greek tragedians Thucidides, Virgil, and Ovid.

3 credits

CLS 225- I: The Classical Tradition

The literature of Greece and Rome has had a profound impact on the West in terms of Philosophy, Literature, Political Theory and Art. The course will explore the writings of Greece and Rome and show how they affected Western literature and thought. Authors will include Homer, Hesiod, and Greek tragedians Thucidides, Virgil, and Ovid.

3 credits

CLS 447: Directed Readings in Classics

Intensive study of a particular author, period, or genre of Greek and Latin literature in translation under close faculty supervision. May be repeated.

Prerequisite: Permission of instructor
1-6 credits

CLS 475: Undergraduate Teaching Practicum

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

3 credits, S/U grading

CLT

Comparative Literature

CLT 211- I: Literary Survey: Medieval through Late Renaissance

Historical and analytical study of representative works illustrating medieval epic, romance, and lyric. The course also examines the beginnings of humanism through the late Renaissance.

Advisory Prerequisite: One course in literature
3 credits

CLT 212- I: Literary Survey: Enlightenment through Modern

Historical and analytical study of literature from the late 17th century, the neoclassical era, the romantic revolution through the 19th

century (realism, naturalism, symbolism), leading to the culmination of modernism.

Advisory Prerequisite: One course in literature
3 credits

CLT 220- J: Literature Beyond European Traditions

A survey of the major themes and forms of non-Western literature, such as Asian, Indian, and African. May be repeated as topic changes.

Advisory Prerequisite: Completion of D.E.C. category A
3 credits

CLT 235- K: American Pluralism in Film and Literature

A thorough examination of issues central to American history for nearly two centuries. How "others"--the Irish, Italians, African Americans, Latinos, and people from cultures outside Western Europe--have been portrayed in American literature and film. Readings include slave narratives from the 17th and 18th centuries and literary texts from the 19th and 20th centuries; films from the last 100 years are included. Particular emphasis on the historical period from the Civil War to the present.

Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

CLT 266- G: The 20th-Century Novel

Major works and developments in the modern and contemporary novel. This course is offered as both CLT 266 and EGL 266.

3 credits

CLT 301- G: Theory of Literature

An introduction to the different modes of analyzing literature by periods, ideas, traditions, genres, and aesthetic theories. Stress is placed on classical theory and on developments in the 20th century.

Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in comparative literature

3 credits

CLT 331- G: Literary Genres: Poetry

Analysis of poetic form as illustrated by various kinds of poetry, e.g., epic and lyric. Works selected from different national literatures and literary movements. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 332- G: Literary Genres: Drama

Analysis of dramatic form through readings of major works in tragedy and comedy. Works selected from different national literatures and literary movements. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 333- G: Literary Genres: Novel

Historical and analytical study of the novel form. Works selected from different national literatures and literary movements. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 334- G: Other Literary Genres

Historical and analytical study of such literary genres as satire, fable, romance, epistle, saga, allegory, etc. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 335- G: Interdisciplinary Study of Film

An inquiry into the aesthetics, history, and theory of film as it relates principally to literature but also to disciplines such as art, music, psychology, and cultural history. May be repeated as the topic changes.

Prerequisite: Completion of D.E.C. category B and one course from the following: CCS 101, CCS 201, CCS 204, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUM 201, HUM 202, HUR 241, THR 117

3 credits

CLT 361- G: Literature and Society

An inquiry, interdisciplinary in nature, into the relationship between the events and materials of political and social history and their effect on the form and content of the literature of a period. Also subsumed under the rubric

Literature and Society is the topic Literature and Psychology. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 362- G: Literature and Ideas

An inquiry into the primary writings and significant documents in the history of ideas and their effect on the form and content of the literature of a period. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 363- G: Literature and the Arts

An inquiry into the aesthetic milieu (including the plastic arts, theatre, and music) and its relationship to the form and content of the literature of a period. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

CLT 371- G: Literature and Justice

This course focuses on the theme of justice in literature and investigates the relation of literature to the law and to philosophical accounts of justice. Readings include literary texts centered on questions of justice, fairness, and moral agency, as well as theoretical works that analyze the role of literature in legal education and judicial decision-making. This course is offered as both CLT 371 and PHI 371.

Prerequisite: Completion of DEC B; U3 or U4 status

3 credits

CLT 391- J: African Comparative Literature

Intensive study of multiple African traditions through their history, culture, and literature. The course will insist particularly on novels that address the shifting boundaries of the African continent, both in terms of ideology and of geo-political reality. As such, Ancient Egyptian texts will be confronted with literary productions from Classical Romance culture, and with slave narratives, to address the way

through which literature is influenced by the general politics of mobility.

Prerequisite: Completion of D.E.C. B and one lower-division course from one of the following subject designators: CLT, CCS, EGL, or HUM

3 credits

CLT 392- K: Multicultural Comparative Literature

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

Prerequisite: Completion of D.E.C. B and one lower-division course from one of the following subject designators: CLT, CCS, EGL, or HUM

3 credits

CLT 393- I: European Comparative Literature

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

Prerequisite: Completion of D.E.C. B and one lower-division course from one of the following subject designators: CLT, CCS, EGL, or HUM

3 credits

CLT 394- J: Asian Comparative Literature

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

Prerequisite: Completion of D.E.C. B and one lower-division course from one of the following subject designators: CLT, CCS, EGL, or HUM

3 credits

CLT 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: U4 standing; permission of instructor and chairperson

3 credits, S/U grading

CLT 476: Undergraduate Teaching Practicum II

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

Prerequisites: CLT 475; permission of instructor and chairperson

3 credits, S/U grading

CLT 487: Independent Reading and Research

Intensive reading and research on a special topic undertaken with close faculty supervision. May be repeated.

Prerequisites: Permission of instructor and department

0-6 credits, S/U grading

CLT 495: Comparative Literature Honors Project

A one-semester project for comparative literature majors who are candidates for the degree with departmental honors. The project involves independent study under close supervision of an appropriate faculty member, and the written and oral presentation to the department faculty colloquium of an honors thesis.

Prerequisites: Permission of instructor and department

3 credits

CME

Chemical and Molecular Engineering

CME 101: Introduction to Chemical and Molecular Engineering

Integrates students into the community of the College of Engineering and Applied Sciences and the major in Chemical and Molecular Engineering with a focus on personal and institutional expectations. Emphasizes the interdisciplinary role of the chemical engineering profession in the 21st century. Includes consideration of professional teamwork and the balance of professional growth with issues of societal impact.

3 credits

CME 199: Introduction to Undergraduate Research

An introduction to independent research and basic research skills. Students perform an independent research project in chemical and molecular engineering under the supervision of a faculty member. May be repeated for a maximum of 3 credits.

Prerequisite: Permission of instructor

0-3 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 and 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 300: Writing in Chemical and Molecular Engineering

See "Requirements for the Major in Chemical and Molecular Engineering, Upper-Division Writing Requirement."

Prerequisites: CME major; U3 or U4 standing; WRT 102

Corequisite: CME 310

S/U grading

CME 304: Chemical Engineering Thermodynamics I

First and second laws of thermodynamics, PVT behavior of pure substances, equations of state for gases and liquids, phase equilibria, mass and energy balances for closed and open systems, reversibility and equilibrium, application of thermodynamics to flow

processes, heat effects during chemical reactions and combustion.

Prerequisites: PHY 132; CHE 132

3 credits

CME 310: Chemical Engineering Laboratory I: Unit Operation and Fundamentals

Introduces general safety in a chemical engineering laboratory handling high pressure equipment. Selection and identification of unit components. Batch and continuous units. Reactor types: stirred, bubble column, and slurry-phase reactors. Precise measurements of pressure and temperature variables. Mass balance in a chemical reaction. Simulated distillation.

Prerequisite: B- or higher in CME 304

Corequisite: CME 300, CME Major

2 credits

CME 311: Business Economics for Engineers

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

3 credits

CME 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 and optimization of chemical engineering processes. Solution of complex chemical engineering problems.

Prerequisites: ESG 111; CHE 132 and 134; AMS 261 or MAT 203; B- or higher in CME 304; CME Major

3 credits

CME 314: Chemical Engineering Thermodynamics II

Equilibrium and the Phase Rule; VLE model and K-value correlations; chemical potential and phase equilibria for ideal and non-ideal solutions; heat effects and property changes on mixing; application of equilibria to chemical reactions; Gibbs-Duhem and chemical potential for reacting systems; liquid/liquid, liquid/solid, solid/vapor, and liquid/vapor equilibria; adsorption and osmotic equilibria,

steady state flow and irreversible processes. Steam power plants, internal combustion and jet engines, refrigeration cycle and vapor compression, liquefaction processes.

Prerequisite: B- or higher in CME 304; CME Major

4 credits

CME 315: Numerical Methods for Chemical Engineering Analysis

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

Corequisites: AMS 361 or MAT 303

Prerequisite: CME Major

3 credits

CME 318: Chemical Engineering Fluid Mechanics

Introduces fluid mechanics. Dynamics of fluids in motion; laminar and turbulent flow, Bernoulli's equation, friction in conduits; flow through fixed and fluidized beds. Study of pump and compressor performance and fluid metering devices. Includes introduction to microfluids.

Prerequisites: AMS 261 (or MAT 203 or 205); PHY 131 (or 125 or 141); CME Major or ESG Major

3 credits

CME 320: Chemical Engineering Lab II: Chemical and Molecular Engineering

Introduction and operation of a continuous unit, handling of air-sensitive/water-sensitive materials, sonolysis and thermal techniques for materials synthesis, preparation of polymer nano-composites and nanosized materials.

Prerequisite: CME 310; CME Major

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, distillation, leaching and extraction, fixed-bed membrane separation, crystallization.

Prerequisite: B- or higher in CME 304; CME 318; CME Major

3 credits

CME 323: Reaction Engineering and Chemical Kinetics

Introduction to chemical reaction engineering and reactor design. Fundamentals of chemical kinetics for homogeneous and heterogeneous reactions, both catalyzed and uncatalyzed. Steady-state approximation. Methods of kinetic data collection, analysis and interpretation. Transport effects in solid and slurry-phase reactions. Batch and flow reactors including operations under non-ideal and non-isothermal conditions. Reactor design including bioreactors.

Prerequisites: CME major; U3 standing; CME 312 and 314

3 credits

CME 330: Principles of Engineering for Chemical Engineers

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

Prerequisites: U3 or U4 Standing, CME Major

2 credits

CME 333: Business Economics for Engineers

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

3 credits

CME 369: Polymer Engineering

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

Prerequisites: B- or better in CME 304 or ESG 302; AMS 261 or MAT 203 or MAT 205

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 polymers 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 attention 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 relevance of nanoscale phenomena are discussed.

Pre- or Corequisite: CHE 321 or permission by the instructor.

Prerequisite: CME Major

3 credits

CME 372: Colloids, Micelles and Emulsion Science

This course addresses the fundamental science and chemistry of micro-emulsion and colloid formation, three-component phase diagrams, nanoscale structure and characterization techniques. Specific case studies and issues related to scale-up in food, cosmetics, and biomedical industries are presented.

Prerequisite: CHE 132/134

3 credits

CME 401: Separation Technologies

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

Prerequisites: CME major; U3 or U4 standing; CME 323

3 credits

CME 410: Chemical Engineering Laboratory III: Instrumentation, Material Design and Characterization

Students research a topic and together with the course instructor and undergraduate program director, select an advisor and thesis committee. The student, 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 420: Chemical Engineering Laboratory IV: Senior Thesis

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

Prerequisite: CME 410

2 credits

CME 427: Molecular Modeling for Chemical Engineers

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

Prerequisites: PHY 132; ESG 111; AMS 261 or MAT 203; AMS 361 or MAT 303; B- or higher in CME 304; CME Major

3 credits

CME 430: Fundamentals of Professional Chemical and Molecular Engineering

Preparatory class that provides an overview of professional 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.

Prerequisite: CME Major only

1 credit

CME 440: Process Engineering and Design I

Classical methods of chemical process engineering, advanced mathematical techniques and computer software for efficient and accurate process design and development. Mini-project design.

Prerequisites: CME major; U3 or U4 standing; CME 320 and 327

3 credits

CME 441: Process Engineering and Design II

Major design project: a review of engineering design principles; engineering economics,

economic evaluation, capital cost estimation; process optimization; profitability analysis for efficient and accurate process design.

Prerequisites: CME 401 and 440

3 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 condensation polymerization; methods of separation and analysis of polymers.

Prerequisites: PHY 132, PHY 134, CHE 322

3 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 3.0 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. May not be counted toward specialization requirements.

Prerequisites: U4 standing, 3.0 gpa, grade of B or better in course which assisting

3 credits

CME 480: Cellular Biology for Chemical Engineers

The course is intended to describe and introduce cellular and biological concepts and principles for chemical engineers. The course will provide details on the cellular processes, structures and regulations of the cellular homeostasis as response to internal and external changes and stimuli.

Prerequisite: CME Major; U3 or U4 standing; or permission of the Undergraduate Program Director

3 credits

CME 481: Advanced Cell Biology for Chemical Engineers

This course is intended to provide advanced topics in cellular behavior as a result of varying environmental cues. The course will focus on subjects associated with biological research related to various artificial materials and their influence on the cells and their interaction with the materials.

Prerequisite: CME 480

3 credits

CME 488: Industrial Internship in Chemical Engineering

Research project in an industrial setting under joint supervision of an industrial mentor and chemical engineering faculty. Project to cover some or all of the following chemical engineering principles of product synthesis: experiment design, data collection, data analysis, process simulations, and report writing related to an actual production facility. May be repeated up to a maximum of 12 credits. May not be counted toward specialization requirements.

Prerequisites: B average in CME courses; permission of supervising faculty member

0-12 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 allowable total credits. May not be used for specialization requirements.

Prerequisites: B average in CME courses; permission of supervising faculty member

0-3 credits

CSE

Computer Science

CSE 101: Introduction to Computers and Information Technologies

An introduction to the basics of personal computing and information technologies intended primarily for students majoring in humanities, social and behavioral sciences, or business management. Topics include principles of personal (single-user) computer systems, office automation, and information in a modern, networked (multi-user) computing environment. Emphasis is on conceptual understanding of personal computing rather than use of specific hardware or software. Required participation in computer laboratories. May not be taken for credit in addition to EST 100 or after any CSE or ISE course.

Prerequisite: Satisfaction of entry skill in mathematics requirement (Skill 1) or satisfactory completion of D.E.C. C

3 credits

CSE 102: Introduction to Web Design and Programming

An introduction to the design of Web pages, specifically the development of browser and device independent HTML, with an emphasis on the XHTML standards. Includes the use of style sheets (CSS) and tools for page layout and verification. HTML is presented as a mark-up language, exploring the rules of HTML elements and attributes. Students learn the separation of page viewing information from the HTML through CSS style sheets as well as the use of block layout without using HTML tables. Addresses HTML display properties including text, color, image, and graphic elements as well as approaches to HTML validation and techniques.

Advisory Prerequisite: CSE 101 or basic computer skills

3 credits

CSE 110: Introduction to Computer Science

An introduction to fundamentals of computer science. Topics covered include algorithmic design, problem-solving techniques for computer programming, fundamentals of digital logic and computer organization, the role of the operating system, introductory programming methodology including variables, assignment statements, control statements and subroutines (methods), programming paradigms, the compilation process, theoretical limits of computation, social and ethical issues. Intended for students who have not taken any college-level computer science course containing programming assignments in a high-level programming language.

Prerequisite: Level 3 or higher on the mathematics placement examination

3 credits

CSE 114: Computer Science I

An introduction to procedural and object-oriented programming methodology. Topics include program structure, conditional and iterative programming, procedures, arrays and records, object classes, encapsulation, information hiding, inheritance, polymorphism, file I/O, and exceptions. Software debugging and testing techniques are emphasized including an introduction to formal verification methods. Includes required laboratory.

Prerequisite: Level 4 or higher on the math placement exam

Advisory Prerequisite: CSE 110

4 credits

CSE 130: Introduction to Programming in C

Introduces programming concepts using the C language. Variables, data types, and expressions. Conditional and iterative statements, functions, and structures. Pointers, arrays, and strings. Scope of variables and program organization. Includes programming projects of an interdisciplinary nature. Suitable as an introductory programming course for non-CSE majors.

Prerequisite: Level 3 or higher on the mathematics placement examination

3 credits

CSE 150: Foundations of Computer Science: Honors

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

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

4 credits

CSE 160: Computer Science A: Honors

First part of a two-semester sequence, CSE 160 and CSE 260. Emphasizes a higher-level, object-oriented approach to the construction of software. Focus on software engineering issues such as programming style, modularity, and code reusability. Includes the way in which software tools can be used to aid the program development process. First considers the construction of small programs, continues by treating the design and implementation of program modules, and culminates in an introduction to object-oriented design techniques suitable for larger programs.

Prerequisite: Computer Science Honors Program or Honors College or WISE program or permission of instructor

4 credits

CSE 213: Foundations of Computer Science II

A continuation of CSE 113 focusing on the descriptive formalisms relevant to computing, including set theory and its application to quantifiers, relations and graphs, combinatorics, and finite state machines.

Prerequisite: CSE 113

3 credits

CSE 214: Computer Science II

An extension of programming methodology to data storage and manipulation on complex data sets. Topics include: programming and applications of data structures; stacks, queues, lists, binary trees, heaps, priority queues, balanced trees and graphs. Recursive programming is heavily utilized. Fundamental sorting and searching algorithms are examined along with informal efficiency comparisons.

Prerequisite: C or higher in CSE 114

3 credits

CSE 215: Foundations of Computer Science

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

Prerequisite: AMS 151 or MAT 125 or MAT 131

3 credits

CSE 219: Computer Science III

Development of the basic concepts and techniques learned in CSE 114 Computer Science I and CSE 214 Computer Science II into practical programming skills that include a systematic approach to program design, coding, testing, and debugging. Application of these skills to the construction of robust programs of 1000 to 2000 lines of source code. Use of programming environments and tools to aid in the software development process.

Prerequisite: C or higher in CSE 214 and CSE major or ECE major or permission of instructor

3 credits

CSE 220: Systems-Level Programming

Introduces systems-level programming concepts using the C language and assembly language and explores the relation of respective programs in these languages. Topics include internal data representation, basic instructions and control structures, arithmetic operations, pointers, function calls and parameter passing, memory allocation, logical and shift operations, linking and loading.

Prerequisites: CSE 160 or 114 and CSE major or permission of instructor.

3 credits

CSE 230: Intermediate Programming in C and C++

Intermediate programming concepts using the C language in a UNIX environment. Files, systems calls, stream I/O, the C preprocessor,

bitwise operations, the use of makefiles, advanced formatting of input and output, conversions. Introduction to object-oriented programming using C++; classes, objects, inheritance, aggregation, and overloading. Suitable for all majors.

Prerequisite: CSE 130 or CSE 220 or ESE 124 or ESG 111 or BME 120 or MEC 102

3 credits

CSE 260: Computer Science B: Honors

Second part of a two-semester sequence, CSE 160 and CSE 260. Further development of the object-oriented design strategies presented in CSE 160. Continues with introductions to event-driven programming, graphical user interfaces, and design patterns. Includes an extended design and programming project.

Prerequisite: CSE 160

4 credits

CSE 300: Technical Communications

Principles of professional technical communications for Computer Science and Information Systems majors. Topics include writing business communications, user manuals, press releases, literature reviews, and research abstracts. Persuasive oral communications and effective presentation techniques, to address a range of audiences, will also be covered. This course satisfies the upper-division writing requirement for CSE and ISE majors.

Prerequisites: WRT 102, CSE or ISE major, U3 or U4 standing

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 languages and the microchip. Societal changes in computer usage due to the microcomputer, emergence of the Internet, the World Wide Web, and mobile computing. Legal and social impacts of modern computing. Cannot be used as a technical elective for the CSE major or minor. This course is offered as both CSE 301 and ISE 301.

Prerequisite: U2 standing or higher
Advisory Prerequisite: one course in computing

3 credits

CSE 302: Professional Ethics for Computer Science

Familiarizes students with professional practice in Information Technology. Enables them to identify ethical conflicts, their responsibilities and options, and to think through the implications of possible solutions to ethical conflicts.

Prerequisites: CSE 219 or CSE 260 or ISE 305

1 credit

CSE 303: Introduction to the Theory of Computation

An introduction to the abstract notions encountered in machine computation. Topics include finite automata, regular expressions, and formal languages, with emphasis on regular and context-free grammars. Questions relating to what can and cannot be done by machines are covered by considering various models of computation, including Turing machines, recursive functions, and universal machines.

Prerequisites: CSE 214 and CSE 213 or 215 and CSE major or permission of instructor.

3 credits

CSE 304: Compiler Design

Topics studied include formal description of programming languages, lexical analysis, syntax analysis, symbol tables and memory allocation, code generation, and interpreters. Students undertake a semester project that includes the design and implementation of a compiler for a language chosen by the instructor.

Prerequisites: CSE 219 or CSE 260, CSE 220, and CSE 303

3 credits

CSE 305: Principles of Database Systems

The design of database management systems to obtain consistency, integrity, and availability of data. Conceptual models and schemas of data: relational, hierarchical, and network. Students undertake a semester project that includes the design and implementation of a database system.

Prerequisites: CSE 219 or CSE 260; CSE 220; CSE major or permission of instructor

3 credits

CSE 306: Operating Systems

Students are introduced to the structure of modern operating systems. Topics include virtual memory, resource allocation strategies, concurrency, and protection. The design and implementation of a simple operating system are performed.

Prerequisites: CSE 219 or CSE 260; CSE 220 or ESE 380 and CSE Major or ECE major or permission of instructor.

3 credits

CSE 307: Principles of Programming Languages

Presents examples of important programming languages and paradigms such as LISP, ALGOL, ADA, ML, Prolog, and C++. Students write sample programs in some of the languages studied. The languages are used to illustrate programming language constructs such as binding, binding times, data types and implementation, operations (assignment data-type creation, pattern matching), data control, storage management, parameter passing, and operating environment. The suitability of these various languages for particular programming tasks is also covered.

Prerequisites: CSE 219 or CSE 260; CSE 220; CSE major or permission of instructor.

3 credits

CSE 308: Software Engineering

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

Prerequisites: CSE 219 or CSE 260 or ISE 305 and CSE major or permission of instructor.

3 credits

CSE 310: Computer Networks

Overview of computer networks and the Internet. Concept of end systems, access networks, clients and servers. Connection-oriented and connectionless services. Circuit switching and packet switching. Description of Internet protocol layers, including application layer, transport layer, network layer and link layer. Architecture of the current Internet and the World-Wide Web. TCP/IP protocol stack. Internet routing and addressing. Local area network protocols, Ethernet hubs and switches. Wireless LANs. Multimedia networking. May not be taken by students with credit for CSE/ ESE 346.

Prerequisites: CSE 214 or 260; CSE 220; CSE major or permission of instructor.

Advisory Pre- or Corequisite: AMS 310

3 credits

CSE 311: Systems Administration

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

Prerequisites: CSE 214 or CSE 230 or CSE 260 or ISE 208

3 credits

CSE 312: Legal, Social, and Ethical Issues in Information Systems

This course deals with the impact of computers on us as individuals and on our society. Rapid changes in computing technology and in our use of that technology have changed the way we work, play, and interact with other people. These changes have created a flood of new social and legal issues that demand critical examination. For example, technologies such as Gmail, Facebook, MySpace, along with music sharing sites and wikis create new social, ethical, and legal issues. This course is offered as both CSE 312 and ISE 312.

Prerequisites: U3 or U4 standing, one D.E.C. E course

3 credits

CSE 315: Database Transaction Processing Systems

Theory and practice of design for applications involving transactional access to a database. Transaction design, schema design, restart and recovery, journaling, concurrency control, distributed databases. Student groups perform design and implementation of significant database application. This course is offered as both CSE 315 and ISE 315.

Prerequisite: CSE or ISE 305

3 credits

CSE 320: Computer Organization and Architecture

Explores the physical structure and organization of a computer, the internal representation of information, and performance evaluation methodology. Introduces instruction set architectures and implementation techniques for computer arithmetic, control path design, pipeline control, memory hierarchy, storage devices, and I/O.

Prerequisite: CSE 220 and CSE major or permission of instructor.

3 credits

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 instructor's discretion.

Prerequisites: CSE 214 or CSE 230 or CSE 260 or ISE 208

3 credits

CSE 325: Computers and Sculpture

This multidisciplinary class surveys how computer science and computer technology are used in sculpture. Case studies with slides, videos, and software demonstrations illustrate a range of approaches of sculptors incorporating computers in their creative process. Various state-of-the-art fabrication technologies are studied (with site visits if available on campus). Mathematical foundations are emphasized so students can recognize them when analyzing sculpture and choose the right tool when designing. In the weekly laboratory, these ideas are reinforced with projects using a range of available software and inexpensive construction materials, e.g., paper, cardboard, and foamcore. *Prerequisites:* CSE 110 or permission of instructor

Prerequisite: CSE 110 or permission of instructor

3 credits

CSE 326: Fundamentals of Digital Image Processing

Covers fundamentals of image transforms, image enhancement, image restoration, image compression, segmentation, representation and description, recognition and interpretation.

Prerequisites: CSE 214 or CSE 230 or CSE 260; AMS 210 or MAT 211

3 credits

CSE 327: Fundamentals of Computer Vision

Introduces fundamental concepts, algorithms, and techniques in visual information processing. Covers image formation, binary image processing, image features, model fitting, optics, illumination, texture, motion, segmentation, and object recognition.

Prerequisites: CSE 214 or CSE 230 or CSE 260; AMS 210 or MAT 211

3 credits

CSE 328: Fundamentals of Computer Graphics

An introduction to computer graphics including graphics application programming; data structures for graphics; representing and specifying color; fundamental hardware and software concepts for calligraphic and raster displays; two-dimensional, geometric transformations; introduction to three-dimensional graphics; graphics standards; and input devices, interaction handling, and user-computer interface.

Prerequisites: CSE 219 or CSE 260; CSE 220; permission of instructor

3 credits

CSE 332: Introduction to Visualization

Visualization of scientific, engineering, medical, and business data sets. Mechanisms to acquire sampled, computed, or synthetic data and methods to transform symbolic into the visual. Topics include classic visualization process; visual perception; volume and surface visualization; methods for visualizing sampled, simulated, and geometric objects; and visualization systems. Emphasis on applications and case studies. This course is offered as both CSE 332 and ISE 332.

Prerequisites: CSE 219 or CSE 260; MAT 211 or AMS 210

3 credits

CSE 333: User Interface Development

Survey of user interface systems, including topics such as command language, windowing, multiple input/output devices, architecture of user interface management systems, and tool kits for designing user interfaces. Additional topics may include human factors, standards, or visual languages. Students participate in a project involving the design and implementation of a user interface system. This course is offered as both CSE 333 and ISE 333.

Prerequisite: CSE 219 or CSE 260
Advisory prerequisite: PSY 103

3 credits

CSE 334: Introduction to Multimedia Systems

Survey of technologies available for user interfaces. Discussion of hypertext; voice, music, and video together with tools and models for capturing, editing, presenting, and combining them. Capabilities and characteristics of a range of peripheral devices including devices based on posture, gesture, head movement, and touch. Case studies of academic and commercial multimedia systems

including virtual reality systems. Students participate in laboratory exercises and build a multimedia project. This course is offered as both CSE 334 and ISE 334.

Prerequisite: U2, U3 or U4 standing
3 credits

CSE 336: Internet Programming

Introduces the design and development of software for Internet commerce. Topics include extended markup language, servlets, cookies, sessions, Internet media types, Web protocols, digital signatures, certificates, encryption, and the wireless Internet.

Prerequisite: CSE 219 or CSE 260
3 credits

CSE 346: Computer Communications

Basic principles of computer communications. Introduction to performance evaluation of protocols. Protocols covered include those for local, metropolitan, and wide area networks. Introduction to routing, high speed packet switching, circuit switching, and optical data transport. Other topics include TCP/IP, Internet, web server design, network security, and grid computing. Not for credit in addition to CSE/ISE 310. This course is offered as both CSE 346 and ESE 346.

Pre- or corequisite for ESE and ECE majors: ESE 306

Pre- or corequisite for CSE majors: AMS 310 or 311

3 credits

CSE 350: Theory of Computation: Honors

Introduces the abstract notions of machine computation for honors students. Includes finite automata, regular expressions, and formal languages, with emphasis on regular and context-free grammars. Explores what can and cannot be computed by considering various models of computation including Turing machines, recursive functions, and universal machines.

Prerequisites: CSE 150; AMS 210 or MAT 211; CSE Honors Program or Honors College or WISE or permission of instructor

4 credits

CSE 352: Artificial Intelligence

Topics covered include critique of artificial intelligence research; state-space problem representations and search algorithms; game-playing programs; theorem-proving programs; programs for the study and simulation of cognitive processes and pattern recognition. Further topics in current research as time permits.

Prerequisites: CSE 219 or CSE 260

3 credits

CSE 355: Computational Geometry

The design and analysis of efficient algorithms to solve geometric problems that arise in computer graphics, robotics, geographical information systems, manufacturing, and optimization. Topics include convex hulls, triangulation, Voronoi diagrams, visibility, intersection, robot motion planning, and arrangements. This course is offered as both AMS 345 and CSE 355.

Prerequisites: AMS 301; programming knowledge of C or C++ or Java

3 credits

CSE 364: Advanced Multimedia Techniques

Digital media production techniques for high-bandwidth applications such as electronic magazine illustration, broadcast television, and motion picture special effects. Students explore techniques such as 3D modeling and character animation, video compositing, and high-resolution image processing in a state-of-the-art multimedia computing laboratory. High-capacity multimedia storage, high-speed networks, and new technologies such as DVD, HDTV, and broadband will be reviewed. This course is offered as both CSE 364 and ISE 364.

Prerequisites: CSE/ISE 334 and permission of the instructor

3 credits

CSE 366: Introduction to Virtual Reality

An introduction to the practical issues in the design and implementation of virtual environments. Topics covered include the fundamentals of systems requirements, transformations, user-interaction models, human vision models, tracking systems, input/output devices and techniques, and augmented reality. The topics covered are explained through the use of real-life applications of virtual-reality systems in engineering, science, and medicine.

Prerequisites: CSE 328, CSE/ISE 332, 333

3 credits

CSE 370: Wireless and Mobile Networking

The fundamentals of wireless communication. Link, network and transport layer protocols for wireless and mobile networking. Cellular networks. Wireless LANs. Wireless multihop networks. Mobile applications.

Prerequisite: CSE 310 or 346

3 credits

CSE 371: Logic

A survey of the logical foundations of mathematics: development of propositional calculus and quantification theory, the notions of a proof and of a model, the completeness theorem, Goedel'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

CSE 373: Analysis of Algorithms

Mathematical analysis of a variety of computer algorithms including searching, sorting, matrix multiplication, fast Fourier transform, and graph algorithms. Time and space complexity. Upper-bound, lower-bound, and average-case analysis. Introduction to NP completeness. Some machine computation is required for the implementation and comparison of algorithms. This course is offered as CSE 373 and MAT 373.

Prerequisites: MAT 211 or AMS 210; CSE 214 or CSE 260

3 credits

CSE 375: Concurrency

The concurrent execution of asynchronous processes in the abstract using state diagrams and a related language. The concurrent aspects of Java are discussed as a practical implementation of these issues and program logic is introduced to describe them formally. Examples are drawn from operating systems, database systems, and communication systems.

Prerequisite: CSE 305 or 306 or ESE 333

3 credits

CSE 376: Advanced Systems Programming in UNIX/C

Focuses on several aspects of producing commercial-grade system software: reliability, portability, security, and survivability. Uses Unix and C, heavily used in industry when developing systems and embedded systems code. Emphasizes techniques and tools to produce reliable, secure, and highly portable code. Requires substantial programming as well as a course project.

Prerequisite: CSE 214 or 230 or 260

3 credits

CSE 377: Introduction to Medical Imaging

An introduction to the mathematical, physical, and computational principles underlying modern medical imaging systems. Covers fundamentals of X-ray computer tomography, ultrasonic imaging, nuclear imaging, and

magnetic resonance imaging (MRI), as well as more general concepts required for these, such as linear systems theory and the Fourier transform. Popular techniques for the visualization, segmentation, and analysis of medical image data are discussed, as well as applications of medical imaging, such as image-guided intervention. The course is appropriate for computer science, biomedical engineering, and electrical engineering majors.

Prerequisites: AMS 161 or MAT 127 or 132 or 142; AMS 210 or MAT 211

3 credits

CSE 378: Introduction to Robotics

Introduces basic concepts in robotics including coordinate transformation, kinematics, dynamics, Laplace transforms, equations of motion, feedback and feedforward control, and trajectory planning. Covers simple and complex sensors (such as cameras), hybrid and behavior based control and path planning. Concepts are illustrated through laboratories using the LEGO Robot Kit.

Prerequisites: AMS 161 or MAT 127 or 132 or 142; AMS 210 or MAT 211 or MEC 262

3 credits

CSE 380: Computer Game Programming

An introduction to the fundamental concepts of computer game programming. Students design and develop original games for PCs applying proven game design and software engineering principles.

Prerequisite: CSE 214 or CSE 230 or CSE 260

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.

Prerequisites: CSE 328 or CSE 380

3 credits

CSE 390: Special Topics in Computer Science

A lecture or seminar course on a current topic in computer science. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes, but cannot be used more than twice to satisfy CSE major requirements.

Prerequisites: CSE or ISE major

3 credits

CSE 391: Special Topics in Computer Science

A lecture or seminar course on a current topic in computer science. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes, but cannot be used more than twice to satisfy CSE major requirements.

Prerequisites: CSE or ISE major

3 credits

CSE 392: Special Topics in Computer Science

A lecture or seminar course on a current topic in computer science. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes, but cannot be used more than twice to satisfy CSE major requirements.

Prerequisites: CSE or ISE major

3 credits

CSE 393: Special Topics in Computer Science

A lecture or seminar course on a current topic in computer science. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes, but cannot be used more than twice to satisfy CSE major requirements.

Prerequisites: CSE or ISE major

3 credits

CSE 394: Special Topics in Computer Science

A lecture or seminar course on a current topic in computer science. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes, but cannot be used more than twice to satisfy CSE major requirements.

Prerequisites: CSE or ISE major

3 credits

CSE 408: Network Security

Principles and practices of computer network security. Cryptography, authentication protocols, digital signatures, IP/E-commerce security, VPNs, firewalls, and network intrusion detection.

Prerequisite: CSE/ISE 310 or CSE/ESE 346

3 credits

CSE 409: Computer System Security

Principles and practices of computer system security. Operating system security, authentication and access control, capabilities, information flow, program security, database security, cryptographic key management,

auditing, assurance, vulnerability analysis and intrusion detection.

Prerequisite: CSE 306 or 376, or ESE 333

3 credits

CSE 475: Undergraduate Teaching Practicum

Students assist faculty in teaching by conducting a recitation or laboratory section that supplements a lecture course. The student receives regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.

Prerequisites: U4 standing as an undergraduate major within the college; a minimum g.p.a. of 3.00 in all Stony Brook courses and the grade of B or better in the course in which the student is to assist; or permission of department

3 credits

CSE 487: Research in Computer Science

An independent research project with faculty supervision. Only three credits of research electives (AMS 487, CSE 487, BME 499, ESE 499, ESM 499, ISE 487, and MEC 499) may be counted toward technical elective requirements. May not be taken for more than six credits.

Prerequisites: Permission of instructor and department

0-6 credits

CSE 488: Internship in Computer Science

Participation in local, state, national, or international private enterprise, public agencies, or nonprofit institutions. Students are required to submit a written proposal, progress reports, and a final report on their experience to the client and to the department. May be repeated up to a limit of 12 credits but CSE and ISE 488 cannot be used as electives to satisfy CSE major requirements.

Prerequisites: CSE major, U3 or U4 standing; permission of department

3 credits, S/U grading

CSE 495: Senior Honors Research Project I

A two-semester research project carried out under the supervision of a computer science faculty member. Students who enroll in CSE 495 must complete CSE 496 in the subsequent semester and receive only one grade upon completion of the sequence.

Prerequisite: Admission to the Computer Science Honors Program

3 credits

CSE 496: Senior Honors Research Project II

A two-semester research project carried out under the supervision of a computer science faculty member. Students must submit a written project report and make a presentation to the department at the year-end Honors Project Colloquium.

Prerequisite: CSE 495

3 credits

CSK

Career Skills and Leadership**CSK 101: Advocacy and Change**

This course examines methods of successful advocacy and ways to identify and overcome resistance to change. Students review theories and effective behaviors for advocating for causes, explaining viewpoints, managing conflict, and achieving consensus. Videos, cases, and exercises provide students with experience in formulating a clear message, eliciting support, and seeking compromise with local and global examples of sustainability. Students consider effective ways of using the media, forming partnerships and alliances, introducing change, and unfreezing seemingly intransigent perspectives.

Prerequisite: SUS, EHM, COS, EHI, EDP major or permission of the instructor

1 credit

CSK 102: Working in Teams

This course recognizes that considerable work is accomplished in groups (committees, boards, design and development teams, task forces, project management teams, quality improvement teams, coalitions, and community groups) with members representing diverse perspectives and disciplines. Students consider how to form and lead groups that have members with the requisite talent, time, and task understanding. Participating in group exercises, students learn ways to promote cooperation and collaboration, value diverse perspectives and cultures, and facilitate group process.

Prerequisite: SUS, EHM, COS, EHI, EDP major or permission of the instructor

1 credit

CSK 103: Behavioral Decision Making

Students consider topics in behavioral decision making such as risk assessment and risk aversion (prospect theory) as they affect a variety of decisions. Psychological and social theories that demonstrate rational and seemingly irrational processes are applied to

individual and group decisions. Game theory elements and examples are reviewed. Using cases and exercises, students apply behavioral decision making processes to scientific and political decisions, for instance, in the adoption of new technology, recognizing environmental and social impact and the interface of public and private institutions.

Prerequisite: SUS, EHM, COS, EHI, EDP major or permission of the instructor

1 credit

CSK 104: Negotiation and Conflict Resolution

Using seminal texts, case examples, and exercises, students practice negotiation and conflict management skills. They learn how to develop negotiation alternatives, identify areas of mutual interest and options for mutual gain, and determine a best alternative to a negotiated agreement. Students work in groups to practice ways of raising and resolving differing degrees of conflict in one-on-one and group situations. Cases and discussion address cognitive and emotional issues and practical ways to face hot topics in sustainability and community engagement. Students resolve commons problems and dilemmas as they represent varying interests and practice different roles.

Prerequisite: SUS, EHM, COS, EHI, EDP major or permission of the instructor

1 credit

CSK 105: Leadership

Developing effective leadership skills is critical for career success. This course guides students in assessing their leadership strengths and weaknesses and establishing goals for leadership development. Students learn transactional and transformational leadership tactics, ways to show consideration of others' interests and feelings, and the importance of valuing differences. Students practice transformational leadership methods for building and sustaining followers' commitment and involvement. Participating in group exercises, they practice establishing goals, giving feedback, and rewarding others.

Prerequisite: SUS, EHM, COS, EHI, EDP major or permission of the instructor

1 credit

CSK 106: Communication Methods and Strategies

Students study and practice effective communication strategies to inform and influence others. They consider the use of multi-media, including print, radio, television, Web, pod-casting, and how to use combinations of media for recording and distribution of information and perspectives.

They study examples of propaganda, marketing, and journalism. They develop a communication strategy to address a sustainability issue.

Prerequisite: SUS, EHM, COS, EHI, EDP major or permission of the instructor

1 credit

CSK 107: Assessment

This course recognizes the importance of assessing needs, tracking implementation processes, and evaluating program outcomes. Students learn basics of research design and data collection methods, such as writing and conducting surveys and interviews. Sources of archival data and data mining techniques are considered. The concepts of reliability, validity, statistical significance, and probability are reviewed, and analytic methods are described. Effective presentation methods are demonstrated for communicating and using the results. Students design an evaluation strategy, apply simple descriptive statistics, and present the results.

Prerequisite: SUS, EHM, COS, EHI, EDP major or permission of the instructor

1 credit

CSK 108: Entrepreneurship

Entrepreneurs create sustainable organizations to accomplish their goals, for instance, to bring about environmental and social change. "Intrepreneurs" foster innovation within organizations. In this course, students assess their entrepreneurial skills, including envisioning, leading, communicating, organizing, implementing, and assessing change. They study examples of successful and unsuccessful entrepreneurs. Working alone or in groups, they write a business plan for a new enterprise. They consider needs, develop a market assessment, and locate available resources. They apply SWOT analysis (identification of internal strengths and weaknesses and external opportunities, and threats), formulate SMART goals (specific, measurable, actionable, realistic, and time bound objectives), and consider ways to ensure the long term viability of their enterprise.

Prerequisite: SUS, EHM, COS, EHI, EDP major or permission of the instructor

1 credit

CSK 109: Forecasting and Planning

Sustainability requires understanding current conditions and predicting possible future directions. This course provides an overview of trend and pattern analysis. Students read fiction and nonfiction authors who have envisioned the future. They learn how to comb for data and identify trends from the media, the

internet, academic publications, and subject matter experts in a wide range of fields. They consider the impact of technological change on life patterns, such as the workplace, home, and community of the future.

Prerequisite: SUS, EHM, COS, EHI, EDP major or permission of the instructor

1 credit

CSK 302: Technical Writing and Communication

A course devoted to the presentation of technical information to different audiences. Styles of writing to be covered will include grant proposals, reports, and journal articles; principles of oral presentation will include elements of design and graphics.

Prerequisite: WRT 102; SUS, EHM, COS, EHI, EDP major or permission of the instructor

3 credits

DAN

Dance

DAN 102- D: Intro to World Dance Cultures

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

3 credits

DAN 164- D: Tap Technique and History

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

3 credits

DAN 165- D: Contemporary Dance I

The fundamentals, technique, and history of modern dance. Basic principles of alignment, centering, placement, and modern technique are introduced. The historical component includes various styles within the field of modern dance, individual artists who have contributed to the field, and the place of modern dance in society and culture at large.

Formerly offered as THR 165. Not for credit in addition to THR 165.

3 credits

DAN 166- D: Ballet Technique I

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

3 credits

DAN 167- D: Jazz Dance Technique I

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

3 credits

DAN 168- D: World Dance I

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

3 credits

DAN 264- D: Movement Awareness and Analysis

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

3 credits

DAN 353: Special Topics in Dance Performance

A concentration in one aspect of dance. May be repeated as the topic changes. Formerly offered as THR 353.

Prerequisite: Permission of instructor

1-3 credits

DAN 365: Contemporary Dance II

Further development of modern dance training, devoted to improvement of style, technique, and physical and mental focus. Formerly offered as THR 365. Not for credit in addition to THR 365.

Prerequisite: DAN 165 (or the former THR 165)

3 credits

DAN 366: Ballet Technique II

Further development of ballet training, devoted to improving style, technique, physical and mental focus. Formerly offered as THR 366. Not for credit in addition to THR 366.

Prerequisite: DAN 166 (or the former THR 166)

3 credits

DAN 367: Jazz Dance Technique II

Further development of jazz dance training, devoted to improvement of style, technique, and physical and mental focus. Formerly offered as THR 367. Not for credit in addition to THR 367.

Prerequisite: DAN 167 (or the former THR 167)

3 credits

DAN 368: Dance Improvisation

The practice of dance and movement investigation through discipline, spontaneity, and awareness. Skills in improvisation will be developed through creative projects and experiments in dance. Formerly offered as THR 368. Not for credit in addition to THR 368.

Prerequisite: DAN 165, 166, or 167 (or the former THR 165, 166, or 167)

3 credits

DAN 369- J: World Dance II

The fundamentals, technique, and history of a specific non-Western dance style. Lectures cover the origins of the dance form, the people who perform the dance, and the place of the dance in society and culture. Studio training includes the physicality of the dance. May be repeated as the topic changes. Formerly offered as THR 369. Not for credit in addition to THR 369.

Prerequisites: Completion of D.E.C. categories A, B, and D

3 credits

DAN 400: Performance Dance Ensemble

Concentrated development of dance technique and performance skills through rehearsal and presentation of choreography. May be repeated once. Formerly offered as THR 400. Not for credit in addition to THR 400.

Prerequisites: Audition; permission of instructor

3 credits

DAN 465: Contemporary Dance III

Advanced study in modern dance techniques, combining dance training, compositional skills, and performance technique. Formerly offered as THR 465. Not for credit in addition to THR 465.

Prerequisite: DAN 365 (or the former THR 365)

3 credits

DAN 467: Jazz Dance Technique III

Advanced study of jazz techniques, combining dance training, compositional skills, and performance techniques. Formerly offered as THR 467. Not for credit in addition to THR 467.

Prerequisite: DAN 367 (or the former THR 367)

3 credits

DAN 468: Choreography

Training in the craft of choreography, the creation of dance, using applied dance techniques, improvisational tools, perceptual skills, and investigations. Students create studies and original dance compositions and critique the various developmental stages in order to modify and expand their creations. The theory presented contains basic aesthetic concepts that contribute to the structure and form of dance. Formerly offered as THR 468. Not for credit in addition to THR 468.

Prerequisite: DAN 465 or 467 (or the former THR 465 or 467)

3 credits

DAN 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Not for major credit. Not for credit in addition to THR 475.

Prerequisites: Dance minor; U3 or U4 standing; permission of instructor and department

3 credits, S/U grading

DAN 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served. Not for major credit. Not for credit in addition to THR 476.

Prerequisites: DAN 475; permission of instructor and department

3 credits, S/U grading

DAN 487: Independent Research

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

Prerequisite: Permission of department

0-6 credits

DAN 488: Internship

Participation in a professional organization that creates and presents public performances, creates and presents, to the public, works in the media arts, or concerns itself with the management or funding of arts organizations. Students are required to submit written progress reports to their department sponsors and a final written report to the department faculty. Supplementary reading may be assigned. May be repeated up to a limit of 12 credits. Not for credit in addition to THR 488.

Prerequisite: Permission of department

0-6 credits, S/U grading

DIA

Digital Arts

DIA 207: Digital Media: History and Theory

An introduction to historical and theoretical issues in digital media. Following discussion of basic concepts in studying digital media, the course focuses on examining the history of computer technologies, and their theoretical implications and cultural ramifications in the present. This course is offered as ARH 207 and DIA 207.

3 credits

DIA 396- H: Video and Computer Game History

The course examines video/computer games as historical artifacts while studying the processes of writing/documenting the history of videogames. Students will engage with histories of gaming companies and platforms, game designer memoirs, fiction, criticism, game analysis, theoretical writing, descriptive historical accounts, preservation practices, and ephemeral forms of historic documentation. Students will also have hands-on access to various console games from the 1970s to the present. This course is offered as both CCS 396 and DIA 396.

Prerequisite: CCS 101 or ARH 207/DIA 207; Satisfaction of DEC B or DEC D

3 credits

DIA 397- H: Video and Computer Game Culture

The course critically examines videogames within cultural, social, and political contexts. It will showcase the interaction between technology and culture and society by examining videogames in terms of play and game play, racial and gendered representation, racism and sexism, games in a global context of online play, power-relations between gamers, violence and moral panics, and military propaganda. This course is offered as both CCS 397 and DIA 397.

Prerequisite: CCS 101 or ARH 207/DIA 207; Satisfaction of DEC B or DEC D

3 credits

ECO

Economics

ECO 108- F: Introduction to Economics

An introduction to economic analysis. Microeconomics (the study of individual, firm, industry, and market behavior) and macroeconomics (the study of the determination of national income, employment, and inflation). This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in MAT 122 or MAT 123 or AMS 151 or level 4 on the mathematics placement examination

4 credits

ECO 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 100 or ESG 198 or CHE 131; and upper division status

3 credits

ECO 303- F: Intermediate Microeconomic Theory

Analytical study of the behavior of fundamental economic units (consumer and the firm) and its implications for the production and distribution of goods and services. Emphasis on the use of economic theory to provide explanations of observed phenomena, including the analytical derivation of empirically verifiable propositions. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisites: C or higher in ECO 108; C or higher in MAT 122 or MAT 123 or AMS 151 or placement level 4 on the mathematics placement examination

4 credits

ECO 305- F: Intermediate Macroeconomic Theory

The theory of national income determination, employment, distribution, price levels, inflation, and growth. Keynesian and classical models of the different implications of monetary and fiscal policy. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisites: C or higher in ECO 108; C or higher in MAT 122 or MAT 123 or AMS 151 or placement level 4 on the mathematics placement examination

4 credits

ECO 310: Basic Computational Methods in Economics

A first course in the computational and graphical techniques for finding numerical solutions to a small set of economic models (such as the Edgeworth Box) based on concepts and constructs presented in the

intermediate microeconomics course. Includes the foundations of programming (using a symbolic algebra language), and finding maxima of functions, finding equilibria of markets, and exploring and fitting functions graphically. Emphasis is put on understanding the connections between the concepts, the algebra, the computation, and the graphical presentation of economic models and on using the numerical models to perform experiments.

Prerequisite: C or higher in ECO 303

4 credits

ECO 316- K: U.S. Class Structure and Its Implications

Investigation of the economic foundations of social class in the U.S. and connections among class, race, and gender. Consideration of both theoretical and empirical strategies to understand the working class, the middle class, and the capitalist class in contemporary U.S. society, including the implications of class analysis for social issues such as government economic policy formation, the "underclass" and welfare reform, globalization, living standards, the distributions of income and wealth, and economic ethics.

Prerequisite: C or higher in ECO 108

3 credits

ECO 317: Marxist Political Economy

An analysis of capitalism as a social system of production and exchange, based on the economic writings of Karl Marx and others working in that broad tradition. The course begins with study of Marx's philosophical method, dialectical materialism, and applies this method to the historical development of capitalism and the operation of the modern capitalist economy. The course explores connections between economic power and political, cultural, and ethical issues.

Prerequisite: C or higher in ECO 108

3 credits

ECO 320: Mathematical Statistics

An introduction to statistical methods and their properties that are useful in analysis of economic data. Topics include elements of probability theory and its empirical application, univariate and multivariate distributions, sampling distributions, limiting distributions, and point and interval estimation. Regular problem sets and occasional projects are required. Not for credit in addition to AMS 310.

Prerequisites: C or higher in ECO 108; C or higher in MAT 122 or MAT 123 or AMS 151 or placement level 4 on the mathematics placement examination

4 credits

ECO 321: Econometrics

The application of mathematical and statistical methods to economic theory. Topics include the concept of an explanatory economic model, multiple regression, hypothesis testing, simultaneous equation models, and estimating techniques. Emphasis is placed on the application of econometric studies.

Prerequisites: C or higher in ECO 320 or AMS 310; C or higher in ECO 108

4 credits

ECO 323: Applied Microeconomics

Exploration of the connection between economic theory and its applications, with a special emphasis on the use of econometric techniques. Real-life examples are used to examine how computer software and the internet allow us to better understand a problem, analyze a question, or find an answer. Computers are used intensively to learn about financial and business decisions, economic models, and econometric methodology. Models of inter-temporal choice, investment, investment under uncertainty, migration, retirement, housing decisions, economics of regulation, education, financial options, and many others are explored with real examples, often with real data and econometric tools. Students are expected to consult many sources and think analytically for problem sets, exams, and in class.

Prerequisites: C or higher in ECO 303; C or higher in ECO 320 or AMS 310

Advisory Prerequisite: ECO 321

4 credits

ECO 325: International Economics

Economic theory of international trade, protection, commercial policy, customs unions, capital movements, and international finance.

Prerequisite: C or higher in ECO 303

3 credits

ECO 326: Industrial Organization

A study of the structure of firms and markets and interactions between them. Price theory, strategic theory and transaction costs analysis are used to illuminate the sources of and limitations on market power of firms. Some empirical evidence, drawn primarily from the U.S. economy, is explored. A brief introduction to antitrust policy and regulatory policy is included.

Prerequisite: C or higher in ECO 303

3 credits

ECO 327- F: Health Economics

An application of microeconomics to the health sector of the economy. Topics include the demand for health care; the roles of hospitals, physicians, and HMOs in the supply of health care; the role of the government in the provision of health care; and the detriments of health care costs.

Prerequisite: C or higher in ECO 303
3 credits

ECO 328- F: Regional Economics

An examination of the major theories of economic structure within a spatial context. Special attention is paid to economic growth within a spatial world, migration of firms and resources across space, the empirical modeling of these processes, and regional economic modeling. Topics include export base theory; input-output modeling, social accounting matrices (SAMs), computable general equilibrium models (CGEs) and regional econometric and conjoined models.

Prerequisite: C or higher in ECO 303
3 credits

ECO 329: Urban Economics

Construction of models to explain aspects of cities, including existence, dynamics, and land use patterns. Concepts include Lorenz Curve, externalities, tipping points, bid-rent curves, and separation of economic activities. Uses algebra, pre-calculus, graphing, and calculus. Computer spreadsheets and scientific hand calculators used.

Prerequisite: C or higher in ECO 303
Advisory Prerequisite: MAT 131
3 credits

ECO 334- J: Demographic Economics of Developing Countries

Problems related to both economics and demography. In scope, the material deals with both contemporary and historical situations in developing countries. Microeconomic aspects of the course concern fertility, marriage, divorce, and migration; macroeconomic aspects concern the implications for growth and development of various patterns of population increase.

Prerequisites: C or higher in ECO 320 or AMS 310; C or higher in ECO 303 and 305
3 credits

ECO 335: Economic Development

An examination of problems and aspects facing developing countries in the transition from traditional, predominantly rural economic systems to modern, largely urban-oriented economies. Theories of economic growth and

development are presented in the light of the actual experience of developing countries.

Prerequisites: C or higher in ECO 303; MAT 126 or 131 or 141 or AMS 151
3 credits

ECO 337: Labor Theory

Microeconomic theory is used to investigate specific topics in the field of labor economics. Areas to be covered include the household's decision-making process and the supply of labor, investments in human capital and discrimination in the marketplace, the effect of market structure on the demand for labor, and the distribution of income.

Prerequisite: C or higher in ECO 303
3 credits

ECO 345: Law and Economic Issues

An application of economic issues to major fields of law to study their effects on market and non-market behavior. The consequences that laws may have on the realization of efficient outcomes, as well as an exploration of the legal process from an economic perspective, are emphasized.

Prerequisite: C or higher in ECO 303
3 credits

ECO 348: Analysis for Managerial Decision Making

Development of analytical techniques (such as linear programming and statistical decision theory) for making economic decisions, both in public and private enterprises. The student makes decisions on large-scale and detailed cases in realistic managerial situations and is introduced to the use of the computer. May not be taken for credit after BUS 249. Not for credit in addition to the discontinued BUS 349.

Prerequisite: C or higher in ECO 303
4 credits

ECO 351: Special Topics in Economics

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

Prerequisites: U3 or U4 standing; additional prerequisites announced with topic
3 credits

ECO 352: Special Topics in Economics

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

Prerequisites: U3 or U4 standing; additional prerequisites announced with topic
3 credits

ECO 353: Special Topics in Economics

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

Prerequisites: U3 or U4 standing; additional prerequisites announced with topic
3 credits

ECO 354: Special Topics in Economics

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

Prerequisites: U3 or U4 standing; additional prerequisites announced with topic
3 credits

ECO 355: Game Theory

Introduction to game theory fundamentals with special emphasis on problems from economics and political science. Topics include strategic games and Nash equilibrium, games in coalitional form and the core, bargaining theory, measuring power in voting systems, problems of fair division, and optimal and stable matching. This course is offered as both AMS 335 and ECO 355.

Prerequisites: MAT 126 or 131 or 141 or AMS 151; C or higher in ECO 303
3 credits

ECO 356: Special Topics in Economics

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

Prerequisites: U3 or U4 standing; additional prerequisites announced with topic
3 credits

ECO 357: Special Topics in Economics

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

Prerequisites: U3 or U4 standing; additional prerequisites announced with topic
3 credits

ECO 358- J: Topics in Developing Economies

Semester supplements to this Bulletin contain specific descriptions when course is offered. Topics may include titles such as The Economics of India and Chinese Economic Development. Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-Western world civilizations. Students will be expected to demonstrate either a knowledge of a broad outline of world history, or the distinctive features of the history, institutions, economy,

society, and culture of one non-Western civilization. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; additional prerequisites announced with topic

3 credits

ECO 360: Money and Banking

An introduction to modern monetary institutions and mechanisms, their relationship to the economy, and governmental policies in this area.

Prerequisite: C or higher in ECO 108

3 credits

ECO 362: Financial Economics

An analysis of financial decision making inside the corporation, covering topics such as the choice of the dividend policy, the choice between equity and debt and the interaction between financing and investment decisions. We will also look at how market imperfections, in particular the existence of informational differences between managers and investors, influence the performance of corporations. Finally, we study the optimal policies to cope with market imperfections.

Prerequisites: C or higher in ECO 303; C or higher in ECO 320 or AMS 310

3 credits

ECO 373- H: Economics of Environment and Natural Resources

Analysis of economic policies designed to deal with environmental problems. Issues involving the management of renewable and exhaustible resources such as timber and oil as well as the advantage of market-based solutions over the conventional demand approach are discussed.

Prerequisite: C or higher in ECO 303

3 credits

ECO 383: Public Finance

Theories of taxation and the satisfaction of public wants; the nature of public goods; theory of public expenditure; effects of taxes on resource allocation and welfare; theories of tax incidence; fiscal and equity implications of alternative tax schemes; fiscal dynamics and growth; intergovernmental fiscal relations.

Prerequisites: C or higher in ECO 303 and 305

3 credits

ECO 389: Corporate Finance

Introduction to the main concepts and problems confronted by financial managers in the corporate world. Development and application of tools and methods for financial decision-making and analysis, including:

discounting and present value; asset valuation; investment criteria; risk and return; risk management; cost of capital; debt and dividend policies; international financial management.

Prerequisite: C or higher in ECO 303

Advisory Prerequisite: C or higher in ECO 305

3 credits

ECO 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: Permission of instructor and department

3 credits, S/U grading

ECO 476: Undergraduate Teaching Practicum II

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

Prerequisite: C or higher in ECO 475; permission of instructor and department

3 credits, S/U grading

ECO 487: Independent Research in Economics

An independent project, developed out of advanced coursework in economics, designed in consultation with and supervised by a faculty member. The project should be formulated before the start of the semester in which the research will be done and should culminate in a substantial written paper. May be repeated.

Prerequisites: At least one upper-division ECO course that forms the basis of research; permission of a supervising faculty member
0-6 credits

ECO 488: Internship in Economics

An independent research project undertaken in the context of a work environment that provides students with access to data, people, and experience that make possible the study of a particular economic issue. Related readings, a daily journal, and an analytical paper under the supervision of a faculty member are

required. Permission must be obtained before the start of the semester in which the student enrolls in ECO 488. May be repeated up to a limit of 12 credits, but only counts as one course toward major requirements.

Prerequisites: C or higher in ECO 303 and 305; permission of supervising faculty member, Career Center Internship Manager, and sponsoring employing agency

0-6 credits, S/U grading

EDP

Environmental Design, Policy, and Planning

EDP 301: The Built Environment I

The functional determinants of an urban region's physical infrastructure, encompassing cities, suburbs, exurbs and satellite communities are presented. The course will cover metropolitan infrastructure components including systems of transportation, water supply, waste disposal and energy distribution and how they are shaped by the interaction of economics, politics and planning practice.

Prerequisite: SBC 200

3 credits

EDP 302: The Built Environment II

The functional dynamics underlying the development and planning for structures and facilities in urban regions are presented including their cities, suburbs, exurbs and recreational satellite communities. The course will cover the interaction of real estate economics, politics and good planning practice as they affect residential, commercial, educational, cultural and industrial sites.

Prerequisite: EDP 301

3 credits

EDP 303: Spatial Economics

Economic theories and empirical data that explain the distribution of man-made activities in geographic regions are presented. The course emphasizes spatial patterns among and within urban regions of the United States. Classes will cover the economic and demographic factors governing the distribution, within natural regional conurbations, of residences, industries and all other activities whose location is economically determined.

Prerequisite: SBC 206

3 credits

EDP 305: Risk Assessment and Sustainable Development

Course presents a comprehensive overview of risk analysis and its application to a broad range of human activities. The methodology of risk analysis enables those involved in environmental sustainability to evaluate the probability of an adverse effect of an agent, chemical, industrial process, or natural process.

Prerequisite: ENV 115

3 credits

EDP 307: Theories and Design of Urban Settlements

The course introduces students to the underlying economic, social and physical forces that shape the development of human settlements, with an emphasis on urban conurbations, and the typical United States metropolitan region.

Prerequisite: SBC 206, SBC 111

3 credits

EDP 309: Planning: Policies and Regulations

An introduction to the process of planning and development of regulations necessary for the implementation of planning objectives.

Prerequisite: SBC 200

3 credits

EDP 404: Environmental Design Project

Students will be formed into teams of 5 - 6 students representing the three major programs to jointly collaborate on a real-world environmental/planning problem affecting one of the eastern five towns of Suffolk County. They will participate with the respective municipal planning and environmental agencies and the residents of the geographic area. The students' role will be to serve as the professional consultant to the community. The design project presented in written, graphic and model form will be critiqued by a panel from the community and local government; including out-of-area experts.

Prerequisite: U3/U4, CSK 102

3 credits

EDP 487: Research in Environmental Design, Policy, & Planning

Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.

1-6 credits, S/U grading

EEL

Select East European Languages

EEL 111: Elementary Selected East European Language I

An introduction to spoken and written selected East European languages (Polish, Czech, Slovak, Serbo-Croatian, Bulgarian, Ukrainian), stressing pronunciation, speaking, comprehension, reading, writing, and culture. EEL 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of the selected language in high school (or who has otherwise acquired an equivalent proficiency) may not take EEL 111 without written permission from the supervisor of the course. May be repeated for more than one language.

3 credits

EEL 112 - S3: Elementary Selected East European Language II

An introduction to spoken and written selected East European languages (Polish, Czech, Slovak, Serbo-Croatian, Bulgarian, Ukrainian), stressing pronunciation, speaking, comprehension, reading, writing, and culture. May be repeated for more than one language.

Prerequisite: EEL 111

3 credits

EEO

Electrical Engineering Online

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, Circuits

4 credits

EEO 304: Electronic Instrumentation and Operational Amplifiers

Design of electronic instrumentation: structure of basic sensors and measurement systems, transducers, analysis and characteristics of operational amplifiers, analog signal conditioning with operational amplifiers, sampling, multiplexing, A/D and D/A conversion; digital signal conditioning, data input and display, and automated measurement systems.

Prerequisite: EEO 315

3 credits

EEO 306: Random Signals and Systems

Random experiments and events; random variables, probability distribution and density functions, continuous and discrete random processes; Binomial, Bernoulli, Poisson, and Gaussian processes; system reliability; Markov chains; elements of queuing theory; detection of signals in noise; estimation of signal parameters; properties and application of auto-correlation and cross-correlation functions; power spectral density; response of linear systems to random inputs.

Prerequisite: ESE 305

3 credits

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 by-pass capacitors. Analog integrated circuits. Metal-Oxide-Semiconductor (MOS) digital circuits with emphasis on CMOS. LEC/LAB

Prerequisite: Electronics Circuits I

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.

3 credits

EEO 331: 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 161 or MAT 127 or 132 or 142 or 171; PHY 127 or 132/134 or 142

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, chemically-directed assembly of 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 transmitters and receiver design, optical link design, single-wavelength fiber optic networks with analysis of FDDI and SONET/SDH, and wavelength division multiplexing.

Prerequisite: ESE 372

3 credits

EEO 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 and ESE 372; ESE 224 or CSE 230

4 credits

EEO 401: RF/Microwave Circuits

This course introduces the concepts of impedance matching in radio frequency (RF) circuits, S-parameter 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: Introduction 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 jet systems. The 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: Electric Machinery and Energy Conversion

This class is a survey of energy conversion and electric machine 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 line 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

EGL

English

EGL 191- B: Introduction to Poetry

Intensive analysis of poems in English of various periods and types and varying complexity. Descriptions available from the English Department. Not for English major credit.

Prerequisite: Completion of D.E.C. category A

3 credits

EGL 192- B: Introduction to Fiction

An analysis of fictional prose in terms of each section's specific theme. A goal of each section is to interpret various pieces of literature in relation to a political or historical view, or a particular literary technique. Descriptions available from the English Department. Not for English major credit.

Prerequisite: Completion of D.E.C. category A

3 credits

EGL 193- B: Introduction to Drama

Introduction to the analysis of drama, emphasizing the literary more than the theatrical dimension of the works, through examination of a range of plays from a variety of genres and periods. Descriptions available from the English Department. Not for English major credit.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 204: Literary Analysis and Argumentation

An introduction to the techniques and terminology of close literary analysis and argumentation as applied to poetry, fiction, and drama. The course includes frequent demanding writing assignments and is designed for students beginning their major study in English. Transfer credit is not accepted for this course.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 205- I: Survey of British Literature I

The study of British literature from the Old English period to Milton.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 206- I: Survey of British Literature II

The study of British literature from Dryden to the end of the 19th century.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 207: History of the English Language

A survey of the history of the English language from its origins to the present, with emphasis on the historical development of the language and on modern English grammar and usage.

Prerequisite: EGL 204; completion of D.E.C. A
3 credits

EGL 217- K: American Literature I

The study of American literature from 1607 to 1865.

Prerequisite: Completion of D.E.C. category A
Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

EGL 218- K: American Literature II

The study of American literature from 1865 to 1945, with attention to the antebellum historical and cultural contexts.

Prerequisite: Completion of D.E.C. category A
Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

EGL 224- G: 20th-Century Literature in English

The study of literature in English in the 20th century from Great Britain, Africa, the Caribbean, Canada, Australia, Ireland, New Zealand, and other countries and areas that produce material written in the English language.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 226- K: 20th-Century American Literature

A survey of major works reflecting the regional, ethnic, and traditional interests of American writers, with emphasis on the post-1945 period.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 231- I: Saints and Fools

An introduction to literature about the lives of saints and the holy fool tradition in major texts of Russian and English literature. Emphasis is placed on the ways authors have used fundamental religious values of humility, the transcendent irrational, and kenosis to confront their own times. Authors considered range from monks to Dickens, Dumas, Chaucer, Gogol, and Pushkin; films include *Murder in the Cathedral* and *Forrest Gump*. This course is offered as both EGL 231 and HUR 231.

Advisory Prerequisite: Completion of D.E.C. category B
3 credits

EGL 232- I: Rebels and Tyrants

An exploration of literary rebels and tyrants central to Russian and Anglo-American traditions. The subversive tactics of such writers as Shakespeare, Dostoevsky, Sir Walter Scott, Solzhenitsyn, and Salinger are appraised in the light of the dominant social, political, and aesthetic systems they confront. This course offered as both EGL 232 and HUR 232.

Advisory Prerequisite: Completion of D.E.C. category B
3 credits

EGL 243- I: Shakespeare: The Major Works

A study of major works in several genres and consideration of Shakespeare's precursors and his influence on the development of drama to the present. Designed for students who want a one-semester survey of Shakespeare.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 249- K: African-American Literature and Music in the 19th and 20th Centuries

A detailed look at African-American literature and music and their importance for American literature and music of the 19th and 20th centuries. An examination of the literature with attention to the special stylistic devices, tones of literary voice, and characterization that writers use in their efforts to match the music experience with the written word. Selections from the recordings of African-American and African-American inspired musicians -- from Bessie Smith and Louis Armstrong to Jimi Hendrix and the Rolling Stones. This course is offered as both AFH 249 and EGL 249.

Advisory Prerequisite: One D.E.C. category B or D course
3 credits

EGL 260- G: Mythology in Literature

The analysis of myth in literature from antiquity to the present. The course explores literary texts that use mythic material, analyzes the irrational in myth, and examines the history of motifs, figures, and themes in myths that persist in Western literature.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 261- B: The Bible as Literature

A literary approach to the Bible that explores the characteristic principles of the Bible's narrative and poetic art. This course is offered as both EGL 261 and JDH 261.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 266- G: The 20th-Century Novel

Major works and developments in the modern and contemporary novel. This course is offered as both CLT 266 and EGL 266.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 274- K: Black American Literature

A survey of 19th- and 20th-century Black American literature. Particular attention is paid to the way in which themes of black literature reflect the historical developments of the time, especially the conditions before, during, and after the Civil War and the Civil Rights Movement.

Prerequisite: Completion of D.E.C. category A
Advisory Prerequisites: Completion of D.E.C. categories I and J
3 credits

EGL 276- B: Feminism: Literature and Cultural Contexts

An examination of works written by or about women reflecting conceptions of women in drama, poetry, and fiction. The course focuses

on literature seen in relation to women's sociocultural and historical position. This course is offered as both EGL 276 and WST 276.

Prerequisite: Completion of D.E.C. category A
3 credits

EGL 285: Writing Workshop: Fiction

A workshop in the development of skills in writing fiction through practice supplemented by readings.

Prerequisites: Permission of instructor; completion of D.E.C. category A
3 credits

EGL 286: Writing Workshop: Poetry

A workshop in the development of skills in writing poetry. Poetry writing is supplemented by readings.

Prerequisites: Permission of instructor; completion of D.E.C. category A
3 credits

EGL 300- G: Old English Literature

The study of Old English language and the literature written in it from its beginnings to the 11th century.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 301: Authors, Periods, Topics, or Genres, with Intensive Writing

Course in English literary or cultural studies, with an emphasis on analytic writing. This course is designed for English majors only.

Prerequisites: EGL 204 and EGL 207
3 credits

EGL 302- G: Medieval Literature in English

Major authors, themes, and forms of British literature from the 13th to the early 16th century, usually excluding Chaucer.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 304- G: Renaissance Literature in English

The study of English literature of the 16th century.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 306- G: English Literature of the 17th Century

The study of English literature from the late Renaissance to the age of Dryden.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 310- G: Neoclassical Literature in English

The study of English literature from about 1700 to 1790.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 312- G: Romantic Literature in English

The study of English literature from the end of the neoclassical period to the beginning of the Victorian Age, 1798-1832.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 314- G: Victorian Literature

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 206
3 credits

EGL 316- G: Early American Literature

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 217
3 credits

EGL 318- G: 19th-Century American Literature

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 217
3 credits

EGL 320- G: Modern and Contemporary Literature

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

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 218, 224, or 226
3 credits

EGL 321- G: Modern and Contemporary Literature

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

Pre- or Corequisite: EGL 204

Advisory Prerequisite: EGL 218, 224, or 226
3 credits

EGL 322- G: Modern and Contemporary Literature

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

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 218, 224, or 226
3 credits

EGL 333- K: The Italian-American Experience in Literature

Literary and historical perspectives on the experience of Italians in America and their contribution to American culture from the earliest wave of Italian immigration to the present day. This course offered as both EGL 333 and HUI 333.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher
3 credits

EGL 340- G: Chaucer

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 342- G: Milton

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 344- G: Major Writers of the Renaissance Period in England

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

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205
3 credits

EGL 345- G: Shakespeare I

A study of the comedies and the history plays. Designed to complement EGL 346.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205 and 243
3 credits

EGL 346- G: Shakespeare II

A study of the tragedies and the romances. Designed to complement EGL 345.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205 and 243

3 credits

EGL 347- G: Major Writers of the Neoclassical Period in England

May be repeated as the topic changes.

Pre- or Corequisite: EGL 204

Advisory Prerequisite: EGL 206

3 credits

EGL 348- G: Major Writers of the Romantic Period in England

May be repeated as the topic changes.

Pre- or Corequisite: EGL 204

Advisory Prerequisite: EGL 206

3 credits

EGL 349- G: Major Writers of the Victorian Period in England

May be repeated as the topic changes.

Pre- or Corequisite: EGL 204

Advisory Prerequisite: EGL 206

3 credits

EGL 350- G: Major Writers of American Literature, Colonial Period to 1900

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

Pre- or Corequisite: EGL 204

Advisory Prerequisite: EGL 217

3 credits

EGL 352- G: Major Writers of 20th-Century Literature in English

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

Pre- or Corequisite: EGL 204

Advisory Prerequisite: EGL 218 or 224

3 credits

EGL 354- G: Major Writers of Contemporary British and American Literature

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

Prerequisite: EGL 204

Advisory Prerequisite: EGL 226

3 credits

EGL 360- G: Literature of Adolescence

The study of novels, short stories, and poetry about adolescence.

Prerequisite: EGL 441

3 credits

EGL 361- G: Poetry in English

The study of the development of form, theme, and language of poetry in English. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 362- G: Drama in English

The study of the development of plot, structure, character, theme, and language of drama in English. Semester Supplements to this Bulletin contain descriptions when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 363- G: Fiction in English

The study of the development of plot, structure, character, theme, and language of fiction in English. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 364- G: Prose in English

The study of the various forms of prose such as the essay, utopia, memoir, autobiography, biography, and nonfictional narrative. Semester Supplements to this Bulletin contain descriptions when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 365- G: Literary Criticism and Theory

A survey of major texts and perspectives in literary criticism and theory.

Pre- or Corequisite: EGL 204

3 credits

EGL 366- G: Topics in Literary Criticism and Theory

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

Pre- or Corequisite: EGL 204

3 credits

EGL 367- G: Contemporary African-American Literature

The study of contemporary African-American literature focused in varying ways, including literary and cultural traditions, and relations to other writers and traditions in American literature.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: EGL 274 or AFH 206

3 credits

EGL 368- G: Caribbean and American Connections in Literature

An exploration of the connections between writers from the French-speaking and English-speaking Caribbean and from the African-American community, who share a similar cultural heritage, historical heritage, and historical experience, but differ in geopolitical situations. Special attention is paid to spirituality, gender, and identity motifs in the literature. This course is offered as both AFH 368 and EGL 368.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 369- G: Topics in Ethnic American Studies in Literature

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 371- G: Topics in Gender Studies in Literature

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 372- G: Topics in Women and Literature

The study of texts written by and about women and of issues they raise relating to gender and literature. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes. This course is offered as both EGL 372 and WST 372.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 373- J: Literature in English from Non-Western Cultures

The study of literature in English from a nation or a region of the world that is significantly different from the United States and Europe. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 374- G: English Literature in Relation to Other Literatures

The study of literature in English as it affects and is affected by other literatures. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 375- G: Literature in English in Relation to Other Disciplines

The study of literature in English as it affects and is affected by other disciplines such as anthropology, science, sociology, the history of ideas, theology, and psychology. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 376- G: The Literature of Imperialism

A course in the history and culture of European imperialism as it is evidenced in the literary texts produced both by Europeans and by the indigenous populations they colonized. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 377- G: Literature in English in Relation to Other Disciplines

The study of literature in English as it affects and is affected by other disciplines such as anthropology, science, sociology, the history of ideas, theology, and psychology. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 378- J: Contemporary Native American Fiction

The study of novels by contemporary Native American writers with particular attention to the way these novels develop imaginative perspectives on contemporary culture and values.

Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 379- J: Native American Texts and Contexts

The study of Native American writings in a variety of genres, including autobiography, short stories, novels, poetry, the oral tradition, and history.

Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 381: Advanced Analytic and Argumentative Writing

An intensive writing course, refining skills appropriate to upper-division work. Content varies: focus may be on analysis or various intellectual issues, rhetorical strategies, or compositional problems within or across disciplines. Frequent substantial writing projects are central to every version of the course. May be repeated as the topic changes. This course is offered as both EGL 381 and WRT 381.

Prerequisite: Completion of D.E.C. category A

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 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.

3 credits

EGL 385: Advanced Fiction Workshop

A fiction writing workshop. Students receive detailed criticism of their work. May be repeated with permission of the director of undergraduate studies.

Prerequisites: EGL 285; permission of instructor

3 credits

EGL 386: Advanced Poetry Workshop

A poetry writing workshop. Students receive detailed criticism of their work. May be repeated with permission of the director of undergraduate studies.

Prerequisites: EGL 286; permission of instructor

3 credits

EGL 387: Playwriting

A workshop devoted to planning and writing finished scripts for the stage. This course offered as both EGL 387 and THR 326.

Prerequisites: Completion of D.E.C. categories A, B, and D

3 credits

EGL 388: Interdisciplinary Topics

Course on English literary and cultural studies in connection with other disciplines. May be repeated as the topic changes.

Prerequisite: completion of DEC A

3 credits

EGL 389- H: Science Fiction

The literary genre called Science Fiction enables us to explore our nature, and that of the universe we inhabit, by postulating worlds, cultures and technologies that do not (yet) exist, but could, and the consequences thereof. This course focuses on the sub-genre called hard science fiction, in which the science/technology is more or less plausible. Students should be prepared to address the genre from both its scientific and literary sides. This course is offered as both AST 389 and EGL 389.

Prerequisites: Completion of D.E.C. A and D.E.C. B requirements; one D.E.C. E course

3 credits

EGL 390- G: Topics in Literary and Cultural Studies

Possible topics titles include Black Women's Literature and Literature and the Arts. Designed for upper-division students, this

course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 391- G: Topics in Literary and Cultural Studies

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 392- G: Topics in Literary and Cultural Studies

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 393- G: Topics in Literary and Cultural Studies

Possible topics titles include Black Women's Literature and Literature and the Arts. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied.

May be repeated for credit as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 394- H: Topics in Literary and Cultural Studies of Science and Technology

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

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

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 396- J: Topics in Literary and Cultural Studies in Asia, Africa, and Latin America

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 397- J: Topics in Literary and Cultural Studies in Asia, Africa, and Latin America

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 398- J: Topics in Literary and Cultural Studies in Asia, Africa, and Latin America

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 399- K: Topics in American Literary and Cultural Studies

Topics in U.S. literary and cultural studies, placed within a broad historical context, including social, political, economic, and cultural history and institutions. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

EGL 440: Performance and Technology in Teaching Literature and Composition

Introduction to the teaching of literature and composition through the use of classroom performance and technology, including film, video, and other media as well as computers and the Internet.

Prerequisite: C or higher in EGL 441; acceptance into the English Teacher Preparation Program
Corequisite: Equivalent section of EGL 450
 3 credits

EGL 441: Methods of Instruction in Literature and Composition

Consideration of specific problems in the teaching of English, e.g., posing questions about literary texts and commenting on student papers. There is frequent use of writing by secondary school students, and the goals of instruction in literature and language are examined. Required of students seeking certification in secondary school English.

Prerequisite: Admission to the English Teacher Preparation Program
Corequisite: Equivalent section of EGL 449
 3 credits

EGL 449: Field Experience, Grades 7-12

Observation, inquiry, and practice in English education at the secondary level including 50 hours of documented visitations and observation at documented sites. Field experience writing logs are the basis for group discussion. Satisfactory/Unsatisfactory grading.

Corequisite: Equivalent section of EGL 441
 1 credit, S/U grading

EGL 450: Field Experience, Grades 7-12

Observation, inquiry, and practice in English education at the secondary level including 50 hours of documented visitations and observation at documented sites. Field experience writing logs are the basis for group discussion. Satisfactory/Unsatisfactory grading.

1 credit, S/U grading

EGL 451: Supervised Student Teaching - English; Middle Level Grades 7-9

Prerequisites: Enrollment in English Teacher Preparation Program; permission of instructor
Corequisites: Equivalent sections of EGL 452 and 454

6 credits, S/U grading

EGL 452: Supervised Student Teaching - English; High School Grades 10-12

Prerequisites: Enrollment in English Teacher Preparation Program; permission of instructor
Corequisites: equivalent sections of EGL 451 and 454

6 credits, S/U grading

EGL 454: Student Teaching Seminar

Seminar on problems and issues of teaching English at the secondary school level. Analysis of actual responsibilities and issues encountered by the teacher candidate in the student teaching experience.

Prerequisite: C or higher in EGL 441
Corequisites: Equivalent sections of EGL 451 and 452
 3 credits

EGL 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisite: Upper-division standing; 12 credits in English; permission of instructor and director of undergraduate studies
 3 credits, S/U grading

EGL 476: Undergraduate Teaching Practicum II

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

Prerequisite: EGL 475; permission of instructor and director of undergraduate studies
 3 credits, S/U grading

EGL 487: Independent Project

Intensive study of a special topic undertaken with close faculty supervision. Request for project approval of undergraduate studies committee must be submitted no later than the last week of classes of the prior semester. May be repeated.

Prerequisites: Permission of instructor and director of undergraduate studies
 0-6 credits

EGL 488: Internship

Participation in local, state, and national public and private organization. The work

must involve skills related to the educational goals of the department. Request for approval of the undergraduate studies committee for internships must be submitted no later than the last week of classes of the prior semester.

Prerequisites: 12 credits of English; 2.50 g.p.a.; permission of instructor and department
 0-6 credits, S/U grading

EGL 490: Honors Seminar: Literary Studies

Honors seminar on a topic in literature and culture.

Prerequisite: Admission to English Honors Program; EGL 204
 3 credits

EGL 491: Honors Seminar: British Literature before 1800

Honors seminar on a topic in pre-1800 British literature and culture.

Prerequisite: Admission to English Honors Program; EGL 204
 3 credits

EGL 492: Honors Seminar: American Literature

Honors seminar on a topic in American literature and culture.

Prerequisite: Admission to English Honors Program; EGL 204
 3 credits

EGL 494: Honors Practicum: Research

Honors practicum for students interested in focusing on the development of research skills.

Prerequisite: Admission to English Honors Program; EGL 204
 3 credits, S/U grading

EGL 495: Honors Practicum for Writing Assistants

Honors practicum for students interested in focusing on the development of pedagogical skills centered on the teaching of writing.

Prerequisites: Admission to English Honors Program; EGL 204; 301
 3 credits

EGL 496: Senior Honors Project

Prerequisites: EGL 490; permission of department
 3 credits

EHI

Ecological Studies and Human Impact

EHI 310: Restoration Ecology

A study of the rationale, principles, practices, and legal, social, economic, and ethical issues associated with restoring the structure and function of degraded ecological systems. Restoration ecology draws heavily from ecological theory, and the process of restoring a site can in fact provide unique experimental opportunities to test how well ecological theories predict the responses of natural systems. Important ecological concepts applied in restoration include disturbances, succession, fragmentation, system function, as well as, emerging areas such as assembly theory and alternative stable states.

Prerequisite: MAT 125 or MAT 131; BIO 201
3 credits

EHI 311: Ecosystem Based Management

Ecosystem-Based Management (EBM) is an emerging management paradigm for balancing ecosystem health and human activities. EBM stresses that management must 1) integrate ecological, social, economic, and institutional views, 2) produce sustainable results, 3) consider uncertainty and risks in making management decisions, and 4) utilize adaptive management practices. This course will examine these principles and identify ways they may be put into practice.

Prerequisite: SBC 111 or ENS 101; BIO 201
3 credits

EHI 321: Human Reproductive Ecology

Course builds on behavioral ecology to focus on why humans make the reproductive choices they do and examines cross cultural and individual differences in fertility, mortality and population growth. Course is organized around current debates in physiological, behavioral, and social aspects of human reproduction. A background in reproductive ecology allows students to think empirically about the demographic component of human/environment interactions, and to better model sustainable futures.

Prerequisite: BIO 201; SBC 115 or SBC 204
3 credits

EHI 322: Human Ecology

Human ecology investigates how humans and human societies interact with nature and with their environment. Course first introduces the concepts and methods of human ecology. Following this foundation, the course will give special emphasis to empirical examples,

case studies and lessons from history. The course will focus on individuals, communities and traditional societies. Human Ecology compliments Human Geography, which studies patterning at the larger scale.

Prerequisite: SBC 116 or ANT 102; BIO 201
3 credits

EHI 326- E: Conservation Genetics

This course is an introduction to genetics taught in the context of conservation. The course will cover a basic introduction to Mendelian, molecular, population, evolutionary and meta-population genetics, and then examine specific applications of these concepts to topics in conservation biology.

Prerequisite: MAT 125 or MAT 131; BIO 201
3 credits

EHI 340- H: Ecological and Social Dimensions of Disease

The ecology and evolutionary biology of disease will be examined to provide a more general context for human diseases. Pathogens may have large effects on many different types of organisms, from bacteria to plants to humans. We will build on this biological background to examine the social dimensions of disease in human populations and societies, including historical, political and economic aspects to issues of money, power, sexuality, international development and globalization. Specific case studies (the chestnut blight in North America, AIDS in Africa, etc.) will be used to examine concepts and principles in detail in a real-world context. This course will investigate basic fundamentals and recent research on these issues in a unified framework.

Prerequisite: BIO 201
3 credits

EHI 342- H: Materials in the Natural and Human World

Course explores in depth the origin, composition, use, bioavailability, mobility, persistence, and fate of selected materials and chemical compounds. Compounds or materials, such as DDT, aldicarb, freon, plastics, organotin, nuclear fuel, antibiotics, and carbon nanotubes, are used to illustrate how man-made substances once released into the environment can lead to environmental degradation, ecological degradation, and/or public health issues.

Prerequisite: ENV 115 or CHE 131; BIO 201
3 credits

EHI 343- H: Sustainable Natural Resources

This course explores in depth the economic viability, social acceptance, and potential of sustainable natural resources to replace non-renewable resources. Examples are drawn from water resource management, agriculture, forestry, fisheries, and renewable energy resources (wind, solar, biofuel, etc.). There is particular emphasis on examples of integrated, participatory and sustainable natural resources management project in less developed countries.

Prerequisite: SBC 111 or ENS 101; ENV 115 or CHE 131; BIO 201
3 credits

EHI 487: Research in Ecosystems and Human Impact

Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.

1-6 credits, S/U grading

EHM

Environmental Humanities

EHM 118- E: Introduction to the Natural History of Long Island

This multi-disciplinary course focuses on the natural history of Long Island and the ecological analysis of local forests, salt marshes, marine intertidal systems and bogs. During field labs, students will become familiar with observation techniques and conceptual approaches used to investigate ecological patterns and processes in the local environment.

3 credits

EHM 201- D: Eco-Aesthetics in Art

Introduces the basic theoretical tools used to analyze and interpret works of fine art, environmental art, landscape architecture and architecture from an aesthetic perspective. Representative works of landscape painting (William Merritt Chase), environmental art (Robert Smithson), and landscape design (Frederick Law Olmstead) will be explored through formal lectures, class discussion and studios/site visits. Students will deconstruct the components of their surroundings and record their observations through the production of an artist's sketchbook. Emphasis will be placed on the multi-sensory examination of form, color, texture, and other principles and elements of art as they are manifested in these environments.

4 credits

EHM 310- K: Beyond Eden: Contact Narratives, Origins and Sin

This course surveys Pueblo, African, Spanish, British, and Shinnecock contributions to American literature from the 1500s through the 1900s. Students will extend their understanding of these diverse traditions by analyzing contemporary literature that addresses the themes of nature, origins and sin and by engaging in their own creative work. A final project will require students to examine one tradition in depth, to demonstrate understanding of theoretical approaches to literature, and to engage in historical research.

Prerequisite: WRT 102, SBC 203

3 credits

EHM 314- J: Civilizations and Collapse

A comparative study of the development and collapse of civilizations. Changing case studies drawn from prehistoric and historic societies in the Americas provide students with an in-depth understanding of the ways in which two non-Western cultures were affected by and attempted to cope with environmental change. Students will learn to think critically about these processes and will complete the course with an increased awareness of the diversity of human responses to climactic change.

Prerequisite: SBC 111 or ENS 101 or GEO 101 or ANT 104 or permission of instructor

3 credits

EHM 315: Ethnographic Field Methods

Ethnographic Field Methods will explore and apply the methodological tools used by anthropologists to gather and interpret data. Using classic ethnographic texts, students will study a variety of anthropological methods. Both qualitative and quantitative methods will be examined. Students will apply the methods studied in class to an independent research project throughout the semester.

Prerequisite: U3/U4 standing

Advisory Prerequisite: ANT 102

3 credits

EHM 320- G: Artists and Designers of the East End

Students trace the history of Long Island's East end artists and architects beginning with the work of Thomas Moran, Grosvenor Atterbury and William Merritt Chase through postwar artists Jackson Pollack and architect Richard Meier. Contemporary artists including Eric Fischl, April Gornick and Robert Wilson are studied and studio visits are made. Assignments center on primary research into the creative process through photo documentation and oral history.

Prerequisite: Completion of EHM 201-D or another DEC D course and U3 / U4 Standing

4 credits

EHM 330- J: The Household in Non-Western Society

This course offers a survey of vernacular architecture in Non-Western societies worldwide. Students examine the design and meaning of vernacular architecture in a variety of cultures, exploring the ways in which construction practices and architectural design are shaped by cultural requirements and social mores. Special attention will be given to the future of vernacular architecture, and the ways in which housing may be designed to be both sustainable and culturally appropriate.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: ANT 102, ANT 104, or ARH 205

3 credits

EHM 331- J: Precolumbian Urbanism

An examination of the development of Precolumbian cities throughout the Americas. Specific attention will be paid to the interaction of urban development and environment, as well as the ways in which culture and cosmology impact architectural design. In depth consideration will be given to urban architecture of specific cultural groups in North, Central, and South America.

Prerequisite: U3 or U4 standing

3 credits

EHM 487: Research in Environmental Humanities

Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.

1-6 credits, S/U grading

ENS

Environmental Studies

ENS 101- E: Prospects for Planet Earth

An introduction for non-science majors to global environmental change. Exploration of the natural science of Earth's environment; the scientific, socioeconomic, and political issues that influence human impact on the global environment and responses to environmental changes; the strategies for humans to live in greater harmony with planet Earth. Global issues are related to the particular issues of the United States, the Northeast, and the greater metropolitan New York City-Long Island area.

3 credits

ENS 119- E: Physics for Environmental Studies

The principles of physics as they apply to environmental issues. A review of mathematics is followed by a discussion of Newton's laws, conservation principles, topics in fluids and wave motion, optical instruments, and radioactivity. Three lectures and one laboratory session per week. This course is offered as both ENS 119 and PHY 119.

Prerequisites: MAT 123; CHE 131

4 credits

ENS 301- H: Contemporary Environmental Issues and Policies

The scientific, socioeconomic, legal and legislative aspects of current environmental issues and policies. Invited experts address current environmental issues and policies of local, regional and global significance. Topics may include: land use practices and reform, farmland and open space preservation; soil and water conservation; wetlands protection and rehabilitation; waste management and reduction, recycling and composting; air pollution, global warming and sea level rise; and marine wilderness areas.

Prerequisite: One of the following: GEO 101, MAR 104, ATM 102, or ENS 101

3 credits

ENS 311- H: Ecosystem Ecology and the Global Environment

Ecosystem ecology with an emphasis on biogeochemical cycling in oceans and on land, as well as on biosphere-atmosphere interactions. Topics include earth system processes such as climate and atmospheric composition, the hydrological cycle, cycling of chemicals such as nutrients and metals in the oceans, the soil cycle, and the fate and transport of materials in the atmosphere. Natural and perturbed systems are discussed. This course is offered as both BIO 386 and ENS 311.

Prerequisites: BIO 201; CHE 131 or 141

Advisory Prerequisite: MAR 104

3 credits

ENS 312- H: Population, Technology, and the Environment

A study of the biological, social, and economic factors that influence population growth. The development of new technologies and their influence on resource use and the effects that increasing population and changing technologies have on the environment are explored.

Prerequisites: MAR 340; one semester of BIO

3 credits

ENS 333: Environmental Law

Survey of the origins of environmental law and the major legislation enacted by Congress and the state of New York. Special emphasis is placed on the application of environmental law to the problem of solid waste management on Long Island. This course is offered as both ENS 333 and POL 333.

Prerequisites: ECO 108; POL 102

3 credits

ENS 380- H: 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 conserved it from pre-colonial times to the present. Students will examine changes in attitudes and behaviors toward nature and the interplay between environment 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.

Prerequisite: U3 or U4 standing

4 credits

ENS 395: Topics in Environmental Sciences

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

Prerequisite: one upper division ENS course

3 credits

ENS 443: Environmental Problem Solving

The integration of information and skills from the natural sciences, social sciences, engineering and the humanities to address important environmental problems. An environmental problem of current interest is presented. Working in small groups, students develop a proposal to solve the problem, collect and analyze data, and present results. Data collection may include field and laboratory work outside of scheduled class meetings.

Prerequisites: U3 or U4 standing; ENS major or minor

2 credits

ENS 447: Readings in Environmental Studies

Tutorial readings in the environmental sciences. This course may be repeated but no more than 3 credits may be used toward Environmental Studies major requirements.

Prerequisite: Permission of instructor and SoMAS undergraduate director

1-3 credits, S/U grading

ENS 487: Independent Research in Environmental Studies

An independent project, developed out of advanced coursework in environmental studies, designed in consultation with and supervised by a faculty member. The project should be formulated before the start of the semester in which the research will be done and should culminate in a substantial written paper. May be repeated.

Prerequisites: Permission of a supervising faculty member and SoMAS Undergraduate Programs Director

0-6 credits

ENS 488: Internship in Environmental Studies

Internships provide students with an opportunity of gaining experience working in the community at government agencies, environmental groups, aquaria, summer camps, field studies, etc. A suitable proposal must be presented by the student and approved by the Director of Undergraduate Studies before the internship begins. May be repeated for a maximum of 6 credits for the ENS major, 3 credits for the ENS minor.

Prerequisite: Permission of the SoMAS Undergraduate Programs Director

0-6 credits, S/U grading

ENV

Environmental Science

ENV 115- E: Chemistry, Life, and Environment

This survey course introduces chemical principles by emphasizing the role chemistry plays in everyday life, the natural environment, the built environment, energy production, and in processes leading to environmental degradation. In addition, the role of chemistry in the development of alternative energy sources, remediation technologies, and eco-friendly products is discussed. This course for non-science majors introduces chemical principles using mostly qualitative approaches

rather than quantitative approaches. Interactive tools and interactive visualization tools are extensively used to illustrate concepts, reactions, and processes. This course is offered as both CHE 115 and ENV 115.

3 credits

ENV 304- H: Global Environmental Change

An analysis of the physical, chemical, and biological processes in the atmosphere, hydrosphere, lithosphere, and biosphere that are susceptible to change either from natural or anthropogenic causes. In addition to focusing on the processes, this course will examine the spatial/temporal scales of environmental changes, their consequences to systems including our economic, political, and social systems, and will consider our responsibility and capability in managing systems in a sustainable way. This course is offered as both ENV 304 and GEO 307.

Prerequisites: SBC 111, or SBC 113, or ENS 101, or GEO 101, or GEO 102; ENV 115 or CHE 131

3 credits

ENV 315: Principles and Applications of Groundwater Hydrology

Principles of groundwater hydrology. Aquifer geology, with an emphasis on coastal ground water systems and Long Island in particular. Introduction to quantitative numerical methods to simulate regional groundwater flow and contaminant transport in aquifers. Development and management of freshwater aquifers as drinking water resources.

Prerequisite: MAT 126 or MAT 131; ENS 119; SBC 113 and SBC 114

3 credits

ENV 316: Coastal Zone Management

Coastal zones are dynamic environments shaped by natural forces as well as human intervention. Developing management strategies is critical and requires an understanding of the coastal zones environments, the threats to these environments, as well as the applicable laws and policies. This course examines past and present coastal zone management strategies at the national, regional, and local level. Coastal zone management on Long Island will be extensively reviewed and discussed.

Prerequisite: ENS 101, SBC 113, POL 102, or MAR 104

3 credits

ENV 317: Ecology of Algae and Plants of Coastal Plains Freshwater Habitats

An introduction to the ecology of algae and aquatic plants of Long Island's freshwater habitats. Specific focus is on the lakes and ponds, rivers and streams, and wetlands (bogs, swamps, and marshes) of the coastal plains. Emphasis is on natural ecology, biodiversity, and water quality. Subject matter includes the major functional groups of algae and aquatic plants, taxonomic identification skills, aquatic field and lab methods, water quality analyses, and data analysis.

Prerequisite: BIO 201 and CHE 131 or ENV 115, or permission by instructor

3 credits

ENV 320: Chemistry for Environmental Scientists

Course designed to provide a firm understanding of the chemical principals and reactions of importance in environmental degradation of natural environments or built environments, remediation and abatement processes, energy production. In addition, the course reviews the chemical processes that control the transport, fate, and bioavailability of common organic pollutants, metals, and metalloids. The course expands on concepts from general chemistry, and introduces concepts from physical chemistry, analytical chemistry, organic chemistry, photochemistry, and geochemistry. Not for credit in addition to CHE 310.

Prerequisite: CHE 131 and CHE 132

3 credits

ENV 321: Chemistry for Environmental Scientists-Lab

Laboratory course is designed to illustrate principles, processes, and reactions presented in ENV 320. In addition, the laboratory will focus on the quantitative analysis and identification of common chemical pollutants, including common volatile and semi-volatile organics, metals and metalloids. Some of the laboratory meetings will be in the form of short field trips to practice sampling techniques as well as in situ and on site analysis techniques.

Pre- or corequisite: ENV 320

1 credit

ENV 340: Contemporary Topics in Environmental Science

Course explores one or more contemporary environmental science topics in depth. Topic(s) vary by semester. Examples of topics include: formation and fate of Asian Brown Cloud; Arsenic in Drinking water; Acid Rain; Environmental issues related to mining; Environmental impact of burning and

mining coal; Pesticides and Herbicides in the Environment. Course may be repeated once.

Prerequisite: U3/U4; ENV 115 or CHE 131
3 credits

ENV 405: Field Camp

A field course in environmental science of closely related field that may be taken at any one of several approved university programs. Student should plan in consultation with Undergraduate Program Director.

Prerequisite: U3/U4 standing

1-6 credits, S/U grading

ENV 447: Readings in Environmental Sciences

Tutorial readings in the environmental science. May be repeated.

1-2 credits, S/U grading

ENV 487: Research in Environmental Sciences

Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.

0-6 credits, S/U grading

ESE

Electrical Engineering

ESE 123: Introduction to Electrical and Computer Engineering

Introduces basic electrical and computer engineering concepts in a dual approach that includes: laboratories for hands-on wired and computer simulation experiments in analog and logic circuits, and lectures providing concepts and theory relevant to the laboratories. Emphasizes physical insight and applications rather than theory.

Pre- or Corequisites: AMS 151 or MAT 125 or 131 or 141; PHY 125 or 131 or 141

4 credits

ESE 124: Computer Techniques for Electronic Design I

An extensive introduction to problem solving in electrical engineering using the ANSI C language. Topics covered include data types, operations, control flow, functions, data files, numerical techniques, pointers, structures, and bit operations. Students gain experience in applying the C language to the solution of a variety of electrical engineering problems, based on concepts developed in ESE 123. Knowledge of C at the level presented in this

course is expected of all electrical engineering students in subsequent courses in the major.

Pre- or Corequisites: AMS 151 or MAT 125 or 131 or 141; ESE 123 or equivalent

3 credits

ESE 201: Engineering and Technology Entrepreneurship

The purpose of this course is to bridge the gap between technical competence and entrepreneurial proficiency. Students are not expected to have any formal business background, but have some background in a technical field. These fields can range from the engineering disciplines to computer science, and from biology and chemistry to medicine. Accordingly, the course will provide the necessary exposure to the fundamentals of business, while minimizing the use of business school jargon. Entrepreneurship is considered as a manageable process built around innovativeness, risk-taking and proactiveness. The course focuses on ventures where the business concept is built around either a significant technical advance in an operational process, or in the application of technology to create a new product or service.

Prerequisite: BME 100 or CME 101 or ESG 100 or ESE 123 or MEC 101 or EST 192 or EST 194 or EST 202 or LSE 320

3 credits

ESE 211: Electronics Laboratory A

Introduction to the measurement of electrical quantities; instrumentation; basic circuits, their operation and applications; electronic devices; amplifiers, oscillators, power supplies, wave-shaping circuits, and basic switching circuits.

Prerequisite: ESE 271

Corequisite: ESE 372

2 credits

ESE 218: Digital Systems Design

Develops methods of analysis and design of both combinational and sequential systems regarding digital circuits as functional blocks. Utilizes demonstrations and laboratory projects consisting of building hardware on breadboards and simulation of design using CAD tools. Topics include: number systems and codes; switching algebra and switching functions; standard combinational modules and arithmetic circuits; realization of switching functions; latches and flip-flops; standard sequential modules; memory, combinational, and sequential PLDs and their applications; design of system controllers.

Prerequisite or Corequisite: PHY 127 or 132/134 or 142 or ESE 124

4 credits

ESE 224: Computer Techniques for Electronic Design II

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

Prerequisite: ESE 124

3 credits

ESE 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 132/134 or 142

3 credits

ESE 271: Electrical Circuit Analysis I

Kirchoff's Laws, Ohm's Law, nodal and mesh analysis for electric circuits, capacitors, inductors, and steady-state AC; transient analysis using Laplace Transform. Fundamentals of AC power, coupled inductors, and two-ports.

Prerequisites: AMS 161 or MAT 127 or 132 or 142 or 171; PHY 127 or 132/134 or 142

4 credits

ESE 290: Transitional Study

A vehicle used for transfer students to remedy discrepancies between a Stony Brook course and a course taken at another institution. For example, it allows the student to take the laboratory portion of a course for which he or she has had the theoretical portion elsewhere. Open elective credit only.

Prerequisite: Permission of department

1-3 credits

ESE 300: Technical Communication for Electrical and Computer Engineers

Topics include how technical writing differ from other forms of writing, the components of technical writing, technical style, report writing, technical definitions, proposal writing, writing by group or team, instructions and manuals, transmittal letters, memoranda, abstracts and summaries, proper methods of

documentation, presentations and briefings, and analysis of published engineering writing. Also covered are the writing of resumes and cover letters.

Prerequisite: WRT 102; ESE or ECE major, U3 standing;

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

3 credits

ESE 301- H: Engineering Ethics and Societal Impact

The study of ethical issues facing engineers and engineering related organizations and the societal impact of technology. Decisions involving moral conduct, character, ideals and relationships of people and organizations involved in technology. the interaction of engineers, their technology, the society and the environment is examined using case studies.

Prerequisites: U3 or U4 standing, one D.E.C. category E course

3 credits

ESE 304: Applications of Operational Amplifiers

Design of electronic instrumentation: structure of basic measurement systems, transducers, analysis and characteristics of operational amplifiers, analog signal conditioning with operational amplifiers, sampling, multiplexing, A/D and D/A conversion; digital signal conditioning, data input and display, and automated measurement systems. Application of measurement systems to pollution and to biomedical and industrial monitoring is considered.

Prerequisite: ESE 372

3 credits

ESE 305: Deterministic Signals and Systems

Introduction to signals and systems. Manipulation of simple analog and digital signals. Relationship between frequencies of analog signals and their sampled sequences. Sampling theorem. Concepts of linearity, time-invariance, causality in systems. Convolution integral and summation; FIR and IIR digital filters. Differential and difference equations. Laplace transform, Z-transform, Fourier series and Fourier transform. Stability, frequency response and filtering. Provides general background for subsequent courses in control, communication, electronics, and digital signal processing.

Pre- or Corequisite: ESE 271

3 credits

ESE 306: Random Signals and Systems

Random experiments and events; random variables, probability distribution and density functions, continuous and discrete random processes; Binomial, Bernoulli, Poisson, and Gaussian processes; system reliability; Markov chains; elements of queuing theory; detection of signals in noise; estimation of signal parameters; properties and application of auto-correlation and cross-correlation functions; power spectral density; response of linear systems to random inputs.

Pre- or Corequisite: ESE 305

4 credits

ESE 307: Analog Filter Design

Introduces basic concepts of analog filter theory and implementation. Topics include: filter types; transfer functions; Bode plots; implementation of first- and second-order filters using op amps, maximally flat, and equal-ripple filters; frequency transformations; LC ladders; transconductance-C realizations; switched capacitor circuits; and filter sensitivity.

Prerequisites: ESE 305 and 372

3 credits

ESE 310: Electrical Circuit Analysis II

Network elements, graph theory, linear network analysis; fundamental loops and cutsets, matrix solutions, nonlinear network analysis; state variables, small and large signal analysis, numerical methods.

Prerequisite: ESE 271

3 credits

ESE 311: Analog Integrated Circuits

Engineering design concepts applied to electronic circuits. Basic network concepts, computational analysis and design techniques: models of electronic devices; biasing and compensation methods; amplifiers and filters designed by conventional and computer-aided techniques.

Prerequisite: ESE 372

3 credits

ESE 314: Electronics Laboratory B

Laboratory course on design and operation of basic building blocks of electronics. The course is coordinated with, and illustrates and expands upon, concepts presented in ESE 372. Emphasis is given to design solutions more relevant to integrated rather than to discrete element electronics. Field effect transistors are given special attention due to their importance in contemporary analog and digital IC. Frequency responses of the basic amplifiers and active filters are analyzed. Internal structure and fundamental

performance limitations of digital inverter and other gates are studied.

Prerequisites: ESE 211 and 372

3 credits

ESE 315: Control System Design

Analysis and design of linear control systems. Control components, development of block diagrams. Computer simulation of control systems and op-amp circuit implementation of compensators. Physical constraints in the design. Pole-placement and model matching design using linear algebraic method. Selection of models using computer simulation and quadratic optimal method. Root-locus method and Bode plot method. Use of PID controllers in practice.

Prerequisite: ESE 271

3 credits

ESE 319: Electromagnetics and Transmission Line Theory

Fundamental aspects of electromagnetics wave propagation and radiation, with application to the design of high speed digital circuits and communications systems. Topics include: solutions of Maxwell's equations for characterization of EM wave propagation in unbounded and lossy media; radiation of EM energy; guided wave propagation with emphasis on transmission lines theory.

Prerequisite: ESE 271

3 credits

ESE 321: Electromagnetic Waves and Wireless Communication

Covers the wireless radio signal environment; electromagnetic wave propagation in free space and in other media; effects of reflection, scattering, diffraction, and multi-path interference on the characteristics and quality of the received signal; cellular wireless network planning; efficient use and reuse of assigned radio frequency spectrum; effects of transmitting and receiving antenna design; introduction of basic wireless communication techniques to achieve reliable communication.

Prerequisite: ESE 319

3 credits

ESE 322: Introduction to Auto ID Technologies

Introduces theory and application of important data-capture technologies namely barcodes, biometrics and RFID. Topics to be covered include: architecture of data-capture / Auto ID systems, barcodes; overview of 1-D and 2-D barcodes and other LOS technologies biometrics; fingerprints, iris-scan, voice recognition and smart-cards; radio frequency

identification (RFID); fundamentals, near-field vs. far field, UHF read range estimation, reader sensitivity limits, tag singulation and multiple access protocols, standards, privacy and security issues in RFID, real time location systems (RTLS).

Prerequisites: ESE 218, 305, and 372;

Corequisite: ESE 319

3 credits

ESE 323: RFID Technology for Automatic Identification

This course covers the analysis and design of RFID technologies for automatic identification. Included are the theory of operation, analysis of RFID system components, passive and active tags, frequencies used, air interfaces, coding structures, antenna design, and regulatory compliance.

Prerequisite: ESE 319

3 credits

ESE 324: Electronics Laboratory C

Illustrates and expands upon advanced concepts presented in ESE 372. Experiments include multistage amplifiers, class B and class C power amplifiers, speech processing, active RC and switched-capacitor filters, oscillators, and switching power supplies. Laboratory fee required.

Prerequisites: ESE or ECE major; U3 standing; ESE 211 and 372

2 credits

ESE 325: Modern Sensors

The course focuses on the underlying physics principles, design, and practical implementation of sensors and transducers including piezoelectric, acoustic, inertial, pressure, position, flow, capacitive, magnetic, optical, and bioelectric sensors. Established as well as novel sensor technologies as well as problems of interfacing various sensors with electronics are discussed.

Prerequisite: ESE 372

3 credits

ESE 330: Integrated Electronics

An overview of the design and fabrication of integrated circuits. Topics include gate-level and transistor-level design; fabrication material and processes; layout of circuits; automated design tools. This material is directly applicable to industrial IC design and provides a strong background for more advanced courses.

Prerequisite: ESE 372

3 credits

ESE 332: Semiconductor Device Characterization

Basic experimental experience in characterization of microelectronic and optoelectronic semiconductor devices including diodes, transistors, light emitting diodes, lasers, and photodetectors. Measurement of I-V and L-I (light-current) device characteristics; practice in the techniques of determining various device parameters; analysis of aggregate experimental data to determine the relationships between device and output characteristics, device band diagrams, and device designs. Includes study of modern methods of silicon and compound semiconductor devices and systems technologies.

Prerequisite: ESE 372

3 credits

ESE 333: Real-Time Operating Systems

Introduces basic concepts and principles of real-time operating systems. Topics include structure, multiple processes, interprocess communication, real-time process scheduling, memory management, virtual memory, file system design, security, protection, and programming environments for real-time systems.

Prerequisites: ESE 124; CSE 214; ESE 380 or CSE 220

3 credits

ESE 337: Digital Signal Processing: Theory

Introduces digital signal processing theory sequences, discrete-time convolution, difference equations, sampling and reconstruction of signals, one- and two-sided Z-transforms, transfer functions, and frequency response. Design of FIR and IIR filters. Discrete and fast Fourier transforms and applications.

Prerequisite: ESE 305

3 credits

ESE 340: Basic Communication Theory

Basic concepts in both analog and digital data communications; signals, spectra, and linear networks; Fourier transforms, energy and power spectra, and filtering; AM, FM, and PM; time and frequency multiplexing; discussion of problems encountered in practice; noise and bandwidth considerations; pulse modulation schemes.

Prerequisites: ESE 305 and 306

3 credits

ESE 341: Introduction to Wireless and Cellular Communication

Basic concepts of wireless cellular communications, radio frequency, spectrum reuse, radio channel characterization, path loss and fading, multiple access techniques, spread spectrum systems, channel coding, specific examples of cellular communication systems.

Prerequisite: ESE 340

3 credits

ESE 342: Digital Communications Systems

Pulse modulation and sampling. All-digital networks. Pulse code modulation. Digital modulation techniques. Time-division multiplexing. Baseband signaling. Intersymbol interference. Equalization. Basic error control coding. Exchange of reliability for rate. ARQ schemes. Message and circuit switching.

Prerequisite: ESE 340

3 credits

ESE 344: Software Techniques for Engineers

Trains students to use computer systems to solve engineering problems. Includes C/C++ programming languages, UNIX programming environment, basic data structures and algorithms, and object oriented programming.

Prerequisites: ESE 218; CSE 230 or ESE 224

3 credits

ESE 345: Computer Architecture

Starts with functional components at the level of registers, buses, arithmetic, and memory chips, and then uses a register transfer language to manipulate these in the design of hardware systems up to the level of complete computers. Specific topics included are microprogrammed control, user-level instruction sets, I/O systems and device interfaces, control of memory hierarchies, and parallel processing organizations.

Prerequisites for CSE majors: CSE 220 and ESE 218

Prerequisite for ESE and ECE majors: ESE 380

3 credits

ESE 346: Computer Communications

Basic principles of computer communications. Introduction to performance evaluation of protocols. Protocols covered include those for local, metropolitan, and wide area networks. Introduction to routing, high speed packet switching, circuit switching, and optical data transport. Other topics include TCP/IP, Internet, web server design, network security, and grid computing. Not for credit in addition

to CSE/ISE 310. This course is offered as both CSE 346 and ESE 346.

Pre- or corequisite for ESE and ECE majors: ESE 306

Pre- or corequisite for CSE majors: AMS 310 or 311

3 credits

ESE 347: Digital Signal Processing: Implementation

Fundamental techniques for implementing standard signal-processing algorithms on dedicated digital signal-processing chips. Includes a review of discrete-time systems, sampling and reconstruction, FIR and IIR filter design, FFT, architecture and assembly language of a basic signal processing chip, and an introduction to adaptive filtering.

Prerequisites: ESE 337, or ESE 305 and 380

4 credits

ESE 350: Electrical Power Systems

Fundamental engineering theory for the design and operation of an electric power system. Modern aspects of generation, transmission, and distribution are considered with appropriate inspection trips to examine examples of these facilities. The relationship between the facilities and their influence on our environment is reviewed. Topics include power system fundamentals, characteristics of transmission lines, generalized circuit constants, transformers, control of power flow and of voltage, per unit system of computation, system stability, and extra-high voltage AC and DC transmission.

Prerequisite: ESE 271

3 credits

ESE 352: Electromechanical Energy Converters

Basic principles of energy conversion; DC, induction, and synchronous rotary converters; the three-phase system and symmetrical components; the relationships between voltage, current, flux, and m.m.f.; equivalent circuits and operating characteristics of rotary converters; and analysis of saturation effects.

Prerequisite: ESE 372

3 credits

ESE 355: VLSI System Design

Introduces techniques and tools for scalable VLSI design and analysis. Emphasis is on physical design and on performance analysis. Includes extensive laboratory experiments and hands-on use of CAD tools.

Prerequisite: ESE 218

4 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 357: Digital Image Processing

Covers digital fundamentals, image transforms, image enhancement, image restoration, image compression, segmentation, representation and description, recognition and interpretation.

Prerequisites for ESE and ECE majors: ESE 305; ESE 224 or CSE 230

Prerequisites for CSE majors: CSE 214 and 220

3 credits

ESE 358: Computer Vision

Introduces fundamental concepts, algorithms, and computational techniques in visual information processing. Covers image formation, image sensing, binary image analysis, image segmentation, Fourier image analysis, edge detection, reflectance map, photometric stereo, basic photogrammetry, stereo, pattern classification, extended Gaussian images, and the study of human visual system from an information processing point of view.

Prerequisites for ESE and ECE majors: ESE 305; ESE 224 or CSE 230

Prerequisites for CSE majors: CSE 214 and 220

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 hardware working with software. Topics include encryption, public key cryptography, authentication, intrusion detection, digital rights management, firewalls, trusted computing, encrypted computing, intruders and viruses. Not for credit in addition to CSE 408.

Prerequisite: ESE/CSE 346 or CSE/ISE 310

3 credits

ESE 363: Fiber Optic Communications

Design of single and multi-wavelength fiber optic communications systems. Topics include analysis of optical fibers, optical transmitters and receiver design, optical link design, single-wavelength fiber optic networks with analysis of FDDI and SONET/SDH, and wavelength division multiplexing.

Prerequisite: ESE 372

4 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 and ESE 372; ESE 224 or CSE 230

4 credits

ESE 372: Electronics

The pertinent elements of solid-state physics and circuit theory are reviewed and applied to the study of electronic devices and circuits, including junction diodes, transistors, and gate and electronic switches; large- and small-signal analysis of amplifiers; amplifier frequency response; and rectifiers and wave-shaping circuits.

Prerequisite: ESE 271

Coresquisite for ESE and ECE majors: ESE 211

4 credits

ESE 373: RF Electronics for Wireless Communications

Introduces basic concepts and key circuits of radio-frequency systems. Taught within the design and construction of a transceiver for wireless communications, the course covers fundamental principles which apply to all radio devices. Essential theoretical background, with additional emphasis on practical implementation using commercially-available integrated circuits for double-balanced mixers, oscillators, and audio power amplifiers. Basic components and circuits; key elements of radio electronics, including filters, matching networks, amplifiers, oscillators, mixers, modulators, detectors, and antennae. Computer simulation via Pspice and Puff is emphasized as an integral part of the design process.

Prerequisite: ESE 372

3 credits

ESE 380: Embedded Microprocessor Systems Design I

Fundamental concepts and techniques for designing electronic systems that contain a microprocessor or microcontroller as a key component. Topics include system level architecture, microprocessors, ROM, RAM, I/O subsystems, address decoding, PLDs and programmable peripheral ICs, assembly language programming and debugging. Hardware-software trade-offs in implementation of functions are considered. Hardware and software design are emphasized equally. Laboratory work involves design, implementation, and testing of microprocessor controlled circuits.

Prerequisite: ESE 218

4 credits

ESE 381: Embedded Microprocessor Systems Design II

A continuation of ESE 380. The entire system design cycle, including requirements definition and system specifications, is covered. Topics include real-time requirements, timing, interrupt driven systems, analog data conversion, multi-module and multi-language systems. The interface between high-level language and assembly language is covered. A complete system is designed and prototyped in the laboratory.

Prerequisites: ESE 271 and 380

4 credits

ESE 382: Digital Design Using VHDL and PLDs

Digital system design using the hardware description language VHDL and system implementation using complex programmable logic devices (CPLDs) and field programmable gate arrays (FPGAs). Topics include design methodology, VHDL syntax, entities, architectures, testbenches, subprograms, packages, and libraries. Architecture and characteristics of PLDs and FPGAs are studied. Laboratory work involves writing the VHDL descriptions and testbenches for designs, compiling, and functionally stimulating the designs, fitting and timing simulation of the fitted designs, and programming the designs into a CPLD or FPGA and bench testing.

Prerequisite: ESE 218

4 credits

ESE 440: Engineering Design I

Lectures by faculty and visitors on typical design problems encountered in engineering practice. During this semester each student will

choose a senior design project for Engineering Design II. A preliminary design report is required. Not counted as a technical elective. Laboratory fee required.

Prerequisites: ESE or ECE major, U4 standing; two ESE technical electives (excluding ESE 390 and 499); ESE 300. Students may need additional prerequisites depending on the design project undertaken.

3 credits

ESE 441: Engineering Design II

Student groups carry out the detailed design of the senior projects chosen during the first semester. A comprehensive technical report of the project and an oral presentation are required. Not counted as a technical elective. Laboratory fee required.

Prerequisite: ESE 440

3 credits

ESE 475: Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.

Prerequisites: U4 standing; a minimum g.p.a. of 3.00 in all Stony Brook courses, and a grade of B or better in the course in which the student is to assist; permission of department.

3 credits

ESE 476: Instructional Laboratory Development Practicum

Students work closely with a faculty advisor and staff in developing new laboratory experiments for scheduled laboratory courses in electrical and computer engineering. A comprehensive technical report and the instructional materials developed must be submitted at the end of the course. May be used as a technical elective for electrical and computer engineering majors. May be repeated as an open elective.

Prerequisites: U4 standing; minimum cumulative g.p.a. of 3.0 and minimum grade of A- in the course for which the students will develop material; permission of department and instructor

3 credits

ESE 488: Internship in Electrical/ Computer Engineering

An independent off-campus engineering project with faculty supervision. May be repeated but only three credits of internship

electives may be counted toward the non-ESE technical elective requirement.

Prerequisites: ECE or ESE major; U3 or U4 standing; 3.00 g.p.a. minimum in all engineering courses; permission of department
3 credits

ESE 499: Research in Electrical Sciences

An independent research project with faculty supervision. Permission to register requires a 3.00 g.p.a. in all engineering courses and the agreement of a faculty member to supervise the research. May be repeated but only three credits of research electives (AMS 487, BME 499, CSE 487, MEC 499, ESM 499, EST 499, ISE 487) may be counted toward non-ESE technical elective requirements.

Requirements: U4 standing, 3.00 g.p.a. minimum in all engineering courses, permission of department

0-3 credits

ESG

Engineering Science

ESG 100: Introduction to Engineering Science

An overview of the development and application of engineering principles in response to social, industrial, and environmental problems from ancient times to the present. Engineering methods and theory through case studies and real-world applications. Creativity and problem solving techniques of modern engineering through participation in a design project as well as learning through analyses of engineering disasters.

3 credits

ESG 111: C Programming for Engineers

Introduces computer programming techniques for engineering students who are not planning to take advanced computer science courses. Students learn C programming language as applied to various scientific and engineering problems. Includes advanced simulation packages such as Labview to introduce computer control of experimental systems. Not intended for students who have completed a C programming course.

Pre- or Corequisites: AMS 151 or MAT 125 or 131 or 141; PHY 125 or 131/133 or 141

3 credits

ESG 198: Fundamentals of Engineering Chemistry

A quantitative introduction to chemistry (stoichiometry, bonding, states of matter, equilibrium) with emphasis on topics of interest to students in engineering (metals and semiconductors; thermochemistry; electrochemistry and corrosion; polymers). Labs include an introduction to analytical techniques, electrochemistry and chemical synthesis. Both quantitative and qualitative methods are emphasized. May not be taken for credit in addition to CHE 131/133, 141/143 or 198/199.

Pre- or Corequisites: PHY 132 or PHY 142 or PHY 126 and PHY 127; MAT 127 or MAT 132 or MAT 142 or AMS 161

4 credits

ESG 199: Introduction to Undergraduate Research

An introduction to independent research and basic research skills. Students perform an independent research project in engineering science under the supervision of a faculty member. May be repeated.

Prerequisite: Permission of instructor

0-3 credits

ESG 201- H: Learning from Disasters

The role of the engineer is to respond to a need by building or creating something along a certain set of guidelines (or specifications) which performs a given function. Just as importantly, that device, plan or creation should perform its function without fail. Everything, however, does eventually fail and, in some cases, fails with catastrophic results. Through discussion and analysis of engineering disasters from nuclear meltdowns to lost spacecraft to stock market crashes, this course will focus on how modern engineers learn from their mistakes in order to create designs that decrease the chance and severity of failure.

Prerequisite: One D.E.C. category E course

3 credits

ESG 217: Engineering Science Design I

An introduction to the philosophy of engineering design, emphasizing the integration of problem-solving techniques with choices of available technology and materials in order to respond to a particular human need. Engineering ethics are also examined from both historical and decision-making perspectives. Basic science of design, including system viability and project management, is discussed through examples, flowcharts, and optimization techniques with an emphasis on design for manufacturing and reliability.

3 credits

ESG 281: Engineering Introduction to the Solid State

A discussion of relativity followed by review of the atom and its constituents. Lectures treat the quantization of light and of atomic energy levels, matter waves, and introduce the Schrodinger equation, first in one dimension, then in three dimensions. Electron spin and magnetic effects are discussed, followed by multielectron atoms and the periodic table. Radiation and lasers, molecules and solids, including conductors, semiconductors, and insulators.

Prerequisite: PHY 132/134 or 142 or 126/127

4 credits

ESG 300: Writing in Engineering Science

See Requirements for the Major in Engineering Science, Upper-Division Writing Requirement.

Prerequisites: WRT 102; ESG major; U2 standing

Corequisite: ESG 312

S/U grading

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 100 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 or CHE 131/132/133 and AMS 161

Advisory Prerequisite: AMS 261

4 credits

ESG 312: Engineering Laboratory

Laboratory exercises and lectures covering the theory, practice, and design of engineering experimentation. The course has three components: error analysis and data message; electrical circuits and experiment control; and mechanical and optical measurement. Laboratory fee required.

Prerequisites: PHY 126 and 127 or PHY 132/134; U2 standing
Corequisite: ESG 300

3 credits

ESG 316: Engineering Science Design II: Methods

Design and design-planning methods are developed from the conceptual stages through the application stages using lecture and laboratory. Includes synthesis, optimization, modeling, and simulation and systems engineering. Case studies illustrate the design process. Students undertake a number of laboratory projects employing various design tools. Laboratory fee required.

Prerequisites: ESG major; U2 standing or higher; ESG 217; AMS 161 or MAT 127 or MAT 132 or MAT 142 or MAT 171

4 credits

ESG 320: Sensor Materials and Devices

Presents sensors 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 multicomponent systems are developed. These principles are applied to the control of the properties of semiconductors, commercial plastics, and engineering alloys by thermochemical treatment. Corrosion, oxidation, and other deterioration processes are interpreted through the interaction of materials with their environment.

Prerequisites: CHE 131 or CHE 141 or ESG 198 and ESG 302 or PHY 306 or CME 304 or CHE 353 (or Mechanical Engineering majors may use MEC 301 as a corequisite)

4 credits

ESG 333: Materials Science II: Electronic Properties

After a review of quantum mechanics and atomic physics, the binding energy and electronic energy levels in molecules and solids are discussed. The free-electron theory of metals is introduced and applied to the quantitative treatment of a number of electron emission effects. The band theory of solids is developed quantitatively via the Kronig-Penney model, and the transport properties of metals and semiconductors are discussed in detail. The physical principle of pn junctions, transistors, tunnel diodes, etc. is explained. Fundamentals and applications of photoconductors, lasers, magnetic materials, and superconductors are also discussed. (ESG 332 is not a prerequisite.)

Prerequisites: ESG 281 or PHY 251; ESG 302 or CME 304

4 credits

ESG 339: Thin Film Processing of Advanced Materials

Fundamental aspects of thin film materials design, fabrication, and characterization. Overviews of semiconductor fabrication, surface analysis, and vacuum system design. This course includes a design content of one credit, achieved through a design exercise related to thin film fabrication.

Prerequisite: ESG 332, or ESE 331 for ESE majors

4 credits

ESG 375: Fundamentals of Professional Engineering

The course provides an overview of professional licensure and focuses on the general fundamentals of the engineering exam. Students take a practice exam for both the general exam and in-depth general exam option and review the results.

Prerequisite: U3 or U4 standing

1 credit

ESG 440: Engineering Science Design III

Lectures by faculty members and visitors on typical design problems encountered in engineering practice. During this semester each student chooses a senior design project. A preliminary design report is required. Not counted as a technical elective. Laboratory fee required.

Prerequisites: ESG 316; ESG major; U4 standing; permission of the department

3 credits

ESG 441: Engineering Science Design IV

Student groups carry out the detailed design of the senior projects chosen during the first semester. A final and detailed design report is prepared. Not counted as a technical elective. Laboratory fee required.

Prerequisite: ESG 440

3 credits

ESG 487: Cooperative Research in Technological Solutions

An independent research course in which students apply principles of engineering design, technological problem solving, mathematical analysis, computer-assisted engineering, and effective teamwork and communication to develop solutions for a need in a governmental, educational, non-profit, or community organization in a multidisciplinary setting.

Prerequisites: U3 or U4 standing; an abstract of the project; permission of instructor

0-3 credits

ESL English as Second Language

ESL 191: Intermediate Oral/Aural Skills

Students improve skills necessary for speaking and understanding English with special emphasis on developing communication capabilities. Class work includes pronunciation modification, presentation skills and cultural awareness in the classroom. Language and listening laboratories required. A diagnostic test during the first week of classes determines placement in the course.

3 credits

ESL 192: Intermediate Composition

A course for students who have attained a degree of fluency in speaking English but need additional training in reading and writing

skills. Beginning with basic sentence patterns and working toward paragraph development and eventually essays, each student has the opportunity to practice many different varieties of writing. May be repeated but counts only once toward graduation. Writing placement score determines placement in the course. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used.

Prerequisite: A score of 1 on the writing assessment.

3 credits, ABC/U grading

ESL 193: Advanced Composition

Advanced training in writing for ESL students who need to concentrate on paragraph and essay development. The course deals with the development of a variety of essay genres, including the personal narrative, summary/response and argumentation/persuasion. Key grammar points are reviewed and are expected to be mastered. May be repeated but counts only once toward graduation. Writing placement score or successful completion of ESL 192 determines placement in the course. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used.

Prerequisite: A score of 2 on the writing assessment or successful completion of ESL 192.

3 credits, ABC/U grading

ESL 194: Academic English Skills for U.S. Residents

The study of spoken and written English for students who are graduates of American high schools but are non-native speakers of English. The focus of the course is on helping students to speak, write, and understand English in academic contexts. Particular attention is paid to understanding lectures, increasing vocabulary, and improving knowledge of English sentence structure. Open to first semester English Enrichment Program students only. A through F grading only. The Pass/No Credit option may not be used. Only for students in the English Enrichment Program.

3 credits

ESL 198: Advanced Oral/Aural Skills and Accent Improvement

An advanced course in speaking and listening skills for non-native speakers of English. Work is done with individual problem sounds, stress, and intonation in order to help students modify their accents and make their speech more intelligible. Techniques of speaking before a group are taught to enable non-native speakers to feel more confident in participating in their other classes. Advanced work in American idioms and grammar is usually included.

Language laboratory work may be required by individual instructors. Especially useful for undergraduate and graduate students who need to make seminar presentations and for graduate students with teaching assistantships.

3 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 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

ESM 299: Directed Research in Materials Science

A directed research project with faculty supervision or as part of a research team. Intended for freshman or sophomore students

to develop research skills in a closely mentored environment. A final report and oral presentation are required at the end of the project. ESM 199 is a recommended prerequisite.

Prerequisite: Permission of the Undergraduate Program Director

0-3 credits

ESM 325: Diffraction Techniques and Structure of Solids

X-ray diffraction techniques are emphasized. Topics include coherent and incoherent scattering of radiation, structure of crystalline and amorphous solids, stereographic projection, and crystal orientation determination. The concept of reciprocal vector space is introduced early in the course and is used as a means of interpreting diffraction patterns. Laboratory work in X-ray diffraction patterns is also included to illustrate the methods.

Prerequisite: ESG 332

3 credits

ESM 334: Materials Engineering

Practical application of basic material and engineering concepts to fundamental and advanced material utilization. To that end, the course is divided into three sections: (1) "Tough stuff," (2) "Hot stuff," and (3) "Smart stuff." Combined, these address issues of material operation and failure under normal and harsh conditions, high-temperature electrochemical devices (e.g. solid oxide fuel cells), thermal barrier coatings, electromagnetic devices and shape memory alloys.

Prerequisite: ESG 332

4 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

4 credits

ESM 336: Electronic Materials

The properties of intrinsic and extrinsic semiconductors are discussed with particular attention first to the equilibrium distribution of electrons in the bands and then to the nonequilibrium transport of charge carriers. The properties and applications of photoconductors and of luminescent materials are then described. The concept of stimulated

emission is introduced, laser operation explained, and laser materials discussed in relation to their applications in science and technology. Other topics considered are the properties of magnetic materials, of dielectric materials, and of superconductors.

Prerequisite: ESG 333

3 credits

ESM 350: Advanced Engineering Laboratory

Students work in teams to perform advanced laboratory projects that emphasize the structure-property relationship. Emphasis on statistical analysis, multivariate fitting of data, and technical manuscript preparation.

Prerequisites: ESG 312, ESG 332, and ESG 333

3 credits

ESM 353: Biomaterials: Manufacture, Properties, and Applications

The engineering characteristics of materials, including metals, ceramics, polymers, composites, coatings, and adhesives, that are used in the human body. Emphasizes the need of materials that are considered for implants to meet the material requirements specified for the device application (e.g., strength, modulus, fatigue and corrosion resistance, conductivity) and to be compatible with the biological environment (e.g., nontoxic, noncarcinogenic, resistant to blood clotting if in the cardiovascular system). This course is offered as both ESM 353 and BME 353.

Prerequisite: ESG 332

3 credits

ESM 355: Materials and Processes in Manufacturing Design

The design of mechanical and electrical systems, materials selection, and fabrication processes are surveyed and shown to be essential components of manufacturing engineering. The mechanical and thermal processing of a wide range of metallic and nonmetallic materials is reviewed. Modern computer-based materials selection, advanced processing methods, and automation are explored.

Prerequisite: ESG 332 or 333

3 credits

ESM 369: Polymer Engineering

An introductory survey of the physics, chemistry, and technology of polymers. Topics covered include classification of polymers, molecular forces and bonds, structure of polymers, measurement of molecular weight and size, rheology and mechanical

properties, thermodynamics of crystallization, polymerization mechanisms, and commercial polymer production and processing.

Prerequisite: ESG 332

3 credits

ESM 378: Materials Chemistry

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

Prerequisites: CHE 375 or permission of the instructor

3 credits

ESM 400: Research and Nanotechnology

This is the capstone course for the minor in Nanotechnology Studies (NTS). Students learn primary aspects of the professional research enterprise through writing a journal-quality manuscript and making professional presentations on their independent research (499) projects in a formal symposium setting. Students will also learn how to construct a grant proposal (a typical NSF graduate fellowship proposal), methods to search for research/fellowship funding, and key factors in being a research mentor.

Prerequisites: ESM 213, at least one semester of independent research (499 level)

3 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 testbed 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.

Prerequisites: ESG 332 and ESM 335

Students in BE/MS Program: Prerequisite: ESG 332; *Corequisite:* ESM 513

3 credits

ESM 475: Undergraduate Teaching Practicum

May be used as an open elective only and repeated once.

Prerequisites: U4 standing as an undergraduate major within the college; a minimum g.p.a. of 3.00 in all Stony Brook courses and the grade of B or better in the course in which the student is to assist; permission of department

3 credits

ESM 488: Cooperative Industrial Practice

A design engineering course oriented toward both research/development and manufacturing technology. Students work in actual industrial programs carried out cooperatively with companies established as university incubators or with regionally located organizations. Supervised by a committee of faculty and industry representatives to which students report.

Prerequisite: Permission of department

0-6 credits

ESM 499: Research in Materials Science

An independent research project with faculty supervision. Permission to register requires a B average in all engineering courses and the agreement of a faculty member to supervise the research. May be repeated, but only three credits of research electives (AMS 487, BME 499, CSE 487, ESE 499, ESM 499, EST 499, ISE 487, MEC 499) may be counted toward technical elective requirements. *Prerequisite:* B average in all engineering courses and the agreement of a faculty member to supervise the research

Prerequisites: B average in all engineering courses; permission of faculty advisor

0-4 credits

EST

Technology and Society

EST 100: Computer Literacy in a Digital Era

Introduces computer applications and selection of computer-based tools and the skills necessary to be successful in an era of digital revolution including: electronic communication; application-based projects; information management and assessment; and the societal impacts of digital literacy. Emphasizes computer literacy skills used in education, industry, and other professional environments. Participation in weekly computer labs is required.

3 credits

EST 102- E: Weather and Climate

Introduces the nature and causes of common meteorological phenomena, severe weather occurrences, and climatic patterns. Topics include formation and movement of air masses and large-scale storms; techniques for weather prediction; weather satellites; hurricanes, tornadoes, and thunderstorms; cloud and precipitation types; the climatic history of the earth; and actual and potential effect of human activities on weather and climate, and of weather and climate on humans. This course is offered as both ATM 102 and EST 102.

3 credits

EST 104: Projects in Technology and Society

Introduces students to technological issues in society. A new topic is presented each semester. Explores underlying scientific and engineering concepts, ethical issues, and technological risks. Students complete a project with faculty supervision.

Prerequisite: Permission of department
1 credit

EST 192: Introduction to Modern Engineering

Familiarizes students with systems and decision-making concepts of modern engineering and technology. The conceptual areas to be studied include an engineering approach to problem solving and design, modeling of dynamic systems, and technology assessment. The artificial heart program, solar energy technology, and building access for the handicapped are some of the socio-technological case studies that are used.

Prerequisites: Course is for students without prior engineering experience, permission of the department required
3 credits

EST 194- C: Patterns of Problem Solving

A survey of techniques and methods of problem solving as developed by the engineer and applied scientist. Applications drawn from a broad range of fields. Intended for non-engineering majors.

Prerequisites: Course is for students without prior engineering or natural science experience, permission of the department required
3 credits

EST 201- H: Technological Trends in Society

Explores the impact of technology and engineering design on society past, present,

and future. The main themes as they relate to changing technology are: industry and the economy; the environment; social, educational, and psychological implications of computers; energy and society; warfare; and 21st-century emerging technologies.

Prerequisite: One D.E.C. category E course
3 credits

EST 202: Introduction to Science, Technology, and Society Studies

An introduction to the interrelationship between science and technology as dynamic and inseparable. Discusses the concepts, framework, and context of science-technology studies. Includes ethical issues, social influences, and public policies as they influence and interact with the social management of science and technology.

Prerequisite: EST 192
3 credits

EST 203: Technology in the City

This course covers the intersection of technology and society. Topics include, how different technologies play an essential element of urban society such as transportation systems, energy, and financial systems. It examines the changes in technology which causes changes in society.

3 credits

EST 210: Learning to Learn New Technologies

Developing processes for learning new technology that continues to change at an increasing rate. The key issues covered are: learning new software tools, the problem solving process, applying tools, debugging, choosing a tool, helping others to learn new software packages, how networks change the use of tools, ethical issues, Internet and the information explosion. Classes are held in computer laboratories. Students are required to work in campus computer consulting situations.

3 credits

EST 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).

3 credits

EST 291- H: Energy, Environment, and People

Case studies selected from topics such as radioactive wastes; Long Island's toxic wastes; Shoreham, Chernobyl, and nuclear safety; agriculture and the environment; and global resources. The course emphasizes the interplay between scientific and engineering considerations and human values and institutions.

Prerequisites: Two D.E.C. category E courses (except those designated ANP); any AMS or MAT course
3 credits

EST 300: Computer Modeling and Experiments in Mathematics and Science Education

Focus on computer-based experimentation and modeling to enhance mathematics and science education. Students construct their own computer-enhanced experiments using probe/software systems to study the behavior of real-world systems and computer simulation software packages to model the behavior of those systems.

Prerequisite: EST 100 or CSE 101
3 credits

EST 302: Assessment of Computer-Based Technologies

Methodologies for assessing the impact of computer-based technologies on economics, decision making, division of labor, and societal issues such as privacy and ethics. Frameworks for assessing technologies, as well as applications of standard approaches such as benefit-cost analysis. Case studies drawn from robotics, banking, automation in the U.S. postal system, and other areas.

Prerequisite: EST 100 or any CSE course
3 credits

EST 303: Crisis Communications

Explores the emerging fields of crisis and risk communications through case studies. Oil spills, cyber crimes, medical device malfunctions, product tampering, and recalls are among the types of crises studied. Also examines crisis prevention, crisis plan development, media management, and the way

organizations struggle to speak truthfully about risks that arouse public fears.

Prerequisite: U3 or U4 standing

3 credits

EST 304: Communication for Engineers and Scientists

Students learn how to write about technical concepts that make sense not only to other technologists and scientists, but also to audiences ranging from high school students to technical consumers in the world marketplace. Examines issues of rhetorical persuasion, ethical presentation, and emotional engagement (logos, ethos, pathos), and the basics of information design and use. Students work on polishing their prose voice and learn how to apply different technical communications styles to different audiences and for different applications.

Prerequisite: Level 5 on the writing placement examination or WRT 102

3 credits

EST 305: Applications Software for Information Management

Introduction to the role of applications software in various types of organizations with emphasis on methods of formulating the requisite information flows to engender adequate communications, operation, and control. The importance of audit ability, maintainability, and recoverability in systems design is stressed. Provides students with knowledge of basic techniques and elementary skills in representing system structure with application of the principles in practical case studies using spreadsheet and database software. Extensive interaction with applications software reinforces concepts presented.

Prerequisite: EST 100 or CSE 101

3 credits

EST 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. This course is offered as both EST 310 and ISE 340.

Advisory Prerequisite: Basic Computer Skills

3 credits

EST 320- H: Communication Technology Systems

Emphasizes basic science and engineering concepts underlying design and usage of modern telecommunications systems. Considers effects of human factors and societal constraints on design and development of nascent technological systems. Includes the electromagnetic spectrum, analog and digital signals and resonance as well as societal considerations of government regulations, international competition, and environment.

Prerequisites: MAT 123; one D.E.C. category E course

3 credits

EST 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 or CSE 260 or ISE 208

3 credits

EST 325- H: Technology in the Workplace

A study of automation and information technologies in both manufacturing and service industries. Considers how technology is changing the work and lives of everyone from production workers to executives. Case studies are used to understand how technology can improve quality and productivity and how incorrect use produces disappointing results.

Prerequisites: Completion of D.E.C. category E

3 credits

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 eCommerce industries. The preparation and evaluation of a marketing plan will also be covered.

3 credits

EST 330- H: Natural Disasters: Societal Impacts and Technological Solutions

A study of the physical causes of natural disasters; their societal impacts in developed and developing nations; the use of engineering, architecture, and regional planning to reduce vulnerability and loss; and the institutional mechanisms, both domestic and international, for providing cross-cultural technology transfer and post-disaster assistance. Case studies of disasters in a number of countries are included.

Prerequisites: U3 or U4 standing; one D.E.C. category E course

3 credits

EST 331: Professional Ethics and Intellectual Property

The study of ethical decisions confronting individuals and organizations in engineering and science. Related questions about moral conduct, character, ideals, and relationships of people and organizations involved in technical development are discussed. Ethics codes for engineers, computer scientists, and natural scientists are covered. Includes topics in intellectual property such as patents, trademarks, copyrights and copyright applications, licensing, and IP in cyberspace.

Prerequisite: U3 or U4 standing

3 credits

EST 341: Waste Treatment Technologies

This course will examine technologies such as wastewater management, solid waste disposal, and drinking water treatments that minimize the effects of human wastes. Pollution prevention will be emphasized.

Prerequisites: EST 202; or MAT 123 and one D.E.C. category E course

3 credits

EST 391- H: Technology Assessment

A multidisciplinary analysis of the environmental, economic, scientific, engineering, social, and ethical impacts of a technology and of policies for controlling them. Each class, often working with research teams and visiting area facilities, concentrates on topics such as plastics recycling, the future of the automobile, nuclear power, nanotechnology, space stations, virtual reality, biotechnology, smart weapons, and the Internet.

Prerequisites: PHY 132/134 or CHE 132 or BIO 201 or 202 or 203; MAT 127 or 132 or 142 or 171 or AMS 161

3 credits

EST 392- F: Engineering and Managerial Economics

Applications of fundamental economics principles and systems analysis to problems of planning and design in manufacturing or service sectors of industry. Includes the time value of money, analysis of various types of cash flows, development of rate of return, and benefit-to-cost ratios in their use to evaluate competing investment programs. The role of depreciation and investment tax credits on the level of corporate taxation leading to the determination of after-tax rates of return.

Prerequisite: AMS 151 or MAT 125

3 credits

EST 393: Project Management

Lays the foundation for an understanding of project management principles. Project initiation, implementation, and conclusion are explored, and the software tools for implementation of project management are studied. Case studies are presented and discussed in each part of the course.

Prerequisite: EST 391

3 credits

EST 400: Research and Nanotechnology

This is the capstone course for the minor in Nanotechnology Studies (NTS). Students learn primary aspects of the professional research enterprise through writing a journal-quality manuscript and making professional presentations on their independent research (499) projects in a formal symposium setting. Students will also learn how to construct a grant proposal (a typical NSF graduate fellowship proposal), methods to search for research/fellowship funding, and key factors in being a research mentor.

Prerequisites: EST 213; at least one semester of independent research (499 level)

3 credits

EST 411- H: Science, Technology, and Arms Control

A study of the application of scientific technology to national defense, covering nuclear weapons and delivery systems, chemical and biological weapons, conventional weapons systems, defense research and development, arms control and disarmament negotiations, and international technology transfer. This course is offered as both EST 411 and POL 411.

Prerequisites: U3 or U4 standing; one D.E.C. category E course

3 credits, S/U grading

EST 412: Intelligence Organizations, Technology, and Democracy

The role of intelligence organizations in decision making through analysis of agency practices in support of U.S. national security policy. The course also explores the roles of intelligence agencies and practices in democratic societies. This course is offered as both EST 412 and POL 412.

Prerequisites: U3 or U4 standing; POL 101 and 102; one D.E.C. category E course

3 credits

EST 420: Seminar on Information-Age Society

The characteristics of and current trends in telecommunication technology. Science and engineering concepts are applied as students analyze case studies focusing on the migration of entertainment media into the digital era, computer-generated speech, interactive cable television, and other current technologies. Engineering technology design constraints, critical success factors, and ethics for a technological world are explored.

Prerequisite: EST 320

3 credits

EST 421: Starting the High-Technology Venture

Introduces engineering and applied science students to start-up and early development of a new high-technology venture. Turning a concept into a new venture. Identifying and evaluating product and market. Issues of feasibility, patents, and prototypes.

Prerequisites: CEAS major; U4 standing

3 credits

EST 440: Interdisciplinary Research Methods

Uses scientific research and related engineering technology problem-solving as a framework for the synthesis of diverse disciplines studied by students in the first three undergraduate years. Provides students with experience in team problem-solving. Students develop a proposal for interdisciplinary research or project to be carried out in the final semester of study.

Prerequisites: EST 393 and TSM major

3 credits

EST 441: Interdisciplinary Senior Project

Students carry through to completion their own research, development or product evaluation project based on the proposal submitted and approved in EST 440. Requires practical steps including garnering faculty mentorship,

creating a schedule, assembling resources, conducting research or working on prototype, and a final paper and presentation.

Prerequisite: EST 440

3 credits

EST 475: Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.

Prerequisites: U4 standing; a minimum g.p.a. of 3.00 in all Stony Brook courses and a grade of B or better in the course in which the student is to assist; permission of department

3 credits

EST 488: Internship in Technology and Society

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

1-3 credits

EST 499: Research in Technology and Society

An independent research project with faculty supervision. Permission to register requires a B average in all engineering courses and the agreement of a faculty member to supervise the research. May be repeated, but only three credits of research electives (AMS 487, CSE 487, ESE 499, EMS 499, EST 499, ISE 487, MEC 499) may be counted toward engineering technical elective requirements.

Prerequisite: Permission of instructor

0-3 credits

EUR

European Studies

EUR 101- G: Foundations of European Culture

This course presents students with the thinking from a variety of disciplines that influenced the development of the diverse national cultures of Europe. Students are exposed to a chronological representation of the major ways

that classical Greek, Roman, Judeo-Christian, and Islamic cultures contributed to the making of individual national cultures and identities of the major countries of Europe.

3 credits

EUR 201- I: Development of European Culture

An introduction to the important literary works that arose from major European cultural and intellectual movements and an examination of their continued influence on the modern world. Readings focus on central texts pertaining to core religious issues, the Renaissance, the Enlightenment, Romanticism, Realism, Modernism, and Post Modernism. Examples from the arts, including film, music, and theatre, are used to illustrate the influence of the literary works.

Prerequisite: Completion of D.E.C. category B
3 credits

EUR 390- I: Special Topics in European Studies

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: To be announced with the topic
3 credits

EUR 401: Senior Research Seminar in European Studies

Intensive investigation of specific topics within the European Studies concentrations. Students will develop their skills in selecting a relevant topic, problematizing it, conducting research and writing on it in a persuasive fashion, presenting their findings in the seminar, and submitting a written paper at least 20 pages in length.

Prerequisites: EUR 201; 15 additional credits in the major; U4 standing; European Studies major
3 credits

EUR 447: Directed Readings in European Studies

Independently supervised readings in selected topics in European Studies. May be repeated.

Prerequisite: Permission of instructor
1-6 credits

EUR 475: Undergraduate Teaching Practicum in European Studies I

Students aid instructors and students in European Studies courses in one or several of the following ways: leading discussions, helping students improve writing and research skills, and library research. Students meet regularly with the supervising instructor.

Students may not serve as teaching assistants in the same course twice.

Prerequisites: U3 or U4 standing; permission of instructor and department; EUR major or minor

3 credits, S/U grading

EUR 476: Undergraduate Teaching Practicum in European Studies II

Students aid instructors and students in European Studies courses in one or several of the following ways: leading discussions, helping students improve writing and research skills, and library research. Students meet regularly with the supervising instructor. In EUR 476, students assume greater responsibility in areas such as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites: EUR 475; permission of instructor and department; EUR major or minor
3 credits, S/U grading

EUR 487: Independent Project in European Studies

The designing and carrying out of a research project selected by the student and arranged by the student and the instructor. May be repeated once.

Prerequisite: Permission of instructor
0-6 credits

EUR 488: Internship in European Studies

Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce language and related skills and knowledge of social and cultural institutions. May be repeated up to a limit of 12 credits.

Prerequisites: Permission of instructor and department
0-6 credits, S/U grading

EUR 495: Senior Honors Project in European Studies

A one-semester project for seniors. Arranged in consultation with the department, the project involves writing a paper, under the close supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors take this course.

Prerequisites: Permission of instructor and department
3 credits

EXT

Externships

EXT 288: Internship

Internships are work-learning arrangements. These supervised, career-related work experiences, combined with reflection that relates the work to academic study, help students 'learn by doing.' A sponsored internship with an off-campus organization or on-campus agency gives students an opportunity to learn how to effectively apply their university studies to work in professional settings and explore untested areas of work experience. Internships must be sponsored by a faculty member. As with established guidelines for EXT 488 internship, a request for approval of the Career Center Internship Manager must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. Course is not repeatable.

Prerequisites: Minimum g.p.a. 2.5; one prior semester of attendance at Stony Brook; completion of DEC A, first course; acceptance by a faculty sponsor; permission of appropriate department and the Career Center Internship Manager
0-3 credits, S/U grading

EXT 488: Internship

Participation in an off-campus or on-campus agency or organization that provides students the opportunity to learn to apply their university studies to areas of work experiences. Internships must be sponsored by a faculty member. Request for approval of the internship manager in the Career Center must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar. Students may register for only one 488 course per semester. May be repeated up to a limit of 12 credits.

Prerequisites: Minimum g.p.a. of 2.50; U3 standing; one prior semester of attendance at Stony Brook; acceptance by faculty sponsor; permission of appropriate department and internship manager
0-6 credits, S/U grading

FLA

Foreign Language Teacher Preparation

FLA 339: Methods and Materials in the Teaching of Foreign Languages

A review of methods and materials for the teaching of foreign languages and literatures

in the secondary schools. Special attention is given to the problems and purposes of the teaching of foreign languages at the high school level.

Prerequisites: Admission to a Foreign Language Teacher Preparation program; C or higher in one 300-level foreign language course; C or higher in one 300-level literature course; minimum GPA of 2.75
Corequisite: FLA 449

3 credits

FLA 340: Curriculum Development and Micro-Teaching

A course designed to train future language teachers in the development of well-articulated programs in secondary schools. Students have the opportunity to enjoy clinical experiences in school settings. Special attention is given to lesson planning, classroom management, and portfolio development.

Prerequisites: C or higher in FLA 339; minimum g.p.a. of 2.75
Corequisite: FLA 450

3 credits

FLA 439: Technology Literacy for Foreign Language Teachers

FLA 439 is designed as a course to improve the technological literacy of all future language teachers. In this course, teacher candidates will explore in a very hands-on, practical and applied manner all of the technologies used by teachers of languages. The class will also discuss how the technologies relate to current language pedagogies, both for individualized and classroom learning, especially as these issues can be discussed in a very applied and pragmatic manner.

Prerequisite: FLA 339

3 credits

FLA 440: Foreign Language Acquisition Research

A study of recent trends in foreign language acquisition research. The focus is on classroom-based research: qualitative and quantitative research methodologies, variables in classroom-based learning research, analysis of research results. Students conduct classroom research studies, present their findings, and address applications of their findings to classroom teachers and learners of foreign languages.

Prerequisites: FLA 339; acceptance into a foreign language secondary teacher preparation program

3 credits

FLA 449: Field Experience, Grades 7-12

Observation, inquiry, and practice in foreign language education at the secondary level including 50 hours of documented visitations and observation at documented sites. Field experience writing logs are the basis for group discussion. Satisfactory/Unsatisfactory grading.

Prerequisites: Admission to a Foreign Language Teacher Preparation program; minimum GPA 2.75

Corequisite: FLA 339

1 credit, S/U grading

FLA 450: Field Experience, Grades 7-12

Observation, inquiry, and practice in foreign language education at the secondary level including 50 hours of documented visitations and observation at documented sites. Field experience writing logs are the basis for group discussion. Satisfactory/Unsatisfactory grading.

1 credit, S/U grading

FLA 451: Supervised Student Teaching: Middle School Level Grades 7-9

Prerequisite: Enrollment in the Foreign Language Teacher Preparation Program; permission of instructor

Corequisites: FLA 452 and 454

6 credits, S/U grading

FLA 452: Supervised Student Teaching: High School Grades 10-12

Prerequisites: Enrollment in the Foreign Language Teacher Preparation Program; permission of instructor

Corequisite: FLA 451 and 454

6 credits, S/U grading

FLA 454: Student Teaching Seminar

Seminar on problems encountered by student teachers and public school teachers at the secondary level in foreign language teaching. Study and analysis of the many aspects of the foreign language teaching profession, such as individualized teaching, testing, and professional organizations.

Prerequisite: C or higher in FLA 340

Corequisites: FLA 451 and 452

3 credits

FRN

French

FRN 101 - S3: Intensive Elementary French

An intensive course covering the elementary French program (FRN 111, 112) in one semester. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of French in high school (or who has otherwise acquired an equivalent proficiency) may not take FRN 101 without written permission from the supervisor of the course. May not be taken for credit after any other course in French.

6 credits

FRN 111: Elementary French I

An introduction to spoken and written French, stressing pronunciation, speaking, comprehension, reading, and writing. Language Center supplements class work. FRN 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of French in high school (or who has otherwise acquired an equivalent proficiency) may not take FRN 111 without written permission from the supervisor of the course. May not be taken for credit in addition to FRN 101.

4 credits

FRN 112 - S3: Elementary French II

An introduction to spoken and written French, stressing pronunciation, speaking, comprehension, reading, and writing. Language Center supplements class work. May not be taken for credit in addition to FRN 101.

Prerequisite: FRN 111

4 credits

FRN 201 - S3: Intensive Intermediate French

Review of grammar and analysis of simple French texts through reading, writing, and discussion. Language Center supplements class work. May not be taken for credit in addition to FRN 211 or FRN 212.

Prerequisite: FRN 101 or 112

6 credits

FRN 211 - S3: Intermediate French I

Intermediate courses in conversation, composition, and the interpretation of French texts. May not be taken for credit in addition to FRN 201.

Prerequisite: FRN 101 or 112

3 credits

FRN 212 - S3: Intermediate French II

Intermediate courses in conversation, composition, and the interpretation of French texts. May not be taken for credit in addition to FRN 201.

Prerequisite: FRN 211

3 credits

FRN 311 - S3: Conversation

A course emphasizing the development of oral and aural proficiency in French. Class work, supplements, use of technologically-based materials.

Prerequisite: FRN 212 or 201

3 credits

FRN 312 - S3: Composition

A course emphasizing writing proficiency in French. Class work, supplements, use of technologically-based materials.

Advisory Pre- or Corequisite: FRN 311

3 credits

FRN 313: French Vocabulary through Popular Culture

A course designed to increase vocabulary and oral comprehension of French through the study of realms from clothing and banking to love and music.

Prerequisite: FRN 212 or FRN 201

3 credits

FRN 331- G & 3: Introduction to Advanced French (with the Novel)

A course aimed at bridging the gap between conversational and tourist French and advanced and formal French. Extracts from novels, supplements, and technologically-based materials.

Prerequisite: FRN 312

3 credits

FRN 332- G & 3: Introduction to Advanced French (with Drama)

A course aimed at bridging the gap between conversational and tourist French and advanced and formal French. Extracts from plays, supplements, and technologically-based materials.

Prerequisite: FRN 312

3 credits

FRN 395- G & 3: Readings in French Literature I: Analysis and Interpretation

These courses teach literary analysis and its application to representative texts chosen from various periods of French literature. All readings are done in French. Discussions are in French.

Prerequisite: FRN 312

3 credits

FRN 396- G & 3: Readings in French Literature II: Analysis and Interpretation

These courses teach literary analysis and its application to representative texts chosen from various periods of French literature. All readings are done in French. Discussions are in French.

Prerequisite: FRN 312

3 credits

FRN 410 - S3: Business French

A course designed for students who wish to become more proficient in reading, writing, and translating French. Students also are trained in the use of French in business, in administration, and in everyday professional life. Emphasis is placed on the idiomatic peculiarities of the French language and the relation of French to the structure of English.

Prerequisite: FRN 312

3 credits

FRN 411 - S3: Phonetics and Diction

A course designed to develop mastery of the spoken language. Students learn to express themselves in the current idiom with fluency and accuracy. At least one hour of laboratory is required weekly.

Prerequisite: FRN 312

3 credits

FRN 412 - S3: Stylistics

A course designed to acquaint students with the subtleties of French grammar and style. Extensive practice in composition and in translation from English to French.

Prerequisite: FRN 312

3 credits

FRN 413 - S3: Advanced French Conversation

A course designed to develop and maintain complete fluency in the language.

Prerequisite: FRN 312

3 credits

FRN 423- J: Africana Literature in French

An examination of a range of literature in French produced by writers throughout the African diaspora who claim affiliation with Africa. While the course is conducted in French, students will have the option to write papers in either French or English. Competence in reading and speaking French is a requirement for the course. This course is offered as both AFH 423 and FRN 423.

Prerequisite: A 200-level course in literature. For French majors, FRN 395, 396 or Permission of the Instructor.

3 credits

FRN 432 - S3: Studies in Medieval and Renaissance Literature

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

Prerequisite: FRN 395 or 396

3 credits

FRN 433 - S3: Studies in 17th-Century Literature

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

Prerequisite: FRN 395 or 396

3 credits

FRN 434 - S3: Studies in 18th-Century Literature

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

Prerequisite: FRN 395 or 396

3 credits

FRN 435 - S3: Studies in 19th-Century Literature

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

Prerequisite: FRN 395 or 396

3 credits

FRN 436 - S3: Studies in 20th-Century Literature

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

Prerequisite: FRN 395 or 396

3 credits

FRN 438- J & 3: Caribbean and African Literature in French

A study of representative texts (tales, novels, poems, plays, etc.) from the French-speaking world outside continental France, with special emphasis on the literature of the Caribbean and Africa.

Prerequisite: FRN 395 or 396

3 credits

FRN 441- I & 3: French Civilization

A discussion of French civilization from the creation of the modern state to the present. The course is intended for those interested in studying the background and traditions of modern France. An anthology of historical texts and documents serves as a point of departure; the institutions and life in France are considered, along with the development

of art, architecture, music, and literature. The emphasis is on discussion (in French) and individual projects. Visiting lecturers contribute to the variety of topics and points of view.

Prerequisite: FRN 395 or 396

3 credits

FRN 442 - S3: Free Seminar

A seminar built around themes like "Women in French Literature," "Self-Deception in the 17th-Century Moralists and the 20th-Century Novel," and "The City in the French Novel." A detailed description of the seminar may be obtained from the department for each semester it is offered. May be repeated as topic changes.

Prerequisite: FRN 395 or 396

3 credits

FRN 447 - S3: Directed Readings in French

Individually supervised readings in selected topics in French language and literature or, alternatively, for the purpose of developing French vocabulary in a secondary field, in selected topics in the humanities, social sciences, or natural sciences. May be repeated.

Prerequisite: Permission of department

1-6 credits

FRN 475 - S3: Undergraduate Teaching Practicum in French I

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

Prerequisites: Fluency in French; permission of instructor and department

3 credits, S/U grading

FRN 476 - S3: Undergraduate Teaching Practicum in French II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served.

Prerequisites: Fluency in French; permission of instructor and department

3 credits, S/U grading

FRN 495 - S3: Senior Honors Project in French

A one-semester project for seniors. Arranged in consultation with the department, the project involves writing a paper, under the close supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors take this course.

Prerequisite: Permission of department

3 credits

GEO

Geosciences

GEO 101- E: Environmental Geology

Fundamental earth science concepts are used to assess the impact of increasing global population and development on earth's natural resources and also to examine how natural processes affect human activities. Topics include water usage and pollution, soil pollution and erosion, radioactive and solid waste disposal, landslides, stream flooding, coastal erosion, environmental consequences of energy and mineral resource utilization, acid rain, global climate change, and the environment effects on human health. Aspects of environmental geology that are particularly applicable to Long Island and metropolitan New York are emphasized.

3 credits

GEO 102- E: The Earth

A summary of the processes that have shaped the earth and the other terrestrial planets as inferred from study of their surface materials, structural features, and interiors. Topics include the earth in the solar system; earth materials and rock-forming processes; surface processes and their bearing on human activities; crustal deformation and global tectonics; the earth's interior; and the geological features, compositions, and evolution of the terrestrial planets.

3 credits

GEO 103- E: The Earth Through Time

The history of the earth from its formation 4.5 billion years ago to the present. Major issues to be addressed include formation and early history of the earth and moon; evolution of continents, oceans, and atmosphere within the framework of plate tectonics; origin of life; and evidence of past climates.

3 credits

GEO 105- E: Energy Resources for the 21st Century

Today we are faced with the challenge of driving the economies of modern civilization with new energy resources. This course looks at the current energy sources to assess their long term sustainability. In particular, this course examines fossil fuels, from the geologic processes that create them through their utilization. This course evaluates the impact on the global environment and the finiteness of each resource. Nuclear, geothermal, solar, wind, hydro, tidal, and other energy sources will be evaluated. This course projects forward to anticipate needs and evaluate future resources for time scales of 10, 20, 50, and 100 years. It identifies the technical advances that are required to meet the future energy needs. The emphasis of the course is to provide a vision of the current global energy setting. It develops tools that enable critical thinking on issues that interface society and science. Homework assignments will use the internet for accessing relevant information and spread sheets (such as Excel) and Google Earth to evaluate this information.

3 credits

GEO 106- E: Planetary Geology

Geology and geological history of the terrestrial planets, planetary satellites and minor bodies of the solar system are evaluated. Whenever possible, emphasis will be placed on geological results from the most recent planetary missions. Among the main topics to be considered are meteorites and the origin of terrestrial planets, the internal structure of terrestrial planets, planetary volcanism, planetary stratigraphy, surface processes such as meteorite impacts, wind and weathering, minor bodies of the solar system and the origin of the solar system. Not for credit in addition to AST 105 or AST 205.

Advisory Prerequisite: High School Earth Science

3 credits

GEO 107- E: Natural Hazards

An introduction to the concepts, techniques, and scientific methods used in the earth sciences. The natural hazards posed by earthquakes and volcanic eruptions are used as a focus. These phenomena are examined in the context of the theory of plate tectonics to determine their cause, destructive potential, and the possibility of predicting and controlling their occurrence. Elementary probability methods are introduced in the treatment of approaches to prediction. Societal responses to forecasts are also considered.

3 credits

GEO 109- E: Life Through Time

An examination of biodiversity as preserved in the fossil record and how it contributes to the understanding of evolution. Species examined include invertebrates, plants, dinosaurs, and mammals and the ultimate origin and evolution of humans. Principles of evolution, paleontology, phylogeny reconstruction, and conservation are discussed. This course is offered as both GEO 109 and HBA 109.

3 credits

GEO 112: Physical Geology Laboratory

Rock and mineral identification, introduction to topographic and geologic maps.

Pre- or Corequisite: GEO 102

1 credit

GEO 113: Historical Geology Laboratory

An introduction to basic techniques used for interpreting geological history. Topics include interpretation of topographic and geological maps and cross sections, introduction to fossils, and basic stratigraphic techniques. One three-hour laboratory per week.

Pre- or Corequisite: GEO 103

1 credit

GEO 121: Principles of Geology

Course offered in conjunction with Sayville High School.

4 credits

GEO 122- E: Physical Geology

The nature of the earth and of the processes that shape it: the earth's external and internal energy; minerals and rocks; external processes and the evolution of the landscape; internal processes and the structure of the earth; the earth compared with other planets; sources of materials and energy. Laboratory includes study of minerals and rocks; landforms as shown on topographical maps and aerial photographs; geologic structures inferred from maps and block diagrams; problem sets. Two lectures and one three-hour laboratory and recitation per week. GEO 102/112 and GEO 122 may not both be taken for credit.

Advisory Prerequisite: High school chemistry or CHE 123

4 credits

GEO 287: Introductory Research in Geology

Independent research, under the supervision of a faculty member, at a level appropriate to lower-division students. May be repeated once.

Prerequisites: U1 or U2 standing; one GEO course; permission of instructor and departmental research coordinator
0-3 credits, S/U grading

GEO 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 100 or ESG 198 or CHE 131; and upper division status
3 credits

GEO 302: GIS For Geologists

A practical introduction to geographic information system GIS software. Participants learn to use direct measurement and mathematical techniques to compute the location of features and gain practical experience in rendering imagery and tabular geographic data as layers on maps. The course consists of two three-hour sessions per week for first five weeks of semester, which include fieldwork, lectures, demonstrations and software-based analysis of data. This course meets with GEO 305 Field Geology for the first five weeks of the term. Students cannot take both GEO 302 and GEO 305 for credit.

Prerequisites: GEO 122, or GEO 102 and 112; GEO 103 and 113, or GEO 101 and 111
1 credit

GEO 303: Geology of the Turkana Basin

Field course that applies fundamental geological concepts to the sediments and rock units in the Turkana Basin, Kenya, to provide a foundation for the chronology and context for recorded events in human evolution. Emphasis is given to sedimentation, stratigraphy, volcanism, and tectonics, as they apply to local geology, including training in field methods. Modern terrestrial processes and landscape evolution are examined using features present in the Turkana Basin. Consideration is also given to broader geologic events spanning the Oligocene to the present. Geologic concepts are linked to modern

and ancient environments, archaeology, and paleoanthropology in northern Kenya.

Prerequisite: Permission of the instructor/ Study Abroad office
Advisory Prerequisite: GEO 103 and GEO 113
3 credits

GEO 304- H: Energy, Mineral Resources, and the Environment

A survey of the origin, distribution, and importance to modern civilization of the fuels and minerals won from the earth. Geology of mineral resources and problems of finding, extracting, and supplying fossil fuels, metallic ores, water, and non-metallic commodities to industry and community as well as the ultimate limits of their abundances. Environmental concerns related to the exploitation of mineral resources with review of legislation and other steps being taken to minimize environmental damage.

Prerequisite: One DEC E course
3 credits

GEO 305: Field Geology

Geological field studies on and near the Stony Brook campus. Labs emphasize mapping techniques and field studies of glacial and environmental geology, and include geophysical and hydrological analyses and mapping. Course consists of two three-hour sessions per week, divided between lecture and outdoor labs.

Prerequisites: GEO 102/112 or GEO 112 and 103 and 113 or GEO 112 and 101 and 111
3 credits

GEO 306: Mineralogy

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

Prerequisites: GEO 102 and 112; CHE 131
4 credits

GEO 307- H: Global Environmental Change

An analysis of the physical, chemical, and biological processes in the atmosphere, hydrosphere, lithosphere, and biosphere that are susceptible to change either from natural or anthropogenic causes. In addition to focusing

on the processes, this course will examine the spatial/temporal scales of environmental changes, their consequences to systems including our economic, political, and social systems, and will consider our responsibility and capability in managing systems in a sustainable way. This course is offered as both ENV 304 and GEO 307.

Prerequisites: SBC 111, or SBC 113, or ENS 101, or GEO 101, or GEO 102; ENV 115 or CHE 131

3 credits

GEO 309: Structural Geology

Principles of structural geology, including classification, criteria for recognition, and mechanics of formation of crustal structural features. Elementary concepts of rock mechanics. Discussion of important tectonic features of the continents and oceans. Accompanying laboratory to cover map interpretation and algebraic and graphical solutions of structural problems. Three hours of lecture and one three-hour laboratory per week. A two-day weekend field trip visits "classic" structural localities in the East.

Prerequisites: GEO 122, or GEO 102 and 112; one semester of calculus; PHY 121/123 or 131/133 or 141 or PHY 125 and 126

4 credits

GEO 310: Introduction to Geophysics

An introduction to theoretical and applied geophysics. Topics in global geophysics include seismology, gravity, geomagnetics and heat flow, with applications to the structure and dynamics of the earth's interior. Students conduct computer-based analysis of geophysical data, some of which they collect using techniques of geophysical exploration and environmental geology. Three hours of lecture per week, plus group field experiments and analysis.

Prerequisites: MAT 127 or 132 or 142 or 171 or AMS 161; GEO 122, or GEO 102 and 112; PHY 122/124 or 132/134 or 142, or PHY 126 and 127

3 credits

GEO 311- H: Geoscience and Global Concerns

An exploration of how technologically-based problems facing the United States and the world are related to the basic scientific principles that explain the properties of the lithosphere, hydrosphere, and atmosphere. The set of issues include such geoscience-based topics as global warming, fossil fuel resources, nuclear waste disposal, and earthquake prediction and preparedness.

Prerequisite: GEO 101 or 102 or 107 or 122

3 credits

GEO 312: Structure and Properties of Materials

This course will explore materials from the viewpoint of their structure and chemistry and how these affect applications. We will discuss different states matter (crystals, quasicrystals, glasses, liquids) and their similarities and differences, focusing on the crystalline state. Nanomaterials and their peculiarities in terms of structure and properties will also be considered. Particular attention will be paid to (1) Materials for energy and environment applications, (2) materials for technological applications, and (3) Earth- and planet-forming materials.

Advisory Prerequisite: CHE 131 or PHY 131

3 credits

GEO 313- H: Understanding Water Resources for the 21st Century

Drinking water is a topic of much interest and concern around the world. Issues to be covered will include global scarcities, water-borne disease, climate change, and organizational, corporate and emergency response. On a national and local level more detail will be devoted to source water protection and transmission, drought, industrial pollution, bottled water, pharmaceutical waste, treatment and filtration technologies, regulation and enforcement, peak demand and water conservation practice.

Prerequisite: One DEC E course

3 credits

GEO 315: Groundwater Hydrology

Physical and chemical principles of geohydrology. Concepts of groundwater geology. Introduction to quantitative models of regional fluid flow and groundwater contamination. Groundwater and geologic processes, with examples from tectonics, petroleum geology, geothermics, and economic mineralization.

Prerequisites: GEO 102 or GEO 122; MAT 127 or MAT 132 or MAT 142 or MAT 171 or AMS 161

3 credits

GEO 316: Geochemistry of Surficial Processes

Chemical principles used in the study of surface and near-surface water, rocks, and soils. Application of equilibrium concepts and reaction rates to reactions involving gases, fluids, and minerals in nature. Consideration of soil properties and processes.

Prerequisites: GEO 122, or 102 and 112; CHE 132 or 142

4 credits

GEO 318: Engineering Geology and Coastal Processes

Fundamental concepts of soil, sediment, and rock mechanics and the physics of surficial processes. Application is made to problems of geotechnical and coastal engineering. Topics include consolidation, loose boundary hydraulics, slope stability, underground excavations and beach and tidal inlet stability, and channel sedimentation. This course is offered as both GEO 318 and MAR 318.

Prerequisites: GEO 122 or GEO 102 and 112; MAT 127 or 132 or 142 or 171 or AMS 161

3 credits

GEO 320- E: Glacial Geology

History of glaciation on earth; formation and dynamics of glaciers and ice sheets; processes of glacial erosion and deposition; and the nature of glacial sediments and landforms particularly relating to the development of Long Island.

Prerequisite: GEO 102 or 122

3 credits

GEO 330: The Geology of Mars

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

Prerequisite: GEO 102 or GEO 122 or GEO 106

Advisory Prerequisite: GEO 112

3 credits

GEO 353: Marine Ecology

A survey of biotic responses to ecological challenges in different marine realms. Controls of diversity and trophic structure in the marine ecosystem, historical aspects of marine realms, productivity in the oceans, plankton, soft-bottom communities, intertidal habitats, coral reefs, deep-sea environments, and effects of pollution in the ocean are discussed. This course is offered as both BIO 353 and GEO 353.

Prerequisite: BIO 201 or MAR 104

3 credits

GEO 403: Sedimentation and Stratigraphy

The history and practice of defining units of layered rocks and interpreting their spatial

relationships. Topics include the basis for the geologic time scale, lithostratigraphic versus chronostratigraphic units, biostratigraphy, magnetostratigraphy, facies patterns and Walther's Law, subsurface stratigraphy, and the application of stratigraphy to geological problems. Laboratory emphasizes practical techniques in stratigraphy.

Prerequisite: GEO 306

Corequisite: GEO 401

4 credits

GEO 405: Field Camp

A field course that may be taken at any one of several approved university field stations.

Prerequisites: Two upper-division GEO courses

1-6 credits

GEO 407: Igneous and Metamorphic Petrology

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

Prerequisite: GEO 306

4 credits

GEO 420: Environmental Analysis Using Remote Sensing and Geographic Information Systems

The use of aerial and satellite imagery in environmental analysis and the manipulation of geographic data sets of all types using Geographic Information Systems. Concentrating on Long Island, each student designs and completes a research project on a particular section of the area, focusing on the habitats of local wildlife, the locations of archaeological sites, coastal regimes, etc. Students should expect to spend approximately 10 hours per week beyond regularly scheduled classes in a University computer laboratory. This course is offered as both ANT 420 and GEO 420.

Prerequisite: Upper-division course in ANT or BIO or GEO or MAR

4 credits

GEO 440: Geological Applications of Remote Sensing

An introduction to the fundamental principles of remote sensing, with emphasis on geological and environmental applications.

Discussion of the physical basis for remote sensing techniques. Survey of commonly used sensors and image analysis methods in earth sciences. Use of remotely sensed data in geographic information systems. Participants gain practical experience in geologic analysis using satellite imagery.

Prerequisite: GEO 102 or GEO 122

Advisory prerequisite: PHY 122 or PHY 132 or PHY 142 or PHY 126,127

3 credits

GEO 447: Senior Tutorial in Geology

Independent readings in advanced topics. May be repeated once.

Prerequisites: Permission of instructor and chairperson

1-3 credits

GEO 448: Geosciences Colloquium

Every semester, the Department of Geosciences hosts a colloquium series. The series features weekly lectures covering a wide variety of geosciences research topics. The purpose of this course is to expose upper division geoscience students to current research being performed at Stony Brook University and elsewhere. May be repeated up to a limit of 3 credits.

Prerequisite: U3 or U4 status as a GEO or ESS major; Permission of Instructor

1 credit

GEO 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisite: U4 standing; previous preparation in subject field; interview; permission of instructor

3 credits, S/U grading

GEO 476: Undergraduate Teaching Practicum II

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

Prerequisite: GEO 475; previous preparation in subject field; interview; permission of instructor and department

3 credits, S/U grading

GEO 487: Senior Research in Geology

Under the supervision of a faculty member, a major in the department may conduct research for academic credit.

Prerequisites: Permission of instructor and chairperson

0-6 credits

GEO 488: Internship

Participation in local, state, or national private enterprises, public agencies, or nonprofit institutions. May be repeated to a limit of 6 credits.

Prerequisites: Permission of instructor and department

0-6 credits, S/U grading

GER

Germanic Languages and Literature

GER 101 - S3: Intensive Elementary German

An intensive course covering the elementary German program (GER 111, 112) in one semester. GER 101 is designed for students who have no prior knowledge of the language. A student who has had two or more years of German in high school (or who has otherwise acquired an equivalent proficiency) may not take this course without written permission from the supervisor of the course. May not be taken for credit after GER 111 or any other course in German.

6 credits

GER 111: Elementary German I

An introduction to spoken and written German, stressing pronunciation, speaking, comprehension, reading, writing, and culture. The course consists of four hours in a small section conducted in German, and one laboratory hour. The course is designed for students who have no prior knowledge of German. A student who has had two or more years of German in high school (or who has otherwise acquired an equivalent proficiency) may not take GER 111 without written permission from the supervisor of the course.

4 credits

GER 112 - S3: Elementary German II

An introduction to spoken and written German, stressing pronunciation, speaking, comprehension, reading, writing, and culture. The course consists of four hours in a small section conducted in German, and one laboratory hour.

Prerequisite: GER 111

4 credits

GER 211 - S3: Intermediate German I

The reading and interpretation of a wide variety of German texts, with a review of German grammar, composition, and conversation. Work in the language laboratory further develops audiolingual skills.

Prerequisite: GER 101 or 112

3 credits

GER 212 - S3: Intermediate German II

The reading and interpretation of a wide variety of German texts, with a review of German grammar, composition, and conversation. Work in the language laboratory further develops audiolingual skills.

Prerequisite: GER 211

3 credits

GER 311 - S3: German Conversation and Composition

The active use of spoken and written German.

Prerequisite: GER 212

3 credits

GER 312 - S3: German Conversation and Composition

The active use of spoken and written German.

Prerequisite: GER 212

3 credits

GER 313: German Vocabulary in Conceptual Groups

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

Prerequisite: GER 212

3 credits

GER 343- G & 3: Introduction to Literary Genres

Using selected texts easily read and understood by students whose background in German may be limited, this course is intended to introduce

those students to terminology and techniques of literary analysis and interpretation.

Prerequisite: GER 212

3 credits

GER 344- G & 3: Survey of German Literature

A chronological survey of German literature from the 18th century to the present with stress on defining the periods therein. All readings are in German.

Prerequisite: GER 212

3 credits

GER 401 - S3: German Drama

A survey of German drama and its subgenres. All work is done in German.

Prerequisite: GER 343 or 344

3 credits

GER 402 - S3: German Prose

A survey of German prose and its subgenres. All work is done in German.

Prerequisite: GER 343 or 344

3 credits

GER 404 - S3: Goethezeit

An intensive study of German literature in the period 1750-1832. All work is done in German.

Prerequisite: GER 343 or 344

3 credits

GER 438 - S3: Structure of German

Study of the phonological, graphemic, morphological, syntactic, and semantic structures of Modern German.

Prerequisite: GER 212

3 credits

GER 439 - S3: History of German

The development of the German language from Indo-European to Modern High German. A representative selection of texts from different periods is examined. Conducted as a seminar.

Prerequisite: GER 212

3 credits

GER 447 - S3: Directed Readings in German

Independently supervised readings in selected topics in German language and literature, which may focus on a specific German language author or the literature of a specific period or genre. May be repeated.

Prerequisites: Permission of instructor and department

3 credits

GER 475 - S3: Undergraduate Teaching Practicum in German I

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

Prerequisites: Fluency in German; permission of instructor and department

3 credits, S/U grading

GER 476 - S3: Undergraduate Teaching Practicum in German II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served.

Prerequisites: Fluency in German; permission of instructor and department

3 credits, S/U grading

GER 488 - S3: Internship

Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce language and related skills and knowledge of social and cultural institutions.

Prerequisites: GER 311 and 312; permission of instructor and department; specific placement examinations where applicable

0-6 credits, S/U grading

GER 495 - S3: Senior Honors Project in German

Per project for seniors. Arranged in consultation with the department, the project involves writing a paper, under the close supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors take this course.

Prerequisite: Permission of department

3 credits

GLS

Global Studies

GLS 101: Introduction to Stony Brook

A seminar intended to integrate students into the Undergraduate College of Global Studies and into the University community by

providing information about Stony Brook and a forum for discussion of values, intellectual and social development, and personal as well as institutional expectations. Required for all first year students. Not for credit in addition to ADV 101, ACH 101, LDS 101, HDV 101, ITS 101, SSO 101, SBU 101, SCH 101, or LSE 101.

Prerequisite: Admission to the GLS Undergraduate College

1 credit, S/U grading

GLS 102: Undergraduate College Seminar: Global Studies

A seminar for all first-year students in the Undergraduate College of Global Studies. Seminar topics vary annually by section and cover a variety of subjects under the general scope of Global Studies. Required for all first year students. Not for credit in addition to ACH 102, HDV 102, ITS 102, LDS 102, or SSO 102.

Prerequisite: Admission to the GLS Undergraduate College

1 credit, ABC/U grading

GLS 275: Undergraduate College Fellows Seminar

Creates a curricular component for the second year of the Undergraduate College Experience. College fellows will enroll in GLS 275 in the spring semester of their freshman year and GLS 276 in the fall semester of their sophomore year. 275 (spring) engages students in four main content areas: student development theory, scholarship on mentoring and leadership development, concepts of teaching and learning, and programming and event planning. These areas prepare students for supervised learning and teaching experiences that will occur primarily in the fall 276 course.

Prerequisites: Grade of "S" in GLS 101 and a strong desire to help other students. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

GLS 276: Undergraduate College Fellows Practicum

The second semester in the sequence following GLS 275. Students assume higher responsibility and are given opportunities to apply teaching theories and concepts as learned in GLS 275. Students act as a TA for GLS 101.

Prerequisites: A grade of "S" in GLS 275. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

GLS 475: Undergraduate College Teaching Practicum

The purpose of this course is to allow upper-division students the opportunity to work with a faculty member as an assistant in one of the faculty member's scheduled Undergraduate College seminars. 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. May be repeated up to a limit of 2 credits.

Prerequisite: Permission of the instructor and department

1 credit, S/U grading

GLS 488: Undergraduate College Internship

Students learn about contemporary issues in higher education, community building, and teaching at a research university through hands-on work with faculty mentors. Work assigned will include participation in the planning and operation of events and initiatives sponsored by the Undergraduate Colleges. Students are required to submit written reports on their experiences to the Undergraduate Colleges office and Faculty Directors. May be repeated up to a limit of 6 credits.

Prerequisite: Permission of the instructor and department

0-3 credits, S/U grading

GRK

Greek

GRK 101 - S3: Intensive Elementary Modern Greek

An intensive introduction to spoken and written modern Greek, stressing pronunciation, speaking, comprehension, reading, and writing. This course is designed for students who have no prior knowledge of the language.

6 credits

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

4 credits

GRK 112 - S3: Elementary Ancient Greek II

A continuation of GRK 111: the grammar and syntax of ancient Greek, with emphasis on reading comprehension.

Prerequisite: GRK 111

4 credits

GRK 121: Elementary Modern Greek I

An introduction to spoken and written Modern Greek, stressing pronunciation, speaking, comprehension, reading, and writing. Language Center supplements class work. The course is designed for students who have no prior knowledge of the language. Students who have had two or more years of Modern Greek in high school (or who has otherwise acquired an equivalent proficiency) may not take GRK 121 without written permission from the supervisor of the course. May not be taken for credit in addition to GRK 101.

3 credits

GRK 122 - S3: Elementary Modern Greek II

An introduction to spoken and written Modern Greek, stressing pronunciation, speaking, comprehension, reading, and writing. Language Center supplements class work. May not be taken for credit in addition to GRK 101.

Prerequisite: GRK 121

3 credits

HAD

Clinical Laboratory Sciences

HAD 210: Introduction to Clinical Laboratory Sciences

Defines basic clinical laboratory sciences terminology and application. Introduces the specialties within the clinical laboratory sciences profession including microbiology, hematology, chemistry, immunohematology, and immunology and their roles in patient care. Reviews professional organizations and licensures. Examines employment opportunities. Visitation of clinical laboratories included. Open to west campus students.

1 credit

HAD 304: Introd to Forensic Science

Introduces the student to forensic science. Describes the interesting and diverse disciplines that comprise the field. Addresses the value of all physical evidence to criminal and civil investigations. Emphasizes forensic biology and chemistry, and the role of the

forensic laboratory in the process of criminal investigation. Open to west campus students.

1 credit

HAL

Athletic Training

HAL 205: Introduction to Athletic Training

Introduction to the health care profession of athletic training. The course explores the history and development of the profession and the concept of the sports medicine team, as well as medical terminology. Students will be required to complete a 50 hour clinical observation. Open to west campus students.

2 credits

HAL 210: Emergency Care of Athletic Injuries

Recognition and management of medical emergencies with emphasis on those conditions that are most commonly suffered by athletes. Successful completion of the course leads to Professional level Cardio-Pulmonary Resuscitation(CPR), Automated External Defibrillator (AED) and First Aid certification by the American Academy of Orthopedic Surgeons Emergency Care and Safety Institute. HAL 205 is recommended prerequisite. Open to west campus students.

3 credits

HAL 300: Kinesiology

The mechanical aspects of human motion and the structure and function of these motions in physically active individuals with or without pathological involvement. The student learns basic qualitative and quantitative clinical techniques used in identifying pathological movement. Open to west campus students. Prerequisite/Corequisite: ANP 300

Corequisite: ANP 300

4 credits

HAN

Health Sciences

HAN 200: Human Anatomy and Physiology for Health Science I

This is the first course in a two-part sequence that introduces the study of human anatomy and physiology at the cell, tissue and organ system levels of organization, with emphasis on understanding disease processes associated with systems. This course is designed for Health Science (HAV) majors, particularly

those interested in pursuing HAN clinical concentrations of study. Open to non-HSC students. Prerequisite: one BIO course

3 credits

HAN 202: Human Anatomy and Physiology for Health Science II

This is the second course in a two-part sequence that continues the study of human anatomy and physiology. Topics include the endocrine system, blood composition, the cardiovascular system, the lymphatic system, the immune system, the respiratory system, the digestive system, nutrition, the urinary system, the reproductive system, fluid, electrolyte and acid-base balance and heredity. This course is designed for Health Science majors (HAV), particularly those interested in pursuing HAN clinical concentrations of study. Prerequisite: HAN 200.

3 credits

HAN 300: Health Care Issues

Provides students with an overview of the organization of the health care delivery system. Includes the role of health care professionals and health care organizations. Explores issues regarding health care insurance, the uninsured and underserved, managed care and changes in the health care marketplace. Provides an overview of major diseases including epidemics, chronic and acute illness. Discusses the role of health promotion and disease prevention as well as alternative and complementary medicine. Restricted to HAN majors.

Prerequisite: Admission to Undergraduate Health Sciences Center program

3 credits

HAN 312: Medical Terminology and Human Anatomy

Provides the medical terminology and human anatomy needed for non-clinical roles in healthcare. Presents medical terminology through didactic and experiential techniques by reviewing the digestive, urinary, integumentary, reproductive, respiratory, endocrine, nervous, musculoskeletal, cardiovascular and lymphatic systems. Students will learn how to build a medical vocabulary and understand the importance of precise communication in the delivery of health care. Open to non HSC students.

2 credits

HAN 333: Communication Skills

Introduces the principles of effective communication and stages of group development. Offers theory and practice of

interpersonal communication and groups. Provides specific topics related to health care teams. Restricted to HAN majors.

Prerequisite: Admission to Undergraduate Health Sciences Center program

3 credits

HAN 335: Professional Ethics

Provides students with a framework for identifying ethical dilemmas in professional settings. Through the use of case studies and role-playing, students simulate ethical situations relating to confidentiality, informed consent and truth-telling, and explore various approaches for resolving these conflicts. Presents professional codes of ethics using small and large group discussions. Presents and discusses ethics-related topics such as genetics, transplants, cloning, advance directives, and health care accessibility. Restricted to HAN majors.

Prerequisite: Admission to Undergraduate Health Sciences Center program

3 credits

HAN 364: Issues in Health Care Informatics

Acquaints students with the use and application of personal computers and medical information systems used in health care. Emphasizes the optimization and customization potential of computer functions for standard and specialized tasks. Examines the present and potential use of the Internet in the health care arena. Presents the application of medical informatics to health care delivery through classroom demonstrations and discussions. Restricted to HAN majors.

Prerequisite: Admission to Undergraduate Health Sciences Center program

3 credits

HAN 383: Professional Writing

Comprehensive overview of the skill set required to write professional documents. Students will be required to communicate to a variety of audiences via letters, memos, electronically transmitted documents, researched essays, and brochures. Introduces students to software packages and other web-based resources. Restricted to HAN majors.

Prerequisite: Admission to Undergraduate Health Sciences Center program

3 credits

HAN 395: Radiation Physics in Medicine

Provides an introduction to radiological and radiation oncology physics for students interested in a career in either medical

imaging or radiation therapy/oncology. Presents elements of mathematics and general physics relevant to the radiological sciences. Topics include production of radiation, radioactivity, interaction of radiations with matter, radiation detection, characteristics of high energy medical LINAC radiation, absorbed dose calculation and measurement, radiography, radionuclide imaging, imaging with ultrasound, imaging with magnetic resonance, and basic medical radiation safety. Restricted to HANBS students.

Prerequisite: Admission to Undergraduate Health Sciences Center program

4 credits

HAN 401: Radiobiology and Health Physics

Presents an overview of the biological effects of radiation by examining the interaction of radiation with matter, macromolecules, cells, tissue and the whole body. Studies the clinical impact of responses to radiation. Introduces students to radiation safety through topics such as biologic consequences of irradiation, regulatory limitation of exposure, methods for exposure minimization, and radiation monitoring. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 402: Radiographic Anatomy and Pathology

Provides basic radiographic anatomy from both the projection and cross sectional point of view. Introduces to basic disease processes, including the nature and causes of disease and injury. Examines these processes on medical images acquired through radiography, computed tomography, angiography, magnetic resonance, scintigraphy, emission computed tomography and ultrasonography. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 404: Radiology Instrumentation

Expands imaging physics into the area of Radiologic Technology. Studies the physical basis, construction, operation, and quality control of radiographic, fluoroscopic, computed radiographic, direct radiographic, digital subtraction, and computed tomography systems. Restricted to students approved for

appropriate senior year track in the Health Science major. Prerequisite: HAN 394

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 405: Radiographic Technique

Focuses on production of radiographic image. Includes rationale for selection of technical factors, issues of image resolution and contrast, image receptor technology; film sensitometry; image intensification; film processing; grids; automatic exposure control; portable/surgical procedures; and basic contrast agent pharmacology, and administration directly related to the production of radiographic images. Presents an overview of the special modalities of computed radiography (CR), direct radiography (DR), fluoroscopy, digital fluoroscopy, digital subtraction angiography (DSA), computed tomography (CT), and picture archive communication systems (PACS). Special emphasis is placed on reducing patient exposure to radiation. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 406: Radiologic Procedures and Positioning I

Examines routine clinical radiographic positioning of the upper and lower extremities, shoulder, spine, chest, pelvis skull, abdomen, and digestive and urinary systems. Includes portable studies, operating room applications, angiography and advanced imaging techniques. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394

Prerequisite: Admission to HAN 400 level classes

6 credits

HAN 416: Special Issues in Emergency Care and Resuscitation

Explores issues in special patient populations and areas in emergency care. Covers pediatric emergencies, obstetric emergencies, neonatology, and geriatric emergencies. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 417: Cardiac and Medical Emergencies

Explores concepts and issues that are critical to the assessment and care of patients presenting with cardiac and other medical emergencies. Covers pathophysiology, medical patient assessment and management, cardiopulmonary resuscitation, and advanced cardiac life support. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 426: Instrumentation for Nuclear Medicine Technology

Expands on HAN 394 (Imaging Physics), specifically in the area of Nuclear Medicine Technology. Examines the physical basis, construction, operation and quality control of radiation detection, pulse height analysis, planar imaging, Single Photon Emission Tomography (SPECT) imaging and Positron Emission Tomography (PET) imaging devices. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 427: Nuclear Medicine Procedures

Covers principles, methods and instrumentation used in Nuclear Medicine imaging. Examines the preparation and performance of planar, Single Photon Emission Tomography (SPECT) and Positron Emission Tomography (PET) nuclear medicine imaging procedures. Provides information needed to perform a variety of imaging and/or functional studies (e.g. liver, spleen, hepatobiliary, gastric reflux, gastrointestinal bleeds, lung, endocrine, central nervous system). Presents in vitro nuclear medicine procedures. Principles of sensitivity, specificity, accuracy, and predictive values of diagnostic testing are also examined.

Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394

Prerequisite: Admission to HAN 400 level classes

6 credits

HAN 429: Radiopharmacy and Therapy in Nuclear Medicine

Examines the production, labeling, quality control, clinical biodistribution, and application of radionuclide tracers for nuclear medicine imaging. Covers radionuclide and radiopharmaceutical characteristics that

provide suitable imaging properties. Discusses various aspects of laboratory procedures (e.g. safe handling of radionuclides, radiation safety surveys, hot laboratory instruments, radiopharmaceutical preparation, quality control and sterile technique). Explores pathologies, radiopharmaceuticals, dosage calculation and administration, and patient management issues related to radionuclide therapy. Restricted to students approved for appropriate senior year track in the Health Science major. Prerequisite: HAN 394

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 432: Introduction to Health Care Management

Introduces students to the practices and theories of health care policy and management. Presents an overview of the trends in public policy and management techniques. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 434: Corporate Compliance and Regulation

Provides an overview of recently enacted legislation requiring health care institutions' compliance programs. Introduces regulations and compliance including anti-trust, controlled substances, Americans with Disabilities Act, Occupational Safety and Health Act, Joint Commission on Accreditation of Health Care Organizations, Department of Health jurisdiction over hospitals and licensure requirements. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 435: Sales and Marketing in Health Care

Introduces the essential aspects of marketing and sales in the changing health care world. Addresses the concept of marketing, the nature of marketing strategy and the environment in which marketing operates. Provides a framework for understanding the consumer, along with key selling methods. Topics include the "Four Ps" of marketing, promotional elements of marketing, the communication process, and personal selling. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 436: Continuous Quality Improvement in Health Care

Provides basic principles associated with Total Quality Management (TQM) and Continuous Quality Improvement (CQI). Aids identification and quality problem-solving found in all health care organizations utilizing CQI tools and techniques. Through the use of case studies, current events, and textbook materials, students will learn how to identify problems, recommend improvements, and collect data to demonstrate process improvement. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 440: Introduction to Community Health Education

Introduces students to the foundation of planning, implementing and evaluating community-based health education programs. Presents classic theories of health education including the social learning theory, health belief model, and the attribution theory. Reviews relevant health education programs. Examines various learning styles and skills. Basic health education models are introduced and critiqued through individual and group projects. Reviews health education professional organizations and associations. Each student is required to design a health education program for a selected population. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 443: Aging and Disability

Provides comprehensive overview of aging and disability. Includes introduction to the field of geriatrics, age related disabilities, and the experiences of people with disabilities as they age. Presents an interdisciplinary perspective. Incorporates social, environmental, cultural, economic and historical issues related to disability and aging. Film, narrative, biography and guest speakers provide students with first-hand accounts of elders with disabilities. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 446: Disability Health and Community

Presents a comprehensive view of health and community concerns experienced by people with disabilities. Explores historical analysis, biomedical discourse, cultural critique, and field research to understand the evolution of medical practices, cultural beliefs, and social structures influencing the treatments, services, and opportunities available to people with disabilities in the United States and internationally. Includes gender, sexuality, race, poverty, "invisible disabilities", eugenic sterilization, assisted suicide topics. Guest speakers will facilitate a multi-layered understanding of the issues faced by people with disabilities and their families. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 447: Children with Disabilities

Provides a comprehensive overview of the theories of child development and issues related to children with developmental spectrum disorders, neurodevelopmental disorders, and communication and learning disorders. Includes behavioral, developmental, language, medical, motor and sensory needs of children with developmental disabilities. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 448: Disability and Employment

Presents a comprehensive overview of the Disability and Employment field. Explores pertinent employment-related legislation, the vocational rehabilitation system, the structure of existing governmental and not-for-profit programs, and current disability employment practices, through the use of didactic and experiential techniques. Emphasizes the key roles of placement professionals. Provides individualized learning opportunities for individuals with disabilities who happen to be job seeking. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 449: Project in Disability Studies

Students will develop independent projects in topic area of disability studies. They will be required to develop a set of readings, engage in a minimum of 15 hours of experiential learning [in the form of community site-visits, volunteerism, or internships]. Course instructors and assigned mentors will assist students during bi-weekly group meetings and by scheduled appointments. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 450: Introduction to Public Health

Introduces the principles and practices of public health, including definitions and concepts, history and development, determinants of health, and ethical and legal aspects of public health. Orients students to various public health settings such as local and state health departments, not-for-profit community organizations, and agencies for special populations. Provides students with basic knowledge and skills for conducting community needs assessment with diverse populations. Addresses infectious disease control, environmental health, chronic disease control, tobacco and drug control, maternal and child health, women's health, and injury control topics. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 452: Epidemiology and Biostatistics

Provides students with the basic knowledge and skills for studying diseases of individuals and groups. Introduces biostatistical approaches and skills for collecting and organizing data of communities to meet health needs. Addresses epidemiological concepts, limitations and resources. Through the use of case studies, students study various epidemiological models used regionally, nationally and internationally. Includes discussions about ethical situations related to research and statistical studies. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 453: Research Methods in Public Health

Focuses on the details of public health research design. Guides students through a step-by-step approach through qualitative, comparative, and quantitative research designs and analysis methods. Students will learn the language of research, various methods for conducting research and how to identify and synthesize research literature. Builds on concepts covered in the other courses in the public health/community health concentration. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 456: Behavioral and Social Aspects of Health

Introduces social and behavioral factors as determinants of health. Explores theories of human and group behavior and health behavior change models through lecture and case study. Explores the dynamics between health behaviors and culture, gender, age and socioeconomic status. Students study various inventory tools for measuring health-related knowledge and methods for measuring behavior change. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 462: Developing Health Information Systems

Introduces students to fundamental hardware and software concepts, operating systems, GUI or desktop environments and system development life cycles. Reviews Windows applications such as spreadsheet, database, forms, queries and reports. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 464: Health Information Systems Management

The course includes organizational change issues in health care environments, resource management (inventory, tracking and acquisition) and the role of policy formulation. Consumer issues, standards and security and the provision of health information resources to healthcare workers will also be covered. Relevant applications and issues related to health services will also be explored. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 466: Applied Health Care Informatics

Provides overview of the role of information systems in health care organizations. Emphasizes the integration of evidence-based research into clinical decision-making and the influence of information systems on health outcomes. Explores technical, organizational and cost-benefit issues related to health care information systems, including clinical decision-support, integrated networking and distributed computing technologies, telemedicine applications and artificial intelligence solutions. Through a combination of classroom-based seminars, group case studies, and computer laboratory exercises, students will develop and exercise analytical skills for appraising health information systems, as well as acquire practical experience using biomedical research databases, desktop application software, and electronic communication systems. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 467: Utilization and Outcomes Research Methods

Provides the necessary tools to evaluate and implement research methods and utilize outcomes within the health care system. Presents an overview of statistics and research methods and evaluation techniques by utilizing group discussions and case studies. Demonstrates the utilization of technology as a resource for existing research as well as management tools. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 470: Environmental Health, Occupational Health, and Safety Engineering

Provides fundamentals of occupational safety and health including safety engineering regulations, codes and practices, safety program administration, recognition of hazards, and implementation of hazard controls. Focuses on fire safety problems associated with modern industry and the controls needed to prevent or mitigate hazards.

Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 471: Trauma and Trauma Systems

Explores concepts and issues that are critical to the assessment and care of trauma patients. Covers kinematics, pathophysiology, trauma patient assessment and management, and trauma system development. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 472: Weapons of Mass Destruction

Presents a comprehensive overview of nuclear, biological incendiary, chemical and explosive agents that are more likely to be used as Weapons of Mass Destruction (WMD). Expands the Emergency Medical Service (EMS) provider's training in responding to conventional HAZMAT incidents and focuses on the recognition and management of incidents involving bioterrorism, chemical and nuclear weapons. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 474: Industrial Hygiene

Introduces basic concepts of industrial hygiene. Presents the methodology and procedures that professionals in the field use to identify, measure, and correct hazards in the work environment. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 476: Hazardous Materials, Emergency Response and Environmental Auditing

Concentrates on the nature of hazardous materials and how they are handled in the workplace. Presents the fundamentals of emergency response planning and how to perform environmental audits. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 477: HAZMAT Training for Emergency Medical Services

Comprehensive overview of the practice and procedures required of Emergency Medical Service (EMS) providers when responding to major HAZMAT incidents. Includes management strategies for Hazards Materials (HAZMAT) disasters. Emphasizes the coordination of services and resources by national, federal and local agencies. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 478: Internship in Environmental Health

Proposals for special projects involving advanced readings, reports and discussions on selected environmental health topics must be submitted. A research paper on the selected topic will be submitted to an assigned faculty sponsor. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

2 credits

HAN 481: Introduction to Anesthesia

Introduces the basics of the anesthesia specialty. Defines the role of the anesthesia specialist as an integral part of the patient care team. Through the use of lecture, video, tour, and hand-on demonstration, students will gain a working knowledge of how to assist anesthesiologists and anesthetists in the acquisition, preparation and application of equipment and supplies required for the administration of anesthesia. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

2 credits

HAN 482: Introduction to Pathology

Pathology is the branch of medicine devoted to the study and understanding of disease. This course will introduce the student to the concept of disease. The types of growth, causative factors and biological behavior of neoplastic diseases are discussed. Staging procedures are introduced. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 483: Cardiopulmonary Physiology for ASATT

Familiarizes students with the anatomical structures and physiological mechanisms and functions of the cardiopulmonary system. Reviews mathematical formulas and calculations used in clinical applications of physiologic concepts. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

3 credits

HAN 485: Clinical Monitoring

Provides students with a working knowledge of clinical monitoring devices and their application to clinical settings. Covers duties of anesthesia technologist including the provision of technical support to professional staff in order to facilitate anesthesia departmental function. Student develops skills to maintain and organize the anesthesia environment, equipment and supplies. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

1 credit

HAN 486: Principles and Practice of Radiation Therapy

Introduces student to the practice and technical aspects of radiation therapy. An overview of cancer to include: statistics, epidemiology, etiology, patient education and assessment, and pharmacology and drug administration. Radiation therapy techniques specific to anatomical site will be demonstrated and treatment outcome statistics discussed. Explores treatment options available to cancer patients. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 489: Pharmacology for ASATT

Presents basic principles of pharmacologic properties and clinical applications.

Through the use of lectures and scenarios, provides working knowledge base of drug classifications and their modes of action to produce therapeutic effects on target sites. Restricted to students approved for appropriate senior year track in the Health Science major.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 492: Radiation Oncology/Medical Physics II

Provides students interested in a career in medical dosimetry with an introduction to medical physics for radiation oncology. This is the second course in a two-part series that provides the basis for further study of the applications of radiation oncology physics to radiation treatment planning and radiation dose calculations. Covers topics such as radiation dose distribution, patient dose calculations, treatment planning, electron beam therapy, brachytherapy, modern treatment delivery, and radiation protection. Restricted to students approved for appropriate senior year track in the Health Science program.

Prerequisite: Admission to HAN 400 level classes

4 credits

HAN 499: Health Science Teaching Practicum

Advanced students assist faculty members teaching Health Science courses. In addition to working as tutors during instructional periods, students have regular conferences with a faculty supervisor. Students may not serve as teaching assistants in the same course twice. Permission of the instructor is required.

Prerequisite: Admission to Undergraduate Health Sciences Center program

1-2 credits

HAO

Occupational Therapy

HAO 313: Introduction to Occupational Therapy

Introduces the history and essential aspects of occupational therapy. Examines philosophical base, definitions related to the practice, scope of practice and role delineations. Provides an orientation to professional organizations, statutes, and credentialing. Open to west campus students.

1 credit

HAS

Allied Health

HAS 190: Introduction to the Health Professions

Presents topics of interest to students considering careers as health professionals. Introduces the student to basic concepts of

health, factors influencing health care, health care settings, and selected health professions. May not be taken for credit in addition to LHW 102. Open to west campus students.

1 credit

HAS 290: Medicine and Society

Examines traditional concerns of the humanities and social sciences as they interface with health care and its delivery. Practicing physicians or other health professionals present clinical cases. Emphasizes confidentiality, experimentation, dying and death, and allocation of scarce resources. Focuses on the social, historical, ethical, and humanistic importance of the cases. Permission of instructor required. Open to west campus students.

3 credits

HAT

Respiratory Care

HAT 210: Introduction to Respiratory Care

An introduction to the science of respiratory care. Current trends in professional practice are discussed and students have the opportunity to observe clinical practice at a variety of affiliated health care facilities. This course is specifically designed for lower-division four year respiratory care majors. Open to west campus students.

1 credit

HBA

Anatomical Sciences

HBA 109- E: Life Through Time

An examination of biodiversity as preserved in the fossil record and how it contributes to the understanding of evolution. Species examined include invertebrates, plants, dinosaurs, and mammals and the ultimate origin and evolution of humans. Principles of evolution, paleontology, phylogeny reconstruction, and conservation are discussed. This course is offered as both GEO 109 and HBA 109.

3 credits

HBA 398: Research Project in Anatomical Sciences

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on

the project and be able to discuss his or her work. Open to juniors and seniors. May be repeated.

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

2-4 credits

HBA 399: Research Project in Anatomical Sciences

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

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

2-4 credits

HBA 460: Regional Human Anatomy for Students in Cytotechnology

A lecture and laboratory course that includes the dissection of the head, neck and trunk. The course is organized in two modules: 1) thorax and abdomen, and 2) head and neck, including neuroanatomy. It covers regional and conceptual information on a gross anatomical level.

3 credits

HBA 461: Regional Human Anatomy

An overview of the gross anatomy of the human body. Dissection of the entire human body. Includes neuroanatomy. Prerequisite: Permission of instructor for non-Health Sciences students.

Prerequisite: Admission to Undergraduate Health Sciences Center program

5 credits

HBH

Pharmacology

HBH 330: Fundamentals of Pharmacology I

HSC Bulletin Information Covers the basic principles that underlie the action of drugs on physiological processes. These principles are applied to the specific action of drugs on the autonomic nervous system. In addition, the pharmacology of cardiovascular drugs are covered in detail.

Prerequisite: Admission to Undergraduate Health Sciences Center program

2 credits

HBH 331: Fundamentals of Pharmacology II

A continuation of HBH 330. Covers the action of drugs on individual systems as well as drug-drug interactions emphasizing the mechanisms of drug action. Surveys therapeutic applications and adverse drug reactions. Prerequisite: HBH 330

Prerequisite: Admission to Undergraduate Health Sciences Center program

3 credits

HBH 332: Pharmacology in Cardiorespiratory Sciences

Includes the basic principles of drug actions and covers drug applications in the autonomic, cardiovascular and respiratory systems. For cardiorespiratory sciences students enrolled in The School of Health Technology and Management.

Prerequisite: Admission to Undergraduate Health Sciences Center program

3 credits

HBH 393: Topics in Pharmacology

Tutorial readings in pharmacology with periodic conferences, reports, and examinations arranged with the instructor. Open to juniors and seniors. May be repeated. May not be used toward the requirements for the major in pharmacology.

Prerequisites: U3 or U4 standing; permission of instructor

1-5 credits

HBH 394: Topics in Pharmacology

Tutorial readings in pharmacology with periodic conferences, reports, and examinations arranged with the instructor. Open to juniors and seniors. May be repeated. May not be used toward the requirements for the major in pharmacology.

Prerequisites: U3 or U4 standing; permission of instructor

1-5 credits

HBH 396: Research Project in Pharmacology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project. May be repeated. May not be taken for credit in addition to BCP 487.

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

0-6 credits

HBH 398: Research Project in Pharmacology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project. May be repeated. May not be taken for credit in addition to BCP 487.

Prerequisite: U3 or U4 standing

1-6 credits

HBH 399: Research Project in Pharmacology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project. May be repeated. May not be taken for credit in addition to BCP 487.

Prerequisite: U3 or U4 standing

1-6 credits

HBM**Molecular Genetics and Microbiology****HBM 320: General Microbiology**

A study of the molecular structure, functional anatomy, growth, genetics, and pathogenic mechanisms of microbial agents, with an emphasis on bacteria and viruses. Non-specific and specific host defenses and the control of microorganisms will also be covered. Satisfies the microbiology requirement for admission to most allied health, nursing, optometry, and veterinary medicine professional schools.

Prerequisites: BIO 202; CHE 132

3 credits

HBM 321: General Microbiology Laboratory

Complementing the lecture material of HBM 320, this optional laboratory covers basic and applied microbiological methods. Students are introduced to methods for isolating pure cultures, microscopy and staining, quantitation of bacteria and determination of sensitivity to antimicrobial agents. This laboratory is limited to pre-allied health, pre-nursing, and pre-veterinary students.

Prerequisites: BIO 202; CHE 132; permission of instructor

1 credit

HBM 398: Research Project in Microbiology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. Project report required. May be repeated.

Prerequisites: U3 or U4 standing; prior laboratory experience; permission of instructor

0-4 credits

HBM 399: Research Project in Microbiology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. Project report required. May be repeated.

Prerequisites: U3 or U4 standing; prior laboratory experience; permission of instructor

0-4 credits

HBP**Pathology****HBP 310: Pathology**

A study of the basic mechanisms of disease and the pathophysiology of the important human illnesses. Primarily for Health Sciences Center students; others admitted with special permission.

Prerequisite: Admission to Undergraduate Health Sciences Center program

3 credits

HBP 393: Special Topics from Pathology Literature

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

Prerequisites: U3 or U4 standing; permission of instructor

1-2 credits

HBP 394: Special Topics from Pathology Literature

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

Prerequisites: U3 or U4 standing; permission of instructor

1-2 credits

HBP 398: Research Project in Pathology

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

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

0-4 credits

HBP 399: Research Project in Pathology

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

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

0-4 credits

HBP 401: Applied Immunology

Introduces the principles of immunology for allied health professions students. Emphasizes applications of immunological principles to clinical and laboratory immunology. Prerequisite: Enrollment in School of Health Technology and Management or Biology or Pre Med Major.

Prerequisite: Admission to Undergraduate Health Sciences Center program

3 credits

HBW

Hebrew

HBW 111: Elementary Hebrew I

An introduction to modern Hebrew as currently spoken and written in Israel, stressing pronunciation, speaking, listening comprehension, reading, and writing. The course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Hebrew in high school (or who has otherwise acquired an equivalent proficiency) may not take HBW 111 without written permission from the supervisor of the course.

3 credits

HBW 112 - S3: Elementary Hebrew II

An introduction to modern Hebrew as currently spoken and written in Israel, stressing pronunciation, speaking, listening comprehension, reading, and writing.

Prerequisite: HBW 111

3 credits

HBW 211 - S3: Intermediate Hebrew I

Intermediate courses in conversation, composition, and the reading of texts in modern Hebrew.

Prerequisite: HBW 112

3 credits

HBW 212 - S3: Intermediate Hebrew II

Intermediate courses in conversation, composition, and the reading of texts in modern Hebrew.

Prerequisite: HBW 211

3 credits

HBW 311 - S3: Advanced Hebrew I

A course in the active use of spoken and written Hebrew. Readings of classics in the Hebrew language. Discussion is conducted mainly in Hebrew.

Prerequisite: HBW 212

3 credits

HBW 312 - S3: Advanced Hebrew II

Readings in modern Hebrew authors. Oral and written reports. Discussion is conducted mainly in Hebrew.

Prerequisite: HBW 311

3 credits

HBW 405 - S3: Studies in Hebrew Literature

May be repeated as the topic changes.

Prerequisite: HBW 311 or 312

3 credits

HBW 415 - S3: The History of the Hebrew Language

Readings and discussion (in Hebrew) of selections from Biblical, post-Biblical, and modern literature; lectures and discussion (in English) on the changes of sentence structure, meaning, sound, and style from one period to another. Particular attention is given to classicism, innovation, and restructuring in the rise of modern Hebrew.

Prerequisite: HBW 311

3 credits

HBW 447 - S3: Directed Readings in Hebrew

Intensive study of a particular author, period, or genre of Hebrew literature in the original

under close faculty supervision. May be repeated.

Prerequisite: Permission of director

1-4 credits

HBW 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Students may not serve as teaching assistants in the same course twice.

Prerequisites: U3 or U4 standing; permission of instructor

3 credits, S/U grading

HBW 476: Undergraduate Teaching Practicum II

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

Prerequisites: HBW 475; permission of instructor

3 credits, S/U grading

HBY

Physiology and Biophysics

HBY 350: Physiology

The normal functioning of human tissues and organs and their regulation by the nervous and endocrine systems. Special emphasis is given to physiological control systems and the preservation of the constancy of the internal environment. Lectures, conferences, demonstrations. Only for Health Sciences Center students. Only Fall.

Prerequisite: Admission to Undergraduate Health Sciences Center program or admission to Pharmacology major or permission of instructor

4 credits

HBY 390: Topics in Physiology

Seminar in advanced topics taught in conjunction with HBV 350 Physiology. Only Fall.

Corequisite: HBV 350; permission of instructor

1 credit

HBV 393: Special Topics from Physiology and Biophysics Literature

Tutorial readings in physiology and biophysics and periodic conferences, reports, and examinations arranged with the instructor. May be repeated. Only Fall.

Prerequisites: U3 or U4 standing; permission of instructor

1-2 credits

HBV 394: Special Topics from Physiology and Biophysics Literature

Tutorial readings in physiology and biophysics and periodic conferences, reports, and examinations arranged with the instructor. May be repeated. Only Fall.

Prerequisites: U3 or U4 standing; permission of instructor

1-2 credits

HBV 398: Research Project in Physiology and Biophysics

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

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

0-4 credits

HBV 399: Research Project in Physiology and Biophysics

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

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

0-4 credits

HDH

Dental Medicine

HDH 301: Independent Readings and Research

The student conducts his or her research project under the supervision of one or more members of the Department of Dental Health. The student is expected to submit a written report detailing his or her research activities and conclusions. This course is offered for undergraduate students who demonstrate an interest in the health care delivery system of the United States.

Prerequisites: SOC 392 when topic is Health Care Delivery; approval of department chairperson

3 credits

HDO

Oral Biology and Pathology

HDO 320: Research: Oral Biology and Pathology

Fall, Spring or Summer Research: Oral Biology and Pathology

2-4 credits

HDO 321: Oral Biology Research II

The student conducts an independent research project under the supervision of one or more members of the Department of Oral Biology and Pathology. The student is expected to submit a written report detailing experimental methods, results, and conclusions. A copy of the student's transcript must be submitted with the application to the Department. Fall or Spring research.

Prerequisites: U3 standing; permission of the Department prior to registration

Advisory Prerequisites: BIO 202; CHE 132/134 or CHE 142/144

2-4 credits

HDO 420: Oral Biology Research III

The student conducts a research project under the supervision of one or more members of the Department of Oral Biology and Pathology. The student is expected to submit a written report detailing experimental methods, results, and conclusions. A copy of the student's transcript must be submitted with the application to the Department. Fall or Spring research.

Prerequisites: U4 standing; permission of department prior to registration

Advisory Prerequisites: BIO 202; CHE 132/134 or CHE 142/144

2-4 credits

HDO 421: Oral Biology Research IV

The student conducts a research project under the supervision of one or more members of the Department of Oral Biology and Pathology. The student is expected to submit a written report detailing experimental methods, results, and conclusions. A copy of the student's transcript must be submitted with the application to the Department. Fall or Spring research.

Prerequisites: HDO 420

2-4 credits

HDP

Periodontics

HDP 320: Introduction to Periodontal Research

The student is taught various techniques and procedures used in current periodontal research. The student is expected to undertake a small research project implementing these techniques.

Prerequisites: CHE 132/134 or CHE 142/144; BIO 202; permission of instructor

0-4 credits

HDP 321: Introduction to Periodontal Research

The student is taught various techniques and procedures used in current periodontal research. The student is expected to undertake a small research project implementing these techniques.

Prerequisites: CHE 132/134 or CHE 142/144; BIO 202; permission of instructor

0-4 credits

HDP 322: Introduction to Periodontal Research

The student is taught various techniques and procedures used in current periodontal research. The student is expected to undertake a small research project implementing these techniques.

Prerequisites: CHE 132/134 or CHE 142/144; BIO 202; permission of instructor

0-4 credits

HDP 420: Research in the Biology and Pathology of Periodontium

An independent research project under faculty supervision with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. Open to upper-division students. May be repeated up to a maximum of eight credits.

Prerequisites: U3 or U4 standing; permission of instructor

0-4 credits, S/U grading

HDP 421: Research in the Biology and Pathology of Periodontium

An independent research project under faculty supervision with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. Open to upper-division students. May be repeated up to a maximum of eight credits.

Prerequisites: U3 or U4 standing; permission of instructor

0-4 credits, S/U grading

HDP 422: Research in the Biology and Pathology of Periodontium

An independent research project under faculty supervision with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. Open to upper-division students. May be repeated up to a maximum of eight credits.

Prerequisites: U3 or U4 standing; permission of instructor

0-4 credits, S/U grading

HDV

Human Development

HDV 101: Introduction to Stony Brook

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

Prerequisite: Admission to the HDV Undergraduate College

1 credit, S/U grading

HDV 102: Undergraduate College Seminar: Human Development

A seminar for all first-year students in the Undergraduate College of Human Development. Seminar topics vary annually by section and cover a variety of subjects under the general scope of Human Development. Required for all first year students. Not for

credit in addition to ACH 102, GLS 102, ITS 102, LDS 102, or SSO 102.

Prerequisite: Admission to the HDV Undergraduate College

1 credit, ABC/U grading

HDV 275: Undergraduate College Fellows Seminar

Creates a curricular component for the second year of the Undergraduate College Experience. College fellows will enroll in HDV 275 in the spring semester of their freshman year and HDV 276 in the fall semester of their sophomore year. 275 (spring) engages students in four main content areas: student development theory, scholarship on mentoring and leadership development, concepts of teaching and learning, and programming and event planning. These areas prepare students for supervised learning and teaching experiences that will occur primarily in the fall 276 course.

Prerequisites: Grade of "S" in HDV 101 and a strong desire to help other students. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

HDV 276: Undergraduate College Fellows Practicum

The second semester in the sequence following HDV 275. Students assume higher responsibility and are given opportunities to apply teaching theories and concepts as learned in HDV 275. Students act as a TA for HDV 101.

Prerequisites: A grade of "S" in HDV 275. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

HDV 475: Undergraduate College Teaching Practicum

The purpose of this course is to allow upper-division students the opportunity to work with a faculty member as an assistant in one of the faculty member's scheduled Undergraduate College seminars. 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. May be repeated up to a limit of 2 credits.

Prerequisite: Permission of the instructor and department

1 credit, S/U grading

HDV 488: Undergraduate College Internship

Students learn about contemporary issues in higher education, community building, and teaching at a research university through hands-on work with faculty mentors. Work assigned will include participation in the planning and operation of events and initiatives sponsored by the Undergraduate Colleges. Students are required to submit written reports on their experiences to the Undergraduate Colleges office and Faculty Directors. May be repeated up to a limit of 6 credits.

Prerequisite: Permission of the instructor and department

0-3 credits, S/U grading

HIN

Hindi

HIN 101 - S3: Intensive Elementary Hindi

An intensive, 6-credit, elementary-level Hindi language course that provides students with basic skills, including pronunciation, everyday conversational proficiency, script, basic grammatical rules, and basic cultural norms and preferences that govern language use. Using the communicative approach, this course situates oral and written language in real-life contexts and promotes learner-centered, interactive classroom activities. A student will be able to comprehend basic conversations and respond in correct Hindi. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Hindi in high school (or who has otherwise acquired an equivalent proficiency) may not take HIN 101 without written permission from the supervisor of the course. May not be taken for credit after any other course in Hindi.

6 credits

HIN 111: Elementary Hindi I

An introduction to spoken and written Hindi, stressing pronunciation, speaking, comprehension, reading, and writing. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Hindi in high school (or who has otherwise acquired an equivalent proficiency) may not take HIN 111 without written permission from the supervisor of the course.

3 credits

HIN 112 - S3: Elementary Hindi II

An introduction to spoken and written Hindi, stressing pronunciation, speaking, comprehension, reading, and writing.

Prerequisite: HIN 111

3 credits

HIN 211 - S3: Intermediate Hindi I

Advanced speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work. A student who has had more than four years of Hindi in high school (or who has otherwise acquired an equivalent proficiency) may not take HIN 211 without the written permission of the supervisor of the course.

Prerequisite: HIN 112

3 credits

HIN 212 - S3: Intermediate Hindi II

Advanced speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work. A student who has had more than four years of Hindi in high school (or who has otherwise acquired an equivalent proficiency) may not take HIN 212 without the written permission of the supervisor of the course.

Prerequisite: HIN 211

3 credits

HIN 311 - S3: Hindi Conversation and Composition I

An advanced course designed to strengthen students' ability to understand, speak, read, and write Hindi beyond the intermediate level. Students learn to read and comprehend a variety of selected texts from their textbook which includes samples from Hindi newspapers, TV, films, journals, and classical and modern literature and to appreciate the cultural nuances of language use. They are also trained to write professionally and/or creatively in Hindi. Not intended for international students with native knowledge of written and spoken Hindi, or for native students who have mastered written and spoken Hindi.

Prerequisite: HIN 212 or placement test

3 credits

HIN 312 - S3: Hindi Conversation and Composition II

Students continue to strengthen their ability to understand, speak, read, and write Hindi beyond the intermediate level. Students learn to read and comprehend a variety of selected texts from their textbook which includes samples from Hindi newspapers, TV, films,

journals, and classical and modern literature and to appreciate the cultural nuances of language use. Students are also trained to write professionally and/or creatively in Hindi. Not intended for international students with native knowledge of written and spoken Hindi, or for native students who have mastered written and spoken Hindi.

Prerequisite: HIN 311 or placement test

3 credits

HIS

History

HIS 101- F: European History: from Antiquity to Revolution

An introduction to the ideas and institutions of "the West" from the beginnings of civilization to the French Revolution. Topics include ancient cultures; the rise of Christianity; medieval politics and society, Renaissance art and thought; the Reformation and Counter-Reformation; the new science; absolutism and the modern state; and the Enlightenment.

3 credits

HIS 102- F: Modern European History from 1789 to 1945

An introduction to the revolutionary events in politics and the economy, principally the industrialization of society, and the national, class, ethnic, and gender conflicts that dominated the period, including their cultural and ideological aspects. The course begins with the French Revolution, characterized by high hopes for the rational mastery of nature and society, and ends with the Second World War, a period of mass destruction and total war.

3 credits

HIS 103- F & 4: American History to 1877

A survey of American history from the Age of Discovery to the end of Reconstruction. Topics include the transplantation of European culture to America, the rise of American nationalism, the democratization of American society, the institution of slavery, and the emergence of an industrial society.

3 credits

HIS 104- F & 4: United States Since 1877

A survey of modern American history from the end of Reconstruction to the present. The course focuses on the impact of industrialization on social, cultural, and political life; the emergence of the United

States as a world power; and the adaptation of that power to the crises of the later 20th century.

3 credits

HIS 105- F: The Ancient World

An overview of the cultures and civilizations of the Old World from the emergence of the first cities around 3500 BCE to the fall of the Roman Empire. The primary focus is on the development of the stream of tradition antecedent to modern Europe that begins in the ancient Near East and moves through Greece and the Hellenistic world to Rome. The emergence of the first civilizations in India and China will also be treated. Students will focus on individual and group behavior within society and use historical methods and content as a means to observe and analyze human activity and society.

3 credits

HIS 201- J: The Ancient Near East

An overview of the world's first civilization, from the invention of writing to the conquests of Alexander the Great (d. 323 BCE). Ancient Mesopotamia, in which Sumerians, Akkadians, Babylonians, and Assyrians developed their distinctive cultures, will be the central focus, but other Near Eastern peoples who were deeply influenced by the Mesopotamian tradition, such as the Hittites, Israelites, Phoenicians, and Persians, will be covered as well.

Advisory Prerequisite: HIS 105

3 credits

HIS 202- I: Ancient Greece

Basic features of modern life can be traced back to the people of ancient Greece: democracy, philosophy, theater, and more all began among the ancient Hellenes. Who were these people? What enabled them to achieve so much, and why has their influence lasted so long? This course will try to answer these questions.

3 credits

HIS 203- I: Ancient Rome

Important features of modern culture, the legal and religious foundations of our heritage, were shaped by the people of ancient Rome. How could the inhabitants of one city achieve so much, and why has their influence lasted so long? This course will try to answer these questions.

3 credits

HIS 204- J: Egypt of the Pharaohs

An archaeologically informed overview of the history of ancient Egypt, beginning with the introduction of agriculture and concluding with the integration of Egypt into the Roman Empire. Particular attention will be given to the records of the ancient Egyptians themselves, which are transmitted to us through the hieroglyphic writing systems and its derivatives. While political history forms the chronological framework of the presentation, there will be detailed consideration of various aspects of Egyptian culture such as kingship, political institutions, artistic traditions, mortuary practices, religion, historiography, and literature.

Advisory Prerequisite: HIS 105

3 credits

HIS 208- I: Ireland from St. Patrick to the Present

A survey of the history of Ireland with emphasis on its colonization and the subsequent emergence of an independent, though troubled and fragmentary, national state.

3 credits

HIS 209- I: Imperial Russia

The political, social, and cultural developments from Peter the Great to the revolutionary era with emphasis on the unique institutional structure of Tsarist Russia and the problem of its relations with the West.

3 credits

HIS 210- I: Soviet Russia

The ideological and social background of the Russian Revolution and the evolution of Soviet rule: the problem of industrialization, the relations with the capitalist West, and totalitarian control over society.

3 credits

HIS 212- J: Ancient History of Mesoamerica

A detailed examination of the Pre-Columbian civilizations of Mesoamerica. Traces the historical development of Mesoamerican populations from transhumant hunter-gatherers to some of the world's most intriguing independent civilizations. Emphasis will be placed on the social, economic, and political trajectories of the Olmec, Teotihuacan, Zapotec, Maya, Toltec, and Aztec peoples. Class will conclude with a discussion of the role of ancient history in the region's modern identity.

3 credits

HIS 213- J: Colonial Latin America

From conquest to independence: Spanish and Portuguese colonialism in the New World and the forging of Latin American societies.

Advisory Prerequisite: LAC 200

3 credits

HIS 214- J: Modern Latin America

From independence to the present: the evolution of 19th- and 20th-century Latin America. Emphasis on current social, economic, and political issues. This course is offered as both HIS 214 and POL 214.

Advisory Prerequisite: LAC 200

3 credits

HIS 216- J: History of U.S.-Latin American Relations

An examination of the impact of U.S. economic and political relations with Latin America from the mid-19th century to the present. The course considers changes in American policy toward Latin America, as well as the varying responses of Latin American nations to U.S. intervention and influence. This course is offered as both HIS 216 and POL 216.

Advisory Prerequisite: One HIS course

3 credits

HIS 219- J: Introduction to Chinese History and Civilization

Introductory survey examining key concepts and significant themes in Chinese history. Topics include Confucianism, popular religion, government, foreign policy, the economy, Western influence, Chinese revolution, and modernization.

Advisory Prerequisite: One HIS course

3 credits

HIS 220- J: Introduction to Japanese History and Civilization

A broad survey of Japan's history since antiquity. Focus is on the broader processes of political, economic, social, and cultural transformation of Japan. Themes include: the role of the emperor, Japan's relationship to Asia and the West, state-societal relations, and the nature of Japanese capitalism.

Advisory Prerequisite: One HIS course

3 credits

HIS 221- J: Introduction to Modern African History

Historical themes in 19th- and 20th-century Africa. Topics include social and political relations in African states; slavery and the slave trade in West Africa; the impact of Christianity and Islam on African colonialism; colonialism and its consequences; nationalist

movements and de-colonization; pan-Africanism and the politics of African unity; the postcolonial state project; economic planning in postcolonial Africa; and African states and international politics in the Cold War era. This course is offered as both AFS 221 and HIS 221.

Advisory Prerequisite: One D.E.C. category F course

3 credits

HIS 225- J: The Formation of the Judaic Heritage

Jewish history and the development of Judaism during the Persian, Hellenistic, and Roman periods (ca. 500 B.C.E.- ca. 500 C.E.). The course begins with the close of the Hebrew Bible, examines the varieties of Judaism which then arose, and ends with the consolidation of rabbinic Judaism on one hand and Christianity on the other. This course is offered as both HIS 225 and JDS 225.

Advisory Prerequisite: RLS 101 or 110 or one HIS course

3 credits

HIS 226- F: The Shaping of Modern Judaism

The history of the Jews and of Judaism since the fall of the Roman Empire and the rise of Islam. The course concludes with a study of the Holocaust and the creation of the State of Israel, and includes a survey of the major forms of American Jewish life. This course is offered as both HIS 226 and JDS 226.

Advisory Prerequisite: RLS 101 or 110 or one HIS course

3 credits

HIS 227- J: Islamic Civilization

Selected topics in Islamic civilization beginning with the Arabian world at the time of Muhammed and extending to current events. The focus of the course is primarily on history and culture, but the interplay of politics and religion is also examined.

3 credits

HIS 235- I: The Early Middle Ages

A survey of Europe in the Early Middle Ages (300-1100) from the emergence of Christianity and the decline of the Roman Empire in the West through the Investiture Struggle and the early Crusades. The course covers social, political, cultural, and religious developments. Emphasis is placed on the reading of primary sources - literary and religious texts and the public record.

3 credits

HIS 236- I: The Late Middle Ages

A survey of Europe in the Later Middle Ages (1100-1500) from the Crusades and rise of towns and feudal monarchy through the years of war, plague, and the Great Schism and Conciliarism. The course covers social, political, cultural, and religious developments. Emphasis is placed on the reading of primary sources - literary and religious texts and the public record.

3 credits

HIS 237- H: Science, Technology, and Medicine in Western Civilization I

An examination of science, technology, medicine, and their social organization from 1450-1790 (from the Renaissance to the French Revolution) and the origin of those systems in Western cultures. Among the topics covered are experimentation and mathematics, funding of technological development by the state, organizations of scientists, the place of science and technology in cultural life, industrialization, and the character and organization of medical practice.

Advisory Prerequisite: One D.E.C. category E course

3 credits

HIS 238- H: Science, Technology, and Medicine in Western Civilization II

An examination of science, technology, medicine, and their social organization from 1790 to the present (from the French Revolution to the end of the Cold War) and the development of these systems world wide. Among the topics covered are professionalization of medicine, implications of physics for defense industries, growth of biotechnology, and the impact of Darwinism on culture.

Advisory Prerequisite: HIS 102

3 credits

HIS 241- I: The Holocaust: The Destruction of European Jewry-- Causes and Consequences

The rise of modern anti-Semitism since the late 18th century and its political application in Nazi Germany. Topics include the destruction process, ghetto life, resistance, foreign response, and the war crimes trials. This course is offered as both HIS 241 and JDS 241.

Advisory Prerequisite: JDS/HIS 226 or HIS 101 or 102

3 credits

HIS 248- I: Europe, 1815-1914

European history from the Congress of Vienna to the outbreak of the First World War, with

emphasis on political and social developments, but also including economic and cultural trends.

Advisory Prerequisite: HIS 101 or 102

3 credits

HIS 249- I: Modern Europe, 1914-1945

European history from the outbreak of the First World War to the post-World War II period, with emphasis on political and social developments, but also including economic and cultural trends. Consideration of the historic forces leading up to the events of 1914.

Advisory Prerequisite: HIS 102

3 credits

HIS 250- F: The Second World War, 1939-1945

A comprehensive examination of the ordeal of total war. Military history forms the background for a study of how societies mobilized to meet the demands of total war; how people faced foreign occupation and persecution; and how the war changed political, economic, and social institutions, inspired moral reflection and cultural expression, and altered the global balance of power.

Advisory Prerequisite: HIS 102

3 credits

HIS 251- I: Europe Since 1945

A study of contemporary Europe against the background of 20th century history, emphasizing political developments beginning with the Cold War, de-colonization, the problems of postindustrial society, managed capitalism, and intellectual and cultural movements such as existentialism and Marxist humanism.

Advisory Prerequisite: HIS 102

3 credits

HIS 261- K & 4: Change and Reform in the United States, 1877-1919

The growth of industrialism, class conflict, and ethnic diversity in America and the rise of social reform movements to address these changing conditions. Includes early 19th-century background and explores implications for the present day.

Advisory Prerequisite: HIS 104

3 credits

HIS 262- K & 4: American Colonial Society

Political, economic, social, and cultural characteristics of the American colonies from their founding until their separation from

Great Britain. Particular attention is devoted to the interaction of cultures and peoples in the making of colonial societies as reflected in the institution of slavery and ethnic, racial, and provincial identities.

Advisory Prerequisite: HIS 103

3 credits

HIS 263- K & 4: Age of the American Revolution

The social, economic, and political history of the period 1763-1787, set against the background of the development of colonial society. The course stresses social and economic changes, the causes and results of the Revolution, the formation of new state and national governments, and the first party system.

Advisory Prerequisite: HIS 103

3 credits

HIS 264- K & 4: The Early Republic

Against the background of colonial and revolutionary developments, the course examines the beginnings of modern political, economic, and social institutions in the United States. Areas covered include the conflict between the North and South, economic growth and diversity, political democratization and the rise of the professional politician, changes in the roles of men and women, and the development of American popular culture.

Advisory Prerequisite: HIS 103

3 credits

HIS 265- K & 4: Civil War and Reconstruction

An examination of the political and social roots of the conflict between the slave South and free-labor North, going back to the earliest settlements and Constitutional debates. Major themes include how two very different societies fought the war; the political battles over the nature of the reunited nation; the Black Experience during slavery, wartime, and Reconstruction; and changing white racial attitudes throughout this era.

Advisory Prerequisite: HIS 103

3 credits

HIS 266- K & 4: History of the United States West

Study of the United States West as both a place and a process, examining the region through its history as the homeland of various Native American peoples; as an object of European imperial designs and then Mexican and U.S. economic, territorial, and cultural expansionism; and finally as a region with particular ties to the United States federal

government as well as distinctive patterns of race relations and a unique place in U.S. cultural memory.

Advisory Prerequisite: HIS 103 or 104

3 credits

HIS 268- K & 4: Recent U.S. History, 1919 - Present

A survey of recent U.S. history: the 19th and early 20th century social, cultural, and economic developments. Topics include the 1920's, the Great Depression and New Deal, the Cold War, the 1960s and after.

Advisory Prerequisite: HIS 104

3 credits

HIS 277- K & 4: The Modern Color Line

An exploration of the significance of race in 19th- and early 20th-century America. Topics include forms of political organization and collective struggle; the social and psychic consequences of racist subjection; the relationship among race, racism, and culture; and the cultural politics of race and gender. This course is offered as both AFS 277 and HIS 277.

Advisory Prerequisites: AFS 101 and 102; completion of D.E.C. categories I and J

3 credits

HIS 281- H: Global History and Geography

The ways in which geography has influenced human history, and the ways in which the societal impact on Earth's ecosystems has grown since the Industrial Revolution. Additional topics include old and new ideas about history, geography, and climate; the gradual unveiling of the whole face of the Earth through exploration and cartography; and the recent development of Geographical Information Systems (GIS).

Prerequisite: completion of D.E.C. F

Advisory Prerequisite: one D.E.C. E course

3 credits

HIS 300- F: Global History

Designed for upper-division students, this course provides an in-depth study of a specific topic relating to global history. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; one course in 20th-century history

3 credits

HIS 301: Reading and Writing History

How modern historians have written history, focusing on the methods of three types of history - social, cultural, and political - and how historians have addressed three major

problems of historical analysis - causation, motivation, and the significance or meaning of events. Readings include material from U.S., European, and Latin American history.

Prerequisites: At least six credits in history

3 credits

HIS 302- H: Environmental History in Global Perspective

An exploration of human-caused transformations in natural environments and in ideas about nature from prehistory to the present. Examining topics from agriculture and deforestation in classical antiquity to the Columbian encounter, from problems of environmental management in imperial India to the emergence of environmentalism as a global movement today, the course focuses on case studies from several regions, including the Mediterranean, the Caribbean, New England, and South Asia.

Prerequisite: U3 or U4 standing; 1 DEC E course

3 credits

HIS 303- I: The Crusades and Medieval Society

This course examines the various medieval military conflicts known collectively as The Crusades. We will investigate specific episodes such as the Latin conquest of Jerusalem, the Children's Crusade, the Shepards' Crusade, and the Albigenian Crusade. We will also explore such issues as the origins of the idea of crusade, the social developments underlying the crusades, crusading culture and propaganda, the European encounter with the Muslim world, and the long term effects of the crusades on European society, politics, culture, and economy.

Prerequisite: U3 or U4 status

Advisory prerequisites: HIS 101 or HIS 236

3 credits

HIS 304- I: Religion, Magic and Witchcraft in Early Modern Europe

An exploration of the ways in which, from the late Middle Ages through the Renaissance and Reformation to the Enlightenment, Europeans struggled to define their identity and beliefs. The course will investigate such topics as medieval reactions to magic and heresy, the rise of the witch hunts, the split-up of Christendom into warring Catholic and Protestant empires, and the emergence of modern ideas of skepticism and toleration.

Prerequisite: HIS 101 or 102 and U3 or U4 standing

3 credits

HIS 305- I: Victorian Britain

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

Prerequisite: HIS 101 or 102 and U3 or U4 standing

3 credits

HIS 306- I: Post-1945 Britain: Postcolonial Disruptions

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

Prerequisites: HIS 102 and U3 or U4 standing

3 credits

HIS 308- I: Britain and France in the Age of Revolution

This course examines the social, intellectual, cultural and political life of Britain, France and their overseas colonies from the death of the Sun King to the Battle of Waterloo. We will examine the sources and consequences of related developments, focusing on: the structure of the ancient regime states; the impact of war and empire; women, race and public culture in the Enlightenment; Paris and London as global cities; exoticism and exploration; the emergence of popular radicalisms, and the transatlantic circuits of revolution.

Prerequisites: HIS 102 and U3 or U4 standing

3 credits

HIS 310- I: Modern France, 1900 to the Present

The French nation's response to the traumas of world wars, depression, decolonization, and the challenge of industrial society from the Dreyfus Affair to the Fifth Republic.

Prerequisite: HIS 102

3 credits

HIS 312- I: From Empire to Third Reich: Germany, 1890-1945

From Bismarck's dismissal through the Wilhelmian Empire, the First World War and Revolution to Germany's unsuccessful experiment with democracy - the Weimar Republic - accompanied by the rise of Hitler's Nazi movement, which culminated in the Third Reich and the Second World War.

Prerequisite: HIS 102

3 credits

HIS 315- K: Histories of Feminism

An historical study of the theoretical and practical developments that form contemporary feminism. Beginning with the 18th century critiques of women's rights, the course traces the expansion of feminist concerns to include a global perspective, as well as attention to race and class. Representative texts include Mary Wollstonecraft's *A Vindication of the Rights of Women*, poems by Phyllis Wheatley and Sojourner Truth, Charlotte Perkins Gilman's *The Yellow Wallpaper*, Virginia Woolf's *Three Guineas*, and Simone de Beauvoir's *The Second Sex*. This course is offered as both HIS 301 and WST 301.

Advisory prerequisite: WST major or minor or WST 102 or WST 103

3 credits

HIS 318- I: Social and Intellectual History of Europe

An examination of the great movements of ideas in their social and historical contexts in modern European history. Themes may include liberalism, conservatism, romanticism, 19th-century realism, and the discovery of the unconscious.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 101 or 102

3 credits

HIS 319- J: Assyrians, Babylonians, and Hittites

History of the great civilizations of the Late Bronze and Iron Age Near East. Babylonians, Assyrians, and Hittites borrowed much from earlier Mesopotamia and created empires that embraced most of the literate world in the

period between 2000 and 500BC. Examination of the causes of the rise and fall of these powers and their influence on posterity, including their impact on those who wrote the Bible.

Prerequisite: HIS 105, HIS 201, or ANT 360

3 credits

HIS 320- I: European Natural Law to Global Human Rights

An examination of the historical evolution of the concept of human rights, from its origin in European natural law philosophy (including the ideas of Locke and Kant), through European-led human rights campaigns, into the postwar constitutions of former European colonies and its incorporation into the contemporary international legal regime. The time frame ranges from the origin of classical rights philosophy in the 17th and 18th centuries to the present, and the geographic focus is Europe and its former colonies.

Prerequisite: U3 or U4 status

Advisory prerequisite: HIS 102 or 104

3 credits

HIS 321- K & 4: Long Island History

An exploration of U.S. history through the lens of Long Island's history from colonial times to the present. Topics include the island's Native Americans, colonial settlement, towns and counties, the Revolution, slavery, whaling, farming, the Long Island Railroad, suburbanization and modern cultural, social, and economic developments.

Prerequisite: U3 or U4 standing

3 credits

HIS 324- J: Lost Languages, Ancient Civilizations, and Decipherments

The early history of writing and its role in the first civilizations, explored through decipherments of texts in which the languages or scripts were initially unknown to modern scholars. Explores first civilizations of the Near East, Egypt, Mediterranean, Indus Valley, China, Mesoamerica and discusses the role of literacy in each. Related questions include the relationship between language and writing, characteristics of the major language families, history of the alphabet, and the application of modern cryptographic techniques to the decipherment of ancient texts.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 105 or LIN 101

3 credits

HIS 325- K & 4: The Civil Rights Movement

A detailed study of the movement for civil rights from its origins, examining the establishment of the NAACP, race relations between whites and blacks since 1900, the role of the Supreme Court and the federal government, and the turn to militancy in the 1950s and after. This course is offered as both AFS 325 and HIS 325.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 104 or AFS 101 or 102

3 credits

HIS 326- K & 4: History of Popular Culture

The development of popular culture in the United States. The course examines the history of different aspects and genres of popular mentality - 18th century artisanal culture; 19th century commercial culture; and the rise of mass media culture in the 20th century.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 103 or 104

3 credits

HIS 330- J: Topics in Middle Eastern History

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

Prerequisite: HIS 225 or 226 or 227

3 credits

HIS 333- K & 4: Women in U.S. History

An interpretation of the history of women in relation to the major themes in American history such as industrialization and urbanization. Emphasis is placed on topics of special interest to women, i.e., the cult of domesticity, the birth control movement, feminism, women and reform, and changing attitudes toward female sexuality. This course is offered as both HIS 333 and WST 333.

Prerequisite one of the following: HIS 103, HIS 104, WST 102 (formerly SSI/WST 102), or WST 103

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

HIS 335- K & 4: Women at Work in Twentieth-Century America

Women have always worked but as Americans entered the 20th century the conditions of labor--and workers' relationship to their work--changed for both men and women wage-earners. This course will explore the various changes as they directly affected American women economically, socially, and politically and will open up discussions of the impact of race and class as well as gender. This course is offered as both HIS 335 and WST 335.

Prerequisite: U3 or U4 status
Advisory prerequisite: HIS 104

3 credits

HIS 336- I: Women, Work, and Family in Modern European History

An analysis of the effect of urbanization and industrialization on women and the family in Europe from 1750 to the present. Special emphasis is placed on the development of the ideology of the "angel in the house" and the growth of female participation in the work force. Among the topics covered are domestic work, prostitution, sexual attitudes and mores, child-rearing practices, women and revolutionary movements, and the growth of feminism. This course is offered as both HIS 336 and WST 334.

Prerequisite: HIS 102 or WST 102 (formerly SSI/WST 102) or WST 103

3 credits

HIS 338- K & 4: Asian and Pacific Islanders in American History

Asian and Pacific Islanders in American History is an examination of the historical factors that have molded Asian and Pacific Islander life in the United States. Strongly emphasized themes include imperialism/ colonialism, immigration, gender/sexuality, second generation, and images/mass media.

Prerequisite: U3 or U4 status

3 credits

HIS 339- K: Recent African American History

A study of recent African American history. Topics will include the dramatic increase in the number of black elected officials, rise of the black middle-class, the urban crisis, contemporary civil rights struggles, affirmative action, the decline of black radicalism, and the incorporation of black leadership. Enables students to examine the relationship between African Americans and American society during the past 100 years, particularly since

1970. This course is offered as both AFS 339 and HIS 339.

Prerequisite: Successful completion of one D.E.C. category F course.

3 credits

HIS 340- J: Topics in Asian History

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

Prerequisite: HIS 219 or 220

3 credits

HIS 341- J: 20th-Century China

The history of China from the collapse of the monarchy to the triumph of communism, emphasizing the revolutionary, political, social, and economic changes in China today. Special attention is given to the theory and practice of Chinese communism.

Prerequisite: One HIS course
Advisory Prerequisite: HIS 219

3 credits

HIS 344- J: Modern Japan

The history of Japan from the beginning of its imperialistic expansion in 1895 to World War II and postwar reconstruction, including such contemporary topics as educational issues, economic policies, and foreign relations.

Prerequisite: One HIS course
Advisory Prerequisite: HIS 220

3 credits

HIS 345- J: Women and Gender in Chinese History

Exploration of traditional cultural practices and values, and the 20th-century changes in Western and Asian relations in China brought about by nationalism, interaction with Western influences, and socialist rule. This course is offered as HIS 345 and WST 345.

Prerequisite: One of the following: HIS 219, HIS 220, CNS 249, CNS 250, or any WST course

3 credits

HIS 346- J: Political and Social History of Africa

An exploration of theoretical perspectives in the historical sociology and comparative politics of Africa. Topics include the crisis of state legitimacy; the patriarchal society; ethnicity, religion, and politics; the politics of modernization; development and the environment; population growth and underdevelopment; globalization, neo-liberal economic policy and the postcolonial state; and the history of state and society relations. This course is offered as both AFS 346 and HIS 346.

Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two AFS or HIS courses

3 credits

HIS 347- J: South Asia Before Colonialism

The South Asia region (contemporary India, Pakistan, Bangladesh, Sri Lanka, Nepal and Afghanistan) has been a crossroads of diverse people, ideas and commodities for millennia. This course covers key themes and developments in the subcontinent from antiquity to the rise of British colonialism. We will begin by covering major issues in early South Asia, and proceed to consider closely the medieval and early modern periods. Central themes include pre-modern dimensions of the Hindu-Muslim encounter, emergence of South Asian regions, the subcontinent in global networks, and early presence of European powers. This course is offered as both AAS 347 and HIS 347.

3 credits

HIS 348- J: Colonial South Asia

Colonial South Asia comprised much of what is now India, Pakistan and Bangladesh, and was dubbed 'the jewel in the crown' of the British Empire at its height. The Subcontinent's status as the most populous and lucrative colony of the world's largest empire profoundly shaped the world of both colonized and colonizer there. The readings, lectures and discussions call upon students to consider the political, social, economic and cultural and religious effects of Britain's rule in the South Asia during the period of British colonial domination (from about 1700 to 1950). This course is offered as both AAS 348 and HIS 348.

Prerequisite: One of the following: HIS 101, 102, 219, 220 or AAS 201 (or the former SAS 240)

3 credits

HIS 350- J: Topics in African History

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

Prerequisites: two AFS or two HIS courses
3 credits

HIS 351- J: Revolutionary China: Politics, Culture, and Power

Explores the history of revolutionary nation-building efforts in 20th century China, examining social, cultural, economic and political developments during the "Republican" and "Maoist" periods. Focuses on key terms and concepts used by agents and analysts of revolutionary change. Draws on interdisciplinary scholarly studies, government documents, media reports, auto-biographical accounts, and popular fiction to assess the consequences of major events on people's lives, livelihoods, worldviews, and personal relationships. This course is offered as both AAS 351 and HIS 351.

Prerequisite: One AAS or HIS course
3 credits

HIS 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 in 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

HIS 353- J: Postwar Japan

This course provides an in-depth look at post World War II Japanese society, culture, and political-economy. We will take up a number of debates on topics such as the postwar "miracle," technocracy vs. democracy, mass consumer culture, Japanese youth, postwar feminism, US-Japan relations, and war memory.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: HIS 220 or HIS 344
3 credits

HIS 356- I: Zionism Before 1948

A survey of ideologies that have found expression under the general banner of Zionism. Topics include the origins and development of those ideologies, and the

important ideological and conceptual issues that the Zionist movement has not yet managed to resolve.

Prerequisite: One course in modern European history (HIS 226 recommended)
3 credits

HIS 357: Topics in History

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

Prerequisites: U3 or U4 standing and one HIS course
3 credits

HIS 360- I: Women in Premodern Europe

An examination of the position of women in European society from ancient Greece through the Italian Renaissance. The course examines women's roles in the family and political life; women's economic activities; women and the Christian church; cultural attitudes concerning women; and women's own writing and creativity. This course is offered as both HIS 360 and WST 360.

Prerequisite: One HIS course or any WST course
3 credits

HIS 361- K: American History/ American Film

Panorama of American history from Colonial times to the present through the medium of film. Film is viewed as a product of history and a reflection of the social and ideological context in which it is created.

Prerequisite: U3 or U4 standing
3 credits

HIS 362- K: Making Peace With the Sixties

A study of the 1960's, emphasizing conflict within American liberalism between cold warriors and antiwar activists, advocates of the bureaucratic welfare state versus those favoring small-scale community operations, and technocratic liberalism versus a policy of immediacy and moral witness. Special attention is given to the paradigmatic qualities of the civil rights movement, the domestic side of the Vietnam War, and the relationship of liberalism to radicalism.

Advisory Prerequisite: U3 or U4 standing
3 credits

HIS 363- F: Topics in American History

Semester supplements to this Bulletin contain specific descriptions when course is offered.

Topics may include titles such as American Cars and Highways, Radio and Television, and Disney's America. Designed for upper-division students, this course provides an in-depth study of a specific topic within social sciences disciplines such as history, economics, political science, and linguistics. Students will be expected to demonstrate an understanding of the methods social scientists use to explore social phenomena, and knowledge of the major concepts, models, and issues of the social science discipline(s) studied. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; HIS 103 or 104
3 credits

HIS 365- K & 4: Environmental History of North America

The history of interactions between human beings and their natural environment on this continent, with special attention to the Northeastern region. Transformations of forests, homes, farms, and industrial workplaces will be considered. Cultural, economic, political and technological perspectives on the relationship between humans and nature from pre-Columbian to late 20th-century times.

Prerequisites: HIS 103 and 104
3 credits

HIS 368- K & 4: Wealth and Inequality in the Modern Corporate Age

This course delves into the dynamics by which wealth has been created in an American economy dominated by large corporations, and the changing patterns of inequality that have followed. Ever since big companies came to dominate the economy in the late nineteenth century, American affluence has come in spurts or 'booms.' Each period has had its characteristic new technologies and companies and their entrepreneurs, which part of the course will chart, from the robber barons to the dot.com-ers. We will then explore impacts on the work most Americans did, on wealth distribution and political economy, and on the changing ways in which many Americans remained poor.

Prerequisite: U3 or U4 standing
Advisory prerequisite: HIS 103 or 104
3 credits

HIS 369- K & 4: American Social History to 1860

The development of American society from the 17th century to the beginning of industrialization, with emphasis on changing concepts of class and community relations, work, and family and gender roles. Special

attention to how the diversity of the American people shaped the evolution from a traditional world view to the more modern, competitive society of the 19th century.

Prerequisite: HIS 103

3 credits

HIS 370- K & 4: U.S. Social History, 1860-1930

The evolution of American society from the mid-19th century to the Great Depression. An examination of the impact of the Industrial Revolution, urbanization, and mass immigration on concepts of class, community, family, and gender roles. Special emphasis on how increasing class conflict and changing expectations of family life forced the evolution of new, modern social values and institutions.

Prerequisite: HIS 104

3 credits

HIS 371- K & 4: Law and Society in American History, 1620-1877

This course examines the interaction between law and society in America from the period of European colonization through the mid 19th century. Some of the themes we will examine are: the clash of native and European legal systems; the adoption and adaptation of European law, particularly English law, to the circumstances of the American colonies; the development of the profession of law; changing definitions of crime and penal practices; shifts in women's legal status and their relationship to everyday practices and opportunities for women; the changing legal status of children; and transformations in the law of servitude, slavery, race, and emancipation. Witches, judges, women, lawyers, bankrupts, laborers, Native Americans, servants and slaves are some of the groups we encounter in assessing the forces that shaped American legal culture and its institutions. No prior knowledge of law is necessary.

Prerequisite: U3 or U4 status

Advisory prerequisite: HIS 103

3 credits

HIS 372- K & 4: U.S. Constitutional History and Civil Rights

An examination of United States law and constitutional history from colonial times to the present. A particular focus is placed on the history of civil rights and the struggles of women and minorities to be fully included in the interpretation of constitutional protections.

Prerequisite: U3 or U4 status

3 credits

HIS 373- F: History of Crime and Criminal Justice in the U.S.

Study of the development of police, courts, prisons, criminal law and crime in the United States from the 17th century to the present. How were the institutions of criminal justice created? How did they change? How have people perceived and responded to crime?

Prerequisites: U3 or U4 status; HIS 104

3 credits

HIS 374- F: Historical Perspectives on Gender Orientation

An examination of contemporary American gender orientation from an historical perspective. Topics include gay marriage, gay clergy, medical definitions of gender orientation and gays in the military. This course is offered as both HIS 374 and WST 374.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One HIS or WST course

3 credits

HIS 375- K & 4: American Politics and Diplomacy to 1898

The rise of the United States from its origins as a string of dependent settlements along the Atlantic coast to a continent-spanning global power. An examination of the emergence of a distinctively American political system and its interaction with American's foreign relations.

Prerequisite: HIS 103 or 104

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

HIS 376- K & 4: American Politics and Diplomacy, 1898-1945

An examination of the invention of modern, advertising-based politics in the 1890's to the forging of Franklin Roosevelt's New Deal coalition under the twin shocks of the First and Second World Wars.

Prerequisite: HIS 104

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

HIS 377- K & 4: American Politics and Diplomacy Since 1945

The impact of the Cold War upon American politics and diplomacy, with special attention to the challenges of the 1960's to American political and global orders. The collapse of both orders from Reaganism and the end of the Cold War.

Prerequisite: HIS 104

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

HIS 378- F: War and the Military

The causes and origins of wars, and the impact of war on social change, considered in the context of various wars and battles. Topics covered include issues of military organization, recruitment, training, morale, war planning, and the integration of women, gays, and minorities in the military. This course is offered as both HIS 378 and SOC 378.

Prerequisite: One HIS course or SOC 105

3 credits

HIS 379- K: Disease in American History

An examination of changing disease patterns and their impact on American society from the colonial period to the present. Particular attention is paid first to the great epidemics of the 19th century, and how public health measures brought them under control, and the emergence of chronic ailments such as cardiovascular disease, cancer, and diabetes as the leading causes of death in the 20th century.

Prerequisite: U3 or U4 status

Advisory prerequisite: HIS 103 or HIS 104

3 credits

HIS 380- J: Topics in Latin-American History

May be repeated as the topic changes.

Prerequisite: HIS 213 or HIS/POL 214 or HIS/POL 216

3 credits

HIS 381- J: Latin America and World Commodities (1500-2000)

A study of world commodities to learn about and reflect on the connections and contributions of Latin America to the world economy and world culture. Students learn about such products as cocoa, sugar, silver, coffee, rubber, bananas, and cocaine, and the special ways their new histories shed light on the history of Latin Americans, world consumption, and globalization from 1500 to the present.

Prerequisite: a 200-level course in world or international history

Advisory Prerequisite: One World (non-US) History course

3 credits

HIS 382- J: Politics and Political Change in Latin America

An examination of revolutionary and reformist movements that have shaped the political, social, and economic contours of 20th-century Latin America. Topics include the Mexican and Cuban revolutions, populism, urban squatter movements, and guerrilla warfare. This course is offered as both HIS 382 and POL 382.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 213 or HIS/POL 214 or HIS/POL 216 or LAC 200

3 credits

HIS 388- J: Slavery in Latin America and the Caribbean

The institution of slavery and its impact on plantation societies in the Americas, with particular attention to Brazil and the Caribbean. Topics include conquest and enslavement, the formation of slave communities, African culture in Latin America, resistance and oppression, the process of emancipation, and race relations. This course is offered as both AFS 388 and HIS 388.

Prerequisite: One of the following: AFS 239, AFS 240, AFS 277, HIS 213, HIS 214, or LAC 200

3 credits

HIS 389- J: Modern Mexico

The history of Mexico from independence in 1810 to the present crisis. The course explores the relationships among agrarian development, social movements, and state building in Mexican history. Topics include 19th-century instability and liberal reform, and the 20th-century revolution and its legacy for modern Mexican politics.

Prerequisite: HIS 213 or HIS/POL 214 or HIS/POL 216

3 credits

HIS 390- I: Topics in Ancient and Medieval Europe

Recent topics have included Early and Medieval Christianity; Leaders in Ancient Greece and Rome. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; one European history course

3 credits

HIS 391- I: Topics in Early Modern Europe

Recent topics have included Europe in the 16th Century; Before and After the Reformation; Early Modern England. Semester supplements to this Bulletin contain specific description

when course is offered. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; one European history course

3 credits

HIS 392- I: Topics in European History

Recent topics have included England and France in the 18th Century; 17th Century Europe. May be repeated as the topic changes.

Prerequisite: One course in modern European history

3 credits

HIS 393- I: Topics in Modern European History

Recent topics have included London, Paris and Berlin from 1900 to 2000; Victorian England and its legacy; European capitalism from 1900 to the present. May be repeated as the topic changes.

Prerequisite: HIS 102

3 credits

HIS 394- H: Topics in History of Medicine and Reproduction

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

Prerequisites: U3 or U4 standing; one HIS course

3 credits

HIS 395- I: Topics in Russian History

Topics may include Marxism and its aftermath; modern Russian social history, 1750-1921; Russian intellectual history from the 18th to the 20th Century. May be repeated as the topic changes.

Prerequisite: One course in modern European history

3 credits

HIS 396- K & 4: Topics in U.S. History

Designed for upper-division students, this course provides an in-depth study of a specific topic relating to American history. With a focus on U.S. history, topics may include the rise of the American corporation in the 19th and 20th centuries; economic history and changing population patterns; and popular music and society. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; HIS 103 or 104

3 credits

HIS 397- K & 4: Topics in History of U.S. Immigration and Ethnicity

Topics may include Asian and Pacific Islanders throughout American history; and Latino immigration from 1848 to the present. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; HIS 103 or 104 or AFS 102

3 credits

HIS 398- H: Topics in History of Science and Technology

May be repeated as the topic changes.

Prerequisite: HIS 237 or 238

3 credits

HIS 399- K & 4: Topics in U.S. History

Designed for upper-division students, this course provides an in-depth study of a specific topic relating to American history. With a focus on U.S. history, past topics have included titles such Race, Religion, and Gender; Disease in Modern America; and Early American Commerce and Culture. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated as the topic changes.

Prerequisite: HIS 103 or 104

3 credits

HIS 401: Colloquium in European History

May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 402: Colloquium in European History

May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 403: Colloquium in European History

May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 411: Colloquium in American History

Colloquia considering such topics as the history of New York, the westward movement, American socialism, the Vietnam War, U.S. military history, American utopianism, the urban novel, and women in the professions. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 412: Colloquium in American History

Colloquia considering such topics as the history of New York, the westward movement, American socialism, the Vietnam War, U.S. military history, American utopianism, the urban novel, and women in the professions. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 413: Colloquium in American History

Colloquia considering such topics as the history of New York, the westward movement, American socialism, the Vietnam War, U.S. military history, American utopianism, the urban novel, and women in the professions. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 414: Colloquium in American History

Colloquia considering such topics as the history of New York, the westward movement, American socialism, the Vietnam War, U.S. military history, American utopianism, the urban novel, and women in the professions. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 421: Colloquium in Latin American History

Colloquia considering such topics as slavery and race relations, culture and ideology, peasant movements and popular rebellion, and 20th-century revolutions. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 422: Colloquium in Latin American History

Colloquia considering such topics as slavery and race relations, culture and ideology, peasant movements and popular rebellion, and 20th-century revolutions. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 431: Colloquium in Asian History

Colloquia considering such topics as Japanese nationalism and expansion, Far Eastern diplomatic history, and nationalism in Southeast Asia. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 432: Colloquium in Asian History

Colloquia considering such topics as Japanese nationalism and expansion, Far Eastern diplomatic history, and nationalism in Southeast Asia. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 441: Colloquium in Global History

Colloquia considering such topics as the expansion of Europe, theories of imperialism, revolutionary and religious movements, the psychoanalytical interpretation of history, and slavery. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 447: Independent Readings in History

Intensive readings in history for qualified juniors and seniors under the close supervision of a faculty instructor on a topic chosen by the student in consultation with the faculty member. Semester Supplements to this Bulletin contain description when course is offered. May be repeated.

Prerequisites: A strong background in history; permission of instructor and department

1-3 credits

HIS 451: Colloquium in Medieval History

Selected topics in medieval history are studied with attention to primary sources and current hagiographic controversies and developments. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 461: Colloquium in the History of Science

Colloquium considering such topics as the history of American science, the social history of science, the impact of Darwinism, modern physics, and technology and social change. Semester supplements to this Bulletin contain

specific description when course is offered. May be repeated as the topic changes.

Prerequisite: Permission of instructor

3 credits

HIS 475: Undergraduate Teaching Practicum

Work with a faculty member as assistant in a regularly scheduled course. The student must attend all classes and carry out all assignments; in addition the student will be assigned a specific role 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.

Prerequisites: Permission of instructor and undergraduate program director

3 credits, S/U grading

HIS 487: Supervised Research

Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.

Prerequisites: Permission of instructor and either department or departmental research coordinator

0-6 credits

HIS 488: Internship

Participation in local, state, and national public and private agencies and organizations. May be repeated up to a limit of 12 credits.

Prerequisites: 15 credits in history; permission of instructor and department

0-6 credits, S/U grading

HIS 495: Senior Honors Project in History

First course of a two-semester project for history majors who are candidates for the degree with honors. Arranged in consultation with the department, the project involves independent study and writing a paper under the close supervision of an appropriate instructor on a suitable topic selected by the student. Students enrolled in HIS 495 are obliged to complete HIS 496. Students receive only one grade upon completion of the sequence.

Prerequisite: Admission to the history honors program

3 credits

HIS 496: Senior Honors Project in History

Second course of a two-semester project for history majors who are candidates for the degree with honors. Arranged in consultation with the department, the project involves

independent study and writing a paper under the close supervision of an appropriate instructor on a suitable topic selected by the student. Students enrolled in HIS 495 are obliged to complete HIS 496. Students receive only one grade upon completion of the sequence.

Prerequisite: Admission to the history honors program

3 credits

HNI

Nursing

HNI 290: Introduction to Nursing

Introduces nursing to those planning a career in nursing, but are not yet enrolled in the School of Nursing.

2 credits

HON

Honors College

HON 105: Modes of Knowledge

An examination of the structure and content of knowledge, as well as the ways in which various kinds of knowledge are constituted. The course examines some classical epistemological and ethical texts and also considers the ways in which modern epistemological theories, as well as knowledge forms characteristic of the natural sciences, social sciences, arts and humanities, have altered and/or affected our understanding of the nature of knowledge.

Prerequisite: First year Honors College membership

3 credits

HON 106: Modes of Being

Examination of the many different modes of being - aspects of the ways in which people think of themselves and behave in the world - through analysis of literary works and through texts that derive from the various social sciences, including psychology.

Prerequisite: First year Honors College membership; HON 105

3 credits

HON 110: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan

region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 111: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 112: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 113: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language

of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 114: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 115: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 116: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 117: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 118: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 119: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 120: Honors Topics

These courses, which use alternative learning modes, are intended to enrich the Honors College experience by introducing students to specific aspects of community, academic, and creative life at the University, on Long Island, and in the New York metropolitan region. Past topics have included: the lives of scientists; current events; Long Island ecology; contemporary art; musical performance at Stony Brook; the language of dance; immigration; cultural diversity; entrepreneurship. Each course culminates in the writing of a short, substantive paper. May be repeated as the topic changes.

Prerequisite: Acceptance into the Honors College

1 credit

HON 201: The Arts and Society

An exploration of the interconnections between art and society, using the biographies and autobiographies of notable visual artists, performers, and composers when appropriate, but also using other texts that focus on art works by anonymous creators such as the architects and sculptors who designed and created medieval cathedrals or the anonymous lyricists and composers who created the songs and dances of traditional cultures. Close examination of the works themselves is an integral part of the course, generally involving several field trips.

Prerequisites: Second year Honors College membership; HON 105 and HON 106

3 credits

HON 301: Science, Engineering, Medicine, and Society

An examination of the mutual relations among science, technology, medicine, and society: how the sciences and various technologies affect society and, at the same time, are affected by it. This examination is conducted through the perspectives of disciplines outside the sciences - such as history, philosophy, sociology, and economics--in combination with the natural sciences, applied sciences, clinical medicine, and engineering.

Prerequisites: Third year Honors College membership; HON 105, HON 106, and HON 201

3 credits

HON 401: Global Issues

Using historical, geographical, sociological, political, and economic perspectives, students examine global issues. This examination may be either topical or regional and may be oriented either toward the past, the present, or the future.

Prerequisite: Fourth year Honors College membership; HON 105, HON 106, HON 201, and HON 301

3 credits

HON 495: Honors College Senior Project

First course of a two-semester, six-credit, research or creative project to be arranged with and approved by the Honors College Faculty Director and a faculty supervisor. Both the Faculty Director of the Honors College and the selected faculty member provide ongoing project supervision. With the approval of the Faculty Director of the Honors College, students may substitute an appropriate credit-bearing departmental honors project or they may, with the approval of the department, submit their Honors College Senior Project for departmental honors. Students may not submit the same project for academic credit under two different sets of course numbers and/or designators. At the end of the first term, a progress report is expected; at the end of the second term, the student must make an oral presentation at the Honors College Symposium and must submit an appropriate thesis. Students receive only one grade upon completion of the sequence.

Prerequisite: U3 or U4 standing in the Honors College

3 credits

HON 496: Honors College Senior Project

Second course of a two-semester, six-credit, research or creative project to be arranged with and approved by the Honors College Faculty Director and a faculty supervisor. Both the Faculty Director of the Honors College and the selected faculty member provide ongoing project supervision. With the approval of the Faculty Director of the Honors College, students may substitute an appropriate credit-bearing departmental honors project or they may, with the approval of the department, submit their Honors College Senior Project for departmental honors. In no case, however, may they submit the same project for academic credit under two different sets of course numbers and/or designators. At the end of the first term, a progress report is expected; at the end of the second term, the student must make an oral presentation at the Honors College Symposium and must submit an appropriate thesis. Students receive only one grade upon completion of the sequence.

Prerequisite: U3 or U4 standing in the Honors College

3 credits

HSQ

Adapted Aquatics

HSQ 121: Intermediate Swimming

Designed to equip swimmers with detailed strokes and water skills.

1 credit, S/F graded

HSQ 221: Lifeguard Training I

The first in a two-semester sequence leading to certification as an American Red Cross lifeguard. Course content includes elementary rescue techniques, boating and equipment rescues, and swimming rescues.

2 credits

HSQ 222: Lifeguard Training II

Preparation for the Red Cross certification in Lifeguard Training and Waterfront Lifeguarding. The material includes requirements and responsibilities of lifeguards, selection and training, preventive lifeguarding, emergency procedures, records and reports, equipment, health and sanitation, water rescues, search and recovery, and environmental conditions.

2 credits

HSQ 223: Water Safety Instructor

A course designed for students to meet the requirements for certification as an American Red Cross Water Safety Instructor.

2 credits

HSQ 270: Emergency Response, CPR and Personal Safety

An American Red Cross and American Heart Association certification course designed to develop skills and knowledge for the immediate care given to an individual who has been injured or taken ill. The course issues certification in emergency response first aid, professional CPR training, and the use of automated external defibrillators. Presentations include legal issues; disease transmission and prevention; wound care; drugs, alcohol, and other substance abuse; cardiovascular and respiratory disease; AIDS and STD education. Certifications issued meet the required standards for admission to undergraduate and graduate health sciences programs. An extra-fee course.

3 credits

HSQ 271: Instructor of Cardiopulmonary Resuscitation

Covers the American Red Cross certification requirements for Instructor of CPR for the

Professional Rescuer and Instructor of Basic Life Support Cardiopulmonary Resuscitation for the Health Care Provider. The course includes teaching methods and protocols of cardiopulmonary resuscitation, including infant, child, adult and two rescuer procedures and use of bag-valve masks.

Prerequisites: HSQ 270 (or the former PEC 270); permission of instructor

2 credits

HSQ 272: Instructor of First Aid

Covers the American Red Cross certification requirements for Instructor of Responding to Emergencies First Aid. The course includes teaching methods and protocols for effective first-response techniques in various emergencies, including treatment of bleeding, burns, fractures and dislocations, and sudden illness.

Prerequisites: HSQ 270 (or the former PEC 270); permission of instructor

2 credits

HSQ 325: Instructor of Adapted Aquatics I

One course of a two-semester sequence in the adaptation of the aquatic environment and aquatic skills to teach the disabled, leading to instructor and/or aid certification in Adapted Aquatics. Focuses on a wide spectrum of disabilities including physical, mental, emotional, and multiple disorders in children through adults. Consideration of motor movement and learning theories, development of normal versus impaired motor-cognitive skills, hydrodynamics and aquatic adaptation, and related anatomy, physiology, and disease etiologies. Class time is equally divided between lecture/recitation and clinical work in the swimming pool. The sequence may be completed in either order for certification.

2 credits

HSQ 326: Instructor of Adapted Aquatics II

Second course of a two-semester sequence of instructor training in the adaptation of the aquatic environment and aquatic skills for teaching the physically, mentally, emotionally, or multiple challenged, leading to instructor and/or aid certification in Adapted Aquatics. Focus on the general physiological and genetic etiologies of various disabilities as well as the commonly used surgical treatments, drug therapies, and prosthetic devices for the disabled. Class time is equally divided between lecture/recitation and clinical work in the swimming pool. The sequence may be completed in either order for certification.

2 credits

HSQ 329: Fieldwork in Adapted Aquatics Instruction

Provides the Adapted Aquatics Instructor or Aid candidate the possibility of concentrating on a specific disability. Students study full case histories and medical files and prescribed physical, occupational, and/or respiratory therapy regimens for specific disabled individuals. Students develop focused aqua-therapy and instructional aquatic regimens for the individual. May be repeated to a maximum of 3 credits.

1 credit

HSQ 475: Adapted Aquatics Teaching Practicum I

Students assist faculty members teaching Adapted Aquatics and/or Emergency Response classes. In addition to working as tutors during instructional periods, students have regular conferences with a faculty supervisor. Students may not serve as teaching assistants in the same course twice.

Prerequisites: Advanced skill level; permission of instructor and department

2 credits, S/F graded

HSQ 476: Adapted Aquatics Teaching Practicum II

Advanced students assist faculty members teaching Adapted Aquatics and/or Emergency Response classes. In addition to working as tutors during instructional periods, students have regular conferences with a faculty supervisor. Students may not serve as teaching assistants in the same course twice.

Prerequisites: Advanced skill level; permission of instructor and department

2 credits, S/F graded

HUE

European Literature and Culture Courses in English

HUE 269- I: Topics in Contemporary Slavic Culture

Analysis and discussion of contemporary cultural topics dealing with Russia or Eastern and East Central Europe. Attention is paid to the historic political, social, aesthetic, and cultural forces out of which contemporary culture has evolved. Recent topics have included the apocalypse in literature; 20th-century Poland; Yugoslavia, past and present. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

3 credits

HUE 392- I: Topics in Slavic Studies

Recent topics have included consideration of cultural representations of women and war in film and in literary and biographical writings. Semester supplements to this Bulletin contain a specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

HUE 487: Independent Research

Intensive study of a special topic undertaken with close faculty supervision. Request for project approval of undergraduate studies director must be submitted no later than the last week of classes of the prior semester. May be repeated.

Prerequisites: U3 or U4 standing; permission of instructor and department

0-6 credits

HUF

French Literature and Culture Courses in English

HUF 211- D: French Cinema

Introduction to French films as representative of cinematic art. Films are selected to provide a broad historical perspective and range of the director's concerns. Students are taught methods of reading and analyzing filmic works. All films have English subtitles.

3 credits

HUF 216- I: French Civilization through the Ages

An overview of French civilization seen through its diverse manifestations in various cultural fields. The heritage of French society is analyzed through the arts, philosophy, science, literature, and theatre.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUF 219- I: Modern France

A survey of contemporary France and its political, social, and economic structure, as well as the study of cultural life and institutions within the context of its historical development. Special attention is given to other French-speaking countries and their relations to France.

3 credits

HUF 311- G: French Literature

A course given in English on a major French author or literary movement in relation to European or American literature. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as topic changes. May be used to satisfy English or Comparative Literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

HUF 318- J: Pan-African Literature I

An examination of the cultural themes of Pan-Africanism and negritude, drawing on a selection of writers from the United States, Africa, and the Caribbean. The course treats the development, diffusion, and significance of these themes. It involves intensive consideration of selected literary works of African and African-American expression. This course is offered as both AFH 329 and HUF 318.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in literature

3 credits

HUF 385- J: French Caribbean Literature

A study of representative texts from the French Caribbean translated into English, focusing on literary manifestations of a search for a specific identity by writers from Martinique, Guadeloupe, French Guiana, and Haiti. This course is offered as both AFH 385 and HUF 385.

Prerequisite: U3 or U4 standing

3 credits

HUF 475: Undergraduate Teaching Practicum I

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

Prerequisite: U3 or U4 standing; permission of instructor and language coordinator

3 credits, S/U grading

HUF 476: Undergraduate Teaching Practicum II

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

Prerequisite: U3 or U4 standing; permission of instructor and language coordinator

3 credits, S/U grading

HUG

German Literature and Culture Courses in English

HUG 221- D: German Cinema Since 1945

The theory and history of German film as an art form, from filmmakers such as Alexander Kluge, Bernhard Wicki, and the "new filmmakers" Rainer Werner Fassbinder, Volker Schlöndorff, Margarete von Trotta, Werner Herzog, and Wim Wenders. Topics include silent film; New German Cinema, 1962-1985; national cinema and national identity; film as literature and from literary models; problems of authors and their audiences; women's film, film in the former German Democratic Republic; and the influence of American filmmakers, subject matter, and settings.

3 credits

HUG 229- I: Germany Today

A survey of contemporary Germany and its political, social, and economic structure, as well as the study of cultural life and institutions, within the context of its historical development, with comparisons to American models and standards.

3 credits

HUG 321- G: Topics in the Literature of Germany

A course given in English on a major German author, genre, or literary movement, designed primarily to give students in other disciplines

an opportunity to become acquainted with the German tradition. (German majors are admitted by special permission of their advisors, and do the reading and term papers in German.) Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two literature courses
3 credits

HUG 475: Undergraduate Teaching Practicum I

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

Prerequisite: U3 or U4 standing; permission of instructor and language coordinator

3 credits, S/U grading

HUG 476: Undergraduate Teaching Practicum II

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

Prerequisite: U3 or U4 standing; permission of instructor and language coordinator

3 credits, S/U grading

HUI

Italian Literature and Culture Courses in English

HUI 216- I: Italian Civilization Through the Ages

The historical development of civilization in Italy with reference to literature and

connection to artistic expression such as visual arts, music, and theatre.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUI 231- D: Sex and Politics in Italian Cinema

The cinematic representation of gender, class, and sexual politics in post-World War II Italian films and the relationship of these themes to Italian history, society, and culture are discussed. Films by directors such as Bertolucci, Fellini, and Wertmuller are studied. Readings include selected works of film history, criticism, and theory.

3 credits

HUI 234- G: Introduction to 20th-Century Drama

A study of avant-garde drama through the analysis of texts by Marinetti, Bontempelli, Pirandello, Betti, Beckett, Ionesco, and Tennessee Williams. Important questions such as identity and diversity are discussed from a variety of perspectives within the social, psychological, sexual, and multicultural context of our time.

Advisory Prerequisite: Completion of D.E.C. category B or THR 101

3 credits

HUI 235- G: Sex, Love, and Tragedy in Early Italian Literature

A study of the interactions between the sexes in contrast with humankind's spiritual needs in the major works of early Italian literature. Dante's *Inferno* and *Purgatorio*, Boccaccio's *Decameron* and Petrarch's poetry are analyzed. May be used to satisfy English major requirements.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUI 236- K: The Italian-American Scene

Exploration of the phenomenon of Italian-American experiences, with emphasis on issues of immigration and ethnicity. Studies in anthropology, history, sociology, literature, and culture provide historical and theoretical backgrounds of the experience of Italians in North and South America and their contributions to American culture.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUI 237- K: Images of Italian-American Women

Examination of the role of Italian-American women through literature, film, politics, and music. The specific ways they have contributed artistically and socially to the American cultural scene from the first wave of Italian-American immigration to the present is considered. This course is offered as both HUI 237 and WST 237.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUI 239- I: Modern Italy

A survey of contemporary Italy and its political, social, and economic structure, as well as the study of cultural life and institutions, within the context of its historical development, with comparisons to American models and standards.

3 credits

HUI 306- I: The Early Renaissance in Italy

Art in Italy in from the late 13th through the 15th centuries, with special emphasis on Florence and Siena, and such major figures as Masaccio, Donatello, Piero della Francesca, and Botticelli. This course offered as both ARH 306 and HUI 306.

Prerequisite: ARH 101 and 102

3 credits

HUI 307- I: The Age of Michelangelo in Central Italy

An exploration of the works of Michelangelo, Da Vinci and other major masters, including Raphael, Bramante and Pontormo, who inspired, were influenced by or rejected the work and ideals of Michelangelo. This course is offered as both ARH 307 and HUI 307.

Prerequisite: ARH 101

Advisory prerequisite: ARH 306

3 credits

HUI 310- I: Splendors of Renaissance Art in Venice

The special qualities of Venetian art, which blends Byzantine, Islamic, and Western traditions, are explored through the works of such major figures as Giovanni Bellini, Giorgione, Titian, Veronese, and Palladio. Course offered as both ARH 310 and HUI 310.

Prerequisite: ARH 101 and 102

Advisory prerequisite: ARH 307

3 credits

HUI 331- G: Italian Literature

A topics course given in English on a major Italian author or literary movement in relation to European or American literature. Semester

supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes. May be used to satisfy English or comparative literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

HUI 333- K: The Italian-American Experience in Literature

Literary and historical perspectives on the experience of Italians in America and their contribution to American culture from the earliest wave of Italian immigration to the present day. This course offered as both EGL 333 and HUI 333.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

HUI 336- K: Italian Americans and Ethnic Relations

An historical and sociological examination of Italian-Americans from colonial America to the present with the major focus on the period from 1870 to the present. Comparative experience with other ethnic and minority groups within the U.S., including formation, migration, and conflict.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: One D.E.C. category F; completion of D.E.C. categories I and J

3 credits

HUI 338- K: Images of Italian Americans in Film

Italian-American ethnicity as represented in mainstream and independent American cinema from the silent era to the present. Particular attention is paid to the origin and existence of the traditional stereotypes associated with these representations, how they reflect the changing role of immigrants from the Industrial Revolution to the present, and how Italian-American filmmakers respond to them.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: HUM 201; HUI 231

3 credits

HUI 390- G: Italian-American Studies in the Humanities

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

HUI 431: Special Topics in Italian Cinema

A topics course given in English on Italian cinema. Topics may include films of a particular actor or director, genre, theme, or historical period. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: HUI 231

Advisory Prerequisite: HUI 338

3 credits

HUI 447: Directed Readings in Italian Studies

Individually supervised readings in Italian studies. Primarily for students who do not have the language proficiency to take ITL 447. May be repeated.

Prerequisite: Permission of department

1-6 credits

HUI 475: Undergraduate Teaching Practicum I

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

Prerequisite: U3 or U4 standing; permission of instructor and language coordinator

3 credits, S/U grading

HUI 476: Undergraduate Teaching Practicum II

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

same course twice. This course does not count toward the major or minor in Italian.

Prerequisite: U3 or U4 standing; permission of instructor and language coordinator

3 credits, S/U grading

HUL

Romance Languages

HUL 324- I: Romance Linguistics

Compares the linguistic evolution and synchronic grammars of the Romance languages in their original form 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, however, students must complete significant assignments in French, Italian, Spanish, Portuguese, and/or other Romance languages. This course is not a history or translation course.

Pre- or corequisite: One of the following: FRN 312, ITL 312, LAT 112, SPN 312

Advisory Prerequisites: LIN 101, LIN 201, LIN 211

3 credits

HUM

Humanities

HUM 109- B: Philosophy and Literature in Social Context (III)

The role of literature and philosophy in understanding and critically assessing personal experience and social life. The links among literary texts, philosophical issues, and political and social commitments are explored. Topics include the relations between language and experience, the role of philosophical thinking through literary texts, and the significance of literary expression in different cultural and historical situations. This course is offered as both HUM 109 and PHI 109.

3 credits

HUM 121- B: Death and Afterlife in Literature

Through discussion of representative contemporary and classical texts, this course addresses the topic of how human beings have

chosen to live with the one certainty of their existence, its eventual conclusion in death, and how various images of afterlife or denial of its possibility have shaped those choices.

3 credits

HUM 122- B: Images of Women in Literature

An historical and intercultural examination of selected representations of women in world literature ranging from classical literature to modern evocations of women's changing social roles and the rise of feminine self-consciousness.

3 credits

HUM 123- B: Sexuality in Literature

An exploration of the expression and interpretation of sexual experience in literature and culture, through discussion of selections from world literature and art, both classic and contemporary. Themes include temptation and gratification, desire and fulfillment, and how societies shape gender roles and deviance and set limits on sexual representation in literature and art.

3 credits

HUM 201- D: Film Genres

An introduction to the study of film through the examination of multiple genres. Special attention is given to how film deals with issues of race and gender.

3 credits

HUM 202- D: Film History

An introduction to the theory and criticism of film and television from the "primitive" era to the present. Special attention is given to mainstream Hollywood cinema as well as to experimental traditions originating in the Soviet Union, France, and Germany.

3 credits

HUM 220- G: Cross-Cultural Encounters

Introduction to the process and effects of the encounter of two or more previously separate cultures, illustrated by study of historical or contemporary instances of such encounters, and drawing from the art, music, theatre, literature, philosophy or religion of the selected cultures. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: Completion of D.E.C. category B
3 credits

HUM 475: Undergraduate Teaching Practicum I

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

Prerequisites: U3 or U4 standing; permission of instructor and chairperson

3 credits, S/U grading

HUM 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. In HUM 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. *Prerequisites: HUM 475; permission of instructor and chairperson*

3 credits, S/U grading

HUM 495: Humanities Honors Project

A one-semester project for humanities majors who are candidates for the degree with honors. The project involves independent study and the writing of a senior thesis under the close supervision of an appropriate faculty member.

Prerequisites: Permission of instructor and director of undergraduate studies

3 credits

HUR

Russian Literature and Culture Courses in English

HUR 141- B: The Age of Empire

A survey in English of major Russian writers of the 19th century, including Pushkin, Dostoevsky, and Tolstoy. A brief history of Russian literary masterpieces in the context of world literature and of major cultural movements such as the Renaissance, the Enlightenment, and Romanticism.

3 credits

HUR 142- B: Culture and Revolution

HUR 142-B Culture and Revolution
Introduction to the major texts of modern Russian literature. Topics include the social and aesthetic rebellions of writers confronted with political oppression (labor camps, prisons, Stalin's reign of terror) or with outdated literary tradition. Typical cultural modes of rebellion, including avant-garde prose and poetry as well as popular forms of carnival and folk laughter, are explored in literature, theater, and film.

3 credits

HUR 231- I: Saints and Fools

An introduction to literature about the lives of saints and the holy fool tradition in major texts of Russian and English literature. Emphasis is placed on the ways authors have used fundamental religious values of humility, the transcendent irrational, and kenosis to confront their own times. Authors considered range from monks to Dickens, Dumas, Chaucer, Gogol, and Pushkin; films include *Murder in the Cathedral* and *Forrest Gump*. This course is offered as both EGL 231 and HUR 231.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUR 232- I: Rebels and Tyrants

An exploration of literary rebels and tyrants central to Russian and Anglo-American traditions. The subversive tactics of such writers as Shakespeare, Dostoevsky, Sir Walter Scott, Solzhenitsyn, and Salinger are appraised in the light of the dominant social, political, and aesthetic systems they confront. This course offered as both EGL 232 and HUR 232.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUR 235- G: Crime and Punishment in World Literature

An exploration of the nature of crime and punishment in literature, including readings from Dostoevsky, Dickens, and Nabokov on the depiction of criminals, villains, acts of violence, and the moral code of their time. May be used to satisfy English major elective requirements.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

HUR 241- D: Russian Cinema

Survey of major developments in Soviet and Russian cinema extending from the groundbreaking innovations of Soviet montage to the popular cinema of the post-communist period. Emphasis on situating the works of, among others, Eisenstein, Tarkovsky, Muratova, Balabanov within the context of Russia's tumultuous history and its distinct cultural traditions.

3 credits

HUR 249- I: Russia Today

Contemporary cultural trends viewed in terms of their historic social and political context. Recent responses to historical change such as the breakup of the Soviet Union and its relation to the forces that brought about the Russian Revolution, the new economic order, and the search for Russian national identity are explored in literature, the arts, and media.

3 credits

HUR 341- G: Russian Literature and the West

A topics course given in English on a major Russian author or literary movement in relation to European or American literature. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes. May be used to satisfy English or comparative literature major elective requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

HUR 393- G: Literary Analysis of Russian Texts

Selected topics in literary analysis focusing on the work of one or more Russian authors in translation. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: One literature course at the 200 level or higher

3 credits

HUR 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. In HUR 476, students

assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. This course does not count toward the major or minor in Russian.

Prerequisite: U3 or U4 standing; permission of instructor and language coordinator

3 credits, S/U grading

HUR 476: Undergraduate Teaching Practicum II

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

Prerequisite: U3 or U4 standing; permission of instructor and language coordinator

3 credits, S/U grading

HUS

Spanish Literature and Culture Courses in English

HUS 254- J: Latin America Today

An introduction to a continental perspective of 20th-century Latin American culture. Latin America's political, historical, and cultural developments of this century are studied.

3 credits

HUS 255- I: Modern Spain

An examination of major cultural and social developments in Spain throughout the 20th century, with special emphasis on the Spanish Civil War, the Franco era, and the transition to democracy. Presented in English, the course seeks to enhance understanding of Spain through analysis of such issues as national character, change and continuity, and regional diversity.

3 credits

HUS 361- G: Latin American Literature

A topics course given in English on a major Latin American author or literary movement in relation to European or American literature. Semester supplements to this Bulletin contain

specific description when course is offered. May be repeated as the topic changes. May be used to satisfy English or comparative literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

HUS 371- G: United States Latino Literature

A topics course given in English on a major Latino author or literary movement in relation to European or American literature. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes. May be used to satisfy English or comparative literature major requirements with permission of major department.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One literature course at the 200 level or higher

3 credits

HUS 390- J: Latin American Cinema

A contextual approach to the national cinemas of Latin America. Students develop their skill in film analysis as they examine the specific role of film in re-focusing the terms of ongoing debates on questions of national identity and the function of culture in society.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One 200-level course in film or one course in Latin American literature, culture, or history

3 credits

HWC

Social Welfare

HWC 210: Introduction to Social Work

Introduces the student to the field of social work. Provides an overview of the variety of settings in which social workers practice. Describes the knowledge, values, and skills which social workers use in order to help individuals, families, groups, and communities.

1 credit

HWC 323: Growing Old in America: The Social Conditions Policy and Practice Implications

Explores the social, political and economic conditions related to aging in this society. Identifies social policies and program formats that enhance wellness and support

dependencies from a positive perspective. Co-scheduled with HWC 523.

2 credits

HWC 326: Health Care Delivery with Diverse Populations

An overview of the many facets of health care delivery and the role of social workers in that delivery. Various systems and diverse populations and how they are treated by the health care systems are examined. Covered are community-based health care services, hospital care, long-term care, and the health care needs and impact of the health care system on women, African Americans, Latinos, the developmentally disabled, children, and the aged.

2 credits

HWC 329: Complementary and Alternative Medicine

Human service workers are often required to discuss issues of health and healing. Many individuals, by virtue of their culture, experiences and/or choice, often adhere to a combination of nontraditional and traditional beliefs regarding health care. Familiarizes students with those methods and beliefs most often found in specific cultures. Students will develop an appreciation of each practice in order to interact with clients from a strengths perspective and will gain an international perspective on health care modalities. Co-scheduled with HWC 529.

2 credits

HWC 340: Social Issues in Popular Culture

Movies have been a useful medium that can illustrate current social issues and family dynamics, as well as policy and research dilemmas. Each week, a film with a central practice/research/policy issue provides the basis for a lecture and class discussion. Topics focus on a variety of social issues such as family dynamics, bereavement, adoption, domestic violence, abuse, residential placement, policy and research. Co-scheduled with HWC 540.

2 credits

HWC 349: Overview of Social Work with Special Populations

Examines the issues that social workers must consider when working with traditionally disenfranchised populations. Emphasis will include micro and macro issues when intervening with gay and lesbian individuals, members of diverse racial and ethnic groups, and women, as well as others. The historic

as well as contemporary experiences of these individuals' interactions with the health and human service delivery system will be explored. Co-scheduled with HWC 549.

2 credits

HWC 351: Law and Social Change

Introduces students to the interrelationship of the legal process in the United States and the profession of social work. Focuses on the legal process in general, social welfare law, in particular, and the implications for effective social work practice. Co-scheduled with HWC 551.

2 credits

HWC 361: Implications of Racism for Social Welfare

Examines personal and institutional racism in the United States and the effect racism has on the delivery of services to individuals who do not fit the traditional "American model." Examines the historical relationship between racism and social welfare policies, programs and practice, as well as contemporary strategies for change. Co-scheduled with HWC 561.

2 credits

HWC 363: Homelessness, Politics and Public Health

Analyzes homelessness as an issue of social policy, including its history, recent causes, and current demographics. Emphasizes the political and economic context that has made homelessness a major social problem. Co-scheduled with HWC 563.

2 credits

HWC 379: Special Topics in Social Welfare

Examines significant timely issues confronting the profession. Topics include violence as a public health problem, issues of aging, racism, gender, AIDS, the media, spirituality, forensic social work, international social work and others. Topics vary each term as faculty develop specific modules that address one or more of these issues. Co-scheduled with HWC 579.

Prerequisite: Admission to Undergraduate Health Sciences Center program

1-3 credits

IAP

International Academic Programs

IAP 390: American History and Society

Overview of U.S. history from the time of European arrival on the North American continent to the present day, followed by an examination of crucial issues of American society and culture. Readings and discussions consider the social, economic, political, and cultural developments that have shaped the United States, and are crucial for the understanding of contemporary America. International students who participate in their university's Junior Year abroad program hosted and administered by IAP may take this course.

Prerequisite: Participation in the Junior Year Abroad program

3 credits

IAP 391: American Society and Culture

The interplay between social structure and culture that produces and reproduces American society is the main focus of this course. Students will consider selected social institutions such as the family, immigration, media, markets and social movements in American society. Reflections on these institutions, will employ a sociological analyses derived from documentary films/movies as well as journal articles and book chapters.

Prerequisite: Participation in the Junior Year Abroad program

3 credits

IAP 488: Internship

May be repeated to a limit of 6 credits.

Prerequisites: Permission of instructor and department

0-6 credits, S/U grading

INT

International Studies

INT 201: Democracy and Capitalism

Introduction to the two major ideologies and structures shaping the world today: democracy and the interstate political system, and capitalism and the world-economy. How they came into being, how they have been transformed over time, and how and whether they continue to be transformed. The course seeks to understand global connections between democracy and capitalism, and how the workings of the interstate system and the world-economy combine to impact power, culture, and social change at both the global and local level.

2 credits

INT 302: Colloquium in International Studies

A colloquium on international studies involving guest experts who discuss particular world topics or regional specialties. Students also contribute class discussions, oral presentations, and a substantial essay on themes drawn from various topics and regions. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated for as the topic changes.

Prerequisite: U3 or U4 standing
1 credit

INT 401: Global Social Problems

The consequences of the "globalization" of social, economic, and political life around the world. Topics include economic inequality and poverty; environmental degradation; AIDS epidemics; gender inequality and patriarchy; racism; human rights issues; migration and immigration and how they have shaped and been shaped by the social, political and economic dynamics underlying them. Consideration of the possibilities of global-local activism and social change. Conducted as part seminar and part practicum.

Prerequisites: INT 201; U3 or U4 standing
3 credits

INT 487: Independent Study in International Studies

Independent research projects on international studies by upper-division students in the minor under the supervision of an instructor. May be repeated twice.

Prerequisites: INT 201; U3 or U4 standing; permission of director of the minor
0-6 credits

ISE

Information Systems**ISE 102: Introduction to Web Design and Programming**

An introduction to the design of Web pages, specifically the development of browser and device independent HTML, with an emphasis on the XHTML standards. Includes the use of style sheets (CSS) and tools for page layout and verification. HTML is presented as a mark-up language, exploring the rules of HTML elements and attributes. Students learn the separation of page viewing information from the HTML through CSS style sheets as well as the use of block layout without using HTML tables. Addresses HTML display properties including text, color, image, and

graphic elements as well as approaches to HTML validation and techniques.

Advisory Prerequisite: CSE 101 or basic computer skills
3 credits

ISE 108: Introduction to Programming

Introduces computer programming at a level suitable for those with no prior programming experiences, including liberal arts and humanities majors. Programming exercises involve state-of-the-art visual applications. Topics include problem-solving techniques, object-oriented design, and programming concepts such as conditionals, iteration, arrays, and modularity.

3 credits

ISE 208: Intermediate Programming

Teaches programming and system design techniques with an emphasis on applications to business. Topics include object-oriented design techniques, testing and debugging, data structures, recursion, and exception-handling. Uses the Java programming language.

Prerequisite: ISE 108
3 credits

ISE 215: Foundations of Computer Science

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

Prerequisite: AMS 151 or MAT 125 or MAT 131

3 credits

ISE 218: Introduction to Computer Organization

This course introduces computer organization to students interested in the relationship between computer hardware and information systems. The course examines components found in high use computing devices such as desktop computers, smart phones and navigation systems. The course explores the underlying technology of each component, along with price/performance curves, competing technologies, and integration into larger systems. Upon completion of the course, students should be proficient in reading device specifications, particularly the functional and performance implications of system components. Students should be able to use that knowledge to compare competing devices.

Prerequisite: Level 4 or higher on the mathematics placement examination; U2 standing or higher
3 credits

ISE 300: Technical Communications

Principles of professional technical communications for Computer Science and Information Systems majors. Topics include writing business communications, user manuals, press releases, literature reviews, and research abstracts. Persuasive oral communications and effective presentation techniques, to address a range of audiences, will also be covered. This course satisfies the upper-division writing requirement for CSE and ISE majors.

Prerequisites: WRT 102, CSE or ISE major, U3 or U4 standing
3 credits

ISE 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 languages and the microchip. Societal changes in computer usage due to the microcomputer, emergence of the Internet, the World Wide Web, and mobile computing. Legal and social impacts of modern computing. Cannot be used as a technical elective for the CSE major or minor. This course is offered as both CSE 301 and ISE 301.

Prerequisite: U2 standing or higher
Advisory Prerequisite: one course in computing
3 credits

ISE 302: Professional Ethics for Computer Science

Familiarizes students with professional practice in Information Technology. Enables them to identify ethical conflicts, their responsibilities and options, and to think through the implications of possible solutions to ethical conflicts.

Prerequisites: CSE 219 or CSE 260 or ISE 305
1 credit

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.

Prerequisite: ISE 208 or CSE 214 or CSE 230
3 credits

ISE 308: Software Engineering

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

Prerequisite: CSE 219 or ISE 305
3 credits

ISE 311: Systems Administration

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

Prerequisites: CSE 214 or CSE 230 or CSE 260 or ISE 208
3 credits

ISE 312: Legal, Social, and Ethical Issues in Information Systems

This course deals with the impact of computers on us as individuals and on our society. Rapid changes in computing technology and in our use of that technology have changed the way we work, play, and interact with other people. These changes have created a flood of new social and legal issues that demand critical examination. For example, technologies such as Gmail, Facebook, MySpace, along with music sharing sites and wikis create new social, ethical, and legal issues. This course is offered as both CSE 312 and ISE 312.

Prerequisites: U3 or U4 standing, one D.E.C. E course
3 credits

ISE 315: Database Transaction Processing Systems

Theory and practice of design for applications involving transactional access to a database. Transaction design, schema design, restart and recovery, journaling, concurrency control, distributed databases. Student groups perform design and implementation of significant database application. This course is offered as both CSE 315 and ISE 315.

Prerequisite: CSE or ISE 305
3 credits

ISE 320: Information Management

The course presents the relationship between information technology and the systems that use the technology. The emphasis is on business systems with a high information technology components (e.g. software developments, communications, financial management, etc.). Topics include infrastructure management, information management, security, and communications. Emphasis is given to case studies relating to information management.

Prerequisite: U2 Standing
3 credits

ISE 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 or CSE 260 or ISE 208
3 credits

ISE 325: Computers and Sculpture

This multidisciplinary class surveys how computer science and computer technology are used in sculpture. Case studies with slides, videos, and software demonstrations illustrate a range of approaches of sculptors incorporating computers in their creative process. Various state-of-the art fabrication technologies are studied (with site visits if available on campus). Mathematical foundations are emphasized so students can recognize them when analyzing sculpture and choose the right tool when designing. In the weekly laboratory, these ideas are reinforced with projects using a range of available software and inexpensive construction materials, e.g., paper, cardboard, and foamcore. *Prerequisites:* CSE 110 or permission of instructor 3 credits

Prerequisite: CSE 110 or permission of instructor

3 credits

ISE 332: Introduction to Visualization

Visualization of scientific, engineering, medical, and business data sets. Mechanisms to acquire sampled, computed, or synthetic data and methods to transform symbolic into the visual. Topics include classic visualization process; visual perception; volume and surface visualization; methods for visualizing sampled, simulated, and geometric objects; and visualization systems. Emphasis on applications and case studies. This course is offered as both CSE 332 and ISE 332.

Prerequisites: CSE 219 or CSE 260; MAT 211 or AMS 210
3 credits

ISE 334: Introduction to Multimedia Systems

Survey of technologies available for user interfaces. Discussion of hypertext; voice, music, and video together with tools and models for capturing, editing, presenting, and combining them. Capabilities and characteristics of a range of peripheral devices including devices based on posture, gesture, head movement, and touch. Case studies of academic and commercial multimedia systems including virtual reality systems. Students participate in laboratory exercises and build a multimedia project. This course is offered as both CSE 334 and ISE 334.

Prerequisite: U2, U3 or U4 standing
3 credits

ISE 340: 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. This course is offered as both EST 310 and ISE 340.

Advisory Prerequisite: Basic Computer Skills
3 credits

ISE 364: Advanced Multimedia Techniques

Digital media production techniques for high-bandwidth applications such as electronic magazine illustration, broadcast television, and motion picture special effects. Students explore techniques such as 3D modeling and character animation, video compositing, and

high-resolution image processing in a state-of-the-art multimedia computing laboratory. High-capacity multimedia storage, high-speed networks, and new technologies such as DVD, HDTV, and broadband will be reviewed. This course is offered as both CSE 364 and ISE 364.

Prerequisites: CSE/ISE 334 and permission of the instructor

3 credits

ISE 377: Introduction to Medical Imaging

An introduction to the mathematical, physical, and computational principles underlying modern medical imaging systems. Covers fundamentals of X-ray computer tomography, ultrasonic imaging, nuclear imaging, and magnetic resonance imaging (MRI), as well as more general concepts required for these, such as linear systems theory and the Fourier transform. Popular techniques for the visualization, segmentation, and analysis of medical image data are discussed, as well as applications of medical imaging, such as image-guided intervention. The course is appropriate for computer science, biomedical engineering, and electrical engineering majors.

Prerequisites: AMS 161 or MAT 127 or 132 or 142; AMS 210 or MAT 211

3 credits

ISE 378: Introduction to Robotics

Introduces basic concepts in robotics including coordinate transformation, kinematics, dynamics, Laplace transforms, equations of motion, feedback and feedforward control, and trajectory planning. Covers simple and complex sensors (such as cameras), hybrid and behavior based control and path planning. Concepts are illustrated through laboratories using the LEGO Robot Kit.

Prerequisites: AMS 161 or MAT 127 or 132 or 142; AMS 210 or MAT 211 or MEC 262

3 credits

ISE 390: Special Topics in Information Systems

Lecture or seminar course on a current topic in information systems. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes, but cannot be used more than twice to satisfy ISE major requirements.

Prerequisites: ISE or CSE major; U3 or U4 standing

3 credits

ISE 391: Special Topics in Information Systems

Lecture or seminar course on a current topic in information systems. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes, but cannot be used more than twice to satisfy ISE major requirements.

3 credits

ISE 475: Undergraduate Teaching Practicum

Students assist faculty by conducting a recitation or laboratory section that supplements a lecture course. The student receives regularly scheduled supervision from the faculty advisor. May be used as an open elective only and repeated once.

Prerequisites: U4 standing as an undergraduate CEAS major; a minimum g.p.a. of 3.00 in all Stony Brook courses; grade of B or better in the course in which the student is to assist; or permission of department

3 credits

ISE 487: Research in Information Systems

An independent research project with faculty supervision. Only three credits of research electives (AMS 487, BME 499, CSE 487, ESE 499, ESM 499, EST 499, ISE 487, MEC 499) may be counted toward technical elective requirements. May not be taken for more than six credits.

Prerequisites: Permission of instructor and department

0-6 credits

ISE 488: Information Systems Internship

Participation in local, state, national, or international private enterprises, public agencies, or nonprofit institutions. Students are required to submit a written proposal, progress reports, and a final report on their experience to the client and to the department. May be repeated up to a limit of 12 credits but only 3 credits of CSE or ISE 488 may be used as an elective to satisfy ISE major requirements.

Prerequisites: ISE major; U3 or U4 standing; permission of faculty sponsor and department

3 credits, S/U grading

ITL

Italian

ITL 101 - S3: Intensive Elementary Italian

An intensive course covering the elementary Italian program (ITL 111, 112) in one semester. ITL 101 is designed for students

who have no prior knowledge of the language. A student who has had two or more years of Italian in high school (or who has otherwise acquired an equivalent proficiency) may not take this course without written permission from the supervisor of the course. May not be taken for credit after any other course in Italian.

6 credits

ITL 111: Elementary Italian I

An introduction to spoken and written Italian, stressing pronunciation, speaking, comprehension, reading, and writing. Selected texts are read. Practice in language laboratory supplements class work. ITL 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Italian in high school (or who has otherwise acquired an equivalent proficiency) may not take ITL 111 without written permission from the supervisor of the course. May not be taken for credit in addition to ITL 101.

4 credits

ITL 112 - S3: Elementary Italian II

An introduction to spoken and written Italian, stressing pronunciation, speaking, comprehension, reading, and writing. Selected texts are read. Practice in language laboratory supplements class work. May not be taken for credit in addition to ITL 101.

Prerequisite: ITL 111

4 credits

ITL 201 - S3: Intensive Intermediate Italian

An intensive course covering the intermediate Italian program (ITL 211, 212) in one semester. May not be taken for credit in addition to ITL 211, 212.

Prerequisite: ITL 101 or 112

6 credits

ITL 211 - S3: Intermediate Italian I

Intermediate courses in the reading and discussion of selected Italian texts. Completion of grammatical and syntactic points not covered in Elementary Italian. Extensive practice in conversational ability. May not be taken for credit in addition to ITL 201.

Prerequisite: ITL 101 or 112

3 credits

ITL 212 - S3: Intermediate Italian II

Intermediate courses in the reading and discussion of selected Italian texts. Completion of grammatical and syntactic points not covered in Elementary Italian. Extensive

practice in conversational ability. May not be taken for credit in addition to ITL 201.

Prerequisite: ITL 211

3 credits

ITL 311 - S3: Italian Conversation and Composition

A course in spoken and written Italian, with emphasis on precision and fluency in the spoken form.

Prerequisite: ITL 201 or 212

3 credits

ITL 312 - S3: Italian Conversation and Composition

Reading of selected short passages of prose and poetry in class, with emphasis on improved writing skills, oral expression, and increased mastery of Italian syntax and techniques of literary analysis.

Prerequisite: ITL 201 or 212

3 credits

ITL 313 - S3: Italian Vocabulary

A course designed to increase the vocabulary and oral comprehension of students of Italian through media such as television commercials, popular music, folk songs, etc. The particular theme changes each semester. May be repeated twice for credit as the topic changes.

Prerequisite: ITL 201 or 212

1 credit

ITL 395- G & 3: Readings in Italian Literature I

Literary analysis and its application to representative short stories and novels chosen from the various periods of Italian literature. Readings, writings, and discussions are in Italian.

Prerequisite: ITL 311

Pre- or Corequisite: ITL 312

3 credits

ITL 396- G & 3: Readings in Italian Literature II

Literary analysis and its application to representative plays and poems chosen from the various periods of Italian literature. Readings, writings, and discussions are in Italian.

Prerequisite: ITL 311

Pre- or Corequisite: ITL 312

3 credits

ITL 410 - S3: Business Italian

A course designed for students who wish to become more proficient in reading, writing, and translating Italian. Students are also

trained in the use of Italian in business, in administration, and in everyday professional life. Emphasis is placed on the idiomatic peculiarities of the Italian language and the relation of Italian to the structure of English.

Prerequisites: ITL 311 and 312

3 credits

ITL 411 - S3: Advanced Conversation and Composition

A course designed to develop fluency and accuracy in the use of the spoken language through intensive practice, exposition, class discussion, and the use of the language laboratory.

Prerequisites: ITL 311 and 312

3 credits

ITL 412 - S3: Advanced Conversation and Syntax

A course designed to acquaint students with the subtleties of Italian grammar and style. Extensive practice in composition and in translation from English to Italian.

Prerequisites: ITL 311 and 312

3 credits

ITL 424 - S3: History of the Italian Language

A study of the history of the Italian language from Latin to its present form.

Prerequisites: ITL 311 and 312

3 credits

ITL 425 - S3: Italian and Its Dialects

An examination of the Italian dialects within the larger framework of Romance language development, particularly through primary texts (medieval to modern) in various Italian dialects.

Prerequisite: ITL 311; ITL 312; HUL 324; or permission of instructor

3 credits

ITL 426 - S3: Italian Linguistics

An examination of the linguistic evolution and the synchronic structures (phonology, morphology, and syntax) of standard Italian and some Italo-Romance dialects.

Prerequisite: ITL 311; ITL 312; HUL 324; or permission of instructor

3 credits

ITL 430 - S3: Studies in 13th- and 14th-Century Literature

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

Prerequisites: ITL 311, 312, 395, and 396

3 credits

ITL 431 - S3: Studies in 13th- and 14th-Century Literature

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

Prerequisites: ITL 311, 312, 395, and 396

3 credits

ITL 432 - S3: Studies in 15th- and 16th-Century Literature

May be repeated as the topic changes.

Prerequisites: ITL 311, 312, 395, and 396

3 credits

ITL 433 - S3: Studies in 17th- and 18th-Century Literature

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

Prerequisites: ITL 311, 312, 395, and 396

3 credits

ITL 434 - S3: Studies in 19th-Century Literature

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

Prerequisites: ITL 311, 312, 395, and 396

3 credits

ITL 435 - S3: Studies in Contemporary Literature

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

Prerequisites: ITL 311, 312, 395, and 396

3 credits

ITL 436: Special Topics in Italian Cinema

A topics course given in Italian on Italian cinema. Topics may include films of a particular actor or director, genre, theme, or historical period. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Pre- or Corequisites: ITL 311 and 312

Advisory Prerequisite: HUI 231

3 credits

ITL 440- I & 3: The Italian Scene

The reality of Italy and the Italian people through a study of the evolution of the historical, cultural, political, and social character of the nation.

Prerequisites: ITL 311 and 312

3 credits

ITL 441 - S3: Topic Seminar

A seminar built around a theme such as "Cities in Italian Literature," "Women in Italian Literature," "Death and Resurrection in Contemporary Italian Literature," or "Sin and Sensuality in the Italian Short Story." A detailed description of the seminar may be obtained from the department for each semester it is offered. May be repeated as the topic changes.

Prerequisites: ITL 311 and 312

3 credits

ITL 447 - S3: Directed Readings in Italian

Individually supervised readings in selected topics in Italian language and literature or, alternatively, for the purpose of developing Italian vocabulary in a secondary field, in selected topics in the humanities, social sciences, or natural sciences. May be repeated.

Prerequisite: Permission of instructor

1-6 credits

ITL 475 - S3: Undergraduate Teaching Practicum I (in Italian)

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

Prerequisites: Fluency in Italian; permission of instructor and department

3 credits, S/U grading

ITL 476 - S3: Undergraduate Teaching Practicum in Italian II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served.

Prerequisites: Fluency in Italian; permission of instructor and department

3 credits, S/U grading

ITL 488 - S3: Internship

Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce language skills and knowledge of social and cultural institutions.

Prerequisites: ITL 410; permission of instructor and department

0-6 credits, S/U grading

ITL 495 - S3: Senior Honors Project in Italian

A one-semester project for seniors. Arranged in consultation with the department, the project involves writing a paper, under the close supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors take this course.

Prerequisite: Permission of department

3 credits

ITS Information and Tech Studies

ITS 101: Introduction to Stony Brook

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

Prerequisite: Admission to the ITS Undergraduate College

1 credit, S/U grading

ITS 102: Topics in Information and Technology Studies

A seminar for students in the College of Information and Technology Studies. Various topics within the scope of information, technology, and engineering studies. Required for all first year students. Not for credit in addition to ACH 102, GLS 102, HDV 102, LDS 102, or SSO 102.

Prerequisite: Admission to the ITS Undergraduate College

1 credit, ABC/U grading

ITS 275: Undergraduate College Fellows Seminar

Creates a curricular component for the second year of the Undergraduate College Experience. College fellows will enroll in ITS 275 in the spring semester of their freshman year and ITS 276 in the fall semester of their sophomore year. 275 (spring) engages students in four main content areas: student development theory, scholarship on mentoring and leadership development, concepts of teaching and learning, and programming

and event planning. These areas prepare students for supervised learning and teaching experiences that will occur primarily in the fall 276 course.

Prerequisites: Grade of "S" in ITS 101 and a strong desire to help other students. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

ITS 276: Undergraduate College Fellows Practicum

The second semester in the sequence following ITS 275. Students assume higher responsibility and are given opportunities to apply teaching theories and concepts as learned in ITS 275. Students act as a TA for ITS 101.

Prerequisites: A grade of "S" in ITS 275. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

ITS 475: Undergraduate College Teaching Practicum

The purpose of this course is to allow upper-division students the opportunity to work with a faculty member as an assistant in one of the faculty member's scheduled Undergraduate College seminars. 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. May be repeated up to a limit of 2 credits.

Prerequisite: Permission of the instructor and department

1 credit, S/U grading

ITS 488: Undergraduate College Internship

Students learn about contemporary issues in higher education, community building, and teaching at a research university through hands-on work with faculty mentors. Work assigned will include participation in the planning and operation of events and initiatives sponsored by the Undergraduate Colleges. Students are required to submit written reports on their experiences to the Undergraduate Colleges office and Faculty Directors. May be repeated up to a limit of 6 credits.

Prerequisite: Permission of the instructor and department

0-3 credits, S/U grading

JDH

Judaic Studies: Humanities

JDH 230- G: Judaism

A survey of the great texts of the Judaic heritage, with the aim of learning the contribution of each to the Jewish tradition. The course includes an examination of characteristic Jewish beliefs, practices, and attitudes. This course is offered as both JDH 230 and RLS 230.

3 credits

JDH 261- B: The Bible as Literature

A literary approach to the Bible that explores the characteristic principles of the Bible's narrative and poetic art. This course is offered as both EGL 261 and JDH 261.

Prerequisite: Completion of D.E.C. category A

3 credits

JDH 320- G: The Rabbinic Tradition

The origin and development of the Rabbinic tradition, examination of the chief elements of Rabbinic teaching at various times, and analysis of the major types of Rabbinic literature. This course is offered as both JDH 320 and RLS 320.

Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230

3 credits

JDH 361- G: Women in the Biblical World

Consideration of how we define, on the basis of biblical and other contemporaneous literature, women's position in the socio-political sphere, including women in professions and institutions, such as goddesses, leaders of the community, queens, "wise women", writers, prophetesses, magicians, and prostitutes; and examination of literary types such as the Wife (and concubine), the Mother, the Daughter, the Temptress, and the Ancestress. This course is offered as both JDH 361 and WST 361.

Prerequisite: One JDH or JDS or WST or literature course at the 200 level or higher

3 credits

JDH 369- G: Topics in Biblical Interpretation

A study of some of the ways a selected book in the Hebrew Bible, a selection from the prophets, or another book, has been understood through history. The course examines traditional Christian interpretations in contrast with Rabbinic interpretations.

Higher biblical criticism is discussed as a reflection of 19th-century historicism and science. Modern interpretations include psychoanalytic, structuralist, anthropological, and literary. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: JDH 230 or one literature course at the 200 level or higher

3 credits

JDH 390- G: Humanities Topics in Judaic Studies

An examination of a selected topic in Judaic studies within the humanities area. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230

3 credits

JDH 415- G: Judaic Response to Catastrophe

The response of Judaic thinkers, from the Bible to the Second World War, to the problem of historical disaster and the need to understand and respond to it. Particular attention is given to the question of long-term continuity and the appearance of innovation in such responses. This course is offered as both JDH 415 and RLS 415.

Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230

3 credits

JDH 447: Readings in Judaic Studies

Qualified juniors and seniors may read independently in the areas of Jewish religion, philosophy, and literature in an approved program under the supervision of a faculty member. May be repeated.

Prerequisite: Permission of instructor

1-6 credits

JDS

Judaic Studies: Social and Behavioral Sciences

JDS 225- J: The Formation of the Judaic Heritage

Jewish history and the development of Judaism during the Persian, Hellenistic, and Roman periods (ca. 500 B.C.E.- ca. 500 C.E.). The course begins with the close of the Hebrew Bible, examines the varieties of Judaism which then arose, and ends with the consolidation of

rabbinic Judaism on one hand and Christianity on the other. This course is offered as both HIS 225 and JDS 225.

Advisory Prerequisite: RLS 101 or 110 or one HIS course

3 credits

JDS 226- F: The Shaping of Modern Judaism

The history of the Jews and of Judaism since the fall of the Roman Empire and the rise of Islam. The course concludes with a study of the Holocaust and the creation of the State of Israel, and includes a survey of the major forms of American Jewish life. This course is offered as both HIS 226 and JDS 226.

Advisory Prerequisite: RLS 101 or 110 or one HIS course

3 credits

JDS 241- I: The Holocaust: The Destruction of European Jewry-- Causes and Consequences

The rise of modern anti-Semitism since the late 18th century and its political application in Nazi Germany. Topics include the destruction process, ghetto life, resistance, foreign response, and the war crimes trials. This course is offered as both HIS 241 and JDS 241.

Advisory Prerequisite: JDS/HIS 226 or HIS 101 or 102

3 credits

JDS 327- F: Women in Judaism

A survey of women in Judaism and in Jewish life from the Biblical period to the present, focusing on such topics as the representation of women in the Bible, Jewish law concerning women, the role of women in the Enlightenment in Germany and America, immigrant women in America, women in the Holocaust, and women in Israel. This course is offered as both JDS 327 and WST 320.

Prerequisite: One JDS or WST course

3 credits

JDS 356- I: Zionism Before 1948

A survey of ideologies that have found expression under the general banner of Zionism. Topics include the origins and development of those ideologies, and the important ideological and conceptual issues that the Zionist movement has not yet managed to resolve.

3 credits

JDS 390- F: Social Sciences Topics in Judaic Studies

An examination of selected topics within the social and behavioral sciences area to be

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

Prerequisite: JDS/HIS 225 or 226

3 credits

JDS 447: Readings in Judaic Studies

Qualified juniors and seniors may read independently in the areas of Jewish history, culture, and society, in an approved program under the supervision of a faculty member. May be repeated.

Prerequisites: Two JDS courses, or one course each in JDS and JDH; permission of director

1-6 credits

JPN

Japanese Language

JPN 101 - S3: Intensive Elementary Japanese

An intensive, 6-credit, elementary-level Japanese language course that provides foundational knowledge and skills including pronunciation, basic everyday conversational proficiency, principles of character formation, basic grammatical rules, and basic cultural norms and preferences that govern language use. Drawing upon a communicative approach, this course situates oral and written language in real-life contexts and promotes learner-centered, interactive classroom activities. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Japanese in high school (or who has otherwise acquired an equivalent proficiency) may not take JPN 101 without written permission from the supervisor of the course. May not be taken for credit after any other course in Japanese.

6 credits

JPN 111: Elementary Japanese I

An introduction to spoken and written Japanese with equal attention to speaking, reading, and writing. Linguistic analysis of the characters provides cultural and historical background of the language. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Japanese in high school (or who has otherwise acquired an equivalent proficiency) may not take JPN 111 without written permission from the supervisor of the course.

4 credits

JPN 112 - S3: Elementary Japanese II

An introduction to spoken and written Japanese with equal attention to speaking, reading, and writing. Linguistic analysis of the characters provides cultural and historical background of the language. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Japanese in high school (or who has otherwise acquired an equivalent proficiency) may not take JPN 112 without written permission from the supervisor of the course.

Prerequisite: JPN 111

4 credits

JPN 201 - S3: Intensive Intermediate Japanese

An intensive, 6-credit, Intermediate-level Japanese language course that offers foundational knowledge and skills at the intermediate level, including conversational proficiency, orthography, grammatical rules, and essential cultural norms and preferences that govern language use. Drawing upon a communicative approach, this course situates oral and written language in real-life contexts and promotes learner-centered, interactive classroom activities. May not be taken for credit in addition to JPN 211 or JPN 212.

Prerequisite: JPN 101, JPN 112, or placement test

6 credits

JPN 211 - S3: Intermediate Japanese I

An intermediate course in Japanese language to develop audiolingual skills and reading and writing ability. Selected literary texts serve as the basis for practice in reading comprehension and composition. A student who has had three or more years of Japanese in high school (or has otherwise acquired an equivalent proficiency) may not enroll in JPN 211 without written permission from the supervisor of the course.

Prerequisite: JPN 112

4 credits

JPN 212 - S3: Intermediate Japanese II

An intermediate course in Japanese language to develop audiolingual skills and reading and writing ability. Selected literary texts serve as the basis for practice in reading comprehension and composition. A student who has had three or more years of Japanese in high school (or has otherwise acquired an equivalent proficiency) may not enroll in JPN 212 without written permission from the supervisor of the course.

Prerequisite: JPN 211

3 credits

JPN 311 - S3: Advanced Japanese I

An advanced course designed to strengthen students' ability to understand and speak the Japanese language. Students are required to prepare selected texts and to read and translate them in class. They also write essays based on the texts as well as on Japanese videos.

Prerequisite: JPN 212

3 credits

JPN 312 - S3: Advanced Japanese II

An advanced course designed to strengthen students' ability to understand and speak the Japanese language. Students are required to prepare selected texts and to read and translate them in class. They also write essays based on the texts as well as on Japanese videos.

Prerequisite: JPN 311

3 credits

JPN 331- F: Social Sciences Topics in Japanese Studies

An investigation of a specific area of Japanese studies in the social and behavioral sciences. Semester supplements to this Bulletin contain specific description when course is offered.

May be repeated as the topic changes.

Previously offered as JNS 331.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in Asian studies

3 credits

JPN 332- G: Humanities Topics in Japanese Studies

An investigation of a specific area of Japanese studies in the humanities. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in Asian studies

3 credits

JPN 410: Business Japanese

A course designed for students who wish to expand their Japanese communication skills in a business context and understand socio-economic situations as well as socio-cultural values in Japan. Upon completing this course, students will be able to hold conversations with correct business vocabulary and with culturally appropriate manners, read authentic materials related to business and economics in Japan, and write business correspondence in proper styles and formats.

Prerequisite: JPN 312 or equivalent

3 credits

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 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 411 or placement test
3 credits

JPN 426: Structure of Japanese

The study of phonology, morphology, syntax, semantics, lexicon, and writing systems of the Japanese language as well as the use and functions of the language in relation to the social structures and interpersonal relationships.

Prerequisite: JPN 312 or permission of instructor

3 credits

JPN 447: Independent Study

Directed reading and research in Japanese studies. Limited to Japanese studies minors or upper-division students working on advanced problems in Japanese studies. May be repeated. Previously offered as JNH and JNS 447.

Prerequisites: U3 or U4 standing; permission of instructor

1-6 credits

JPN 487: Independent Research

An individual research project in Japanese, such as translation, analysis of documents or literature, etc., in consultation with the instructor. Students are expected to meet at regular intervals and to present the completed project at the end of the semester. May be repeated.

Prerequisites: Interview; permission of instructor

0-3 credits

JRN

Journalism

JRN 101- B: News Literacy

How do you know if you're getting the truth from the news media? This course is designed to prepare students to become more discriminating news consumers. It will examine standards of reliability and accuracy in news gathering and presentation, and seek to establish the differences between news and propaganda, assertion and verification, bias and fairness, and infotainment 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 EGL 390-G (spring 2006). Not for credit in addition to EGL 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 vice versa.

Pre- or co-requisite: WRT 101 or higher or equivalent, or permission of department

3 credits

JRN 102: Colloquium on the News

This course is designed to introduce students to the journalistic process and expose them to some of the leading newsmakers in the area. Students will be expected to do research on timely issues in the news and prepare questions for visitors who will conduct periodic press conferences. Students will be expected to learn basic research and interviewing skills, as well as develop an appreciation of current news issues. Previously offered as JRN 285. Not for credit in addition to JRN 285.

1 credit

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 students to become more discriminating news consumers. It will examine standards of reliability and accuracy

in news gathering and presentation, and seek to establish the differences between news and propaganda, assertion and verification, bias and fairness, and infotainment 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 EGL 390-G (spring 2006). Not for credit in addition to EGL 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 vice versa.

Pre- or co-requisite: WRT 101 or higher or equivalent, or permission of department

3 credits

JRN 108- F: The History and Future of the American Press

This course traces the history of the American press from pre-American Revolution to post-Internet revolution. It examines the political, economic and technological forces that shaped the news media and how the press, in turn, influenced American government, politics and society. Topics will include freedom of the press, the rise of the popular press, war and the press, the press and presidents, the impact of investigative journalism, the evolution of radio and TV news, and the advent of 24/7 online news. Previously offered as JRN 280. Not for credit in addition to JRN 280.

Pre- or co-requisite: WRT 101 or higher or equivalent, or permission of department

3 credits

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 foundation 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 sentence 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 journalism program. Previously offered as JRN 287. Not for credit in addition to JRN 287.

Prerequisite: Completion of D.E.C. category A

Pre/Co-Requisite: JRN 101 (formerly offered as EGL 390 Fall 2005-Spring 2006) or JRN 103

3 credits

JRN 111: Writing Immersion Lab

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

Prerequisite: Completion of D.E.C. A

Mandatory Corequisite: JRN 110

S/U grading

JRN 201: Journalism That Changed the World

This course is designed to give students an appreciation for the power of the press to work on behalf of the public interest. It is designed as a case study course in which students examine major, contemporary stories in broadcast and print that have had a significant impact on society. Included are case studies of Watergate, coverage of the Civil Rights movement, revelations of local corruption on Long Island, and the disclosure of ethnic cleansing in Bosnia, among other stories. Students also will be assigned to read, watch, and study earlier examples of public service journalism. Journalists who participated in the case studies will visit class and discuss their stories.

Prerequisite: Completion of D.E.C. Category A

Pre- or Corequisite: JRN 101 or JRN 103

3 credits

JRN 210: News II: Advanced Reporting and Writing

This course is a continuation of JRN 110, with an emphasis on developing advanced reporting and newswriting skills. Students move beyond the basic wire-service type breaking-news report (speech story, obituary, crime report) and begin writing using more advanced forms: the news feature, the profile, the news analysis, the trend story. Classroom drills include scene-setters and human-interest stories. Emphasis is placed on improving reporting skills, developing story ideas, researching,

interviewing, expanding the number and type of sources used and using numbers and statistics accurately and effectively. Students are required to write in Associated Press style.

Prerequisite: JRN 110 and 111 or 287

Mandatory Corequisite: JRN 211

3 credits

JRN 211: Digital Photojournalism Lab

In this lab, which must be taken in conjunction with JRN 210, students develop an appreciation for news photography and fundamental skills, including photo composition, lighting, approaches to subject matter and other aspects of news photography. In addition to being able to illustrate and enhance the stories they produce in JRN 210, students will acquire the ability to apply these skills in many of their subsequent print, broadcast and online journalism courses. Satisfactory/Unsatisfactory grading only.

Students must receive a Satisfactory grade in order to continue in journalism skills courses.

Mandatory Corequisite: JRN 210

S/U grading

JRN 220: Media Law and Ethics

This course examines how journalists do their work from the perspectives of legal and ethical parameters. It will provide an introduction to the legal foundation that supports freedom of the press and examine current law on such subjects as source confidentiality, access to documents, libel, and invasion of privacy. Students will also examine ethical codes that guide journalists, including standards regarding independence, accountability, truth-telling, protecting sources, and study conflicts that arise when journalistic principles clash with real-life dilemmas.

Prerequisite: JRN 110 and 111

3 credits

JRN 288: On Campus Internship

Designed to provide students with experience in journalism at the campus level. Students will work for a campus news outlet on a schedule approved by the School of Journalism. The work will involve journalistic skills related to the educational goals of the School of Journalism. The internship coordinator will determine whether the work meets appropriate journalistic standards. This internship is required of all journalism majors and may be repeated once.

Prerequisite: JRN 210 and 211; 12 credits of JRN; permission of intern coordinator

Pre- or corequisite: JRN 310 if broadcast or online

1 credit, S/U grading

JRN 301: Journalism 24/7

This course examines the rapidly evolving media landscape and the implications for journalism and journalists. Students examine the revolutionary changes in digital technology, dramatically shifting patterns of media consumption, rise of non-traditional competition, challenges of serving a more diverse audience, and accelerating media consolidation, and explore alternative visions for the impact on content, standards, business models, and jobs in the next decade.

Prerequisites: JRN 108 or 201; JRN 110 and 111

3 credits

JRN 310: News III: Reporting, Writing and Production for Broadcast

Students are introduced to the skills needed to report and write news stories for television and radio. Students will become familiar with the proper use of pictures and sound in broadcast journalism, and become comfortable writing news reports in a variety of broadcast formats. Students also are expected to become familiar with a variety of broadcast production tools, including the basics of Final Cut Pro and video photography. Course includes a lecture and a weekly three-hour lab.

Prerequisite: JRN 210 and 211

3 credits

JRN 320: The Promise and Perils of Online Journalism

This course examines the challenges presented by the explosion of journalism on the Internet and assesses the role of the journalist in an online society. Students are exposed to both practical skills and a broader understanding of issues. Topics include how journalists add value to information online, writing and editing for the Web, the use of interactive tools, blogs and podcasts, and an elementary understanding of Web design. At the same time, students explore issues of privacy, the Internet's potential threat to traditional journalistic standards, and how online publishing is creating new audiences. Students will critique news Web sites, participate in a blog and podcast, create a news Web page, and produce an online story package. Course includes a lecture and a weekly three-hour lab.

Prerequisites: JRN 210, 211

3 credits

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 work across all three media platforms, 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

3 credits

JRN 331: Specialized Beat Reporting (Government)

Students become acquainted with the skills and knowledge necessary to become a specialist in the area of government and public affairs reporting. In seminar format students meet and question broadcast and print beat reporters in the areas of government, politics, the courts, police, and education. Four class sessions meet at SBU Manhattan campus. Students may participate via video conferencing to the main campus. Note: This class is only offered in the fall semester. Students may take either JRN 331 or JRN 332, but not both, to satisfy a requirement of the major.

Prerequisite: JRN 310

Advisory prerequisite: POL 367

3 credits

JRN 332: Specialized Beat Reporting (Culture and Lifestyle)

Students become acquainted with the skills and knowledge necessary to become a specialist in the areas of culture, arts and lifestyle and sports. In seminar format students meet and question beat reporters in the areas of film, theatre, art, fashion, food, architecture and sports. Four class sessions meet at SBU Manhattan campus. Students may participate via video conferencing to main campus. Note: This course is only offered in the spring semester. Students may take JRN 331 or JRN 332, but not both, to satisfy a requirement of the major.

Prerequisite: JRN 310

Advisory prerequisite: SOC 330

3 credits

JRN 333: Business Reporting

This course provides practical training for journalism students interested in a possible career in business reporting. It seeks to provide the basic understanding and skills to report on business and consumer news and economic trends. Goals include learning how to read and understand financial statements, how to identify and access relevant public documents,

and how to interpret basic economic data and statistics. Students profile a public company on Long Island or in New York City, and learn how to write a business story that conforms to standards of accuracy and context. They will be encouraged to visit major financial institutions, public markets, and regulatory agencies in New York City. Students will also examine business stories and controversies in the news from the perspective of the business community and journalists.

Prerequisite: JRN 310

Advisory Prerequisites: ECO 108 and BUS 110

3 credits

JRN 334: Science and Health Reporting

Students will examine methods of evaluating and reporting science and health news with accuracy and context. Among the topics to be covered: how to read a medical journal article; how to understand simple statistical data; how to develop and interview expert sources; how to deal with conflicting claims. Drawing on the resources of the Health Sciences Center, the course also will provide information on how research and health care are organized and funded. Students will report and write several stories for print, broadcast or the Web. They also will spend a day shadowing a health care professional.

Prerequisites: JRN 210 and 211; 1 DEC E and 1 DEC F

3 credits

JRN 335: Reporting in New York City--Print

This course, which is offered mainly in winter and summer sessions, provides students with an overview of how reporters cover the major institutions in New York City: City Hall, the United Nations, the police department, 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 newsroom. It is offered at the university's Manhattan extension.

Prerequisite: JRN 210 and JRN 211; permission of the department

3 credits

JRN 336: Sports Reporting

This course is designed to prepare students to report, write and produce sports stories in print, broadcast and online, from sports news to behind-the-scenes issues that resonate in the world of sports. Upon completion of this course, students should be as comfortable covering a government hearing on steroids in

professional sports as covering a basketball game.

Prerequisite: JRN 310

3 credits

JRN 337: Introduction to Narrative Journalism

Building on students' experiences in newswriting, this course examines the reporting and writing of longer stories and more textured feature stories. There will be an emphasis on focus, structure, and storytelling, including the rudiments of developing style and a narrative voice. Students will be expected to write several original enterprise stories. They will also explore the similarities and differences in telling stories in print, online, and in broadcast formats. Previously offered as JRN 288. Not for credit in addition to JRN 288 "Feature Writing" that was offered prior to Fall 2006.

Prerequisite: JRN 210 and 211

3 credits

JRN 340: Beat Reporting

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

Prerequisite: JRN 310

3 credits

JRN 350: Journalistic Judgment

This course examines the fundamentals of journalistic judgement, for all media, with emphasis on critical thinking, maximizing accuracy, removing bias, and providing context. Students will do case studies in print, broadcast, and online before completing a culminating project.

Prerequisite: JRN 310

Pre- or Corequisite: JRN 320

3 credits

JRN 355: Reporting in New York City - Broadcast

This course, which is offered mainly in winter and summer sessions, provides students with an overview of how broadcast journalists cover the major institutions in New York City: City Hall, the United Nations, the police department, 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 newsroom. It is offered at the university's Manhattan extension.

Prerequisite: JRN 310 and permission of the department

3 credits

JRN 360: Techniques of In-Depth Reporting

This course explores explanatory, interpretive and issue-based journalism for both print and the Web. Students will produce analytical and explanatory stories that combine authoritativeness of 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. Not for credit in addition to JRN 364.

Prerequisites: JRN 310

Pre- or corequisite: JRN 350 or permission

3 credits

JRN 361: News Editing and Presentation/Print

This course focuses on developing students' copy editing and layout skills and is designed for students concentrating 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 headlines and captions on 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, page placement and cropping, and to the use of graphics and other elements to enhance newspaper storytelling.

Prerequisites: JRN 350 or permission

Pre- or corequisite: JRN 364

3 credits

JRN 362: Magazine Editing

This course is designed for students who have an interest in magazine journalism. Students will study editorial 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 and 350 or permission of instructor

3 credits

JRN 363: Magazine Writing

This course builds on JRN 337, advancing the exploration of long-form magazine stories. Students will learn how to develop ideas and craft them into sophisticated pieces with protagonists and strong narrative drive. They will learn to bring their stories to life using novelistic techniques such as character development, voice, mood and theme, conflict and resolution, scene-setting, foreshadowing and dialogue. Required reading assignments, group discussions of works-in-progress and roundtable meetings with professional narrative journalists will inspire students to develop their own writer's eye and voice. The culminating goal of the course is for each student to produce a 2,500-to-3,000-word story for publication. Students will also learn how to select a market for their stories and write a query letter.

Prerequisites: B or better in JRN 337 and permission of department

3 credits

JRN 364: City Editor

This course is designed to prepare student journalists to get to the bottom of complex stories through probing reporting that will seek rich detail and context. Students will work independently under the supervision of a 'City Editor' to produce one in-depth story of approximately 1,500 words during the semester. These stories will delve deeply into the subject matter. Students will meet regularly with the City Editor in a seminar setting to discuss procedures, ideas, progress, to brainstorm and to share their experiences and assess their progress. They also will work independently on all aspects of developing their stories. Students will be graded on a number of benchmarks such as story proposal, revised proposal, quality of research and reporting, drafts of the story and the final story. It is the goal that the stories be published. Not for credit in addition for JRN 360.

Prerequisite: JRN 310

Pre- or corequisite: JRN 350 or permission

3 credits

JRN 370: Advanced Reporting, Writing and Production for Broadcast

This course builds on the work of JRN 310 and is offered in a workshop/production environment. There is focus on mastering the reporting of breaking news, live reporting and developing story ideas. Emphasis also will be on shooting techniques. Students will produce longer-form reports.

Prerequisite: JRN 310

Pre- or corequisite: JRN 350 or permission

3 credits

JRN 371: Television Production

This course is designed to introduce students to planning, assembling, producing and performing the elements 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 370

3 credits

JRN 380: Advanced Editing and Presentation / Web

This course, designed for students interested in specializing in online news, will focus on content management and the presentation of news on the Web. Students will have the opportunity to manage a news 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 interactivity. 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 builds on the skills learned in JRN 320. After completion of course overview material, students will move through three phases designed to simulate a key role in current online newsrooms. The phases include real-time content management, multi-media integration and harvesting original video. There will be emphasis on building critical thinking skills and developing team work. By the end of this course, students are to produce a complete multimedia project and integrate its production into a real-time online news site.

Prerequisite: JRN 320

Pre- or Corequisite: JRN 350 or permission

3 credits

JRN 381: Advanced Digital Storytelling

Students will combine their advanced journalistic skills in reporting, writing and producing with advanced multimedia techniques to create an online "microsite" devoted to one major story, combining text with video, photos, blogs and interactive

features. This course builds on skills acquired in JRN 380. Significant computer use will be required outside of class time.

Prerequisite: JRN 380

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. Coursework 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: JRN320

1 credit

JRN 388: Advanced Feature and Magazine Writing

A continuation of JRN 337 (or the former JRN 288) with emphasis on longer newspaper features and magazine articles. Discussion focuses on how to research stories, manage material, and organize publishable pieces of 1000-2000 words. Students are expected to read widely in daily press and periodicals.

Prerequisite: JRN 337

3 credits

JRN 389: Investigative Reporting

An advanced course in the reporting and writing of investigative and complex stories. Emphasis is placed on independent field research, types of proof, confrontational interviews, and the organization and writing of longer stories and story series for publication. The course deals with ethical problems, libel, and invasion of privacy.

Prerequisite: JRN 210

3 credits

JRN 390: Special Topics: Issues in Contemporary Journalism

This special topics course will deal with timely and contemporary 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. May be repeated as the topic changes.

Prerequisite: JRN 101 or 103; may vary by topic

3 credits

JRN 391: Journalism Workshops

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

Prerequisite: Varies by topic, permission of the department

1 credit

JRN 394: Journalism Practicum

Classroom practice in selecting and laying out stories for a front page. The course also covers such media topics as typography, the operation of editorial boards, op-ed articles, wire services, TV news, books, the music business, the history of journalism, and the foreign press.

Prerequisite: JRN 110 or 337

3 credits

JRN 395: News Editing

Editing copy for grammatical correctness, consistency, accuracy, tightness, and brightness; writing headlines. The course also considers the broader aspects of editing, such as assigning stories and handling writers sensitive about their copy.

Prerequisite: JRN 110

3 credits

JRN 411: Television Practicum

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 their 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 newscast, 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: JRN370, permission of the instructor

Pre- or co-requisite: JRN371

3 credits

JRN 435: Journalism Without Walls

This course, which will be offered only during winter or summer sessions, is designed for experienced and energetic 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 published 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, went to China. Another went to the Gulf Coast.) While on assignment, students will file blogs, gather multimedia and video, write and edit stories, produce a Web site and establish a "mobile news-room." One or several instructors will accompany the students. This is a capstone course that combines students' journalistic skills, judgment and enterprise with knowledge of emerging technology. May be repeated as the topic changes.

Prerequisites: will vary by subject and will be announced; permission of the department. A Passport may be required.

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. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that already have been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously participated. Not for major or minor credit.

Prerequisites: JRN 475; permission of instructor and undergraduate program director

3 credits, S/U grading

JRN 487: Independent Study

Intensive study of a special topic undertaken with close faculty supervision. May be repeated.

Prerequisites: Permission of instructor and director of undergraduate studies

0-6 credits, S/U grading

JRN 488: Internship

Students work at local, state, and national news organizations. The work must involve journalistic skills related to the educational goals of the department.

Prerequisites: JRN 210 and 211; 310 if broadcast or online; JRN 288; 12 JRN credits; permission. Recommended GPA: 2.5 overall and 3.0 in JRN.

0-6 credits, S/U grading

JRN 489: Specialized Internship

This is an advanced internship. Students will spend 2 days a week at the internship site. In addition, this specialized internship includes a weekly lecture designed to prepare students to report, write and produce stories that benefit from a greater knowledge of a subject. Examples of Specialized Internships include Hyperlocal Reporting, Police and Court Reporting, Governmental Reporting, Culture and the Arts. The work must involve journalistic skills related to the educational goals of the department.

Prerequisite: permission of instructor

Pre- or corequisite: JRN 340

4 credits, S/U grading

JRN 490: Senior Project

This is a capstone course and a requirement for all majors. In a culminating activity, students produce a major story of professional quality, first in their area of journalistic concentration, and then adapt the story for two additional media platforms. Students attend a weekly seminar and work independently under the supervision of a faculty sponsor.

Prerequisite: JRN 340; JRN 364 or JRN 370 or JRN 380

Pre or Co-requisites: JRN 361 or JRN 371 or JRN 381

3 credits

KOR

Korean

KOR 101 - S3: Intensive Elementary Korean

An intensive, 6-credit, elementary-level Korean language course that provides foundational knowledge and skills including pronunciation, basic everyday conversational

proficiency, principles of character formation, basic grammatical rules, and basic cultural norms and preferences that govern language use. Drawing upon a communicative approach, this course situates oral and written language in real-life contexts and promotes learner-centered, interactive classroom activities. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Korean in high school (or who has otherwise acquired an equivalent proficiency) may not take KOR 101 without written permission from the supervisor of the course. May not be taken for credit after any other course in Korean.

6 credits

KOR 111: Elementary Korean I

An introduction to spoken and written Korean with equal attention to speaking, reading, and writing. Fundamental communication skills are acquired through intensive study of basic grammar and pronunciation. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Korean in high school (or who has otherwise acquired an equivalent proficiency) may not take KOR 111 without written permission from the supervisor of the course.

4 credits

KOR 112 - S3: Elementary Korean II

An introduction to spoken and written Korean with equal attention to speaking, reading, and writing. Fundamental communication skills are acquired through intensive study of basic grammar and pronunciation. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Korean in high school (or who has otherwise acquired an equivalent proficiency) may not take KOR 112 without written permission from the supervisor of the course.

Prerequisite: KOR 111

4 credits

KOR 211 - S3: Intermediate Korean I

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 112 or placement test

3 credits

KOR 212 - S3: 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 - S3: Advanced Korean

An advanced course designed for students who wish to enhance reading comprehension and writing ability in Korean. Reading materials are selected from modern Korean literature, journals, and newspapers. Students are trained in samples of various writing styles. Emphasis is also placed on the idiomatic usage of Korean language and the relation of Korean to Chinese characters.

Prerequisite: KOR 212 or placement test

3 credits

KOR 312 - S3: 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 sufficiently high level of fluency. Classes are conducted in Korean. Reading materials, including excerpts from modern Korean literary works, journals, magazines 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

KOR 331- F: Social Science Topics in Korean Studies

An investigation of a specific area of Korean studies in the social and behavioral sciences. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in Asian studies

3 credits

KOR 332- G: Humanities Topics in Korean Studies

An investigation of a specific area of Korean studies in the humanities. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Two courses in Asian studies

3 credits

KOR 351 - S3: Studies in Korean Literature

A detailed study of a particular author, genre, period, or topic in Korean literature. The readings, class discussions, and students' written assignments are in Korean. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: KOR 311

Advisory Prerequisite: One additional Asian studies course

3 credits

KOR 411: Advanced Korean III

An advanced course designed for the fourth-year students of Korean to strengthen their ability to understand, speak, read, and write Korean. Students will read a variety of Korean texts including newspaper/magazine articles, biographies, and literary works and write creatively and/or professionally using sophisticated vocabulary and advanced hanja characters. Students will also be trained to comprehend authentic spoken Korean, using a variety of audio-visual materials and to communicate in Korean, applying appropriate socio-cultural norms. Students will also learn to research in Korean for their term paper.

Prerequisite: KOR 312 or placement test

3 credits

KOR 412: Advanced Korean IV

An advanced course designed for the fourth-year students of Korean to strengthen their ability to understand, speak, read, and write Korean. Students will read a variety of Korean texts including newspaper/magazine articles, biographies, and literary works and write creatively and/or professionally using sophisticated vocabulary and advanced hanja characters. Students will also be trained to comprehend authentic spoken Korean, using a variety of audio-visual materials and to communicate in Korean, applying appropriate socio-cultural norms. Not intended

for international students from Korea who are part of a two-plus-two or exchange program.

Prerequisite: KOR 411 or placement test

3 credits

KOR 447: Independent Study

Directed reading and research in Korean studies. Limited to Korean studies minors or upper-division students working on advanced problems in Korean studies. May be repeated. Previously offered as KRH and KRS 447.

Prerequisites: U3 or U4 standing; permission of instructor

1-6 credits

LAC

Latin American and Caribbean Studies

LAC 200- J: Introduction to Latin American and Caribbean Societies

Introduction to social science, historical, and cultural perspectives on Latin America and the Caribbean, as well as on Latino communities in the United States. The goal is to develop a critical and broad understanding of Latin America's social and historical problems and challenges and an appreciation of the region's economic and cultural contributions.

Advisory Prerequisites: One D.E.C. category F course; one D.E.C. category B or G course

3 credits

LAC 380- J: Topics in Latin American Studies

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: LAC 200

3 credits

LAC 487: Independent Research in Latin American and Caribbean Studies

Supervised research with faculty in the Latin American and Caribbean Studies program. Students develop their own research projects

under the supervision of a faculty member or assist with a faculty member's own research. May be repeated to a limit of 6 credits.

Prerequisites: 15 credits toward the Latin American and Caribbean studies minor; permission of instructor

0-6 credits

LAC 488: Internship

Volunteer work in community, research organizations, or cultural centers relating to Latin American or Latino affairs, arranged in consultation with the LACC director. Current list of intern opportunities available at the LACC, Social and Behavioral Sciences building, N-333.

Prerequisites: 15 credits in LAC studies; permission of instructor and director

0-6 credits, S/U grading

LAC 490: Senior Seminar in Latin American and Caribbean Studies

A small thematic interdisciplinary seminar integrating students' broader college experience in Latin American and Caribbean courses. Themes vary depending on instructor.

Prerequisite: 15 credits toward the minor in Latin American and Caribbean Studies

3 credits

LAN

Uncommonly Taught Languages

LAN 111: Uncommonly Taught Language (Elementary) I

An introduction to a language not offered elsewhere in the University; speaking, comprehension, reading, and writing. Selected texts are read. Practice in the language laboratory supplements class work. May be repeated for different languages. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of the offered language in high school (or who has otherwise acquired an equivalent proficiency) may not take LAN 111 in that language without written permission from the supervisor of the course.

3 credits

LAN 112 - S3: Uncommonly Taught Language (Elementary) II

An introduction to a language not offered elsewhere in the University; speaking, comprehension, reading, and writing. Selected texts are read. Practice in the language laboratory supplements class work. May be

repeated for different languages. No student who has had two or more years of the offered language in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for LAN 112 in that language without written permission from the supervisor of the course.

Prerequisite: LAN 111

3 credits

LAN 211 - S3: Uncommonly Taught Language (Intermediate) I

Continued study of a language not offered elsewhere in the University; advanced speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work. May be repeated for different languages. A student who has had four years of the offered language in high school (or who has otherwise acquired an equivalent proficiency) may not take LAN in that language without written permission from the supervisor of the course.

Prerequisite: LAN 112

3 credits

LAN 212 - S3: Uncommonly Taught Language (Intermediate) II

Continued study of a language not offered elsewhere in the University; advanced speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work. May be repeated for different languages. A student who has had four years of the offered language in high school (or who has otherwise acquired an equivalent proficiency) may not take LAN in that language without written permission from the supervisor of the course.

Prerequisite: LAN 211

3 credits

LAN 447 - S3: Directed Readings in Uncommonly Taught Languages

Intensive study of an uncommonly taught language arranged in consultation with a faculty member.

Prerequisite: Permission of instructor

1-6 credits

LAN 475 - S3: Practicum in Language Teaching I

Proficient speakers of selected languages have an opportunity to learn techniques of language teaching or linguistic analysis by assisting a master teacher in small tutorial sections. Students meet at least weekly with their faculty

supervisors to discuss teaching strategies and problems encountered.

Prerequisites: LIN 101; fluency in the language being taught; U3 or U4 standing; permission of instructor.

3 credits, S/U grading

LAN 476 - S3: Practicum in Language Teaching II

Proficient speakers of selected languages have an opportunity to learn techniques of language teaching or linguistic analysis by assisting a master teacher in small tutorial sections. Students meet at least weekly with their faculty supervisors to discuss teaching strategies and problems encountered.

Prerequisites: LAN 475; fluency in the language being taught; permission of instructor.

3 credits, S/U grading

LAT Latin

LAT 111: Elementary Latin I

Designed to prepare the beginning student to translate Latin that may be needed for use in undergraduate or graduate study. Focus of the course is on the fundamentals of grammar and techniques of translation. LAT 111 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Latin in high school (or who has otherwise acquired an equivalent proficiency) may not take LAT 111 without written permission from the course supervisor.

3 credits

LAT 112 - S3: Elementary Latin II

Designed to prepare the beginning student to translate Latin that may be needed for use in undergraduate or graduate study. Focus of the course is on the fundamentals of grammar and techniques of translation.

Prerequisite: LAT 111

3 credits

LAT 251 - S3: Readings in Latin Literature I

Readings in classical Latin literature of the Republic. The course includes a brief intensive review of grammar, Latin prose composition, and the sampling of a number of authors including Catullus, Cicero, Virgil, and Livy.

Prerequisite: LAT 112

3 credits

LAT 252 - S3: Readings in Latin Literature II

Readings in classical Latin literature of the Republic. The course includes a brief intensive review of grammar, Latin prose composition, and the sampling of a number of authors including Catullus, Cicero, Virgil, and Livy.

Prerequisite: LAT 251

3 credits

LAT 353 - S3: Literature of the Roman Republic

Selected works of Cicero, Lucretius and Catullus are translated and examined in their social and historical context. The reading of critical works in English may also be required.

Prerequisite: LAT 252

3 credits

LAT 354 - S3: Literature of the Roman Empire

Selected works of Virgil, Horace, Petronius, Tacitus, and Juvenal are translated and examined in their social and historical context. The reading of critical works in English is also required.

Prerequisite: LAT 252

3 credits

LAT 355 - S3: Early Medieval Latin

Translation and discussion of Christian and secular Latin literature from the 4th to the 12th century. The course includes an intense review of Latin grammar and an outline of the changes in the language that took place during early medieval times. Selections from the Vulgate and the writings of Jerome, Augustine, Bede, and others are translated and discussed.

Prerequisite: LAT 252

3 credits

LAT 356 - S3: Late Medieval Latin

Translation and discussion of Latin literature from the 12th to the 16th century. Authors include the Archpoet, Thomas Aquinas, Petrarch, Erasmus, and Thomas More.

Prerequisite: LAT 252

3 credits

LAT 447 - S3: Directed Readings in Latin

Intensive study of a particular author, period, or genre of Latin literature in the original under close faculty supervision. May be repeated.

Prerequisite: Permission of director of the classics minor

1-6 credits

LAT 475 - S3: Undergraduate Teaching Practicum

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. The student will be available to students in the class who may need more explanations than class time allows.

Prerequisites: U3 or U4 standing; permission of instructor and department

3 credits, S/U grading

LCR

Living/Learning Center: Community Service Learning

LCR 200- F: The Nature of Community

The course examines the nature of human communities, their conceptualization, definition, and dynamics while providing an introduction to service learning strategies. Exploring issues such as organization and leadership, hierarchy and stratification, students examine the notion of community formation through processes of exchange and reciprocity, institutionalization, alienation and solidarity, marginalization, and empowerment.

3 credits

LCR 201: Methods for Social Action Research

An introduction to basic methods of community action research. Students develop a fundamental set of "fieldwork" skills, learning to apply their academic knowledge in the service of community-based initiatives for social change. Covering theoretical, methodological, ethical, and legal issues, students conduct a series of field assignments to master key concepts in research design, implementation, and analysis.

3 credits

LCR 487: Directed Research in Community Service Learning

Independent research projects under the supervision of a faculty member. May be repeated once.

Prerequisite: Permission of instructor and program director

0-6 credits

LCR 488: Internship in Community Service Learning

Student teams work in specific communities, applying their academic, intellectual, and technical skills to address community concerns. Working with local community members to develop effective plans for community action, students engage in service learning. May be repeated to a limit of 12 credits.

Prerequisites: LCR 200; LCR 201; permission of director of the minor

0-6 credits, S/U grading

LCR 490: Senior Seminar in Community Service Learning

A capstone seminar for the minor in Community Service Learning. The course is designed to bring together students completing the minor and relevant community members to reflect on the nature of the research projects carried out and their expected consequences. An independent project is developed with the faculty director.

Prerequisites: LCR 488; permission of director of the minor

3 credits

LDR

LLC: Leadership Development

LDR 210: Principles of Leadership

Students will be introduced to the theory and practice of leadership. Classes will focus on the concepts of leadership and how students can incorporate these into their experiences as student leaders as well as in non-university programs.

3 credits

LDR 310: Case Studies in Leadership

This course will focus on concepts integral to effective leadership. Historical and contemporary case studies will be utilized to highlight examples of both ineffective and effective leadership. Students will gain an understanding of both positive and negative leadership as well as formal and informal leadership models.

Prerequisites: LDR 210 or SOC 268; U3 or U4 standing

3 credits

LDR 410: Leadership Exploration and Practicum

This course will synthesize the content of LDR 210 and LDR 310, and explore the relationship of related interdisciplinary concepts from elective courses and discuss the on-going learning taking place during the simultaneous practicum component.

Prerequisites: LDR 210 or SOC 268; LDR 310; U4 standing; declaration of LDR minor
3 credits

LDS

Leadership and Service

LDS 101: Introduction to Stony Brook

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

Prerequisite: Admission to the LDS Undergraduate College

1 credit, S/U grading

LDS 102: Undergraduate College Seminar: Leadership and Service

A seminar for all first-year students in the Undergraduate College of Leadership and Service. Seminar topics vary annually by section and cover a variety of subjects under the general scope of Leadership and Service. Required for all first year students. Not for credit in addition to ACH 102, GLS 102, HDV 102, ITS 102, or SSO 102.

Prerequisite: Admission to the LDS Undergraduate College

1 credit, ABC/U grading

LDS 275: Undergraduate College Fellows Seminar

Creates a curricular component for the second year of the Undergraduate College Experience. College fellows will enroll in LDS 275 in the spring semester of their freshman year and LDS 276 in the fall semester of their sophomore year. 275 (spring) engages students in four main content areas: student development theory, scholarship on mentoring and leadership development, concepts of teaching and learning, and programming and event planning. These areas prepare students for supervised learning and teaching experiences that will occur primarily in the fall 276 course.

Prerequisites: Grade of "S" in LDS 101 and a strong desire to help other students. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

LDS 276: Undergraduate College Fellows Practicum

The second semester in the sequence following LDS 275. Students assume higher responsibility and are given opportunities to apply teaching theories and concepts as learned in LDS 275. Students act as a TA for LDS 101.

Prerequisites: A grade of "S" in LDS 275. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

LDS 475: Undergraduate College Teaching Practicum

The purpose of this course is to allow upper-division students the opportunity to work with a faculty member as an assistant in one of the faculty member's scheduled Undergraduate College seminars. 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. May be repeated up to a limit of 2 credits.

Prerequisite: Permission of the instructor and department

1 credit, S/U grading

LDS 488: Undergraduate College Internship

Students learn about contemporary issues in higher education, community building, and teaching at a research university through hands-on work with faculty mentors. Work assigned will include participation in the planning and operation of events and initiatives sponsored by the Undergraduate Colleges. Students are required to submit written reports on their experiences to the Undergraduate Colleges office and Faculty Directors. May be repeated up to a limit of 6 credits.

Prerequisite: Permission of the instructor and department

0-3 credits, S/U grading

LHD

Living/Learning: Human Sexual & Gender Development**LHD 101: Human Development Seminar**

An introduction to human sexual and gender development issues. The course focuses on topics relevant to the campus experience -

e.g., male and female roles in the classroom, college students and the crisis of AIDS and sexually transmitted diseases, and sexual orientation. These issues are examined from an interdisciplinary perspective. *Prerequisite:* Permission of minor coordinator required for students who do not reside in Eisenhower College

1 credit

LHD 301: Human Sexual and Gender Development Issues

An examination of the human life cycle - infancy and childhood, youth and adolescence, mid-life and aging-with regard to gender and sexual self-concepts. Semester Supplements to this Bulletin contain description when course is offered. May be repeated once as the topic changes.

1 credit

LHD 302: Colloquium in Human Sexual and Gender Development

Sexual and gender development issues such as sexual orientation, gender development in children, and the childbirth experience. Semester Supplements to this Bulletin contain description when course is offered. May be repeated once as the topic changes.

1 credit

LHD 305: HIV Reduction in the Campus Context

First course of a two-semester sequence addressing issues of HIV transmission and risk reduction, including identifying opportunities to discuss risk and promote risk reduction, and supporting the process of behavior change. Examination of the history of the AIDS epidemic in the U.S. and around the world.

Prerequisite: Permission of instructor

Corequisite: LHD 307

2 credits

LHD 306: HIV Reduction in the Campus Context

Second course of a two-semester sequence addressing issues of HIV transmission and risk reduction, including identifying opportunities to discuss risk and promote risk reduction, and supporting the process of behavior change. Examination of the history of the AIDS epidemic in the U.S. and around the world.

Prerequisites: LHD 305 and 307; permission of instructor

Corequisite: LHD 308

2 credits

LHD 307: Laboratory in HIV Reduction in the Campus Context

A forum for discussion of the application of material learned in LHD 305 and 306. The course focuses on the development of skills necessary to accomplish education and behavior changes among the peers of course participants, and monitors individual progress toward that end.

Prerequisite: Permission of instructor

Corequisite: LHD 305

1 credit, S/U grading

LHD 308: Laboratory in HIV Reduction in the Campus Context

A forum for discussion of the application of material learned in LHD 305 and 306. The course focuses on the development of skills necessary to accomplish education and behavior changes among the peers of course participants, and monitors individual progress toward that end.

Prerequisites: LHD 305 and 307; permission of instructor;

Corequisite: LHD 306

1 credit, S/U grading

LHD 401: Advanced Seminar in Human Sexual and Gender Development

Consideration of human sexual and gender development issues through examination of primary source material. Semester Supplements to this Bulletin contain description when course is offered. May be repeated once as the topic changes.

1 credit

LHD 402: Parenting Children in the Next Generation

A sociological examination of the evolution of parenting in the post-World War II era. Topics covered include the sociology of childhood, the sociology of the family, parent and child development and parenting responsibilities, and parenting challenging children.

Prerequisite: LHD 301

3 credits

LHD 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: LHD 487; U3 or U4 standing; permission of instructor and director of the minor

3 credits, S/U grading

LHD 476: Undergraduate Teaching Practicum II

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

Prerequisites: LHD 475; permission of instructor and director of the minor

3 credits, S/U grading

LHD 487: Independent Study in Human Sexual and Gender Development

The completion of an individual project by one student or a group of students on human sexual and gender development and the life course. Projects must include both library and field research, or a literary or artistic endeavor. May be repeated once.

Prerequisites: LHD 101 or 301; LHD 302; permission of director of the minor

0-3 credits

LHD 488: Internship

Participation in public and private agencies and organizations. May be repeated up to a limit of 6 credits.

Prerequisite: Permission of director of the minor or instructor

0-6 credits, S/U grading

LHW**Living/Learning Center in Health and Wellness****LHW 102: Introductory Seminar to the Health Professions**

An exploration of the scope of practice for selected health professions. The course includes seminars by invited speakers in the health professions. Students are required to actively investigate several similar professions in order to better understand similarities and differences. Professions explored include medicine, nursing, dentistry, physical therapy, occupational therapy, clinical laboratory sciences, respiratory care, and physician assistant. Not for credit in addition to HAS 190.

1 credit

LHW 301: Issues in Health and Wellness

An investigation of selected topics in health and wellness, chosen by the class as a whole.

Students are required to actively investigate their chosen area and present their findings to the class. Topics are determined through class discussion, individual investigation, and mutual consent.

3 credits

LHW 488: Internship in Health and Wellness

An experience in health and/or wellness promotion, prevention, and/or education. Students learn about contemporary issues in health and wellness through hands-on work with faculty mentors and on- and off-campus health and wellness professionals. May be repeated up to a limit of 6 credits.

Prerequisites: LHW 301; permission of director of the minor

0-6 credits, S/U grading

LIA**Living/Learning Center: Interdisciplinary Arts****LIA 101- D: Introduction to the Interdisciplinary Arts**

An exploration of the interdisciplinary and collaborative nature of the fine arts. The course traces the general development of the arts from their common practical origins in basic communication, ritual, and decoration to the present, and examines how these factors unify the arts in modern culture and society. Students develop in-class presentations using multiple art forms.

3 credits

LIA 102: Opportunities in the Arts

An introductory seminar concerning career opportunities in the arts. Students meet once a week for discussion, networking, establishing career strategies, career planning, and investigations of continued study. Guest lecturers discuss their area of expertise in relation to career opportunities for students entering the field.

1 credit

LIA 401: Senior Seminar

An intensive investigation of theatre theorists with particular emphasis on the application of theory to practice. This course is offered as both LIA 401 and THR 401.

Prerequisites: U4 standing; permission of instructor

3 credits

LIA 487: Independent Research in Interdisciplinary Arts

The completion of a group-generated or individual creative project under the supervision of an instructor. May be repeated to a limit of 6 credits.

Prerequisites: LIA 101; any 200-level art, dance, music, or theatre course; permission of instructor and director of the minor

0-6 credits

LIA 488: Internship in Arts Management

Study of the field of arts management, including public relations, scheduling, resource coordination, and community interaction. Practical work with management of the annual Shirley Strum Kenny Student Arts Festival.

Prerequisite: Permission of director of the minor

0-6 credits, S/U grading

LIN**Linguistics****LIN 101- F: Human Language**

An introduction to the fundamental areas and concepts of modern linguistics. Sounds and their structure, word structure, and sentence structure are discussed. Other topics may include historical linguistics (how languages change over time), dialects, writing systems, language and the brain, and psycholinguistics (especially the question of how children acquire a language).

3 credits

LIN 200- K: Language in the United States

Survey of the languages and language-related issues in the United States. Topics include Native American languages; immigrant languages; dialectal variations (e.g., Black English); the domains in which these languages were and are used; maintenance and loss of minority languages; language contact and its effects; the use of Spanish; language attitudes and politics including bilingual education; and official language movements. Particular attention is paid to the evolution of American English from colonial times to its present world-wide status; the use and impact of Spanish; language attitudes and politics including bilingual education; and official language movements.

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

LIN 201- F: Phonetics

Introduction to the sounds used in human language. Topics include articulatory phonetics, phonetic transcription, the sound structure of English, sounds and sound patterns in languages of the world, the acoustic properties of sounds, speech perception, and speech technology. Includes work in the phonetics laboratory on computer analysis of speech.

Prerequisite: LIN 101

4 credits

LIN 211- F: Syntax

An introduction to generative grammar: the formal theory of sentence structure.

Prerequisite: LIN 101

4 credits

LIN 250- K: Languages and Cultures of Asian Americans

Study of language use and cultural accommodation in selected Asian American communities in relation to the changing roles of Asians in U.S. society from the early democracy to the present. Issues include linguistic and cultural diversity of Asia and Asian Americans; comparison of Asian and European immigration patterns; struggle for equality and acceptance; cultural factors in assimilation; patterns of Asian language use and maintenance in various domains; the role of language in ethnic identity; attitudes toward English and bilingualism; bilingualism as a problem and as a resource. This course is offered as both AAS 250 and LIN 250.

Prerequisite: Completion of D.E.C. category A
3 credits

LIN 300: Writing in Linguistics

Majors in linguistics refine their skills in writing for the discipline by critiquing successive revisions of previously written work under the guidance of the undergraduate director.

Prerequisites: Major in linguistics; U3 or U4 standing

1 credit

LIN 301: Phonology

An introduction to the sound systems of languages focusing on the mental representation of sound structure: how speakers use knowledge of their language to assign meaning to different combinations of sounds. We will examine data from a number of languages to explore the differences and similarities among the sound patterns of different languages, and will consider the question of whether there are universal

preferences for specific types of sounds and sound sequences.

Prerequisite: LIN 201

3 credits

LIN 307- K: Sociolinguistics

An examination of the interaction between language and society, focusing on diversity in American English as it relates to differences in gender, geography, social class, ethnicity, and national origin. Study of the development of dialects including African-American Vernacular English, and pidgins and creoles such as Hawaiian Pidgin English and Chinook Trade Jargon, within the context of historical developments in the U.S. from colonial times to the present.

Prerequisite: LIN 101

Advisory Prerequisite: Completion of D.E.C. categories I and J

3 credits

LIN 320: English Grammar

This course is a systematic survey of English grammar: its major structures, their interaction, and their use. It will also briefly examine some related areas connected to writing like punctuation and spelling.

Prerequisite: Completion of DEC A

Advisory Prerequisite: LIN 101

3 credits

LIN 330: Language Acquisition

Introduction to the field of language acquisition. Issues include cognitive processes, role of innate ability and environment, developmental stages, individual variation, universal tendencies, interaction of language and cognition, bilingualism, similarities and differences between first- and second-language acquisition, and language disorders.

Prerequisite: LIN 201 and 211

3 credits

LIN 340: Historical Linguistics

The application of linguistic theory to the ways in which sound systems, word structure, and sentence structure change. Students learn how linguists establish that certain languages are related, and how they reconstruct prehistoric parent languages.

Prerequisites: LIN 211 and 301

3 credits

LIN 344: Literacy Development

An introduction to the theories of literacy and their application in education. Students acquire knowledge about the complex nature of academic literacy; how literacy skills can be taught and assessed across all disciplines,

and how literacy and language skills develop among diverse learners, including students with special needs and English Language Learners. Attention is given to the integration of technology into the development of literacy skills. Not for major credit.

Prerequisite: Admission to a teacher education program

3 credits

LIN 345- J: Writing Systems of the World

A survey of the major types of writing including (but not limited to) alphabetic, syllabic, and logographic systems; the invention of writing; changes in writing systems over time and the decipherment of ancient writing. Special attention is given to modern English spelling, including both its regular, systematic properties and the historical background of its irregularities.

Prerequisite: LIN 101 or 201 or satisfaction of Skill 3 Elementary Foreign Language Competence

3 credits

LIN 346- F: Language and Meaning

An exploration of semantics, the study of linguistic meaning. The course examines fundamental issues including the nature of meaning, its relation to word and sentence form (morphology and syntax), its relation to systems of mental representation (cognition), and the interaction between meaning and use (pragmatics). Recent research into the way that linguistic meaning is acquired and how it is deployed in speech and understanding is discussed.

Prerequisite: LIN 101 or 211

3 credits

LIN 355- J: Language and Life in a Selected Area of the World

Study of the languages of a selected country or region outside of Europe in relation to its society, culture, history, and politics. Topics include language family, social varieties, status and attitudes, language policies, and cultural patterns reflected in language use. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Advisory Prerequisite: LIN 101

3 credits

LIN 356- I: Topics in Language and Life in Europe

Focus will be on the language of a particular country or region in Europe and the relationship between language and the society,

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

Prerequisite: One LIN course or satisfaction of Entry Skill 3 foreign language proficiency
3 credits

LIN 370- J: Intercultural Communication

Through combination of theory and research from discourse linguistics and linguistic anthropology, this course examines (i) how culture shapes ways of speaking; (ii) how language constructs identities, dispositions, role relations; and (iii) what challenges people from different cultures may face when they communicate with each other. The following analytical perspectives will be presented: speech act theory, ethnography of communication, linguistic politeness, and sequential organization of turn taking. This course is offered as both AAS 370 and LIN 370.

Prerequisite: One previous course in D.E.C. J or one previous course in Linguistics
3 credits

LIN 375: TESOL Pedagogy: Theory and Practice

Introduction to language and literacy instruction, instructional approaches, and assessment models for the teaching of speaking, listening, reading, and writing. Students design standard-based lessons and evaluate resources and technologies.

Prerequisites: Declared major in Linguistics; C or higher in LIN 101, 201, or 211; g.p.a. of 2.75 or higher; for non-native speakers of English, a SPEAK test score of 57 or TOEFL-iBT Speaking Component score of 28
Corequisite: LIN 449

3 credits

LIN 378: Content-Based Language and Literacy Development

Introduction to language and literacy development across disciplines and to assessment, cooperative learning, and reflective practices. Students will develop standard-based interdisciplinary thematic

units, integrate technologies, and explore collaborative practices.

Prerequisite: LIN 375 and LIN 449

Corequisite: LIN 450

3 credits

LIN 425: Special Topics in Linguistics

Seminars for advanced linguistics students. May be repeated as the topic changes.

Prerequisite: Varies with subject matter

3 credits

LIN 426: Special Topics in Linguistics

Seminars for advanced linguistics students. May be repeated as the topic changes.

Prerequisite: Varies with subject matter

3 credits

LIN 427: Special Topics in Linguistics

Seminars for advanced linguistics students. May be repeated as the topic changes.

Prerequisite: Varies with subject matter

3 credits

LIN 431: The Structure of an Uncommonly Taught Language

An investigation of the phonology and syntax of either a language or a family of languages. May be repeated if a different language is covered.

Prerequisite: LIN 211 and LIN 301

3 credits

LIN 447: Directed Readings in Linguistics

Qualified juniors and seniors in linguistics are offered an opportunity to do independent work on topics in linguistics under guidance of a faculty member. May be repeated to a limit of six credits.

Prerequisite: Permission of department

1-6 credits

LIN 449: Field Experience, Grades N-12

Observation, inquiry, and practice in language and literacy development across disciplines for learners from linguistically and culturally diverse backgrounds. Students are placed in variety of educational settings in elementary and secondary schools for 50 hours of fieldwork.

Prerequisites: Declared major in Linguistics; C or higher in LIN 101, 201, or 211; g.p.a. of 2.75 or higher; for non-native speakers of English, a SPEAK test score of 57 or TOEFL-iBT Speaking Component Score of 28
Corequisite: LIN 375

1 credit, S/U grading

LIN 450: Field Experience, Grades N-12

Observation, inquiry, and practice in language and literacy development across disciplines for learners from linguistically and culturally diverse backgrounds. Students are placed in variety of educational settings in elementary and secondary schools for 50 hours of fieldwork.

Corequisite: LIN 378

1 credit, S/U grading

LIN 451: Supervised Teaching -- English as a Second Language: Primary Grades N-6

Supervised practice teaching in English as a second language by arrangement with selected Boards of Cooperative Educational Services and primary, middle, and secondary schools. Applications must be filed in the academic year preceding that in which the student plans to take the course.

Prerequisites: Linguistics major; 3.00 g.p.a. in major; 2.75 g.p.a. overall; NY teacher certification exam LAST
Corequisite: LIN 452 and 454

6 credits, S/U grading

LIN 452: Supervised Student Teaching in English as a Second Language: Secondary Grades 7-12

Supervised practice teaching in English as a second language by arrangement with selected Boards of Cooperative Educational Services and middle and secondary schools. Applications must be filed in the academic year preceding that in which the student plans to take the course.

Prerequisites: Linguistics major; 3.00 g.p.a. in major; 2.75 g.p.a. overall; NY teacher certification exam LAST
Corequisites: LIN 451 and 454

6 credits, S/U grading

LIN 454: Managing Instruction, Assessment, and Resources

Examination of effective practices, assessments, and technologies for developing language and literacy across content areas in multi-level classrooms. Collaboration with colleagues, parents, and communities is explored.

Prerequisites: C or higher in LIN 378; New York teacher certification examination LAST
Corequisites: LIN 451 and 452

3 credits

LIN 464: Morphology and Word Formation

The internal structure of complex words. A variety of analytical methods is introduced,

together with examples from English and many other languages.

Prerequisites: LIN 211 and 301

3 credits

LIN 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Not for major credit.

Prerequisites: Linguistics major; U3 or U4 standing; permission of instructor.

3 credits, S/U grading

LIN 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice. Not for major credit.

Prerequisite: LIN 475; permission of instructor

3 credits, S/U grading

LIN 487: Directed Research in Linguistics

Qualified advanced undergraduates in linguistics may carry out individual research projects under the direct supervision of a faculty member. May be repeated up to a limit of six credits.

Prerequisite: Permission of department

1-6 credits

LIN 488: Internship

Participation in local, state, and national public and private agencies and organizations. May be repeated up to a total of 12 credits.

Prerequisites: 15 credits in linguistics; permission of department

0-6 credits, S/U grading

LIN 495: Senior Honors Project in Linguistics

First course of a two-semester sequence for linguistics majors who are candidates for the degree with honors. The project involves independent readings or research and the writing of a thesis. Students enrolled in LIN 495 are obliged to complete LIN 496 the next semester. Students receive only one grade

upon completion of the sequence. Not for major credit.

Prerequisite: Admission to the Linguistics Honors Program

3 credits

LIN 496: Senior Honors Project in Linguistics

Second course of a two-semester sequence for linguistics majors who are candidates for the degree with honors. The project involves independent readings or research and the writing of a thesis. Students enrolled in LIN 495 are obliged to complete LIN 496 the next semester. Students receive only one grade upon completion of the sequence. Not for major credit.

3 credits

LSE

Living/Learning Center: Science and Engineering

LSE 201: Opportunities in Science and Engineering

A survey of the various science and engineering disciplines. Guest speakers describe their respective fields of research and study and the opportunities for students entering the field today. Other topics include ethics, intellectual property and entrepreneurship. The interdisciplinary nature of science and technology is emphasized.

1 credit

LSE 310- H: Current Issues in Science and Engineering

A study of the issues and events that confront scientists and engineers today. Student presentations and student-led discussions cover such topics as ethics, social responsibilities, the environmental impact of technology, and the economics of research and technology.

3 credits

LSE 320- H: Future Trends in Science and Engineering

A study of forecasts for developments in science and engineering in the 21st century and their predicted effects on society. Predictions about science and engineering from the early 20th century and their accuracy today. Readings and student-led discussion on essays written by leading scientists and engineers concerning predictions in their fields during the next century. Includes several presentations made by science and engineering faculty on their current research, focusing on the long-

term effects of their research on their discipline and on society. Several research papers by students will be required.

Prerequisites: U3 or U4 standing; one course in science or engineering

3 credits

LSE 475: Undergraduate Teaching Practicum

Students work with the instructor in an LSE course in leading discussion sections, helping students improve research skills, or assisting with the educational program presented as part of coursework. Students meet regularly with the supervising instructor.

Prerequisites: U3 or U4 standing; permission of instructor and director of the minor

3 credits, S/U grading

MAE

Mathematics Teacher Preparation

MAE 301: Foundations of Secondary School Mathematics

A re-examination of elements of school mathematics, including topics in algebra, geometry, and elementary functions. Competence in basic secondary-level ideas and techniques are tested.

Prerequisites: MAT 200 and 211; admission to mathematics or applied mathematics secondary teacher preparation program
Corequisite: MAE 311

3 credits

MAE 302: Methods and Materials for Teaching Secondary School Mathematics

The goals of mathematics education, learning theories, mathematics curricula, lesson planning, evaluation and teaching strategies. Lesson plans are drawn up and presented to the group.

Prerequisites: MAE 301 and C or higher in MAE 311

Pre- or Corequisite: MAE 312

3 credits

MAE 311: Introduction to Methods of Teaching Secondary School Mathematics

Aspects of teaching mathematics on the secondary school level, including lesson designs based on the NCTM standards, cooperative learning, and technology in mathematics education. Students observe

classes in middle school and high school settings.

Prerequisites: MAT 211; admission to mathematics or applied mathematics secondary teacher preparation program; department consent

Corequisite: MAE 301

3 credits

MAE 312: Micro-Teaching

Twice-weekly supervised classroom experience, tutoring, or working with small groups of students as a teacher's aide.

Prerequisite: C or higher in MAE 311

Pre- or Corequisite: MAE 302

2 credits

MAE 330: Technology in Mathematics Education

Introduces students in the secondary mathematics teacher preparation program to techniques and requirements for effective use of technology in the mathematics classroom. Emphasis on projects. Use of graphing calculators and computer software such as Geometer's Sketchpad.

Prerequisites: MAE 301 and 311

3 credits

MAE 412: Issues in Teaching and Learning in Collegiate Mathematics

Investigation of the issues involved in the teaching and learning of introductory collegiate mathematics. A supervised teaching internship of undergraduate mathematics accompanies this seminar.

Prerequisite: MAE 302

4 credits

MAE 447: Directed Readings in Mathematics Education

Tutorial studies in recent advances in mathematics education.

Pre- or Corequisite: MAE 312

1 credit

MAE 451: Supervised Teaching - Middle School Level Grades 7-9

Intensive supervised teaching in secondary schools. Students work in the school under the supervision of an experienced teacher.

Prerequisites: MAE 312; MAT 312, 319 and 360; AMS 310; permission of director of mathematics teacher education program

Corequisites: MAE 452 and 454

6 credits, S/U grading

MAE 452: Supervised Teaching - High School Grades 10-12

Intensive supervised teaching in secondary schools. Students work in the school under the supervision of an experienced teacher.

Prerequisites: MAE 312; MAT 312, 319 and 360; AMS 310; permission of director of mathematics teacher education program

Corequisites: MAE 451 and 454

6 credits, S/U grading

MAE 454: Student Teaching Seminar

Weekly discussions of teaching techniques and experiences, learning theory, curriculum content, and classroom problems.

Corequisites: MAE 451 and 452

3 credits

MAP

Mathematics Proficiency

MAP 101: Fundamentals of Arithmetic and Algebra

Arithmetic: fractions, decimals, and percent. Algebra: signed numbers, monomials, linear equations in one unknown, and word problems. This course is intended for students who have never studied algebra. Does not satisfy the entry skill in mathematics requirement or the D.E.C. category C requirement. Students who have otherwise satisfied D.E.C. category C may not register for this course. Overqualified students as determined by a placement test may be deregistered and directed to transfer to another course. Does not count toward graduation. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used.

3 credits

MAP 103 - S1: Proficiency Algebra

An intensive review of high school algebra as preparation for calculus and other mathematics. Facility with exponents, basic graphing, solving linear and quadratic equations in one variable, solving linear systems in two variables, polynomials, factorization of algebraic expressions, binomial theorem, and inequalities. Algebraic manipulations, analytic geometry of lines. Does not count toward graduation. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: Level 2 on the mathematics placement examination or MAP 101

3 credits

MAR

Marine Sciences

MAR 101- E: Long Island Sound: Science and Use

An introduction to one of the region's most important coastal marine environments - Long Island Sound. The course traces the origin and development of the Sound; presents an overview of the natural physical, biological, chemical, and geological processes that characterize it; explores its importance to society and assesses how society's uses of the Sound have affected it; evaluates attempts to manage it; and looks at the future of the Sound.

3 credits

MAR 104- E: Oceanography

An examination of the World Ocean and the chemical, geological, biological, and physical processes that control its major features and the life that inhabits it. Students will also explore human interactions with the marine environment.

3 credits

MAR 301: Environmental Microbiology

Microbiological mediation of natural processes in marine, freshwater, soil, and groundwater habitats, as well as microbial potential for remediation of pollutants and public health issues. The course includes a survey of taxonomic and metabolic diversity, elementary cell biology, nutrition, environmental controls on physiology and adaptations, biogeochemical cycles, and modern methods of sampling and analysis. Not for credit in addition to BIO 357.

Prerequisites: BIO 202; CHE 131 or 141

4 credits

MAR 302: Marine Microbiology and Microbial Ecology

Introduction to the evolution, diversity, and importance of the microbial flora of the sea. Lectures highlight the physiological distinctions and ecological functions of each of the major microbial groups (viruses, bacteria, fungi, protozoans, algae). Particular emphasis is placed on the role of these micro-organisms in many of the elemental (geochemical) cycles of the oceans. Aspects of the microbiota as agents of environmental pollution or detoxification are also discussed.

Prerequisites: BIO 201 and 202; CHE 132 or 142

Advisory Prerequisite: MAR 301

3 credits

MAR 303: Long Island Marine Habitats

The study of six representative marine environments around Long Island. Students visit the sites on weekly field trips, measuring environmental parameters and identifying common plants and animals. Using qualitative and quantitative methods in the field and in laboratory sessions, the class determines major factors that control the biological community in each habitat.

Prerequisites: U3 or U4 standing; BIO 201
Advisory Prerequisites: AMS 110 or other statistics course; MAR 101 or 104 or 333

4 credits

MAR 304- E: Waves, Tides, and Beaches

A survey of water waves and tides, including both a description of the phenomena and the basic theory of waves and sediment transport. This background forms the basis for a description of shore processes including beaches, and coastal erosion. The variety of the world's coastal environments will be differentiated in terms of physical processes. The behavior of beaches also will be examined. This course is suitable for non-science majors as well as providing students majoring in geology, engineering or other sciences with the foundation for more advanced study. A survey of water waves and tides, including both a description of the phenomena and the basic theory of waves and sediment transport. This background forms the basis for a description of shore processes including beaches, shoreface dynamics, and coastal erosion. Areas of current research are also discussed.

Prerequisites: U3/U4 status or MAR 101 or MAR 104

Advisory prerequisites: MAR 101, MAR 104, or MAR 333

3 credits

MAR 305: Experimental Marine Biology

Students design and conduct experiments in the laboratory and at local field sites, collect and analyze data, and use scientific literature to interpret and present results in papers and oral presentations.

Prerequisites: U3 or U4 standing; BIO 201.
Advisory Prerequisites: CHE 131 or 141; AMS 110 or other statistics course; MAR 101 or 104 or 333

3 credits

MAR 308: Principles of Instrumental Analysis

The development of familiarity in the laboratory with the techniques and instrumentation used in environmental analytical chemistry, emphasizing determination of trace inorganic species. Primary emphasis on applications utilizing the absorption of emission of electromagnetic radiation. Topics include metal determinations in sediment and in river water using molecular ultraviolet-visible and atomic absorption spectrometry.

Prerequisites: CHE 132/134 or 142/144

3 credits

MAR 315- H: Marine Conservation

The fundamental concepts of Conservation Biology, a new synthetic field that incorporates principles of ecology, biogeography, population genetics, systematics, evolutionary biology, environmental sciences, sociology, anthropology, and philosophy toward the conservation of biological diversity. Examples drawn from the marine environment emphasize how the application of conservation principles varies from terrestrial, aquatic, and marine realms.

Prerequisite: BIO 351 or 353

3 credits

MAR 318: Engineering Geology and Coastal Processes

Fundamental concepts of soil, sediment, and rock mechanics and the physics of surficial processes. Application is made to problems of geotechnical and coastal engineering. Topics include consolidation, loose boundary hydraulics, slope stability, underground excavations and beach and tidal inlet stability, and channel sedimentation. This course is offered as both GEO 318 and MAR 318.

Prerequisites: GEO 122 or GEO 102 and 112; MAT 127 or 132 or 142 or 171 or AMS 161

3 credits

MAR 320: Limnology

The physical, chemical, and biological aspects of lakes and ponds. The morphology of lake basins, physics of water movement, water chemistry, and ecology of organisms are explored through lecture and laboratory instruction. The laboratory portion of the course includes field sampling to investigate temporal variation in water chemistry and plankton biology, and laboratory experiments to demonstrate important concepts.

Prerequisites: BIO 201; CHE 131 or 141

4 credits

MAR 333- H: Coastal Oceanography

Aspects of physical, biological, chemical, and geological processes that characterize coastal marine environments. Topics include such natural phenomena as upwelling, particle transport, benthic/pelagic coupling, and barrier island processes, as well as the impacts of society on the Coastal Ocean.

Prerequisites: MAT 125 or 131 or 141 or AMS 151; completion of D.E.C. category E

3 credits

MAR 334- E: Remote Sensing of the Environment

A study of the theory of remote sensing and its application in the fields of atmospheric science and oceanography. A discussion of the interaction of electromagnetic radiation with rough surfaces and the atmosphere is followed by a treatment of sensors and platforms. The remainder of the course is devoted to data processing techniques involved in remote sensing.

Prerequisite: One of the following: ENS/PHY 119, PHY 127, PHY 132/134, or PHY 142

3 credits

MAR 336: Marine Pollution

A review of the sources, transport, and fate of toxic and non-toxic contaminants in the ocean. The interactions of biological, chemical, and physical processes that control the cycling and toxicity of contaminants are considered. Contaminants include metals, oil, halogenated hydrocarbons, radioactive wastes, excess nutrients, plastics, and solid wastes.

Prerequisites: BIO 201; CHE 131 or 141; MAR 333

3 credits

MAR 340- H: Environmental Problems and Solutions

A detailed examination of the scientific, social, and legal aspects of important environmental problems, including global climate change, the depletion of atmospheric ozone, acid rain, rain forests and the loss of biodiversity, and energy conservation, as well as case histories of problems such as the use of DDT, environmental carcinogens, and lead poisoning.

Prerequisites: U3 or U4 standing; one course in chemistry or biology

3 credits

MAR 346: Marine Sedimentology

A study of sedimentology in the marine environment, including an introduction to fluid mechanics, sediment transport theory, quantitative models of sedimentation, and dynamic stratigraphy.

Prerequisites: GEO 102 or 122; PHY 126 or 132/134 or 142

3 credits

MAR 349: Introduction to Biological Oceanography

An examination of the processes which produce and maintain the abundances, composition, and temporal variations of organisms in the ocean. The roles of biological processes in global cycles and the food chain, beginning with microbes and progressing through fisheries, are also covered. Weekly three-hour laboratory or field sessions present methods used in observational and experimental studies.

Prerequisites: CHE 131 and 132; BIO 201
4 credits

MAR 350: Introduction to Ocean Physics

An introduction to hydrodynamics, contemporary ideas on ocean circulation, and the application of acoustics and optics to ocean technologies. Not for credit in addition to MAR 352.

Prerequisites: ENS/PHY 119 or PHY 121/123 or 125 or 131/133 or 141; MAT 127 or 132 or 142 or 171 or AMS 161
2 credits

MAR 351: Introduction to Ocean Chemistry

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

Prerequisite: CHE 132 and one MAR course
3 credits

MAR 352: Introduction to Physical Oceanography

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

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

Corequisite: MAR 353

2 credits

MAR 353: Physical Oceanography Laboratory

An introduction to the measurements, equipment, and data processing techniques used to study the motion of fluids (air and water) on the earth. Students will learn to use scientific instruments, design sampling strategies, and utilize previously collected data sets to study both local and global processes. At-sea collection and analysis of data will be emphasized.

Pre- or co-requisite: MAR 350 or MAR 352
1 credit

MAR 366: Plankton Ecology

An introduction to the biology of the plant and animal plankton present in the sea. Techniques of collection, enumeration, and identification of phytoplankton and zooplankton are described. Life histories are studied and factors that influence seasonal changes in species and biomass are examined.

Prerequisites: BIO 201 and 202
3 credits

MAR 370: Marine Mammals

The biology of the major groups of marine mammals, including cetaceans, pinnipeds, and sirenians. Topics include evolutionary history and adaptation, thermoregulation, locomotion and foraging, diving physiology and behavior, communication and sensory systems, social behavior, reproduction, energetics, distribution patterns, exploitation, and conservation.

Prerequisites: BIO 201 and 203
3 credits

MAR 371: The Biology and Conservation of Marine Birds and Sea Turtles

A survey of the basic biology of marine birds and sea turtles, with an emphasis on species endemic to the Northeast U.S. Topics covered include origins, taxonomy and systematics, anatomy, organ systems, reproduction, nutrition, migration, and conservation status. Weekly lectures will be supplemented with three field trips, of which the student must attend at least two.

Prerequisites: BIO 201 and 203
3 credits

MAR 375: Marine Mammal and Sea Turtle Rehabilitation

An intensive hands-on course designed to introduce students to the topics of marine mammal and sea turtle biology as they relate to rehabilitation and research. Students will be exposed to marine mammal and sea turtle ecology, conservation issues, management, and research in the context of wildlife rehabilitation. Through active participation in the rehabilitation activities at the New York State's only marine mammal rescue facility, instructive lectures, writing, reading assignments, quizzes, tests, and research, students will be offered the opportunity to be thoroughly immersed in the field of marine mammal and sea turtle rehabilitation.

Prerequisite: BIO 201 or permission of instructor
3 credits

MAR 380: Ichthyology

The biology of fishes. This course focuses on the diversity of fishes and the physiological, anatomical, ecological, and behavioral adaptations that allow them to populate a wide range of niches and environments. Field and laboratory work provide students with practical experience in collecting, identifying, and studying fish.

Prerequisites: BIO 201; BIO 328 or 344 or 346
3 credits

MAR 384: Diseases of Aquatic Organisms

Fundamental and current issues pertaining to host/pathogen interactions in the aquatic environment. 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 important player in infectious and non-infectious diseases.

Prerequisites: BIO 202 and 203
3 credits

MAR 385: Principles of Fishery Biology and Management

The theory, techniques, history, and practical problems of fishery management, with emphasis on Long Island fisheries. Three field trips outside regularly scheduled class meetings are required.

Prerequisites: BIO 201; MAT 125 or 131 or 141 or AMS 151
3 credits

MAR 388: Tropical Marine Ecology

This travel course surveys organisms (invertebrates, fishes and algae) and habitats (coral reefs, sea grass meadows and mangrove forests) within tropical marine coral reef ecosystems. The course consists of formal lectures, demonstrations and instructor-led field trips and involves snorkeling, SCUBA diving, reefwalking and underwater photography. Students will develop individual research projects requiring field observations and collecting data and will write a research proposal and final research papers.

Prerequisites: BIO 201 and permission of instructor

4 credits

MAR 392- H: Waste Management Issues

Conventional and innovative approaches to waste reduction, recycling, and reuse. The environmental impacts of waste on the terrestrial and marine environment are introduced as are the complex social, political, and scientific issues of making sound policy decisions.

Prerequisites: GEO 101; CHE 131 or ENS/PHY 119

3 credits

MAR 393: Waste Treatment Technologies

This course examines technologies such as wastewater management, solid waste practices, and drinking water treatments that minimize the effects of human wastes. Pollution prevention, especially for marine environments, is also discussed.

Prerequisites: EST 202; or MAT 123 and one D.E.C. category E course

3 credits

MAR 394- H: Environmental Toxicology and Public Health

Principles of toxicology are presented and problems associated with major classes of toxic chemicals to human and environmental health are examined. Case studies dealing with current waste management issues are also discussed. This course is offered as both BCP 394 and MAR 394.

Prerequisites: BIO 201; CHE 131 or 141
Advisory Prerequisite: CHE 321

3 credits

MAR 395: Topics in Marine Environmental Sciences

May be repeated as the topic changes.

Prerequisite: One upper-division MAR course

3 credits

MAR 447: Readings in Marine Science

Tutorial readings in the marine sciences. These courses may be repeated but no 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, S/U grading

MAR 475: Undergraduate Teaching Practicum

A practicum in the techniques of teaching marine sciences courses. Each student assists a faculty member in a regularly scheduled class. The student may be required to attend all classes and meets with the faculty member at regularly scheduled times. Students may assist in laboratories, hold recitation or review sessions, propose questions for examinations, and review already graded assignments.

Prerequisites: U3 or U4 standing; permission of instructor and SoMAS Undergraduate Programs Director

3 credits, S/U grading

MAR 487: Research in Marine Sciences

A student may conduct research for credit. May be repeated.

Prerequisite: Permission of instructor and SoMAS Undergraduate Programs Director

0-6 credits

MAR 488: Internship

Participation in research at off-campus laboratories or in the activities of public and private agencies and organizations. May be repeated up to a limit of 12 credits.

Prerequisites: Permission of instructor and SoMAS Programs Director

0-6 credits, S/U grading

MAT Mathematics

MAT 118- C: Mathematical Thinking

Development of quantitative thinking and problem solving abilities through a selection of mathematical topics: logic and reasoning; numbers, functions, and modeling; combinatorics and probability; growth and change. Other topics may include geometry, statistics, game theory, and graph theory. Through their engagement in problem solving, students develop an appreciation of the intellectual scope of mathematics and its connections with other disciplines.

Prerequisite: C or better in MAP 103 or level 2+ or higher on the mathematics placement examination

(Prerequisite must be met within one year of beginning this course.)

3 credits

MAT 122- C: Overview of Calculus with Applications

The basics of calculus in a self-contained, one-semester course. Properties and applications of polynomial, exponential, and logarithmic functions. Derivatives: slopes, rates of change, optimization, integrals, area, cumulative change, and average. The fundamental theorem of calculus. Emphasis on modeling examples from economics. Students who subsequently wish to enroll in MAT 125 or 131 will be required to take MAT 130 as a pre- or corequisite to either course or to score level 4 on the mathematics placement examination before taking either course. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or better in MAP 103 or level 3 on the mathematics placement exam
(Prerequisite must be met within one year prior to beginning the course.)

3 credits

MAT 123- C: Introduction to Calculus

Comprehensive preparation for the regular calculus sequences, with introduction to derivatives. Careful development of rational, exponential, logarithmic, and trigonometric functions, and their applications. Asymptotics and limits. Linear approximations, slope and derivatives, detailed curve sketching. General modeling examples. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or better in MAP 103 or level 3 on the mathematics placement exam
(Prerequisite must be met within one year prior to beginning the course.)

3 credits

MAT 125- C: Calculus A

Differential calculus, emphasizing conceptual understanding, computations and applications, for students who have the necessary background from 12th-year high school mathematics. Differentiation of elementary algebraic, trigonometric, exponential and logarithmic functions; graphing; modeling; and maximization. May not be taken for credit in addition to MAT 131 or 141 or AMS 151. This

course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in MAT 123; or level 4 on the mathematics placement examination; or MAT 122 and coregistration in MAT 130
3 credits

MAT 126- C: Calculus B

A continuation of MAT 125, covering integral calculus: the fundamental theorem, symbolic and numeric methods of integration, area under a curve, volume, applications such as work and probability, complex numbers. May not be taken for credit in addition to MAT 142 or AMS 161. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in MAT 125 or 131 or 141 or AMS 151 or level 6 on the mathematics placement examination
3 credits

MAT 127- C: Calculus C

A continuation of MAT 126, covering: improper integrals and l'Hospital's rule, sequences, series, Taylor series, differential equations and modeling. May not be taken for credit in addition to MAT 132, MAT 142, MAT 171, or AMS 161. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in MAT 126 or level 8 on the mathematics placement examination
3 credits

MAT 129: Introduction to Integration

This course covers the material that is in MAT131 and not MAT125: The Riemann integral and the Fundamental Theorem of Calculus. This course serves as a bridge for students who took MAT125 but are ready to handle the faster pace of MAT132. Students must have a solid understanding of differentiation, which is covered by MAT125. Not for credit in addition to any of MAT126, MAT131, MAT141, or AMS151. Offered in winter session only.

Prerequisites: B or better in MAT 125 or Math placement level 6
1 credit

MAT 130: Functions

Inverse functions, exponential and logarithmic functions, radian measure of angles and

trigonometric functions. Open to prospective students in engineering, physical sciences, and mathematics who need to bridge the gap between MAT 122 and 125 or MAT 131 or AMS 151. May not be taken for credit in addition to MAT 123.

Advisory Prerequisite: C or higher in MAT 122
Advisory Corequisite: MAT 125 or 131 or AMS 151

1 credit

MAT 131- C: Calculus I

The differential calculus and integral calculus, emphasizing conceptual understanding, computations and applications, for students who have the necessary background from 12th-year high school mathematics. Differentiation of elementary algebraic; trigonometric, exponential, and logarithmic functions; graphing; modelling and maximization; the Riemann integral; and the fundamental theorem. May not be taken for credit in addition to MAT 125 or 141 or AMS 151. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: B or higher in MAT 123, or level 5 on the mathematics placement examination, or B or higher in MAT 122 and concurrent registration for MAT 130

4 credits

MAT 132- C: Calculus II

A continuation of MAT 131, covering symbolic and numeric methods of integration; area under a curve; volume; applications such as work and probability; improper integrals and l'Hospital's rule; complex numbers; sequences; series; Taylor series; differential equations; and modelling. May not be taken for credit in addition to MAT 127, MAT142, MAT 171, or AMS 161. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in AMS 151 or MAT 131 or 141, or level 7 on the mathematics placement examination

4 credits

MAT 141- C: Honors Calculus I

The topics of MAT 131 treated with additional attention to the underlying theory as a means of understanding why the processes of calculus work. May not be taken for credit in addition to MAT 125 or 131. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering

for HD/CA courses for the first time will have priority to do so.

Prerequisite: Level 5 on the mathematics placement examination; priority given to students in the University's honors programs
4 credits

MAT 142: Honors Calculus II

A continuation of MAT 141 in the same spirit, covering the topics of MAT 132. May not be taken for credit in addition to MAT 126, MAT 127, MAT 171, MAT 132 or AMS 161. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in MAT 141, or B or higher in MAT 131 or AMS 151, or level 7 on the mathematics placement examination
4 credits

MAT 160: Mathematical Problems and Games

Intended for students interested in sharpening their problem-solving skills and in developing their ability to express mathematical ideas.

1 credit, S/U grading

MAT 171- C: Accelerated Single-Variable Calculus

A single semester, honors-level, course which reviews the material in MAT 131 in a few weeks, then concentrates on the topics covered in MAT 132, with additional attention paid to the underlying theory. Primarily intended for students who have had calculus in high school. May not be taken for credit in addition to MAT 126, MAT 127, MAT 132, MAT 142, MAT 171, or AMS 161.

Prerequisites: Level 5 on the AB Calculus AP exam, Level 3 on the BC Calculus exam, A or A- in MAT 131 or AMS 151, MAT 141, or level 7 on the mathematics placement exam. Priority given to students in the University's honors programs.
4 credits

MAT 200: Logic, Language and Proof

A basic course in the logic of mathematics, the construction of proofs and the writing of proofs. The mathematical content is primarily set theory, combinatorics and Euclidean geometry. There is considerable focus on writing.

Prerequisites: C or higher in MAT 203, 205 or AMS 261, and in MAT 211 or AMS 210; or A- or higher in MAT 125, 131, 141 or AMS 151; or B- or higher average in MAT 125/126/127, 131/132, 141/142, 171 or AMS 151/161; or permission of instructor

3 credits

MAT 203: Calculus III with Applications

Vector algebra in two and three dimensions, multivariate differential and integral calculus, optimization, vector calculus including the theorems of Green, Gauss, and Stokes. Applications to economics, engineering, and all sciences, with emphasis on numerical and graphical solutions; use of graphing calculators or computers. May not be taken for credit in addition to AMS 261 or MAT 205.

Prerequisite: C or higher in MAT 127 or 132 or 142 or AMS 161 or level 9 on the mathematics placement examination

4 credits

MAT 205: Calculus III

Vector algebra, multivariate differential and integral calculus, divergence and curl, line and surface integrals, theorems of Green, Gauss, and Stokes. More theoretical than MAT 203 with applications to the physical sciences. Not for credit in addition to AMS 261 or MAT 203.

Prerequisite: C or higher in MAT 127 or 132 or 142 or AMS 161 or level 9 on the mathematics placement examination
Pre- or Corequisite: MAT 211 or AMS 210

4 credits

MAT 211: Introduction to Linear Algebra

Introduction to the theory of linear algebra with some applications; vectors, vector spaces, bases and dimension, applications to geometry, linear transformations and rank, eigenvalues and eigenvectors, determinants and inner products. May not be taken for credit in addition to AMS 210.

Prerequisite: C or higher in AMS 151 or MAT 131 or 141 or coregistration in MAT 126 or level 7 on the mathematics placement examination

3 credits

MAT 260: Problem Solving in Mathematics

Students actively solve challenging problems in plane geometry, basic number theory, and calculus, and write precise arguments. Relevant preparation for problem-solving is provided in the course.

Prerequisite: Permission of instructor

1 credit

MAT 303: Calculus IV with Applications

Homogeneous and inhomogeneous linear differential equations; systems of linear differential equations; series solutions; Laplace

transforms; Fourier series. Applications to economics, engineering, and all sciences with emphasis on numerical and graphical solutions; use of computers. May not be taken for credit in addition to AMS 361 or MAT 305.

Prerequisite: C or higher in MAT 127 or 132 or 142 or AMS 161 or level 9 on the mathematics placement examination

4 credits

MAT 305: Calculus IV

Linear versus nonlinear equations and their numerical solutions, existence and uniqueness, Duhamel's principle for linear equations, series solutions, systems. Fourier series; comparison of separation of variables with integral formulas. More theoretical than MAT 303. Applications to the physical sciences. May not be taken for credit in addition to MAT 303 or AMS 361.

Prerequisite: C or higher in MAT 127 or 132 or 142 or AMS 161 or level 9 on the mathematics placement examination

4 credits

MAT 307: Multivariable Calculus with Linear Algebra

Introduction to linear algebra: vectors, matrices, systems of linear equations, bases and dimension, dot product, determinants. Multivariate differential and integral calculus, divergence and curl, line and surface integrals, theorems of Green, Gauss, and Stokes. More theoretical and intensive than MAT 203, this course is primarily intended for math majors. Together with MAT 308, it forms a 2-semester sequence covering the same material as the 3-semester sequence of MAT 205, MAT 211 and MAT 305. May not be taken for credit in addition to MAT 203, MAT 205 or AMS 261.

Prerequisite: MAT 127 or MAT 132

4 credits

MAT 308: Differential Equations with Linear Algebra

Linear algebra: determinants, eigenvalues and eigenvectors, diagonalization. Differential equations; existence and uniqueness of solutions. First- and second-order equations; linear versus nonlinear equations. Systems of linear equations. Laplace transform. Applications to physics. More theoretical and intensive than MAT 303, this course is primarily intended for math majors. Together with MAT 307, it forms a 2-semester sequence covering the same material as the 3-semester sequence of MAT 205, MAT 211 and MAT 305. May not be taken for credit in addition to MAT 303, MAT 305 or AMS 361.

Prerequisite: MAT 307 or MAT 205 and MAT 211

4 credits

MAT 310: Linear Algebra

Finite dimensional vector spaces, linear maps, dual spaces, bilinear functions, inner products. Additional topics such as canonical forms, multilinear algebra, numerical linear algebra.

Prerequisites: C or higher in MAT 211 or 305 or 308 or AMS 210; C or higher in MAT 200 or permission of instructor

4 credits

MAT 311: Number Theory

Congruences, quadratic residues, quadratic forms, continued fractions, Diophantine equations, number-theoretical functions, and properties of prime numbers.

Prerequisites: C or higher in MAT 312 or 313 or 318; C or higher in MAT 200 or permission of instructor

3 credits

MAT 312: Applied Algebra

Topics in algebra: groups, informal set theory, relations, homomorphisms. Applications: error correcting codes, Burnside's theorem, computational complexity, Chinese remainder theorem. This course is offered as both AMS 351 and MAT 312.

Prerequisite: C or higher in AMS 210 or MAT 211

Advisory Prerequisite: MAT 200 or CSE 113

3 credits

MAT 313: Abstract Algebra

Groups and rings together with their homomorphisms and quotient structures. Unique factorization, polynomials, and fields.

Prerequisites: C or higher in MAT 310 or 312 or 318; C or higher in MAT 200 or permission of instructor

3 credits

MAT 316: Invitation to Modern Mathematics

Mathematical reasoning and the process of mathematical research. The power and range of modern mathematics are discussed in detail through a few key theorems in algebra, analysis, geometry, and topology together with some applications.

Prerequisites: MAT 211 or AMS 210; MAT 203 or 205 or AMS 261; MAT 200 or permission of instructor

3 credits

MAT 319: Foundations of Analysis

A careful study of the theory underlying topics in one-variable calculus, with an emphasis on those topics arising in high school calculus. The real number system. Limits of functions and sequences. Differentiations, integration, and the fundamental theorem. Infinite series.

Prerequisites: C or higher in MAT 200 or permission of instructor; C or higher in one of the following: MAT 203, 205, 211, 307, AMS 261, or A- or higher in MAT 127, 132, 142, or AMS 161

4 credits

MAT 320: Introduction to Analysis

A careful study of the theory underlying calculus. The real number system. Basic properties of functions of one real variable. Differentiation, integration, and the inverse theorem. Infinite sequences of functions and uniform convergence. Infinite series.

Prerequisites: C or higher in MAT 200 or permission of instructor; C or higher in one of the following: MAT 203, 205, 211, 307, AMS 261, or A- or higher in MAT 127, 132, 142, or AMS 161

4 credits

MAT 322: Analysis in Several Dimensions

Continuity, differentiation, and integration in Euclidean n-space. Differentiable maps. Implicit and inverse function theorems. Differential forms and the general Stokes's theorem.

Prerequisites: C or higher in MAT 203, 205, or AMS 261; C or higher in MAT 211 or AMS 210; B or higher in MAT 320

Advisory Pre- or Corequisite: MAT 310

3 credits

MAT 324: Real Analysis

Metric spaces, including compactness, connectedness, completeness, and continuity. Introduction to Lebesgue integration. Aspects of Fourier series, function spaces, Hilbert spaces, Banach spaces.

Prerequisites: C or higher in MAT 203 or 205 or 307 or AMS 261; B or higher in MAT 320

3 credits

MAT 331: Computer-Assisted Mathematical Problem Solving

Exploration of the use of the computer as a tool to gain insight into complex mathematical problems through a project-oriented approach. Students learn both the relevant mathematical concepts and ways that the computer can be used (and sometimes misused) to understand them. The particular problems may vary by semester; past topics have included

cryptography, fractals and recursion, modeling the flight of a glider, curve fitting, the Brachistochrone, and computer graphics. No previous experience with computers is required.

Prerequisite: C or higher in MAT 203 or 205 or 307 or AMS 261

3 credits

MAT 336- H: History of Mathematics

A survey of the history of mathematics from the beginnings through the 19th century, with special attention to primary sources and to the interactions between culture and mathematics. Emphasis on topics germane to the high school curriculum. Mesopotamian, Egyptian, and Greek mathematics; non-European mathematics; early Renaissance mathematics; the birth and flowering of calculus; the beginnings of probability theory; and the origin of non-euclidean geometrics and the modern concept of number.

Prerequisite: MAT 200 or AMS 301

3 credits

MAT 341: Applied Real Analysis

Partial differential equations of mathematical physics: the heat, wave, and Laplace equations. Solutions by techniques such as separation of variables using orthogonal functions (e.g., Fourier series, Bessel functions, Legendre polynomials). D'Alembert solution of the wave equation.

Prerequisites: C or higher in the following: MAT 203 or 205 or 307 or AMS 261; MAT 303 or 305 or AMS 361

Advisory Prerequisite: MAT 200

3 credits

MAT 342: Applied Complex Analysis

Functions of a complex variable, calculus of residues including evaluation of real integrals, power and Laurent series, conformal mappings and applications, Laplace and Cauchy-Riemann equations, the Dirichlet and Neumann problems, and the Laplace and Hilbert transforms and their applications to ordinary and partial differential equations.

Prerequisites: C or higher in the following: MAT 203 or 205 or 307 or AMS 261; MAT 303 or 305 or AMS 361

Advisory Prerequisite: MAT 200

3 credits

MAT 351: Differential Equations: Dynamics and Chaos

A study of the long-term behavior of solutions to ordinary differential equations or of iterated mappings, emphasizing the distinction between stability on the one hand and sensitive

dependence and chaotic behavior on the other. The course describes examples of chaotic behavior and of fractal attractors, and develops some mathematical tools for understanding them.

Prerequisites: C or higher in the following: MAT 203 or 205 or 307 or AMS 261; MAT 303 or 305 or 308 or AMS 361; MAT 200 or permission of instructor

3 credits

MAT 360: Geometric Structures

Formal geometries and models. Topics selected from projective, affine, Euclidean, and non-Euclidean geometries.

Pre- or Corequisites: C or higher in the following: MAT 203 or 205 or 307 or AMS 261; MAT 211 or AMS 210; MAT 200 or permission of instructor

3 credits

MAT 362: Differential Geometry of Surfaces

The local and global geometry of surfaces: geodesics, parallel transport, curvature, isometries, the Gauss map, the Gauss-Bonnet theorem.

Prerequisite: C or higher in MAT 319 or 320 or 364

3 credits

MAT 364: Topology and Geometry

A broadly based introduction to topology and geometry, the mathematical theories of shape, form, and rigid structure. Topics include intuitive knot theory, lattices and tilings, non-Euclidean geometry, smooth curves and surfaces in Euclidean 3-space, open sets and continuity, combinatorial and algebraic invariants of spaces, higher dimensional spaces.

Prerequisites: MAT 203 or 205 or 307 or AMS 261

Advisory Prerequisite: MAT 319 or 320

3 credits

MAT 371: Logic

A survey of the logical foundations of mathematics: development of propositional calculus and quantification theory, the notions of a proof and of a model, the completeness theorem, Goedel'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

MAT 373: Analysis of Algorithms

Mathematical analysis of a variety of computer algorithms including searching, sorting, matrix multiplication, fast Fourier transform, and graph algorithms. Time and space complexity. Upper-bound, lower-bound, and average-case analysis. Introduction to NP completeness. Some machine computation is required for the implementation and comparison of algorithms. This course is offered as CSE 373 and MAT 373.

Prerequisites: MAT 211 or AMS 210; CSE 214 or CSE 260

3 credits

MAT 401: Seminar in Mathematics

Discussions of a specific area of interest in mathematics. The work of each semester covers a different area of mathematics. May be repeated as topic changes. Prerequisites will be announced with the topic each time the course is offered.

Prerequisites: U3 or U4 standing; additional prerequisites announced with topic

3 credits

MAT 402: Seminar in Mathematics

Discussions of a specific area of interest in mathematics. The work of each semester covers a different area of mathematics. May be repeated as topic changes. Prerequisites will be announced with the topic each time the course is offered.

Prerequisites: U3 or U4 standing; additional prerequisites announced with topic

3 credits

MAT 475: Undergraduate Teaching Practicum

Each student assists in teaching a lower-division mathematics course or works in the Mathematics Learning Center. The student's work is regularly supervised by a faculty member. In addition, a weekly seminar is conducted. Responsibilities may include preparation of materials for student use and discussions, helping students with problems, and involvement in "alternative" teaching projects. Intended for upper-division students who have excelled in the calculus sequence. May not be used for major credit.

Prerequisite: Permission of the director of undergraduate studies

3 credits, S/U grading

MAT 487: Independent Study in Special Topics

A reading course for juniors and seniors. The topics may be chosen by the student with the approval of a supervising member of the faculty, who also takes responsibility for

evaluation. A topic that is covered in a course regularly offered by the department is not appropriate for independent study. May be repeated.

Prerequisite: Permission of the director of undergraduate studies

0-6 credits

MAT 495: Honors Thesis

The student and a supervising faculty member together choose a topic in mathematics, and the student writes a substantial paper expounding the topic in a new way.

Prerequisite: Permission of the director of undergraduate studies

3 credits

MEC

Mechanical Engineering

MEC 101: Engineering Computing and Problem Solving I

Computer integrated introduction to engineering design and analysis. The mechanical engineering profession, engineering ethics, and engineering impact on society. Engineering equations, graphs, dimensional analysis, curve fitting, optimization in engineering design. Introduction to vectors and engineering statics, failure, and materials selection. Use of spreadsheets and MATLAB.

Pre- or co-requisites: AMS 151 or MAT 125 or MAT 131 or MAT 141 and PHY 125 or PHY 131 or PHY 141

2 credits

MEC 102: Engineering Computing and Problem Solving II

Introduction to programming with MATLAB. Control structures, arrays and matrix operations, functions, object-oriented programming, interfacing MATLAB with other languages. Projects includes applications in solid mechanics, fluid mechanics, thermodynamics and heat transfer, control theory, and basic design concepts. Emphasizes the interpretation of previous analysis in terms of generating results, making quantitative comparisons, and assessing changes that optimize or otherwise maximize the usefulness of the result.

Prerequisite: A grade of C or better in MEC 101

2 credits

MEC 104- E: Practical Science of Things

A practical introduction to the science and engineering of objects and phenomena in everyday life. The basic principles that underlie the operation common to modern devices such as rollercoasters, balloons, vacuum cleaners, airplanes, bicycles, thermostats, air conditioners, automobiles, and GPS systems are developed by investigating how they work. Issues of design, safety, and environmental impact are also discussed.

Prerequisite: Satisfaction of entry skill in mathematics requirement (Skill 1) or satisfactory completion of D.E.C. C

3 credits

MEC 105- E: Everyday Science

A practical introduction to the science and engineering of objects and phenomena in everyday life. The basic principles that underlie the operation common to modern devices such as xerographic copiers, tape recorders, computers, microwaves, lasers, CDs, plastics, nuclear weapons, and magnetic resonance imaging (MRI) are developed by investigating how they work. Issues of design, safety, and environmental impact are also discussed.

Prerequisite: Satisfaction of entry skill in mathematics requirement (Skill 1) or satisfactory completion of D.E.C. C

3 credits

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 200: Technical Communication in Mechanical Engineering I

Introduction to technical writing and oral communication with topics chosen from mechanical engineering. Includes technical memo and report writing and an introduction to researching sources of information as well as engineering ethics. Emphasizes the development of oral presentation skills.

Prerequisites: MEC major; U2 standing

1 credit, S/U grading

MEC 202: Engineering Drawing and CAD I

Introduces methods used to communicate design ideas through the techniques of freehand technical sketching and computer-aided design software. Includes the principles of engineering drawing and sketching for mechanical design and the application of computer-aided design software in developing engineering drawings and mechanical designs.

Prerequisite: MEC major or permission of department

1 credit

MEC 203: Engineering Drawing and CAD II

Application of computer graphics and solid modeling to design and representation of 3D objects, their assembly and tolerance analysis. Includes hands-on experience in the use of CAD software packages for solid modeling.

Prerequisite: MEC 202

2 credits

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).

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.

Prerequisites: MAT 126 or 131 or 141 or AMS 151; MEC major or permission of instructor.
Corequisites: MAT 127 or 132 or 142 or 171 or AMS 161

1 credit

MEC 220: Practical Electronics Mechanical Engineers

This is a lecture and laboratory 2 credit course that will overview basic electronics from a practical level (versus a theoretical approach) to provide mechanical engineering students with the fundamentals to do basic electronics work needed for laboratories, subsequent courses and their professional careers.

Prerequisites: PHY127, PHY132, or PHY142; MEC major

2 credits

MEC 260: Engineering Statics

A review of vector algebra. Concept of force. Equilibrium of particles. Moments about points and lines, couples and equivalent force systems. Equilibrium of rigid bodies. Analysis of simple structures such as trusses, frames, and beams. Centroids, centers of gravity, and moments of inertia. Dry friction with applications to wedges, screws, and belts. Method of virtual work, potential energy, and stability.

Prerequisite: PHY 131/133 or 141 or 125

Corequisite: AMS 261 or MAT 203

3 credits

MEC 262: Engineering Dynamics

Vectorial kinematics of particles in space, orthogonal coordinate systems. Relative and constrained motions of particles. Dynamics of particles and the systems of particles, equations of motion, energy and momentum methods. Collisions. Two- and three-dimensional kinematics and dynamics of rigid bodies. Moving frames and relative motion. Free, forced, and damped vibrations of particles and rigid bodies.

Prerequisite: A grade of "C" or better in MEC 260

3 credits

MEC 280- H: Pollution and Human Health

An examination of major environmental pollution problems such electromagnetic radiation, ozone layer depletion, and global warming, with a specific focus on the resulting effects on human health. Assessment of health risks in relation to the formulation of environmental and workplace regulations is also considered.

Prerequisite: One D.E.C. category E course

3 credits

MEC 300: Technical Communication in Mechanical Engineering II

Aims to ensure proficiency in the types of communication necessary for success in the engineering profession. Provides students with the ability to apply their knowledge of

correct written and spoken English to the diverse modes of communication encountered and used by engineers in the professional workplace.

Prerequisites: WRT 102; MEC major; U3 or U4; MEC 200

Corequisite: MEC 317

1 credit, S/U grading

MEC 301: Thermodynamics

Variables that describe the thermodynamic state of a system or control volume, including absolute temperature, internal energy, enthalpy, and entropy are introduced, and basic principles governing the transformations of energy, especially heat and work, are developed. Underlying principles are used to analyze and solve problems related to thermodynamic systems and to determine the changes in properties of the systems and surroundings implied by changes in inputs, configuration, or constraints.

Prerequisites: AMS 261 or MAT 203; PHY 125 or 131/133 or 141; MEC Major

3 credits

MEC 305: Heat and Mass Transfer

The fundamental laws of momentum, heat and mass transfer, and the corresponding transport coefficients. Principles of steady-state and transient heat conduction in solids are investigated. Laminar and turbulent boundary layer flows are treated, as well as condensation and boiling phenomena, thermal radiation, and radiation heat transfer between surfaces. Applications to heat transfer equipment are covered throughout the course.

Prerequisites: MEC 301 and 364; MEC 102 or 111 or 112, or ESG 111, or ESE 124, or CSE 114 or 130

3 credits

MEC 310: Introduction to Machine Design

Application of graphical and analytical methods to the analysis and synthesis of mechanism. Covers concepts of degrees of freedom, graphical and analytical linkage synthesis, position, velocity, acceleration, and force analysis of linkage mechanisms. Introduces principles behind the operation of various machine elements such as gears and gear trains, cams, flywheels, roller and journal bearings, couplings, clutches, brakes, belts, and chains and their design, and analysis techniques.

Prerequisites: MEC 102 or 111 or 112 or CSE 114 or 130 or ESG 111; MEC 262 (ESG 316 for ESG majors)

Pre- or Corequisite: MEC 203

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: MEC 214; MEC 363; AMS 361 or MAT 303;

Corequisites: MEC 301 and 364

3 credits

MEC 317: Mechanical Engineering Laboratory II

Hands-on experience in solid and fluid mechanics and heat transfer. Emphasis is on the understanding of fundamental principles as well as familiarity with modern experimentation. Lectures at the beginning of the course provide background information and theories of experimentation. Student groups perform four experiments each in solid mechanics and in fluid mechanics and heat transfer. Report writing is an integral part of the course, with emphasis on design of experiment, interpretation and presentation of data, error analysis, and conclusions. Laboratory fee required.

Prerequisites: MEC 316 and 364

Corequisite: MEC 305 and MEC 300

2 credits

MEC 320: Engineering Design Methodology and Optimization

The general process of engineering design as a systematic and disciplined process. Covers materials related to the formulation of design specifications and criteria; conceptual design and evaluation of the design options; design creativity; formulation of analyzable models; simulation and optimization techniques; design for manufacture; design for reliability; engineering economics; and engineering ethics.

Prerequisites: MEC 102 or 111 or 112 or CSE 114 or 130 or ESG 111

Corequisite: MEC 310

3 credits

MEC 325: Manufacturing Processes

The relationship between product design and manufacturing. Materials properties and influence. Introduces traditional and

nontraditional manufacturing processes and their capabilities and limitations. Measurement inspection, reliability, and quality engineering. Economic impact of modern process engineering. Hands-on experience in various manufacturing machines and processes.

Prerequisite: ESG 332

Pre- or Corequisite: MEC 125

3 credits

MEC 325: Manufacturing Processes

The relationship between product design and manufacturing. Materials properties and influence. Introduces traditional and nontraditional manufacturing processes and their capabilities and limitations. Measurement inspection, reliability, and quality engineering. Economic impact of modern process engineering. Hands-on experience in the fundamentals of machining including metrology tools, saw, sheet metal working, drilling, reaming, tapping, turning, boring, milling, welding, and rapid prototyping. Spring, 3 credits.

3 credits, Letter graded (A, A-, B+, etc.)

MEC 363: Mechanics of Solids

Stress and deformation of engineering structures and the influence of the mechanical behavior of materials. Concepts of stress and strain, constitutive relations, analysis of statically indeterminate systems, study of simple bars and beams, and stability conditions. Emphasis on force equilibrium, elastic response of materials, geometric compatibility, Mohr's circle, stresses and deflections in beams, and torsion and buckling of rods. Design for bending, shear, and combined states of stress.

Prerequisite: A grade of "C" or better in MEC 260

3 credits

MEC 364: Introduction to Fluid Mechanics

Fundamental properties of fluids and their conservation laws with applications to the design and evaluation of flows of engineering interest. Topics include hydrostatics, surface tension, dimensional analysis and dynamic similitude, Euler's equation, rotating coordinate systems, boundary layers, lubrication, drag on immersed bodies, open channel and pipe flows, and turbomachinery.

Prerequisite: MEC 262; MEC Major

Pre- or Corequisite: MEC 301

3 credits

MEC 391: Introduction to Automotive Engineering I

First part of a year-long course. Review of Society of Automotive Engineers (SAE) Collegiate Design competitions of past years and the rules of specific competitions and other competition-related issues. Selected engineering topics and mathematical/software tools are introduced including their application to solving engineering problems and to achieving design objectives. Students who enroll in MEC 391 must complete MEC 392 in the subsequent semester and receive only one grade upon completion of the sequence.

Prerequisites: MEC 262 and 363; MEC Major
1 credit

MEC 392: Introduction to Automotive Engineering II

A continuation of MEC 391. Students who enroll in MEC 391 must complete MEC 392 in the subsequent semester and receive only one grade upon completion of the sequence.

Prerequisite: MEC 391; MEC Major
2 credits

MEC 393: Engineering Fluid Mechanics

The application of the principles of fluid mechanics to important areas of engineering practice such as turbomachinery, hydraulics, and wave propagation. Prepares students for advanced coursework in fluid dynamics. Extends the study of viscous effects, compressibility, and inertia begun in MEC 364.

Prerequisite: MEC 364

3 credits

MEC 398: Thermodynamics II

Psychrometrics and psychrometric charts. Thermodynamic considerations for the design and performance of cooling towers, humidifiers, and dehumidifiers. Reacting mixtures, combustion, and chemical equilibrium. Thermodynamics of fluid flow, simple compression, and expansion processes. Analysis and design of gas and vapor power cycles. Cycles with reheat, intercooling, and cogeneration plants. Refrigeration cycles.

Prerequisites: MEC 301 and 364

3 credits

MEC 400: Research and Nanotechnology

This is the capstone course for the minor in Nanotechnology Studies (NTS). Students learn primary aspects of the professional research enterprise through writing a journal-quality manuscript and making professional presentations on their independent research (499) projects in a formal symposium setting. Students will also learn how to construct

a grant proposal (a typical NSF graduate fellowship proposal), methods to search for research/fellowship funding, and key factors in being a research mentor.

Prerequisites: MEC 213; at least one semester of independent research (499 level)

3 credits

MEC 402: Mechanical Vibrations

Modeling, analysis and design for mechanical vibrations. Fundamentals of free vibration, harmonically excited vibration and vibration under general forcing conditions are considered for one degree, two degree and multidegree of freedom systems; continuous systems; vibration design strategies including isolation and absorbers.

Prerequisites: MEC 262 and 363

3 credits

MEC 410: Design of Machine Elements

Application of analytical methods, material science, and mechanics to problems in design and analysis of machine components. Includes the design of mechanical components such as bearings, gears, shafting, springs, fasteners, belts, clutches, and brakes, and takes into consideration factors such as manufacturability and reliability. Design projects with open-ended and interactive problems are assigned to integrate several machine elements in a system.

Prerequisites: MEC 310 and 363

3 credits

MEC 411: Control System Analysis and Design

Analysis and design of feedback control systems. Topics include system modeling; transfer function; block diagram and signal-flow graph; sensors, actuators, and control circuit design; control system characteristics and performance; stability analysis; root locus method; Bode diagram; PID and lead-lag compensator design.

Prerequisites: MEC 262; AMS 361 or MAT 303

4 credits

MEC 422: Thermal System Design

Device design and system design. Quantitative data for system design including operating characteristics of compressors, turbines, heat exchangers, piping systems, internal combustion engines, and other component equipment. Component matching and system simulation. Optimization including thermoeconomic evaluation and energy analysis. Case studies: refrigeration and air

conditioning systems, combined cycles, steam-injected gas turbines.

Prerequisite: MEC 305

3 credits

MEC 440: Mechanical Engineering Design I

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

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

Corequisites: MEC 410 and 411

3 credits

MEC 441: Mechanical Engineering Design II

Part II of the two-semester capstone design project sequence. Students complete the project design, build and test a prototype, write a mid-term report and a final design report, and give an oral presentation. Not counted as a technical elective. Laboratory fee required.

Prerequisite: MEC 440

3 credits

MEC 442: Introduction to Experimental Stress Analysis

The concepts of three-dimensional stress and strain, their transformation laws, and their mutual relationships are discussed in detail. Results from theory of elasticity as pertinent to experimental stress analysis are also presented. Experimental techniques studied include two-dimensional photoelasticity, resistance strain gauge, moiré method, brittle coating, and analog methods. The application of different techniques to the measurement of stress and strain in models as well as actual structures is demonstrated. Students form small groups and each group is assigned different laboratory projects to gain experience in various experimental stress analysis methods. Previously offered as MEC 342.

Prerequisite: MEC 363

3 credits

MEC 450: Mechatronics

An introduction to the design, modeling, analysis, and control of mechatronic systems (smart systems comprising mechanical, electrical, and software components).

Fundamentals of the basic components needed for the design and control of mechatronic systems, including sensors, actuators, data acquisition systems, microprocessors, programmable logic controllers, and I/O systems, are covered. Hands-on experience in designing and building practical mechatronic systems is provided through integrated lab activities.

Prerequisites: MEC 310 and 316

3 credits

MEC 455: Applied Stress Analysis

A study of linear elastic solids with emphasis on internal stress analysis. Simple boundary value problems at plane structures are analyzed with various solution techniques. Major topics are stress and strain tensors, linear elasticity, principle of virtual work, torsion, stress functions, stress concentration, elementary fracture, and plasticity.

Prerequisite: MEC 363

3 credits

MEC 460: Introduction to Robotics: Theory and Applications

Robot components and mechatronic aspects of robotics (sensors, actuators, end effectors, system integration). Rotation, translation, rigid-body transform. Robotics foundations in kinematics and inverse kinematics, dynamics, serial and parallel manipulators and their duality. Introduction to mobile robots and LEGO Robotics, control theories, motion planning, trajectory generation, grasping and manipulation, robotic programming language, industrial robotics, manufacturing automation, and societal impacts. Hands-on projects. Not for credit in addition to CSE 378.

Prerequisites: MEC 262; U4 standing

3 credits

MEC 470: Introduction to Tribology

Focus is on the fundamentals of tribology, the science of surfaces in relative motion, with an introduction to friction, lubrication, and wear. The basics of tribology science: engineering surfaces, contact mechanics, lubrication theory, wear processes and modeling, wear properties of materials, and tribology test methods will be covered. Analysis of tribological aspects of machine components and bearings. Industrial case studies will be presented to place the topics in context to industry and society.

Prerequisites: MEC 363 and 364

3 credits

MEC 475: Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course. The student receives regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.

Prerequisites: U4 standing; a minimum g.p.a. of 3.00 in all Stony Brook courses and the grade of B or better in the course in which the student is to assist; permission of department

3 credits

MEC 488: Mechanical Engineering Internship

Participation in off-campus engineering practice. Students are required to submit a proposal to the department at the time of registration and two term reports before the end of the semester. May be repeated up to a limit of 12 credits.

Prerequisite: Permission of undergraduate program director

3-9 credits, S/U grading

MEC 490: Topics in Mechanical Engineering

Treatment of an area of mechanical engineering that expands upon the undergraduate curriculum. Topics may include advanced material in a specialty, development of a specialized experimental technique, or a specific area of design. Topics may vary from semester to semester. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing in a B.E. degree major; permission of department (course prerequisites vary with topic)

1-4 credits

MEC 491: Topics in Mechanical Engineering

Treatment of an area of mechanical engineering that expands upon the undergraduate curriculum. Topics may include advanced material in a specialty, development of a specialized experimental technique, or a specific area of design. Topics may vary from semester to semester. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing in a B.E. degree major; permission of department (course prerequisites vary with topic)

1-4 credits

MEC 492: Topics in Mechanical Engineering

Treatment of an area of mechanical engineering that expands upon the undergraduate curriculum. Topics may include advanced material in a specialty, development of a specialized experimental technique, or a specific area of design. Topics may vary from semester to semester. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing in a B.E. degree major; permission of department (course prerequisites vary with topic)

1-4 credits

MEC 495: Professional Engineering Seminar

Prepares the student to enter the workplace as a practicing engineer. Topics include professional ethics, professional activities, professional engineering licensing, patents, seeking entry-level employment, and exposure to the engineering work environment. Aids in preparation for the EIT/FE exam. Includes speakers from a variety of disciplines, within the College and from industry.

Prerequisites: CEAS major; U4 standing
1 credit, S/U grading

MEC 499: Research in Mechanical Engineering

An independent research project under the supervision of a mechanical engineering faculty member. Permission to register requires the agreement of the faculty member to supervise the research and submission of a one-page research proposal. May be repeated but only six credits of research electives may be counted as technical electives.

Prerequisite: Permission of department

0-3 credits

MUS

Music

MUS 101- D: Introduction to Music

The basic concepts of music such as melody, harmony, rhythm, counterpoint, and form are studied through investigation of the historical and contemporary masterpieces of the Western classical tradition, of various non-Western musics, and of various "popular" traditions. The different styles and types of music are considered not only in light of the cultural values they embody, but also in relation to present-day cultural and musical values. No previous musical training is assumed. Not for credit after MUS 130.

3 credits

MUS 105- G: Music Cultures of the World

An introduction to selected musical genres and styles from around the world with an emphasis on music making in relation to the social and cultural practices of various peoples. Not for music major credit.

3 credits

MUS 109- D: Rock Music

A study of rock music, including an investigation of its musical constituents--rhythm, form, pitch structure, instrumental texture, and vocal style--and an historical survey beginning with the roots of rock in earlier folk and popular styles and tracing its development from the end of World War II to the present. Special attention is paid to various syntheses of African and European traditions.

3 credits

MUS 119- D: The Elements of Music

Beginning with the rudiments of music, such as meter, tempo, rhythm, and how to read notes in several clefs, this "hands on" course goes on to examine how music is organized, covering scales, keys, intervals, chords, form, and style in classical music. Students also compose throughout the semester and sharpen their listening skills through attendance at concerts. Serves as prerequisite to many music department courses.

3 credits

MUS 120: Elementary Musicianship

Beginning ear-training, including harmonic, rhythmic and melodic dictation, interval and chord recognition, and sight-singing of diatonic melodies. Intended for students who are not prepared to enter MUS 121 but who aspire to be music majors. May be repeated, but credit counts toward graduation only once. Not for music major credit.

Prerequisite: MUS 119 or 130 or placement by undergraduate musicianship examination

2 credits

MUS 121: Musicianship I

Sight-singing, dictation, and transcription of melodic, harmonic, and rhythmic material.

Prerequisite: Placement by undergraduate musicianship examination (consult department concerning dates)

Corequisites: MUS 122 and 321

2 credits

MUS 122: Beginning Keyboard

Basic keyboard skills, including reading in clefs and rudimentary technical competence.

Prerequisite: Placement by undergraduate keyboard examination

Corequisites for Music majors: MUS 121 and MUS 321

1 credit

MUS 130- D: Sound Structures

Development of strategies for informed listening, analysis, and writing about music. Topics include timbre and sonority, meter and rhythm, melodic design, form, organization of pitch and harmony, and interactions between music and language. Repertory is drawn from a wide range of historical periods and cultural contexts. Considerable emphasis on writing and on acquiring concepts and vocabulary appropriate to diverse types of music.

Prerequisite: Primarily intended for prospective music majors and minors; others with sufficient musical background by permission of instructor.

3 credits

MUS 141: Keyboard Harmony A

Practical studies in music theory through basic keyboard exercises.

Prerequisite: MUS 122

Corequisites: MUS 220 and 321

1 credit

MUS 142: Keyboard Harmony B

Practical studies in music theory through basic keyboard exercises.

Prerequisite: MUS 141

Corequisites: MUS 221 and 323

1 credit

MUS 161: Piano

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 391

2 credits

MUS 163: Harpsichord

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 391

2 credits

MUS 165: Violin

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisite: Audition required

Corequisite: MUS 262

2 credits

MUS 166: Viola

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisite: Audition required

Corequisite: MUS 262

2 credits

MUS 167: Cello

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisite: Audition required

Corequisite: MUS 262

2 credits

MUS 168: String Bass

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

2 credits

MUS 169: Classical Guitar

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 391

2 credits

MUS 170: Flute

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and,

enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

2 credits

MUS 171: Oboe

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263

2 credits

MUS 172: Clarinet

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263

2 credits

MUS 173: Bassoon

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263

2 credits

MUS 175: Horn

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

2 credits

MUS 176: Trumpet

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

2 credits

MUS 177: Trombone

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

2 credits

MUS 180: Percussion

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

2 credits

MUS 182: Voice

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 261

2 credits

MUS 187: Other Instruments

A forty-five-minute individual lesson each week, with five hours of practice required. Students are required to play for a jury at the end of each term. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisite: Audition required

Corequisite: MUS 262 or 263 or 264

2 credits

MUS 189: Beginning Jazz Improvisation

Beginning study of jazz theory, nomenclature, and chord-scale relationships as they relate to the playing of improvised jazz solos. In-class performances and transcription analysis are an integral part of the course. May be repeated.

Prerequisite: Audition required

1 credit

MUS 208: Introduction to Media Technology

A survey and hands-on introduction to digital media. Students are introduced to the practical,

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

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

3 credits

MUS 220: Musicianship II

Sight-singing, dictation, and transcription of more complex melodic, harmonic, and rhythmic material, including diatonic chord progressions.

Prerequisite: MUS 121 and MUS 321

Corequisite for Music majors: MUS 141 and MUS 322

2 credits

MUS 221: Musicianship III

Advanced sight-singing and dictation, including modal, modulating, and chromatic melodies; chord progressions and diatonic and modulating chorales; and complex rhythms.

Prerequisite: MUS 141 and 220

Corequisite: MUS 142 and 323

2 credits

MUS 261: Stony Brook Chorale

Study and performance of a repertoire from the Middle Ages to the present. Grading is based upon attendance. Ability to read music is required; advanced sight-reading is not. May be repeated.

Prerequisite: Audition, held at first class meeting; ability to read music

1 credit

MUS 262: University Orchestra

Study and performance of works from the repertoire of the concert orchestra. Grading is based upon attendance. May be repeated.

Prerequisite: Audition required

1 credit

MUS 263: University Wind Ensemble

Study and performance of works for ensembles of woodwinds, brass, and percussion in various combinations. Grading is based upon attendance. May be repeated.

Prerequisite: Audition required

1 credit

MUS 264: Big Band Jazz Ensemble

Study and performance of works for jazz ensemble. Grading is based on attendance. May be repeated.

Prerequisite: Audition required

1 credit

MUS 265: Workshop in Performance

Practice in performance skills in a small group workshop setting under the guidance of a performance instructor. May be repeated.

Prerequisite: Audition required

1 credit

MUS 266: Guitar Workshop

An overview of guitar technique and fingerboard harmony, featuring in-class performance, transcription of tablature systems, and arranging for solo guitar. May be repeated.

Prerequisite: Audition required

1 credit

MUS 267: Jazz Combo

Arranging and extended improvising skills for the small jazz ensemble. Emphasis on in-class performances, transcription assignments, and learning standard jazz compositions. May be repeated.

Prerequisite: Audition required

1 credit

MUS 268: Stony Brook Seawolves Marching Band

The study and performance of music from the marching band repertoire. The course requires attendance at a marching band camp prior to the beginning of the Fall term. Attendance at home games and one away game is also required. Grading is based on attendance. May be repeated.

Prerequisite: must be able to read music

1 credit

MUS 289: Intermediate Jazz Improvisation

Intermediate study of jazz theory, nomenclature, and chord-scale relationships as they relate to the playing of improvised jazz solos. In-class performances and transcription analysis are an integral part of the course. May be repeated.

Prerequisite: Audition required

1 credit

MUS 290: Vocal Repertory

Performance and analysis of works from the vocal repertory. May be repeated.

Corequisite: MUS 182 or 382

1 credit

MUS 300- H: Music, Technology, and Digital Culture

Study of the interactions between music, technology, and culture in popular and concert music since World War I. Issues of production, distribution, and reception, involving such topics as the impact of radio on composition in the 1920s and 1930s, early synthesizers, and the rise of electronic music, digital sampling and DJs, the MP3 phenomenon, cross-cultural borrowings, gender and technology, the internet, interactivity, and new models of consumption. Not for major credit.

Prerequisite: One of the following: MUS 101, 105, 106, 119, or 130

3 credits

MUS 301- I: Music of the Baroque

The development during the late Renaissance of a new style in Italy and elsewhere is traced through opera and oratorio, cantata and chorale, concerto, suite, and trio sonata, to its ultimate expression in the works of Handel, Bach, and their contemporaries. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130

3 credits

MUS 302- I: The Music of J.S. Bach

Study of the vocal and instrumental works of Johann Sebastian Bach, considering the cultural and musical traditions in which they were grounded and their continuing impact on musical developments from the Bach revival of the 19th century to the "authentic" performance practice movement of the 20th century. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130

3 credits

MUS 303- I: The Music of Beethoven

Study of the symphonic, vocal, and chamber music of Ludwig van Beethoven, one of the pivotal composers of the Western world, through consideration of the cultural and musical context of late 18th- and early 19th-century Europe and of the heroic image of Beethoven in the 20th century. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130

3 credits

MUS 304- K: Contemporary Traditions in American Music: 1900 to the Present

Study of the development of diverse 20th-century musical traditions in the U.S. from the perspectives of the musical structures and social contexts that define an "American music." The traditions of jazz, blues, musical theatre, folk music, and popular music are considered, for instance, with respect to such issues as how historical events, race, and gender affect the production and reception of music, how philosophical beliefs shape musical composition, and how technological changes resulted in the music "consumer." Not for music major credit.

Prerequisite: MUS 101 or 119 or 130

Advisory Prerequisite: Completion of D.E.C. categories I and J

3 credits

MUS 305- G: Music in the Romantic Era

The expressive art of the century between the birth of Schubert and the death of Brahms is examined in selected works of these and other figures such as Berlioz, Mendelssohn, Chopin, Schumann, Liszt, Wagner, and Verdi. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130

3 credits

MUS 306- G: The Symphony

Study of important symphonic works from the 18th century to the present. The course will concentrate on the development of styles from Haydn, Mozart, and Beethoven through the Romantics, Brahms, and Mahler, concluding with the transformation of the symphonic idea in works of Stravinsky and Webern. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130

3 credits

MUS 307- I: Imaginative Worlds of Opera

Considering opera's blend of drama, music, spectacle and stage action, the course examines diverse European operatic traditions from a variety of angles, ranging from expressive roles for music to social and cultural values embodied in individual works. Study focuses on outstanding repertory pieces such as Mozart's *Marriage of Figaro*, Verdi's *Otello*, and Berg's *Wozzeck*. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130

3 credits

MUS 308- K: History of Jazz

Historical survey of jazz styles from their antecedents in the late 19th century and early ragtime and blues, through New Orleans jazz, swing, bebop, "cool" jazz, "free" jazz, fusion,

and Latin styles. Guidance in the appreciation of jazz and related musics, musical analysis of representative works, and demonstrations of improvisation. Jazz as an expression of cultural pluralism. Not for music major credit.

Prerequisite: MUS 101 or 109 or 119 or 130

Advisory Prerequisite: Completion of D.E.C. categories I and J

3 credits

MUS 309- G: Music Since 1900

An introduction to the variegated and rapidly changing trends of the last and current centuries, including impressionism, expressionism, neoclassicism, twelve-tone and other serialism, chance and texture music, electronic and computer music, as well as styles derived from folk music, jazz, and other forms of popular music. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130

3 credits

MUS 310- K: Music and Culture in the 1960's

The music of Bob Dylan, John Cage, the Beatles, Pauline Oliveros, Ornette Coleman, Elliot Carter, John Coltrane, Laura Nyro, and others is studied in conjunction with texts from or criticism of the 1960s. Music and texts are correlated through the topics of chaos, protest, Black culture, technology, the women's movement, youth culture, and others. Not for music major credit.

Prerequisite: MUS 101 or 119 or 130

3 credits

MUS 311- J: Topics in Non-Western Music

A survey of 20th-century musical styles within a selected non-Western area. Individual genres are examined in terms of their musical features and in their relationship to aspects of life such as religious observance, social relations, issues of ethnic and national identity, migration, and transnational cultural exchange. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: One of the following: MUS 101, 105, 106, 119, or 130

3 credits

MUS 312- J: Music in the Middle East

A survey of traditional and contemporary musics of Turkey, Iran, Israel, and the Arab world. Musics of rural and urban communities are examined both in terms of their structure and style, and in the ways that they relate to aspects of Middle Eastern life such as

religious observance, social relations, ethnic and national identity, modernization, and emigration. Not for music major credit.

Prerequisite: One of the following: MUS 101, 105, 106, 119, or 130

3 credits

MUS 313- G: Cross-Cultural Musics from Stravinsky to World Beat

An investigation into cross-cultural exchanges in Western and non-Western classical and popular musics in the 20th century, exploring the political and social contexts of, the role of technology in, and the aesthetic and ethical implications of musical borrowings. Among the topics covered are turn-of-the-century exoticism, uses of folk music by classical composers, mutual borrowings between the West and Indonesia, Middle Eastern music and the West, and Paul Simon and the music of South Africa. Not for music major credit.

Prerequisite: One of the following: MUS 101, 105, 106, 119, or 130

3 credits

MUS 314- G: Women Making Music

A study of the contributions made by women to music-making in various contemporary and historical cultures of the world, with emphasis on Western traditions. Topics include women as composers, performers, and listeners; genres designed for women; women's roles in relation to men's; gender implications in musical style; and depictions of women in musical dramas. All types of music are considered: "classical," rock, pop, folk, jazz, various "fusions," and non-Western musics such as those from India, China, Indonesia, and the Middle East. This course is offered as both MUS 314 and WST 314.

Prerequisite: MUS 101 or 119 or 130

3 credits

MUS 315: The Structural Principles of Music I

An introduction to the language and basic structural concepts of the art of tonal music through the study of such elements as melody, rhythm, harmony, counterpoint, and form; analysis, written exercises, and discussion of theoretical principles. Not for music major credit.

Prerequisite: MUS 119

3 credits

MUS 316: The Structural Principles of Music II

An introduction to the language and basic structural concepts of the art of 20th-century music through the study of such elements

as melody, rhythm, harmony, counterpoint, and form; analysis, written exercises, and discussion of theoretical principles. Not for music major credit.

Prerequisite: MUS 315

3 credits

MUS 317: Interactive Media, Performance, and Installation

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

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

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

3 credits

MUS 318: Movie Making: Shoot, Edit, Score

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

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

3 credits

MUS 319- J: Music in Latin America

Survey of music originating in Latin America, featuring both a historical overview and in-depth case studies from various parts of the region. Musical types covered may include: the local, traditional, and folkloric styles; the mediated and hybrid styles generally associated with urban youth populations; and music of the Latin American concert repertoire. The music is studied with respect to the ways it has served as a vital means through which to articulate ethnicity, nationality, modernity, and other key aspects of individual and social identity.

Prerequisite: One of the following: MUS 101, 105, 106, 119, or 130

3 credits

MUS 320- G: U.S. Popular Music

The study of popular music in the United States. Topics may include popular music in the U.S. since 1945; American popular music of colonial times; and American musical theatre. The course explores such aspects as musical structure and form, the nature of the commercial music industry, and how issues of gender, race, geography, economics, and technology affect the creation, performance, and reception of popular music. Not for music major credit.

Prerequisite: One of the following: MUS 101, 105, 106, 119, or 130

3 credits

MUS 321: Tonal Harmony I

Tonal harmony taught through practice in homophonic writing, including the harmonization of chorales. Students study excerpts from the musical repertoire as it pertains to questions of musical construction.

Corequisites: MUS 121 and 122

3 credits

MUS 322: Tonal Harmony II

Practice in homophonic writing, including the harmonization of chorales, including diatonic harmonies, altered chords, and modulation.

Prerequisites: MUS 121, 122, and 321

Corequisites: MUS 141 and 220

3 credits

MUS 323: Techniques of Music, 1880 to the Present

Study and practice in the techniques used in the late 19th and 20th centuries to organize pitch, rhythm, tone color, and dynamics.

Prerequisites: MUS 141, 220, and 322

Corequisites: MUS 142 and 221

3 credits

MUS 324- K & 4: Jazz and American Culture

An exploration of African American jazz and its importance and representation in American history and culture. We will consider novels, poems, stories, paintings, and photographs with jazz content as well as films by both Hollywood and documentary filmmakers. Special emphasis will be given to the myths that have dominated representations of jazz artists as well as the ways in which jazz artists have inspired artists and writers. This course is offered as both CCS 324 and MUS 324.

Prerequisite: MUS 308 or one course in CCS, CLT, or HUM

3 credits

MUS 331: Musicianship IV

Sight-singing and dictation of complex tonal, modal, and atonal material. Special emphasis on melodic, harmonic, and rhythmic idioms characteristic of 20th-century music.

Prerequisite: MUS 221, 142, and 322

2 credits

MUS 339: Beginning Composition

Individual projects in composition discussed and criticized in class. Enrollment limited to eight. May be repeated once.

Pre- or Corequisite: MUS 323

3 credits

MUS 340: Introduction to Music Technologies

An introduction to the computer-based technologies that are changing the art of music. Hands-on experience with hard-disk recording and sound manipulation, MIDI sequencing, notation programs, sound module programming, and using the Web. Exploration of the impact of these technologies on aesthetic choices. Significant time in the computer lab required.

Prerequisites: MUS 130 and 322

3 credits

MUS 341: Sound Design

An investigation into the scientific, formal and artistic qualities of sound developed for students who may or may not have had formal musical training. Students will write reviews of sound pieces, create film or game soundtracks, and create sound-based artworks in response to course content, and write a paper on acoustic or psycho-acoustic phenomena. Emphasis is on studio production techniques, history of sound art and basic acoustics. Students will work on Apple computers in the SINC site and LTA. This course is offered as ARS 341, MUS 341, and THR 341.

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

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

3 credits

MUS 344: Audio Engineering

A theoretical examination of the principals of operation of the essential components of the sound recording and reinforcement chain from acoustic venue, through transduction, electronic manipulation and storage, and the reproduction of the acoustic field in various listening environments.

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

Advisory Prerequisite: ARS/MUS/THR 208

3 credits

MUS 350- G: Western Music Before 1600

The vibrant traditions of Western music from Gregorian chant and the beginnings of polyphony to the suave motets of Palestrina and the expressive madrigals of Monteverdi. Emphasis is on learning to think historically, on development of writing skills, and on cultivation of listening skills.

Prerequisite: MUS 130, 141, 220, and 321

4 credits

MUS 351- I: Western Music 1600-1830

Musical traditions in early modern Europe from Monteverdi through Beethoven.

Study of diverse genres such as opera, cantata, symphony, and string quartet within their cultural contexts. Focus is on the understanding of historical processes, on academic prose writing, and on comprehension of complex musical structures.

Prerequisites: MUS 321 and 350

4 credits

MUS 352- G: Western Music from 1830 to the Present

Western musical traditions from Schubert through David Lang, John Zorn, and Laurie Anderson. Consideration of the central genres of orchestral, vocal, and chamber music and their transformations by various cultural and technological forces. Focus on music stylistic change and proliferation, and on academic writing about music.

Prerequisite: MUS 322 and 351

4 credits

MUS 355- G: Special Topics in Music

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

Prerequisite: One of the following: MUS 101, 105, 106, 119, or 130

3 credits

MUS 361: Piano

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 391

4 credits

MUS 363: Harpsichord

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 391

4 credits

MUS 365: Violin

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisite: Audition required

Corequisite: MUS 262

4 credits

MUS 366: Viola

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisite: Audition required

Corequisite: MUS 262

4 credits

MUS 367: Cello

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisite: Audition required

Corequisite: MUS 262

4 credits

MUS 368: String Bass

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

4 credits

MUS 369: Classical Guitar

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 391

4 credits

MUS 370: Flute

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

4 credits

MUS 371: Oboe

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263

4 credits

MUS 372: Clarinet

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263

4 credits

MUS 373: Bassoon

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263

4 credits

MUS 375: Horn

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

4 credits

MUS 376: Trumpet

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

4 credits

MUS 377: Trombone

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

4 credits

MUS 380: Percussion

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 262 or 263 or 264

4 credits

MUS 382: Voice

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisites: Audition required

Corequisite: MUS 261

4 credits

MUS 387: Other Instruments

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons are taught either (a) by a member of the music faculty, (b) by a teaching assistant, or (c) by an approved off-campus teacher. Students are required to play for a jury at the end of each term. May be repeated.

Prerequisite: Audition required

Corequisite: MUS 262 or 263 or 264

4 credits

MUS 388: Fundamentals of Accompanying

Development of skills required of an accompanist, including sight-reading and instrumental and vocal accompaniment. Specific accompanying assignments are made throughout the semester. May be repeated once.

Prerequisite: MUS 161 or 361

2 credits

MUS 389: Advanced Jazz Improvisation

Advanced study of jazz theory, nomenclature, and chord-scale relationships as they relate to the playing of improvised jazz solos. In-class performances and transcription analysis are an integral part of the course. May be repeated.

Prerequisite: Audition required

1 credit

MUS 391: Chamber Music

Ensembles formed by students enrolled in MUS 161 to 187 or MUS 361 to 387 Performance Study. Two hours of rehearsal per week under the supervision of a faculty member or graduate assistant. May be repeated.

Corequisite: Enrollment in private lessons, MUS 161 through 187, as appropriate

1 credit

MUS 421: Analysis of Tonal Music

An examination, through the study of selected works, of the action and interaction of harmonic progression, rhythm, meter, motive, texture, and line in defining and articulating tonal structures.

Prerequisite: MUS 322

Corequisite: MUS 331

3 credits

MUS 422: Analysis of Post-Tonal Music

Music to be studied is selected from representative works by Debussy, Bartok, Schoenberg, Stravinsky, Webern, and other composers of the 20th and 21st centuries.

Prerequisite: MUS 421

Advisory Prerequisite: MUS 352

3 credits

MUS 432: Tonal Counterpoint

A study of the art of combining voices under the conditions of tonal harmony as observed in works from Bach through the romantic composers.

Prerequisite: MUS 322

Advisory Prerequisite: MUS 351

3 credits

MUS 434: Orchestration

The possibilities and limitations of the commonly used instruments, conventions of notation, and practice in scoring for various ensembles.

Prerequisite: MUS 322

Advisory Prerequisite: MUS 323, MUS 350-352

3 credits

MUS 437: Electronic Music

Historical background, musical works, aesthetic concepts and creative approaches to electronic music. Basic acoustics and sound engineering skills; electronic/live sound production, recording, modification, and editing; critical listening, improvisation, timbral design; musique concrete and live performance will be included. Studio work includes technical practice and creative assignments. Technical background is not required.

Prerequisite: MUS 321; permission of instructor

3 credits

MUS 439: Composition

Open only to students demonstrating sufficient aptitude and capacity for original work. May be repeated.

Prerequisite: Permission of instructor

Advisory Prerequisite: MUS 339

3 credits

MUS 450: Seminar in the History of Music

Advanced study of a topic in music history for music majors. Topics may include study of major composers, major genres, dramatic music, the relation of music and poetry in song, or an historically or geographically defined musical style. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Advisory Prerequisite: MUS 350-352; MUS 322 or 323, depending on topic

3 credits

MUS 475: Undergraduate Teaching Practicum I

Each student receives regularly scheduled supervision from the instructor of the course specified as the forum for the practicum. Responsibilities may include conducting recitation sections of lower-division courses,

preparing material for practice or discussion, and helping students with course problems.

Prerequisite: U3 or U4 standing; music major; permission of instructor and department

3 credits, S/U grading

MUS 476: Undergraduate Teaching Practicum II

Each student receives regularly scheduled supervision from the instructor of the course specified as the forum for the practicum. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.

Prerequisites: MUS 475; permission of instructor and department

3 credits, S/U grading

MUS 487: Independent Project

Individual study under the guidance of a faculty member leading to a major essay or composition. May be repeated.

Prerequisite: Permission of instructor; approval of department's undergraduate studies committee

0-6 credits

MUS 488: Internship

Internship projects arranged in consultation with a faculty member and an outside agency.

Prerequisite: U3 or U4 standing; 15 credits in music department courses; permission of department

0-6 credits, S/U grading

MUS 491: Conducting

Manual technique and the analysis and preparation of scores for performance. May be repeated.

Prerequisite: MUS 322; permission of instructor

Corequisite: MUS 261 or 262 or 263

3 credits

MVL

Medieval Studies

MVL 141- B: The Legend of King Arthur

A study of the development of the legend of King Arthur from the earliest references in medieval English chronicles through the flowering and fixing of the tradition in French and German literary works of the High and Late Middle Ages. Among the texts considered are works by Bede, Giraldus Cambrensis, Geoffrey of Monmouth, Chretien de Troyes,

Wolfram von Eschenbach, and Hartmann von Aue.

3 credits

MVL 241- G: Heroes and Warriors

A study of the warrior-hero in Western literature from the Greeks through the Middle Ages. Works include Homer's Iliad, the Poetic Edda, The Lay of Hildebrand, Beowulf, The Lay of the Nibelungen, and the Song of Roland.

Advisory Prerequisite: One course in medieval history or literature

3 credits

MVL 447: Independent Readings and Research

Independently supervised readings in selected topics in medieval studies. May be repeated.

Prerequisites: Permission of instructor and department

1-3 credits

MVL 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: U3 or U4 standing; permission of instructor and department

3 credits, S/U grading

MVL 476: Undergraduate Teaching Practicum II

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

Prerequisite: MVL 475; permission of instructor and department

3 credits, S/U grading

PHI

Philosophy

PHI 100- B: Concepts of the Person (II)

An historical introduction to philosophy through readings and discussion on topics such as human identity, human understanding, and human values.

3 credits

PHI 101- G: Historical Introduction to Western Philosophy (I)

An introduction to pivotal theories of the Western philosophic tradition. Readings may be drawn from ancient Greek, medieval, and modern classics of philosophy. Topics may include philosophic theories of politics, morality, logic, metaphysics, knowledge, anthropology, art, and religion.

3 credits

PHI 103- B: Philosophic Problems (II)

An introduction to philosophy through the analysis of one or more aspects of contemporary life such as technology, war, international relations, families and friendships, or race, class and gender. A variety of texts are used.

3 credits

PHI 104- B: Moral Reasoning (II)

An introduction to philosophy through inquiry into the formation, justification, and evaluation of moral judgments. Students are introduced to the major theories and problems of ethics, such as utilitarianism, Kant's categorical imperative, ethical relativism, egoism, and classical conceptions of the good and virtue. Against this background students engage in discussions of contemporary moral issues.

3 credits

PHI 105- G: Politics and Society (II)

An historical introduction to philosophy through an analysis of political theories, theories of action, and styles of political life. Main themes include the relation of the individual to the state, the scope of social responsibility, and the nature of human freedom.

3 credits

PHI 108- B: Logical and Critical Reasoning (II)

The principal aim of this course is to help a student acquire the skills of thinking, reading, and writing critically. The student develops a sensitivity to language and argumentation that is applicable to a wide range of situations and subject matters. Material is intended for freshmen and sophomores.

Prerequisite: Open to freshmen and sophomores, and to juniors and seniors who have not completed DEC B

3 credits

PHI 109- B: Philosophy and Literature in Social Context (III)

The role of literature and philosophy in understanding and critically assessing personal experience and social life. The links among literary texts, philosophical issues, and political and social commitments are explored. Topics include the relations between language and experience, the role of philosophical thinking through literary texts, and the significance of literary expression in different cultural and historical situations. This course is offered as both HUM 109 and PHI 109.

3 credits

PHI 110- B: Arts and Ideas (III)

An introduction to the historical and comparative study of the various arts in relation to the philosophical ideas that prevailed at the same time. At least four significantly different historical periods of intense creative activity - such as ancient Greece, the Renaissance, the 18th or 19th century in the West, ancient China, T'ang or Sung dynasty China, Heian or Muromachi period Japan, and the contemporary age - are studied in terms of the interconnections between philosophical theorizing and artistic practice.

3 credits

PHI 111- B: Introduction to Eastern Philosophy (I)

An introduction to different systems of Eastern philosophy and the main classical texts drawn from Hinduism, Buddhism, Taoism, Confucianism, and Neo-Confucianism. Efforts are made to recover the different modes of knowledge, language, identification, and liberation dealt with in these texts.

3 credits

PHI 220- C: Introduction to Symbolic Logic (II)

This first course in symbolic logic emphasizes the development of systematic techniques for assessing the validity of arguments: truth tables and truth values analysis, Venn diagrams, elementary quantification theory, and deduction in both the propositional calculus and quantification theory.

Prerequisite: Satisfaction of entry skill in mathematics requirement

Advisory Prerequisite: U2 standing or one course in philosophy

3 credits

PHI 247- G: Existentialism (I)

Readings in existential philosophy and literature with special emphasis on such themes as alienation, anxiety, nihilism, absurdity, the self, value, death, and immediacy. Existentialist categories are used to interpret contemporary lifestyles and culture.

Prerequisites: U2 standing; one course in philosophy

3 credits

PHI 264- D: Philosophy and the Arts (III)

A study of the arts focusing on the nature of the creative process, methods of interpretation, essential differences among the various arts, and the relation of performance to text.

Advisory Prerequisite: U2 standing or one PHI, ARH, MUS, or THR course

3 credits

PHI 277- G: Political Philosophy (II)

An inquiry into the function of philosophic principles in political thought and action, with readings drawn from such authors as Plato, Aristotle, Machiavelli, Spinoza, Hobbes, Locke, Kant, Hegel, Mill, and Dewey.

Prerequisite: U2 standing or one course in philosophy

Advisory Prerequisite: PHI 105

3 credits

PHI 284- G: Introduction to Feminist Theory

The social construction of gender and how this construction affects philosophical thought and practice. The course provides an introductory survey of current feminist issues and analyses. It also examines the meaning of feminism for philosophy by examining the effect of introducing a political analysis of gender into a discipline that is supposedly universal and neutral. This course is offered as both PHI 284 and WST 284.

Advisory Prerequisite: U2 standing or one PHI or WST course

3 credits

PHI 300- I: Ancient Philosophy (I)

Advanced studies in selected Greek thinkers from the pre-Socratics to the classical Athenian philosophers and the Hellenistic schools.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: PHI 200 or 206 or 208

3 credits

PHI 304- I: Medieval Philosophy (I)

Study of the writings of major thinkers from Augustine to William of Ockham.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: PHI 200

3 credits

PHI 306- I: Modern Philosophy (I)

Advanced studies in selected thinkers such as Descartes, Vico, Spinoza, Locke, Berkeley, Hume, and Kant.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: One of the following: PHI 200, 206, 208, 247, or 300

3 credits

PHI 308- I: 19th-Century Philosophy (I)

Study of major figures in 19th-century thought, such as Hegel, Schopenhauer, Marx, Mill, Nietzsche, Kierkegaard, Spencer, and Comte.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: One of the following: PHI 200, 206, 208, 247, 300, or 306

3 credits

PHI 309- I: 20th-Century Philosophy (I)

A study of selected major philosophical problems and movements during the 20th century, e.g., logical positivism, the problem of induction, incommensurability meta-ethics, the linguistic turn, deconstruction, foundationalism and anti-foundationalism.

Prerequisites: Two philosophy courses
Advisory Prerequisite: One of the following: PHI 206, 208, 220, 306, 308, 310

3 credits

PHI 310- K: American Philosophy (I)

A study of selected major figures in the history of American philosophy, e.g., Jefferson, Emerson, Edwards, James, Peirce, Dewey, Whitehead, and Santayana. American history is viewed through the lens of American philosophies such as pragmatism and transcendentalism.

Prerequisites: Two courses in philosophy
Advisory Prerequisites: One of the following: PHI 200, 206, 208, 247, 300, 306, or 308

3 credits

PHI 312- I: Topics in Contemporary European Thought (I)

Topics in major developments in contemporary European philosophy from 1900 to the present. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisites: Two courses in philosophy

Advisory Prereq: One of the following: PHI 200, 206, 208, 247, 300, 304, 306, 309, or 310
3 credits

PHI 320- G: Metaphysics (II)

An inquiry into the first principles of science, art, and action as these are treated by representative classical and modern authors.

Prerequisites: Two courses in philosophy
3 credits

PHI 325- G: Contemporary Philosophies of Language (II)

A discussion of current topics in the philosophy of language, semiotics, and literary theory.

Prerequisites: Two courses in philosophy
3 credits

PHI 330: Advanced Symbolic Logic (II)

A study of such topics as a natural deduction system of quantification theory including consistency and completeness proofs; axiomatic formal systems and associated concepts of consistency, completeness, and decidability; elementary modal logic; and introductory set theory.

Prerequisite: PHI 220

3 credits

PHI 332- G: Theories of Knowledge (II)

A study of a variety of conceptions of the structure and content of knowledge as found in classical and contemporary epistemologies. Fundamental methods and principles of philosophical inquiry are applied to questions about the ways in which concepts and theories are generated in the physical and social sciences and to questions about knowledge of what is of value, knowledge in philosophy, and knowledge in the arts.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: PSY 103

3 credits

PHI 335- G: Philosophy of Time (II)

An inquiry into the nature of time as it is treated by philosophers of classical and modern times.

Prerequisites: One course in philosophy or physics
3 credits

PHI 336- G: Philosophy of Religion (II)

A philosophical analysis of basic concepts, principles, and problems of religious thought. Topics may include faith and knowledge, religion and morality, divine attributes,

arguments for and against the existence of God, and the problem of evil.

Prerequisites: Two courses in philosophy or one course in religious studies

3 credits

PHI 340- J: Philosophical Traditions of East Asia (I)

A study of influences and confluences among major currents of thought in East Asia, surveying the major debates that shaped the great intellectual traditions of China and their transformation as they were assimilated in Korea and Japan. Particular attention is given to the rise of Neo-Confucian orthodoxy in East Asia and the philosophical and political reasons its basic concepts were challenged during the Ming, late Choson and Tokugawa periods.

Prerequisites: PHI 111 or RLS 240 or 246 or 260; one other course in philosophy

3 credits

PHI 344- J: Japanese Thought and Philosophy (I)

An examination of major texts in Japan's religious, poetic-artistic, and philosophical traditions down to modern times. Topics may include Tendai, Shingon, Pure Land, and Zen Buddhism; the cultural forms of Shinto religiosity; aesthetic concepts such as *miyabi*; Tokugawa Neo-Confucianism and its impact on modern Japan; philosophical aspects of the modern Japanese novel; the Kyoto school of Buddhism.

Prerequisites: PHI 111 or RLS 240 or 246 or 260; one other course in philosophy

3 credits

PHI 347- G: Hermeneutics and Deconstruction (II)

An exploration of the major assumptions, commitments, methods, and strategies of hermeneutics and deconstruction. The course examines how these two recent schools of thought have developed out of the contemporary philosophical scene and how they have had such a significant impact on literary theory, art criticism, text theory, social theory, and the history of philosophy. Readings include selections from the writing of Heidegger, Gadamer, Jaus, Ricoeur, Derrida, Kristeva, Lyotard, Kofman, Irigaray, and others.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: PHI 247, 264, 306, 308, or 312

3 credits

PHI 353- G: Philosophy of Mind (II)

Analysis of the major problems in the philosophy of mind, e.g., the mind-body problem, the problem of identity through time, the relation between thoughts and sensations, the problem of the knowledge of other minds.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: PSY 103

3 credits

PHI 363- G: Philosophy of the Social Sciences (III)

A study of the philosophical foundations of the social sciences, applying principles and methods of philosophical analysis to questions concerning the structures of social reality, the methodological and epistemological status of the social sciences, and the criteria for evidence and theory formation in the social sciences.

Prerequisites: One course in philosophy; completion of D.E.C. category F
Advisory Prerequisite: PHI 105, 206, 249, or 277

3 credits

PHI 364- H: Philosophy of Technology (III)

A systematic study of the interrelations of human beings and their social institutions with the surrounding world of nature and of technological artifacts. The impact of technological culture on human beliefs and perceptions of the world is explored. This course is interdisciplinary in scope, with readings from philosophy, anthropology, literature, history, environmental studies, and other areas where technology is of concern.

Prerequisites: One course in philosophy; completion of D.E.C. category E

3 credits

PHI 365- H: Philosophy and Computers (III)

An investigation of topics at the interface between philosophy and computation drawing on classical and contemporary sources. Philosophical questions about computers, computation, information, logic, language, and mind, and the prospects for computer modeling as a tool in philosophical investigation.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: PHI 220 or one course in computer science

3 credits

PHI 366- G: Philosophy and the Environment (III)

Philosophical questions raised by human relations with the natural world, ranging from basic concepts such as nature, ecology, the

earth, and wilderness, to the ethical, economic, political, and religious dimensions of current environmental problems, including the question of whether there are values inherent in nature itself beyond those determined by human interests alone.

Prerequisites: Two courses in philosophy, or one course in philosophy and completion of D.E.C. category E

3 credits

PHI 367- G: Philosophy of War and Peace (III)

An investigation into the philosophical issues raised by war and peace. Topics may include theories of just war, the relationship between authority, state power and war, and the relationship between reason and the violent nature of history. The question of the origins, perseverance, and need of war, as well as what is peace and how it may be attained will be considered through the study of philosophers such as Plato, Aquinas, Kant, Hegel, Marx, William James, Hannah Arendt, and contemporary thinkers.

Prerequisites: Two courses in philosophy
Advisory Prerequisites: PHI 104 and 105

3 credits

PHI 368- H: Philosophy of Science (III)

A course in the philosophy of science using both historical and contemporary materials. Methodological issues discussed include scientific explanation and prediction, the structure of theories, the nature of scientific revolutions, and the role of laws in science. Philosophic problems in understanding specific sciences and their relation to each other are also considered, as are their relations to other areas of philosophic concern, such as metaphysics.

Prerequisites: One course in philosophy; completion of D.E.C. category E
Advisory Prerequisites: PHI 206

3 credits

PHI 369: Philosophy of Mathematics (III)

An investigation of philosophical issues that arise in mathematics. Topics include foundational issues within mathematics (logicism, formalism, intuitionism, and platonism, as well as recent theories of mathematical naturalism); the nature and existence of mathematical objects; the nature of mathematical truth; the concept of set; reinterpretations of the history of mathematics.

Prerequisites: One course in philosophy; completion of D.E.C. category C
Advisory Prerequisites: PHI 206 and 220

3 credits

PHI 370- G: Philosophical Psychology (III)

An examination of philosophical issues and some psychological theories concerning the nature of the person and the sources of the self. The course includes such topics as the dimensions of the person, the nature of conscious life, the scope of human cognition, and gender identity.

Prerequisites: One course in philosophy
Advisory Prerequisite: PHI 100 or 103 or 104

3 credits

PHI 371- G: Literature and Justice

This course focuses on the theme of justice in literature and investigates the relation of literature to the law and to philosophical accounts of justice. Readings include literary texts centered on questions of justice, fairness, and moral agency, as well as theoretical works that analyze the role of literature in legal education and judicial decision-making. This course is offered as both CLT 371 and PHI 371.

Prerequisite: Completion of DEC B; U3 or U4 status

3 credits

PHI 372- G: Ethical Inquiry (II)

An intensive study of the methodological principles governing the formation of ethical theories and ethical judgments through an investigation of selected ethical problems.

Advisory Prerequisites: PHI 108, 200, 206, 208, 300, 304, 306, 308, 309, or 366

3 credits

PHI 373- G: Philosophy in Relation to Other Disciplines (III)

The study of philosophy as it affects and is affected by other disciplines such as anthropology, science, sociology, the history of ideas, theology, and psychology. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisites: Two courses in philosophy
3 credits

PHI 374- G: Philosophy in Relation to Other Disciplines (III)

The study of philosophy as it affects and is affected by other disciplines such as anthropology, science, sociology, the history of ideas, theology, and psychology. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisites: Two courses in philosophy
3 credits

PHI 375- G: Philosophy of Law (III)

An examination of the concept of law and the nature of legal reasoning. The course explores the relationship of law to other central philosophical and social ideas such as freedom, rights, morality, authority, welfare, property, justice, equality, and constitutionalism.

Prerequisites: Two courses in philosophy
3 credits

PHI 376- G: Philosophy and Medicine (III)

An investigation of the role that philosophical concepts play in medical thinking and practice. The course focuses on the philosophical foundations of concepts of health and disease; concepts of right, responsibility, and justice relevant to medical practice; promise-keeping and truth-telling in the doctor-patient relationship; and specific moral problems that arise in medical practice.

Prerequisites: Two courses in philosophy
Advisory Prerequisite: HIS 237 or 238 or SOC/HMC 200 or HMC 331

3 credits

PHI 377: Contemporary Political Philosophy (II)

A critical examination of selected issues in contemporary political philosophy, for example, the nature and justification of basic rights, the legitimization of political authority, and the various relations between ideals of social justice and democratic rule. Readings represent contemporary views such as libertarianism, liberalism, socialism, communitarianism, and feminism, and include selections by authors such as Rawls, Nozick, Dworkin, Walzer, Habermas, and Pateman. This course is offered as both PHI 377 and POL 377.

Prerequisites: Two courses in philosophy
Advisory Prerequisites: PHI 105 or 277 or 375; one upper-division political science course

3 credits

PHI 378- K: Philosophical Topics in Asian American History (III)

Analysis and interpretation of Asian and American literature, film, law, and history to understand the experiences of Asians in the Americas and to reconceptualize the concepts of power, race, class, gender, and ethnicity from the era of the early immigration period through the present day, placed within a broad historical context, including consideration of social, political, economic, and cultural history

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

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One course in philosophy

3 credits

PHI 379- K: Philosophy of Race (III)

Examination of our assumptions about race and the impact of those assumptions on issues concerning gender, class, and sexuality throughout American history. Readings include critical race theory, feminist theory, and critical legal theory. Students examine racial issues from a philosophical perspective and consider the ways in which representations of race may reinforce patterns of power and privilege. This course is offered as both AFH 379 and PHI 379.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One course in philosophy

3 credits

PHI 380- G: Literature and Philosophy (III)

An intensive study of the methods and principles of the philosophical analysis of literature and the relations between literature and philosophy. Primary texts are selected to demonstrate the precise nature of the relationship. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisites: One philosophy course; one literature course
Advisory Prerequisite: PHI 109 or 110

3 credits

PHI 381- G: Aesthetics (II)

An intensive study of methods and principles specific to the philosophical analysis of art through selected classical texts in aesthetics (e.g., Plato's *Phaedrus*, Aristotle's *Poetics*, Kant's *Critique of Judgment*, and Nietzsche's *The Birth of Tragedy*). Discussions focus on such problems as the ontology of the work of art, its epistemological significance, the relation between fact and fiction, criteria of interpretation, or the political import of art. Readings in the classical texts may be supplemented by selections from contemporary authors.

Prerequisites: Two courses in philosophy; completion of D.E.C. category D course
Advisory Prerequisites: PHI 109 or 110; PHI 264

3 credits

PHI 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 383- G: Philosophical Issues of Race and Gender (III)

Issues of race and gender and how the notion that racism and sexism are analogous forms of oppression aids and detracts from consideration of these issues. Examination of the dynamics of race and gender in various contexts such as activism, art, law, literature, the media, medicine, and philosophy. This course is offered as both PHI 383 and WST 383.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: One PHI or WST course

3 credits

PHI 384- G: Advanced Topics in Feminist Philosophy (III)

An intensive philosophical study of selected topics of feminist concern. Topics are selected to further the understanding of what effect feminism has upon traditional areas of philosophy as well as providing a detailed understanding of particular feminist theories. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes. This course is offered as both PHI 384 and WST 384.

Prerequisites: One PHI course; one WST course

Advisory Prerequisites: PHI/WST 284; one other PHI or WST course

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. May be repeated as the topic changes. This course is offered as both AAS 386 and PHI 386.

3 credits

PHI 390: Topics in Philosophy

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

Prerequisites: Two courses in philosophy

1-3 credits

PHI 400- G: Individual Systems of the Great Philosophers (I)

A detailed study of the works of a single great philosopher. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: One of the following: PHI 300, 304, 306, 308, 309, 310, or 312

3 credits

PHI 401- G: Individual Systems of the Great Philosophers (I)

A detailed study of the works of a single great philosopher. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: One of the following: PHI 300, 304, 306, 308, 309, 310, or 312

3 credits

PHI 402- G: Analysis of Philosophic Texts (I)

Detailed analysis of a major philosophic text. Semester Supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisite: One of the following: PHI 300, 304, 306, 308, 309, 310, or 312

3 credits

PHI 420: Advanced Topics in Philosophy (I, II, III)

An advanced course treating a specialized issue or topic in philosophy or in philosophy and another discipline. The content of the course is announced before the start of the term. May be repeated as the topic changes.

Prerequisite: U4 standing or five courses in philosophy

3 credits

PHI 435: Senior Seminar

An intensive study of an issue, topic, figure, or historical period in philosophy intended to provide both a culminating experience and final integration for senior philosophy majors. This seminar emphasizes careful reading, rigorous discussion, and extensive writing at an advanced level. The content of the seminar is announced before the start of the term, and students are consulted on the content as it proceeds.

Prerequisites: U4 standing; six courses in philosophy; satisfaction of upper-division writing requirement for the philosophy major

3 credits

PHI 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled courses. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: Prior preparation in subject field; need to have already taken the course for a letter grade with the faculty member; no more than one undergraduate teaching practicum course per semester; permission of instructor and director

3 credits, S/U grading

PHI 476: Undergraduate Teaching Practicum II

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

Prerequisites: PHI 475; prior preparation in subject field; need to have already taken the course for a letter grade with the faculty member; no more than one undergraduate teaching practicum course per semester; permission of instructor and director

3 credits, S/U grading

PHI 487: Readings and Research in Philosophy (II)

Advanced-level inquiry with individualized instruction in one particular philosophical style of reasoning. Consult undergraduate advisor for specific details. May be repeated.

Prerequisites: U4 standing in philosophy major; permission of department

0-6 credits

PHI 489: Readings and Research in the History of Philosophy (I)

Advanced-level inquiry with individualized instruction in the great philosophies of the past. Consult undergraduate advisor for specific details. May be repeated.

Prerequisites: U4 standing in philosophy major; permission of department

0-6 credits

PHI 490: Readings and Research in Philosophical Investigations of Other Disciplines (III)

Advanced-level inquiry with individualized instruction in the application of philosophical tools to one of the special disciplines. Consult undergraduate advisor for specific details. May be repeated.

Prerequisites: U4 standing in philosophy major; permission of department

0-6 credits

PHY

Physics

PHY 100: Physics Head Start

An intensive review of the physics and associated mathematical tools necessary to solve the problems and do the calculations encountered in the introductory physics courses. The emphasis will be on the application of trigonometry to physical problems, the manipulation of vectors, diagramming and graphing, and algebraic manipulation including solving linear equations with more than one variable. The use of derivatives to describe physical quantities will be touched on and integrals will be motivated.

Prerequisite: MAT 123 or level 4 on the math placement exam

2 credits, S/U grading

PHY 104: Opportunities in Physics

An introduction to current activities of physicists on Long Island. Stony Brook faculty, alumni and other physicists discuss their current projects and their careers, and relate their activities both to basic undergraduate physics and to areas of on-going research, such as the unification of the fundamental forces, the search for the quark-gluon plasma, and coherent states of atoms trapped at low temperature. Tours of university, industry, and government lab facilities are included, as well as interaction

with physicists in non-traditional areas such as medicine, finance, and the media.

Prerequisite: PHY 125 or 131/133 or 141

Corequisite: PHY 126 or 127 or 132/134 or 142

1 credit

PHY 112- E: Light, Color, and Vision

An introduction to the modern understanding of light, color, and vision, primarily for non-science majors and especially beneficial to students majoring in visual arts or theatre. Topics include the nature of light; the human eye and vision; illusions, color perception, and color theory; optical instruments; the camera and photography; optical phenomena in the atmosphere (mirages, rainbows, halos); and light in modern physics (relativity, lasers). Not for major credit.

Prerequisite: Satisfaction of entry skill in mathematics requirement (Skill 1) or satisfactory completion of D.E.C. C

3 credits

PHY 113- E: Physics of Sports

First part of an introduction to physics from the perspective of sports, especially designed for non-science majors. Basic concepts in classical mechanics and fluid dynamics are used to analyze particular actions in football, baseball, soccer, track and field, and other sports. Students learn, for example, about the knuckle ball in baseball and why it is so hard to hit, and why quarterbacks throw a football in a spiral. The concepts of heat, energy, and calories are also discussed. The laboratory component, PHY 115, may be taken concurrently with or after PHY 113.

Prerequisite: Satisfaction of entry skill in mathematics requirement (Skill 1) or satisfactory completion of D.E.C. C

3 credits

PHY 114- E: Electromagnetism, Waves and Radiation for Sports Science

Second part of the Physics of Sports sequence. The focus is on electricity, magnetism, optics, acoustics, radiation, and medical imaging. The laboratory component, PHY 116, may be taken concurrently with or after PHY 114.

Prerequisite: PHY 113

3 credits

PHY 115: Physics of Sports Laboratory

Laboratory component of PHY 113. Experiments are designed to help students better understand the physics aspects of sports. Students work in groups and conduct experiments indoors and outdoors. Knowledge of first-year college-level mathematics is

recommended, but most necessary information is taught in class as needed. May be taken concurrently with or after PHY 113.

Pre or Corequisite: PHY 113

1 credit

PHY 116: Electromagnetism, Waves and Radiation for Sports Science Laboratory

Laboratory component of PHY 114.

Experiments are designed to help students better understand the physics aspects of sports. Knowledge of first-year college-level mathematics is recommended, but most necessary information is taught in class as needed. May be taken concurrently with or after PHY 114.

Prerequisites: PHY 113 and 115

Pre- or Corequisite: PHY 114

1 credit

PHY 119- E: Physics for Environmental Studies

The principles of physics as they apply to environmental issues. A review of mathematics is followed by a discussion of Newton's laws, conservation principles, topics in fluids and wave motion, optical instruments, and radioactivity. Three lectures and one laboratory session per week. This course is offered as both ENS 119 and PHY 119.

Prerequisites: MAT 123; CHE 131

4 credits

PHY 121- E: Physics for the Life Sciences I

First part of an introduction to physics with applications to biology, primarily for students majoring in biological sciences or pre-clinical programs. Topics include mechanics, fluid mechanics, and thermodynamics. Strong algebra skills and knowledge of the ideas of calculus are required. Three lecture hours and one recitation hour per week. The Laboratory component, PHY 123, must be taken concurrently; a common grade for both courses will be assigned. PHY 121 may not be taken for credit in addition to PHY 125, 131, or 141. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisites: MAT 125 or 131 or 141 or AMS 151; CHE 132 or 142

Corequisite: PHY 123

3 credits

PHY 122- E: Physics for the Life Sciences II

Second part of an 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. Strong algebra skills and knowledge of the ideas of calculus are required. Three lecture hours and one recitation hour per week. The Laboratory component, PHY 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, 132, or 142. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in PHY 121/123

Corequisite: PHY 124

3 credits

PHY 123: Physics for Life Sciences Laboratory I

Must be taken concurrently with Lecture component, PHY 121; a common grade for both courses will be assigned. Two hours of laboratory per week. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Corequisite: PHY 121

1 credit

PHY 124: Physics for Life Sciences Laboratory II

Must be taken concurrently with Lecture component, PHY 122; a common grade for both courses will be assigned. Two hours of laboratory per week. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in PHY 121/123

Corequisite: PHY 122

1 credit

PHY 125- E: Classical Physics A

First of a three-part sequence intended for physical-sciences or engineering majors. It focuses on the mechanics of point particles and simple oscillators, and emphasizes motion in one and two dimensions and the concepts of momentum and energy. Calculus is used concurrently with its development in MAT 125. Three lecture hours and one recitation hour per week. Not for credit in addition to PHY 121/123, 131, or 141. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering

for HD/CA courses for the first time will have priority to do so.

Prerequisite: Level 4 on the mathematics placement examination

Corequisite: MAT 125 or 131 or 141 or AMS 151

4 credits

PHY 126- E: Classical Physics B

Second or third 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, or 142. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in PHY 125 or PHY 131 or PHY 141

Corequisite: MAT 126, MAT 132, MAT 142, MAT 171 or AMS 161 or level 7 or higher on math placement exam

4 credits

PHY 127- E: Classical Physics C

Second or 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, or 142. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in PHY 125 or PHY 131 or PHY 141

Corequisite: MAT 126, MAT 132, MAT 142, MAT 171 or AMS 161 or level 7 or higher on math placement exam

4 credits

PHY 131- E: Classical Physics I

First part of a two-semester physics sequence for physical-sciences or engineering majors who have a strong mathematics background and are ready for a fast learning pace. It covers mechanics, wave motion, kinetic theory, and thermodynamics. Calculus is used concurrently with its development in MAT 131. Three lecture hours and one recitation hour per week. The Laboratory component, PHY 133 (Lab 1), could be taken concurrently. Not for credit in addition to PHY 121/123, PHY 125, or PHY 141. This course has been designated as a High

Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: MAT 125 or level 5 on the mathematics placement examination

Corequisite: MAT 126 or MAT 131 or MAT 141 or AMS 151

3 credits

PHY 132- E: Classical Physics II

Second part of a two-semester physics sequence for physical-sciences or engineering majors who have 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. The Laboratory component, PHY 134, may be taken concurrently; a common grade for both courses will be assigned. Not for credit in addition to PHY 122/124, PHY 126, PHY 127, or PHY 142. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in PHY 131 or PHY 141

Corequisite: MAT 132 or MAT 142 or MAT 127 or MAT 171 or AMS 161

3 credits

PHY 133: Classical Physics Laboratory I

Two hours of laboratory per week that corresponds to the content of PHY 131 or PHY 125+PHY 126. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Pre- or corequisite: PHY 131

1 credit

PHY 134: Classical Physics Laboratory II

Two hours of laboratory per week that corresponds to the content of PHY 132 or PHY 126+127. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Pre- or corequisite: PHY 132

1 credit

PHY 141- E: Classical Physics I: Honors

First 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 141 are similar to those in PHY 131 but are treated in more depth in a small-class setting. Students may transfer to PHY 131 at any time during the first half of each semester without penalty. Three lecture hours, one recitation hour, and one two-hour laboratory per week. PHY 141 may not be taken for credit in addition to PHY 121/123, 125, or 131.

Prerequisite: Level 6 on the Math Placement Exam, or B or higher in MAT 131 or 141 or AMS 151, or B+ or higher in MAT 125, or permission of instructor (priority given to students in Honors or WISE programs)

Corequisite: MAT 131 or 141 or 126 or AMS 151

4 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

4 credits

PHY 191: Transitional Study

Laboratory for transfer students to supplement courses taken at another institution. Students take the laboratory portion of a 100-level course for which they have taken the theoretical portion elsewhere.

Prerequisite: Permission of department

1 credit

PHY 192: Transitional Study

Laboratory for transfer students to supplement courses taken at another institution. Students take the laboratory portion of a 100-level course for which they have taken the theoretical portion elsewhere.

Prerequisite: Permission of department

1 credit

PHY 200: Physics Today

Seminar introducing students to the excitement of current topics in physics research. Students are introduced to researchers from the University and Brookhaven National Laboratory who are conducting research at the forefront of a variety of subfields of physics. Literature search and presentation skills are developed. The course is intended for physics majors but is open to any student who has completed the first-year physics sequence.

Prerequisite: PHY 126/127 or 132 or 142

1 credit

PHY 231: Physics for Future Presidents

A study of key physics ideas that a newly-inaugurated President of the country, or a newly-hired President of a company, needs to know. This course equips the future President with enough knowledge of the physics behind a pressing issue to make an intelligent decision even in the face of conflicting advice about issues including energy, national security, and space exploration. Politics is the art of balancing competing demands, and business involves profitably serving customers, so the economics of many technologies will also be discussed.

Prerequisite: 1 DEC E or 1 DEC F course

3 credits

PHY 237- H: Current Topics in World Climate and Atmosphere

An exploration of current concerns about the greenhouse effect, acid rain, and global ozone loss, in a format accessible to non-science majors. The social and political steps being taken to limit global atmospheric pollution and climate change are discussed. Not for major credit. This course is offered as both ATM 237 and PHY 237.

Prerequisites: One D.E.C. category E course; satisfaction of entry skill in mathematics requirement

3 credits

PHY 251: Modern Physics

A survey of the major physics theories of the 20th century (relativity and quantum mechanics) and their impact on most areas of physics. It introduces the special theory of relativity, the concepts of quantum and wave-particle duality, Schrodinger's wave equation, and other fundamentals of quantum theory as they apply to nuclei, atoms, molecules, and solids. The Laboratory component, PHY 252, must be taken concurrently; a common grade for both courses will be assigned. Three hours lecture and one hour recitation per week.

Prerequisite: PHY 122, or PHY 126 and PHY 127, or PHY 132 and PHY 134, or PHY 142

Pre- or Corequisite: MAT 203 or MAT 205 or AMS 261 or MAT 307

3 credits

PHY 252: Modern Physics Laboratory

Must be taken concurrently with lecture component PHY 251; a common grade for both courses will be assigned. Students perform some of the pivotal experiments of the 20th century. The Lecture component, PHY 251, must be taken concurrently; a common grade for both courses will be assigned. Two hours of laboratory per week.

Corequisite: PHY 251

1 credit

PHY 277: Computation for Physics and Astronomy

An introduction to computing on UNIX/Linux computers. Fundamentals of using UNIX/Linux to write computer programs for numerical algorithms to solve computational physics and astronomy problems. Assignments are carried out in a high-level compiler programming language such as Fortran 90 or C++ and require extensive use of SINC site computers outside the classroom.

Prerequisite: PHY 125, PHY 126, PHY 127; or PHY 131, PHY 132, PHY 133, PHY 134; or PHY 141, PHY 142; AMS 151 or MAT 126 or MAT 131 or MAT 141

Advisory Prerequisite: AMS 161 or MAT 127 or MAT 132 or MAT 142 or MAT 171

3 credits

PHY 287: Introduction to Research

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

Prerequisite: Permission of department

0-3 credits

PHY 291: Transitional Study

A laboratory for transfer students to supplement a course taken at another institution. Students take the laboratory portion of a 200-level course for which they have taken the theoretical portion elsewhere.

Prerequisite: Permission of department

1 credit

PHY 300: Waves and Optics

The physics of oscillations and waves, from mechanical waves to light waves to electron waves. Topics include resonance and normal modes of coupled oscillators, the wave equation and wave propagation, interference and diffraction, polarization and imaging, coherence, and lasers. Three lecture hours and one three-hour laboratory per week.

Prerequisite: PHY 132/PHY 134 or PHY 142 or PHY 126/PHY 127

Corequisite: MAT 203 or MAT 205 or AMS 261

4 credits

PHY 301: Electromagnetic Theory I

The application of Maxwell's equations to solve time-independent boundary-value problems and to study the interactions of electric and magnetic fields with bulk matter.

Prerequisite: PHY 251 and PHY 277 or permission of department

Advisory Corequisite: MAT 341

3 credits

PHY 302: Electromagnetic Theory II

A study of time-dependent electric and magnetic fields as derived from Maxwell's equations. Topics include the interrelations of electric and magnetic fields and their potentials; energy and momentum associated with electromagnetic fields and the Maxwell vacuum and matter; waveguides and transmission lines; special relativity for electromagnetism; retarded potentials for time-varying sources; and radiation of electromagnetic waves.

Prerequisite: PHY 301

3 credits

PHY 303: Mechanics

An in-depth study of classical mechanics, from the Newtonian to the Lagrangian and Hamiltonian formulations. First, Newtonian mechanics is reviewed and applied to more advanced problems than those considered in PHY 131 or 141. The Lagrangian and Hamiltonian methods are then derived from the Newtonian treatment and applied to various problems.

Prerequisite: PHY 251 and PHY 277 or permission of department; MAT 303 or MAT 305 or AMS 361

3 credits

PHY 306: Thermodynamics, Kinetic Theory, and Statistical Mechanics

A study of the laws that govern physical systems in thermal equilibrium. In the first part, the concepts of temperature, internal energy, and entropy are analyzed and the

first and second laws of thermodynamics are used to connect various properties that are independent of the microscopic details of the system. The second part is devoted to a microscopic study of a system in thermal equilibrium, from the kinetic theory of gases to statistical mechanics and the relation between entropy and probability, with application to simple examples in classical and quantum statistics.

Prerequisites: PHY 251, 277, 300

3 credits

PHY 307: Physical and Mathematical Foundations of Quantum Mechanics

Physical and mathematical foundations of quantum mechanics. Maxwell waves and their properties: intensity, energy density, and momentum density. Planck-Einstein relation between energy and frequency for light quanta. De Broglie relation between momentum and wavelength. Number density and probability density of photons. One-photon quantum mechanics, with Maxwell field as the wave function. Diffraction phenomena. Uncertainty relation between wavelength and position, hence between momentum and position. Not for credit in addition to PHY 390 with similar topic. Not for credit in addition to PHY 274.

Prerequisites: PHY 122, or PHY 126 and PHY 127, or PHY 132 and PHY 134, or PHY 142; MAT 132 or MAT 142 or MAT 127 or MAT 171 or AMS 161

Advisory Corequisite: MAT 203 or MAT 205 or AMS 261

4 credits

PHY 308: Quantum Physics

The concepts, historical development, and mathematical methods of quantum mechanics. Topics include Schrodinger's equation in time-dependent and time-independent forms; one- and three-dimensional solutions, including the treatment of angular momentum and spin. Applications to simple systems, especially the hydrogen atom, are stressed.

Prerequisite: PHY 300, 301, and 303

3 credits

PHY 310: Probability and Statistics for Experimental Physics

Statistical techniques used for data analysis in experimental physics, including standard analytic techniques and modern computational extensions such as random number generation, Monte Carlo methods and ensemble tests. The probability theory basis underlying all methods is studied.

Prerequisites: PHY 277 or MAT 331; PHY 303

3 credits

PHY 311: Connections in Science

A selection of the interrelations between physics and other scientific and technological fields, using modern examples from engineering, medicine, and applied mathematics, among others. The course is taught as a seminar and includes guest lecturers, tours of laboratories, and discussion of classic and current research projects. Appropriate for physics and non-physics majors alike.

Prerequisite: PHY 122/124 or 126 and 127 or 132/134 or 142

1 credit

PHY 313- H: Mystery of Matter

Exploration of our understanding of the basic constituents of matter, and of how that understanding and the tools developed to study them affect aspects of contemporary society. Historical discoveries and their place in social and political institutions of the time are considered, along with issues of government funding and the cost to society. Includes a discussion of developments at Brookhaven National Laboratory and their scientific and social impact.

Prerequisites: U3 or U4 standing; one D.E.C. category E course

3 credits

PHY 315- E: Hands-On Science with 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 computers as an introduction to the scientific method, experimental techniques, and data analysis. Classes will integrate group discussions with hands-on investigations in small teams, and then joint brainstorming sessions to analyze and understand the data to suggest ways to 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

PHY 335: Electronics and Instrumentation Laboratory

An intensive laboratory-based course covering modern electronic circuits and the theory behind them. Topics include AC circuits,

digital techniques, and computer interfacing involving both interface hardware and programming in a high-level language such as BASIC or Pascal. Two three-hour laboratories per week.

Prerequisite: PHY 251

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 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

PHY 390: Special Topics in Physics

May be repeated once as the topic changes.

Prerequisite: Permission of department

3 credits

PHY 405: Advanced Quantum Physics

Study of quantitative methods of quantum mechanics, including perturbation theory and the WKB approximation, scattering theory, and elements of quantum-information theory. Symmetry principles are stressed and advanced mathematical techniques are used throughout the course.

Prerequisite: PHY 303 and PHY 308; MAT 341

3 credits

PHY 408: Relativity

A development of the special theory of relativity leading to general relativity with applications to cosmology.

Prerequisite: PHY 302 and 303

3 credits

PHY 420: Introduction to Accelerator Science and Technology

This course will introduce students to the field of accelerator science and technology, a very versatile branch of physics and technology. This course is composed of the following parts: introduction of accelerator history and their basic principles, basic beam dynamics in synchrotrons, introduction of challenges in Accelerator physics, and introduction of typical beam measurements and instrumentations.

Prerequisite: PHY 277, PHY 300, PHY 301, PHY 302, and PHY 303

Pre- or corequisite: PHY 335 and PHY 408

3 credits

PHY 431: Nuclear and Particle Physics

An introduction to the physics of the nucleus and elementary particles, stressing their quantum-mechanical properties and the role of symmetry principles. Topics include nuclear structure, nuclear reactions, nuclear forces, the interaction of radiation with matter, radiation detectors, accelerators, and the properties of elementary particles and resonances.

Prerequisite: PHY 308

3 credits

PHY 445: Senior Laboratory

A selection of historically important experiments from atomic and nuclear spectroscopy, particle physics, solid-state and low-temperature physics, and astronomy performed with modern instrumentation. Each student does three experiments, usually with a partner. As students progress, they are encouraged to pursue independent projects, without rigid formats or procedures. The emphasis is on the development of experimental skills and on professionally acceptable analysis and presentation of results, both orally and in writing. Two three-hour laboratory sessions per week.

Prerequisite: PHY 308 and PHY 335

3 credits

PHY 447: Tutorial in Advanced Topics

Selected readings in advanced topics for upper-division students of unusual ability and substantial accomplishments. Prior to the beginning of the semester, the topic to be studied is selected by the supervising member of the faculty and a reading assignment is planned. Weekly conferences with this faculty member are devoted to discussion of material, resolution of problems encountered, and assessment of the student's progress. May be repeated up to a total of 6 credits.

Prerequisite: Permission of department

1-6 credits

PHY 452: Lasers

Introduction to the theory of lasers using elementary quantum mechanics. It includes a study of resonance conditions, normal modes, and optical cavities; a description of the various types of lasers, their methods of control and their limitations; and an introduction to their applications to research, medicine, communication, and computing.

Prerequisites: PHY 251 and PHY 300

3 credits

PHY 472: Solid-State Physics

A study of the different types of solids, with emphasis on their thermal, electrical, and optical properties. It introduces the concepts of phonons and electronic bands, and applications to metals, semiconductors, superconductors, and magnetism.

Prerequisite: PHY 306 and 308

3 credits

PHY 475: Undergraduate Teaching Practicum

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

Prerequisite: Permission of department

0-3 credits, S/U grading

PHY 487: Research

An opportunity for students to conduct faculty-supervised research for academic credit. Students must take the initiative to negotiate the opportunity. BNL and other scientists may be allowed as co-supervisors. Research proposals must be prepared by the student and submitted for approval by the supervising faculty before the beginning of the credit period. An account of the work and the results achieved is submitted to the supervisor before the end of the credit period. May be repeated, up to a total of 6 credits.

Prerequisite: Permission of department

0-6 credits

POL

Political Science

POL 101- F: World Politics

Analysis of the basic concepts and issues of international relations in the contemporary international system. The behaviors of states and their decision makers are considered according to various models of national and international conflict. The relationship between the characteristics of nations and their foreign policies is studied on a comparative basis.

3 credits

POL 102- F & 4: Introduction to American Government

What the informed citizen and specialist should know about the organization of American government, including the Constitution and what it means today, the Congress, political parties, pressure groups, growth of the Presidency, the Supreme Court, judicial review, federalism, separation of powers, and the Bill of Rights. May not be taken for credit in addition to POL 105.

3 credits

POL 103- F: Introduction to Comparative Politics

Analysis of political institutions and processes in the contemporary world, emphasizing the interaction of political structures and processes in a variety of political settings.

3 credits

POL 201- C: Introduction to Statistical Methods in Political Science

Elementary statistical methods in empirical political science, focusing on the analysis of public opinion, survey research designs, sampling, and probability. The course considers the application of descriptive and inferential statistics to testing hypotheses on various political issues. May not be taken for credit after AMS 102, ECO 320, PSY 201, or SOC 202.

Prerequisite: Satisfaction of entry skill in mathematics requirement; Advisory Prerequisite: POL 101 or 102 or 103 or 105

3 credits

POL 214- J: Modern Latin America

From independence to the present: the evolution of 19th- and 20th-century Latin America. Emphasis on current social, economic, and political issues. This course is offered as both HIS 214 and POL 214.

Advisory Prerequisite: LAC 200

3 credits

POL 216- J: History of U.S.-Latin American Relations

An examination of the impact of U.S. economic and political relations with Latin America from the mid-19th century to the present. The course considers changes in American policy toward Latin America, as well as the varying responses of Latin American nations to U.S. intervention and influence. This course is offered as both HIS 216 and POL 216.

Advisory Prerequisite: One HIS course

3 credits

POL 287: Introductory Research in Political Science

May be repeated up to a limit of 12 credits, but only six credits may count for major or minor requirements in political science.

Prerequisite: Permission of departmental research coordinator

0-3 credits, S/U grading

POL 305- I: Government and Politics of the United Kingdom

Examination of the political system of Great Britain and Northern Ireland, including the Constitution, parliament, cabinet, political parties, and the policy-making process.

Prerequisite: POL 103; U3 or U4 standing

3 credits

POL 309- I: Politics in the European Union

Why the European Union was created, how its institutions have evolved over time, and where the union is going.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 101 and 103

3 credits

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 311: Introduction to International Law

Casebook approach to standard introductory course in international law, including the following topics: state jurisdiction and responsibility, individuals, international organization, and use of force.

Prerequisite: U3 or U4 standing;

Advisory Prerequisite: POL 101

3 credits

POL 313- F: Problems of International Relations

Analysis of the international system, its characteristic forms, and the principal forces making for conflict and adjustment. Examination of some prevalent analytical concepts, of major current problems and developments, and of prospects and alternatives for the future.

Prerequisite: POL 101; U3 or U4 standing.

Advisory Prerequisite: POL 201 or any other course satisfying the major's methodology requirement

3 credits

POL 317- F: American Election Campaigns

The politics of presidential nominations through primaries, caucuses, and conventions; the conduct of presidential general election campaigns; mass media coverage and opinion polling; the citizen's involvement in campaign politics; voter attitudes toward parties, candidates, and issues; and the interpretation of electoral outcomes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

POL 318- F: Voters and Elections

An examination of how citizens make electoral decisions, including the decision to participate at all in elections. The course compares models of voter behavior and probes the influence of such factors as party identification, opinions on issues, ideological orientations, and candidate evaluations. In addition, the social and economic context of voting is explored, as is the importance of elections for policy making and the functioning of the political system.

Prerequisite: U3 or U4 standing; Advisory Prerequisite: POL 102 or 105; POL 201 or any other course satisfying the major's methodology requirement

3 credits

POL 319: Business Law

A study of the legal environment of business operations, covering such topics as the principle of contracts, commercial papers,

partnerships, corporations, real property, estates, bankruptcy, antitrust laws, and environmental and civil rights regulations.

Prerequisite: U3/U4 standing or New Transfer student

3 credits

POL 320- F: Constitutional Law and Politics: United States

A study of the role of the modern Supreme Court within the political and governmental process; its relation with Congress, the Presidency, state and local governments, parties, and interest groups; and the Court's policy-making role in economic regulation.

Prerequisites: POL 102 or 105; U3 or U4 standing

3 credits

POL 322- F: The Presidency in the American Political System

How presidential power developed historically; from what sources the powers of the modern Presidency emanate; how decisions are made in the presidential institution; how and to what degree presidential power may or ought to be controlled.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

POL 323- F: U.S. Congress

An examination of the most powerful legislative institution in America. The historical background of Congress is examined along with its internal organization, rules, and relationship to the rest of government and to the world outside Washington.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

POL 324- F: American Political Parties and Pressure Groups

An examination of political party organization, political leadership, finance, campaign techniques, and legal controls over parties; the functions and methods of pressure groups and their interaction with policy makers; the historical origins and development of the American party system; the significance of parties and pressure groups for democratic ideology; and the problems of political leadership in a democracy.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

POL 325- F: Civil Liberties and Civil Rights

A systematic treatment of leading Supreme Court decisions in such areas as freedom of speech, the press, and religion; the rights of criminal defendants; voting rights; the right to privacy; and discrimination on grounds of race, sex, poverty, illegitimacy, and alienage.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 320

3 credits

POL 327- K: Urban Politics

Covering the development of urban settlements from the early 19th century to the contemporary period, the course emphasizes both the formal and informal political institutions and processes in American cities and suburbs, including governmental structures, political parties, interest groups, and service delivery systems. Special attention is given to the multiethnic and multicultural context within which urban politics in the United States takes place. Among the topics examined is the historical development of urban settlements in the United States, studying both the growth of cities and suburbs and the ever-changing relationship between these types of settlements evident at different times in our history.

Prerequisite: POL 102 or POL 105

3 credits

POL 328- F: Criminal Law

A survey of substantive and procedural criminal law as it applies to traditional and contemporary penal issues, including a review of relevant U.S. and New York constitutional, statutory, and case law provisions.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 320

3 credits

POL 330- K: Gender Issues in the Law

A critical exploration of American law that specifically addresses the issues of (in)equality of women and men in the United States. The course surveys and analyzes cases from the pre-Civil War era to the end of the 20th century dealing with various manifestations of sex discrimination, decided in the federal court system, typically by the Supreme Court, and the state court system. The course also considers how the political nature of the adjudicative process has ramifications for the decisions rendered by a court. This course is offered as both POL 330 and WST 330.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105 or WST 102 (formerly SSI/WST 102)

3 credits

POL 332- F: Politics of Criminal Due Process

A survey of the procedural steps through which a criminal case passes commencing with the initial investigation of a crime, covering the laws and court rules governing arrest, search and seizure, bail and fair trial, and concluding with the unconditional release of an offender.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

POL 333: Environmental Law

Survey of the origins of environmental law and the major legislation enacted by Congress and the state of New York. Special emphasis is placed on the application of environmental law to the problem of solid waste management on Long Island. This course is offered as both ENS 333 and POL 333.

Prerequisites: ECO 108; POL 102

3 credits

POL 336- F: U.S. Foreign Policy

An examination of the central problems in making U.S. foreign policy. The particular system and structure of foreign policy making as they have evolved from the constitutional and historical roots of the United States are the focus. An important central theme is the potential tension between the demands of effective foreign policy and democratic restraints.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 101 or 102 or 103 or 105

3 credits

POL 337- J: The Politics of Africa

A study of nationalism, political thought, and political institutions in Africa. Consideration is given to the quest for unity, the problems of liberation, and the political implications of social change. This course is offered as both AFS 337 and POL 337.

Prerequisites: Two AFS or POL courses

3 credits

POL 338- J: Contemporary India: History, Politics, and Diplomacy

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

relations and impact of the Indian diaspora. This course is offered as both AAS 338 and POL 338.

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

3 credits

POL 339- J: Contemporary China: History, Politics, and Diplomacy

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

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

3 credits

POL 344- F: American Political Ideology and Public Opinion

An examination of the nature of contemporary political ideology and public opinion in the United States. The goal is to understand political conflict and debate in the U.S. and the ways in which the public influences that debate. Major topics in public opinion include political tolerance and trust, attitudes toward women and African Americans, the role of the mass media, and the impact of political values and ideology on political campaigns and elections.

Prerequisites: POL 102 or 105; C or higher in POL 201 or any other course satisfying the major's methodology requirement

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 346- F: Political Psychology

Focus on the application of psychological concepts and measures to political behavior. Course topics include attitude measurement, stability and change, obedience to authority, learning theory, attention and problem solving, personality correlates of political activity, and stress and aggression.

Prerequisite: U3 or U4 standing

3 credits

POL 347- K: Women and Politics

Analysis of the role of women in current American politics -- their electoral participation, office seeking, and political beliefs -- and policy issues that have special relevance to women. The course traces the history of American women's political involvement and the historical trajectory of gender-related policy from the mid-19th century to today. This course is offered as both POL 347 and WST 347.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

POL 348- F: Political Beliefs and Judgments

Following a review of the literature on political attitudes, the course applies psychological concepts and experimental approaches to the study of the content and structure of political beliefs and judgments.

Prerequisite: U3 or U4 standing; *Advisory Prereq:* POL 201 or any other course satisfying the major's methodology requirement

3 credits

POL 350- I: Contemporary European Political Theory

Analysis of major writings in European political thought throughout the 20th century, focusing on four important ideological groupings: liberalism, socialism, fascism, and conservatism, with consideration of their historical antecedents.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. category F

3 credits

POL 351: Social Surveys in Contemporary Society

An interdisciplinary course on the history, uses, design, and implementation of the social survey. Emphasis is given to the use of surveys in politics, the media, and business.

Prerequisites: POL 201 or any other course satisfying the major's methodology requirement; U3 or U4 standing

3 credits

POL 357- J: India's Foreign Policy

A critical analysis of the foreign policy of India since Independence in 1947, especially Non-alignment and relations with major powers. The factors behind India's entry into the nuclear club and its impact on her international relations within the subcontinent and beyond. Analysis of issues such as Kashmir, terrorism, India's quest for a permanent seat in the U.N. Security Council, economic reforms, and role of Indian diaspora to the country's relations with the countries of their adoption.

Prerequisite: U3 or U4 standing or permission of instructor

Advisory Prerequisites: AAS 201 and 348

3 credits

POL 359- F: Public Policy Analysis

A course analyzing the connection between the administrative processes of government in the United States and the public policy process. It focuses on the analysis of policy formulation and the broader connections between public policy and the American political process.

Prerequisites: POL 102 or 105; U3 or U4 standing

3 credits

POL 365- F: Economy and Democracy

An examination of the interplay between economics and politics in Western democracies. Topics include the economic theory of democracy; the political-business cycle; political parties and economic policies; the economy and voter choices in elections; economic performance and government (especially presidential) popularity; and the formation of economic expectations.

Prerequisite: U3 or U4 standing; *Advisory Prerequisite:* POL 102 or 105; POL 201 or any other course satisfying the major's methodology requirement

3 credits

POL 367- F: Mass Media in American Politics

Competing theories of the power of the press are tested by examining the literature on mass media effects on what the public thinks and what the public thinks about. Various explanations of why news organizations behave as they do are also assessed. Conflicts between freedom of the press and such values as privacy, national security, and the right to fair trial are discussed. The relationships between freedom of the press and the public's right to know are also explored.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

POL 368- F: American Political Development

The development and evolution of the American political system. Consideration of the evolution of institutions such as the party system, Congress, and the bureaucracy and how they explain policy developments and shape our political life. Attention to how historical approaches to American politics help explain current dilemmas in the American political system.

Prerequisites: POL 102 or 105; U3 or U4 standing

3 credits

POL 372- J: Politics in the Third World

Analysis of problems and prospects of nonindustrialized nations that are experiencing political and economic development. Particular attention is paid to the impact of colonialism, social problems, economic modernization, and foreign policy orientations of Third World nations.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 101 or 103

3 credits

POL 374- F: Global Issues in the United Nations

An overview of key issues and contemporary debate in the United Nations toward an understanding of its formal and informal operations. Issues include peace and security; human rights; development and trade; and the global environment. Consideration of perspectives of people from outside the United States and the West; the major obstacles to effective international cooperation in the U.N. and the ways these obstacles might be overcome; and how democratic governance is affected by the rise of global institutions and governance. This course offered as both POL and SOC 374.

Prerequisite: SOC 105 or POL 101 or 103

3 credits

POL 377: Contemporary Political Philosophy (II)

A critical examination of selected issues in contemporary political philosophy, for example, the nature and justification of basic rights, the legitimization of political authority, and the various relations between ideals of social justice and democratic rule. Readings represent contemporary views such as libertarianism, liberalism, socialism, communitarianism, and feminism, and include selections by authors such as Rawls, Nozick,

Dworkin, Walzer, Habermas, and Pateman. This course is offered as both PHI 377 and POL 377.

Prerequisites: Two courses in philosophy
Advisory Prerequisites: PHI 105 or 277 or 375; one upper-division political science course

3 credits

POL 382- J: Politics and Political Change in Latin America

An examination of revolutionary and reformist movements that have shaped the political, social, and economic contours of 20th-century Latin America. Topics include the Mexican and Cuban revolutions, populism, urban squatter movements, and guerrilla warfare. This course is offered as both HIS 382 and POL 382.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: HIS 213 or HIS/POL 214 or HIS/POL 216 or LAC 200

3 credits

POL 390: Topics in Political Science

May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; one POL course announced with topic

3 credits

POL 391: Topics in Political Science

May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; one POL course announced with topic

3 credits

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

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

Prerequisites: U3 or U4 standing; one POL course announced with topic

3 credits

POL 401: Seminar in Advanced Topics

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

3 credits

POL 402: Seminar in Advanced Topics

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

3 credits

POL 403: Seminar in Advanced Topics

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

3 credits

POL 404: Seminar in Advanced Topics

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

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.

Prerequisites: U3/U4 standing and permission of instructor

3 credits

POL 411- H: Science, Technology, and Arms Control

A study of the application of scientific technology to national defense, covering nuclear weapons and delivery systems, chemical and biological weapons, conventional weapons systems, defense research and development, arms control and disarmament negotiations, and international technology transfer. This course is offered as both EST 411 and POL 411.

Prerequisites: U3 or U4 standing; one D.E.C. category E course

3 credits, S/U grading

POL 412: Intelligence Organizations, Technology, and Democracy

The role of intelligence organizations in decision making through analysis of agency practices in support of U.S. national security policy. The course also explores the roles of intelligence agencies and practices in democratic societies. This course is offered as both EST 412 and POL 412.

Prerequisites: U3 or U4 standing; POL 101 and 102; one D.E.C. category E course

3 credits

POL 434- F: Supreme Court Decision Making

A comprehensive examination of Supreme Court decision making, aided by analysis of a computer database on the court. The course

covers various stages of the judicial process, including the decision to grant certiorari, the decision on the merits, majority-opinion assignment, and majority-opinion coalitions.

Prerequisites: POL 201 or any other course satisfying the major's methodology requirement; U3 or U4 standing
Advisory Prerequisite: POL 320
3 credits

POL 447: Directed Readings in Political Science

Individually supervised readings in selected topics of the discipline. May be repeated, but total credit may not exceed six credits.

Prerequisites: Political science major with U3 or U4 standing; 15 credits in political science; permission of instructor and department
1-6 credits

POL 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Not for major credit.

Prerequisites: Political science major; U4 standing; permission of instructor
3 credits, S/U grading

POL 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served. Not for major credit.

Prerequisites: POL 475; permission of instructor and department
3 credits, S/U grading

POL 487: Directed Research

Qualified advanced undergraduates in political science may carry out individual research projects under the direct supervision of a faculty member. May be repeated but total credits may not exceed six credits.

Prerequisites: Political science major; 15 credits in political science; permission of instructor and department; permission of

departmental research coordinator may be substituted.

0-6 credits

POL 488: Internship

Participation in a local, state, or federal governmental agency or community organization. Students are required to submit progress reports to their department sponsor and a final report on their experience to the department faculty. May be repeated up to a limit of 12 credits.

Prerequisites: Political science major or minor with 3.00 g.p.a.; 15 credits in political science; permission of instructor and department
0-6 credits, S/U grading

POL 489: Washington or Albany Internship

Designed so that students can participate in Washington, D.C. at the Washington Center as interns in private or public sector organizations and agencies or in Albany as interns in the New York State Assembly or Senate Program. Students are supervised by selected practitioners within the organization or agency. Students are required to submit journals of experience and observation which, together with the supervisor's report, become the basis for a Satisfactory/Unsatisfactory grade. Only three credits may be applied to major requirements.

Prerequisites: Completion of pre-application orientation; admission to Washington Center or NY State Assembly or Senate Program; POL major or minor; 3.00 g.p.a.; 15 credits in POL; sponsorship of a political science faculty member
Corequisite: POL 490
12 credits, S/U grading

POL 490: Washington or Albany Seminar

Seminar offered in Washington, D.C. as part of the internship program of the Washington Center or in Albany as part of the New York State Assembly or Senate Internship Program. The seminars are taught by people with experience in public and private agencies, public policy formulation, and relevant academic and professional experience. Students are offered work in several program areas designed to complement their internships, such as law and justice, congressional studies, policy studies, community urban service, and studies in government.

Prerequisites: Completion of pre-application orientation; admission to Washington Center or NY State Assembly or Senate Program; POL major or minor; 3.00 g.p.a.; 15 credits in

POL; sponsorship of a political science faculty member

Corequisite: POL 489

3 credits

POL 495: Senior Honors Project in Political Science

First course of a two-semester project for political science majors who are candidates for the degree with honors. Arranged in consultation with the department, the project involves independent study and the writing of a research paper under close supervision of a faculty member. Students enrolled in POL 495 are obliged to complete POL 496. Students receive only one grade upon completion of the sequence.

Prerequisite: Admission to the political science honors program

3 credits

POL 496: Senior Honors Project in Political Science

Second course of a two-semester project for political science majors who are candidates for the degree with honors. Arranged in consultation with the department, the project involves independent study and the writing of a research paper under close supervision of a faculty member. Students enrolled in POL 495 are obliged to complete POL 496. Students receive only one grade upon completion of the sequence.

3 credits

PSY **Psychology**

PSY 103- F: Introduction to Psychology

An introduction to research and theory in psychology in such areas as learning, perception, cognition, biopsychology, development, personality, and abnormal and social psychology. As part of the course, students must participate in experiments and/or a library research project.

3 credits

PSY 201- C: Statistical Methods in Psychology

The use and interpretation of elementary statistical techniques in research, emphasizing descriptive statistics, correlational analysis, and inferential statistics, including chi-square, t-tests, and an introduction to the Analysis of Variance. May not be taken for credit after AMS 102, ECO 320, POL 201, or SOC 202. This course has been designated as a High

Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisites: PSY 103; *satisfaction of entry skill in mathematics requirement*

3 credits

PSY 220- F: Survey in Developmental Psychology

A study of the growth processes from fetal development to late childhood. Perceptual and learning characteristics are explained as they relate to increases in cognitive and social competence in the total community. Biological factors are examined as they relate to inheritance of behavior patterns.

Prerequisite: PSY 103

3 credits

PSY 230- F: Survey in Abnormal and Clinical Psychology

Examines the description, etiology, course, and treatment of psychological disorders. Current theory and research are emphasized.

Prerequisite: PSY 103

3 credits

PSY 240- F: Survey in Social Psychology

A presentation of various topics in social psychology including interpersonal processes, obedience to authority, social perception, attitude change, attraction and liking, and aggression and violence, especially as applied to national and international issues.

Prerequisite: PSY 103

3 credits

PSY 250- F: Survey in Biopsychology

Introduction to the neural basis of sensory processes, motor control, attention, emotion, and learning.

Prerequisite: PSY 103 or BIO 101 or 150

3 credits

PSY 260- F: Survey in Cognition and Perception

A survey of theoretical and empirical work on human cognition and perception including pattern recognition, memory, attention, language comprehension, decision making, and problem solving.

Prerequisite: PSY 103

3 credits

PSY 273: Supervised Research in Psychology

Initial training and participation in techniques or duties related to a specific laboratory or

field research experience under the direct supervision of a faculty member or advanced graduate student in the Department of Psychology. Students may take two sections in a single semester, but no more than three credits may be applied to a section. May not be taken for more than six credits per faculty advisor during the student's career.

Prerequisite: *Permission of instructor*

0-6 credits, S/U grading

PSY 283: Applications and Community Service

Designed to provide opportunities for students to study and apply psychological principles outside the classroom (e.g., in settings such as hospitals and schools). Specific programs vary from semester to semester. General information is available in the Psychology Undergraduate Office. May be repeated up to a limit of six credits.

Prerequisite: *Permission of instructor*

1-3 credits, S/U grading

PSY 285: Practicum in Infant/Toddler or Preschool Development and Education

Students work nine hours a week in a full-day child care center on campus with infants/toddlers or preschool-aged children (Section numbers 1 and 2 denote assignment to infants/toddlers; Section numbers 3 and 4 are the practicum with preschool-aged children). Students gain practical experience in infancy or preschool development and education through guiding, teaching, preparing age-appropriate materials, and observing. Students maintain daily journals; they also plan, develop, and implement appropriate educational activities that provide some of the basis for discussion and evaluation in the corequisite seminar, PSY 385. This course requires students to use knowledge gained in PSY 385 in a closely supervised situation. Can be repeated once by enrolling in a section that focuses on a different age group.

Prerequisite: CFS 210 or CFS 322 or PSY 220 or PSY 325 or PSY 326; *permission of instructor*

Corequisite: PSY 385

3 credits, S/U grading

PSY 301: Advanced Statistics

Survey of probability and sampling theory, descriptive and inferential statistics, and introduction to experimental design.

Advisory Prerequisite: PSY 310

3 credits

PSY 310- F: Research and Writing in Psychology

An introduction to and critical analysis of the methodology of psychological research. In addition to attending lectures taught by faculty, students work closely with a graduate instructor and peers in small breakout sections to prepare a research proposal. Not for credit in addition to the discontinued PSY 300. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisites: PSY 103; PSY 201 or any other course satisfying the department's statistics requirement

4 credits

PSY 325: Children's Cognitive Development

A survey of the basic principles of cognition from experimental research with children. Topics include perceptual development, language development, memory development, conceptual development, and the development of academic skills.

Prerequisites: PSY 220

Advisory Prerequisite: PSY 310

3 credits

PSY 326: Children's Social and Emotional Development

Current theories, models, research methods, and findings in the study of children's socioemotional development. The course emphasizes the interaction of the individual with his or her social environment in developmental processes and outcomes. Eras covered include infancy, toddler/preschool, mid-late childhood, and adolescence.

Prerequisites: PSY 220

Advisory Prerequisite: PSY 310

3 credits

PSY 327: Human Growth and Development in the Educational Context

The biological and psychological development of childhood and adolescence that affects teaching and curriculum development for diverse learners. Additional topics include childhood and adolescent psychiatric disorders, special education programs, drug and alcohol use and abuse, and societal issues. Formerly SSE 327 and SSI 327. Not for credit in addition to SSE 327 or SSI 327.

Prerequisites: U3 or U4 standing; admission to a teacher education program, or admission in the Psychology major

3 credits

PSY 329: Special Topics in Developmental Psychology

May be repeated as the topic changes.

Prerequisites: PSY 220

Advisory Prerequisite: PSY 310

3 credits

PSY 333: Mood Disorders

The mood disorders include bipolar (manic-depressive) and depressive disorders. They are among the most common psychological disorders, and are a tremendous personal, social, and economic burden. This course will provide an introduction to current theory and research on the mood disorders, including their classification, epidemiology, course, etiology, pathogenesis, and treatment. Not for credit in addition to PSY 339 with topic of "Mood Disorders."

Prerequisite: PSY 230

3 credits

PSY 334- F: Autism and Intellectual Disability

Study of concepts, procedures, and research related to autism, mental retardation, and other developmental disabilities from a psychological and educational perspective. Topics to be dealt with include: assessment, family roles, development of communication, social development, cognitive development, sensory and motor development, adaptive behaviors, problem behaviors, instructional strategies, comprehensive programs, public policy legal issues, personnel preparation, methodological and research issues, and future directions for disability research and practice.

Prerequisite: PSY 230

Advisory Prerequisite: PSY 220

3 credits

PSY 335: Clinical Behavior Modification

The application of behavioral and cognitive sciences to the assessment and treatment of clinical problems. The aims of the course are to familiarize the student with the theoretical and empirical foundations of clinical behavior modification, provide examples of applications to a variety of different clinical problems, and discuss the results of outcome studies. While specific treatment methods are described and issues related to clinical application are discussed, no actual clinical training or practicum is provided in this course.

Prerequisite: PSY 230

Advisory Prerequisite: PSY 310

3 credits

PSY 337: Applied Behavior Analysis/Positive Behavior Support

Exploration of concepts, procedures, and research related to applied behavior analysis/positive behavior support, an approach that involves the application of principles derived from behavioral, community, and ecological psychology to problems of social significance in the fields of clinical psychology, education, family life, and health. There is a focus on issues of assessment, intervention, and outcomes related to problem behavior, school performance, home-based support, community integration, and improving quality of life through systems change. Not for credit in addition to PSY 339 when the topic is Applied Behavior Analysis/Positive Behavior Support.

Prerequisite: PSY 103

Advisory Prerequisite: U3 or U4 standing

3 credits

PSY 338: Behavior Deviation in Children

Development and modification of behavioral deviations in children; application of principles derived from experimental analysis of behavior to problems of children.

Prerequisites: PSY 220

Advisory Prerequisite: PSY 310

3 credits

PSY 339: Special Topics in Clinical Psychology

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

Prerequisite: PSY 230

Advisory Prerequisite: PSY 310

3 credits

PSY 341: Psychology of Prejudice

An overview of theoretical perspectives, research methods, empirical findings, and practical applications of psychological research on prejudice. Topics include the development of prejudice among children; the role of cognitive, social, personality, and motivational factors in maintaining prejudice and stigma; the psychological consequences of prejudice and stigma; and strategies for reducing prejudice, stigma, and intergroup conflict.

Prerequisite: PSY 240

Advisory Prerequisite: PSY 310

3 credits

PSY 342: Psychology of Drug Addiction

Review of drugs from a historical perspective and motivations for drug use. Importance is placed on psychological theories that attempt to understand drug addiction, including the

role of classical and operant conditioning processes, genetic factors in alcoholism and smoking, the role of expectancies, and the contribution of personality. Various prevention and treatment approaches to drug addiction and their effectiveness are examined. The use of alcohol and tobacco are addressed in-depth, as those drugs cause many more deaths and disabilities than illicit drugs. Not for credit in addition to PSY 348 or 349 when the topic is Drug Addiction or Psychology of Addictive Behavior.

Prerequisite: PSY 240

Advisory Prerequisite: PSY 310

3 credits

PSY 344: Development and Aging in Adulthood

Adult development, aging and death will be examined in the context of family relationships, friendship patterns, intergenerational ties, and cultural themes. Cognitive process, personality, and coping strategies will be integrated into a discussion of biological aging and health maintenance in order to understand the range of individual, ethnic and socioeconomic differences that influence personal choices and challenges in identity formation, work, leisure and retirement. This course is offered as both CFS 344 and PSY 344.

Prerequisite: U3 standing; CFS 210 or PSY 220

3 credits

PSY 345: Theories of Personality

The study of the ways in which people differ. Examines traditional and current thinking and research about the nature and causes of the individual patterns of behavior, emotion, and thinking that we call personality.

Prerequisite: PSY 240

Advisory Prerequisite: PSY 310

3 credits

PSY 346: Health Psychology

The role of psychological factors in the maintenance of good health or in coping with illness. Topics include the modification of specific health behavior, such as alcoholism, obesity, lack of exercise, and smoking; the relationship of stress and illness; and coping with terminal illnesses.

Prerequisite: PSY 240

Advisory Prerequisite: PSY 310

3 credits

PSY 347- F: Psychology of Women

The psychological impact of important physiological and sociological events and

epochs in the lives of women; menstruation, female sexuality, marriage, childbirth, and menopause; women and mental health, mental illness and psychotherapy; the role of women in the field of psychology. This course is offered as both PSY 347 and WST 377.

Prerequisite: WST major or minor; or one of the following: WST 102, WST 103, PSY 103, WST/SOC 247

3 credits

PSY 348: Special Topics in Social Psychology

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

3 credits

PSY 349: Special Topics in Social Psychology

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

Advisory Prerequisite: PSY 310

3 credits

PSY 355: Human Brain Function

The functional organization of the human brain, including dysfunctions resulting from various types of brain pathology. Neuroanatomical, neuropsychological, neurophysiological, and experimental psychological approaches are described.

Prerequisite: PSY 250

3 credits

PSY 356: Physiological Psychology

An advanced survey of the neurobiological bases of complex behavior. A review of basic neurophysiology, neuroanatomy, and neurochemistry is followed by considerations of the circuitry and neural processing supporting perception, motion, emotion, sleep, attention, learning, language, and higher cognitive mechanisms.

Prerequisite: PSY 250 or BIO 202 or BIO 203

3 credits

PSY 357: Animal Learning

Principles of adaptation and behavioral change with emphasis on techniques of reward and punishment and of stimulus control.

Advisory Prerequisite: PSY 310

3 credits

PSY 358: Special Topics in Biopsychology

May be repeated as the topic changes.

3 credits

PSY 359: Special Topics in Biopsychology

May be repeated as the topic changes.

Prerequisite: PSY 250

Advisory Prerequisite: PSY 310

3 credits

PSY 364: Judgment and Decision Making

An exploration of the psychological factors that influence judgment and decision making. Topics include how judgments and decisions ought to be made (e.g., rational decision making), systematic flaws in people's actual performance, and the neural systems that underlie decisions.

Prerequisite: PSY 260

Advisory Prerequisite: PSY 310

3 credits

PSY 365: The Psychology of Language

Examination of language acquisition and a consideration of its implication for cognitive psychology.

Prerequisite: PSY 260

Advisory Prerequisite: PSY 310

3 credits

PSY 366: Human Problem Solving

An exploration of human problem solving and critical thinking. Topics include memory strategies, the role of language in thinking, inductive and deductive reasoning, creativity, and the development of problem solving skills.

Prerequisite: PSY 260

Advisory Prerequisite: PSY 310

3 credits

PSY 367: Memory

A review of classic and current theories of memory and empirical research on memory in memory-intact and memory-impaired populations.

Prerequisite: PSY 260

Advisory Prerequisite: PSY 310

3 credits

PSY 368: Sensation and Perception

An examination of both the basic mechanisms and the organizational processes of visual and auditory perception. Topics include the perception of color, depth, movement, pitch, loudness, speech, and music.

Prerequisite: PSY 260

Advisory Prerequisite: PSY 310

3 credits

PSY 369: Special Topics in Cognition and Perception

May be repeated as the topic changes.

Prerequisite: PSY 260

Advisory Prerequisite: PSY 310

3 credits

PSY 375: History and Systems of Psychology

History of psychology presented either as a development and testing of theories that emerge from a long philosophical tradition, or as a set of practices that serve particular social functions and respond to pressures from the socioeconomic context.

Prerequisites: Nine credits of psychology

3 credits

PSY 380: Research Lab: Human Cognition

Techniques and experimental methods to conduct research in cognition on a selection of topics such as perception and sensation, language, attention, or memory. Hands-on learning of research and reporting of research.

Prerequisites: PSY 310; permission of instructor

4 credits

PSY 381: Research Lab: Cognition/Computers/Learning

Experimental analysis of human performance. Topics include learning, cognitive processes, human-computer interaction, and motor skills. Two hours of lecture and four hours of laboratory per week.

Prerequisites: PSY 310; permission of instructor

4 credits

PSY 382: Research Lab: Social Psychology

Techniques and experimental problems in social psychology, including natural observation, surveys, and experimental design. Three hours of lecture and two hours of field or laboratory research per week.

Prerequisites: PSY 240 and 310

4 credits

PSY 383: Behavioral Ecology Laboratory

This course is an introduction to and critical analysis of theory and research on animal behavior in natural and naturalistic settings. A field research study is major component of this course. This course is also only open to B.S. majors in Psychology and enrollment is limited.

Prerequisites: PSY 103 or 104; PSY 201 or AMS 102; PSY 310

4 credits

PSY 384: Research Lab: Human Factors

Current theories and empirical methods in the psychology of human-computer interaction. Students practice techniques in the research, design, and evaluation of human-computer interfaces.

Prerequisites: PSY 260 and 310; permission of department

4 credits

PSY 385- F: Seminar in Infant/Toddler or Preschool Development and Education

Seminar in development and education of infants/toddlers or preschool-aged children (Section numbers 1 and 2 are seminar on infants/toddlers; Section numbers 3 and 4 are seminar on preschool-aged children). Sections devoted to infants/toddlers focus on learning and living environments that foster emergent communication and language skills and promote social, cognitive, physical, and emotional development. Sections devoted to preschool-aged children focus on emergent literacy, science and math discovery, and multi-sensory experiences that enhance motor development and exploration of the arts. Strategies for problem solving and promotion of positive social interaction and emotional development, including active listening, limit-setting, conflict negotiation, and child initiated approaches are examined from a multicultural perspective. Students design age-appropriate curricula and implement them under instructor supervision within the co-requisite practicum, PSY 285. Can be repeated once by enrolling in a section that focuses on a different age group. Can be used once toward Psychology Department elective requirements.

Prerequisite: CFS 210 or CFS 322 or PSY 220 or PSY 325 or PSY 326; permission of instructor

Corequisite: PSY 285

3 credits

PSY 399: Junior Honors Seminar

First course of a three-semester research seminar on research in psychology. Topics investigated by faculty are reviewed. The class focuses on particular theories, methods, and results that illustrate the research process within the department. Students are expected to present oral and written proposals for their senior year research project.

Prerequisites: PSY 310; admission to psychology honors program

1 credit

PSY 447: Readings in Psychology

Directed readings under the guidance of a faculty member. May be repeated once.

Advisory Prerequisite: PSY 310

1-6 credits

PSY 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly assigned times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisites: PSY 310; U4 standing in psychology major; permission of instructor and department

3 credits, S/U grading

PSY 476: Undergraduate Teaching Practicum II

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

Prerequisites: PSY 475; permission of instructor and department

3 credits, S/U grading

PSY 487: Independent Research in Psychology

Upper-division students interested in carrying out independent research projects under the auspices of a faculty member in the Department of Psychology may do so in this course. The student must propose and carry out the research project and must analyze and write up the results in a form acceptable to the sponsor. Written agreement by the faculty sponsor to undertake this responsibility and an outline of the project goals are filed with the Undergraduate Psychology Office. These become part of the student's departmental file. May be repeated up to a limit of 12 credits.

Prerequisites: U3 or U4 standing; PSY 310; permission of department

0-6 credits

PSY 488: Internship

Participation in public and private agencies and organizations. Students are required to submit written progress reports and a final written report on their experience to the faculty

sponsor and department. May be repeated up to a limit of 12 credits.

Prerequisites: 12 credits in psychology including PSY 310; permission of the supervising faculty member and undergraduate director

0-6 credits, S/U grading

PSY 491: Advanced Seminar in Psychology

Special seminars covering current research theory. Topics are announced prior to the beginning of each semester. May be repeated up to a limit of 18 credits. Students may take two sections in a single semester. May not be taken for more than six credits per faculty member during the student's career.

Prerequisites: PSY 310; permission of instructor

1-3 credits

PSY 492: Advanced Seminar in Psychology

Special seminars covering current research theory. Topics are announced prior to the beginning of each semester. May be repeated up to a limit of 18 credits. Students may take two sections in a single semester. May not be taken for more than six credits per faculty member during the student's career.

Prerequisites: PSY 310; permission of instructor

1-3 credits

PSY 495: Senior Honors Seminar

Second course of a three-semester research seminar with continuing discussions of methods and theories relevant to honors research projects. Students are expected to design and execute a research project and submit a these under the supervision of appropriate faculty sponsorship. Students enrolled in PSY 495 are obliged to complete PSY 496. Students receive only one grade upon completion of the sequence.

Prerequisite: PSY 399; permission of department

Corequisite: PSY 487

1 credit

PSY 496: Senior Honors Seminar

Third course of a three-semester research seminar with continuing discussions of methods and theories relevant to honors research projects. Students are expected to design and execute a research project and submit a these under the supervision of appropriate faculty sponsorship. Students enrolled in PSY 495 are obliged to complete

PSY 496. Students receive only one grade upon completion of the sequence.

Prerequisite: PSY 495; permission of department

Corequisite: PSY 487

1 credit

RLS

Religious Studies

RLS 101- B: Western Religions

An historical introduction to Judaism, Christianity, and Islam. Attention is given to the cultural background, art, literature, philosophy, and institutional development of each tradition.

3 credits

RLS 102- B: Eastern Religions

An historical introduction to Hinduism, Buddhism, Confucianism, and Taoism. Attention is given to the cultural background, art, literature, philosophy, and institutional development of each tradition. This course is offered as both AAS 102 and RLS 102.

3 credits

RLS 230- G: Judaism

A survey of the great texts of the Judaic heritage, with the aim of learning the contribution of each to the Jewish tradition. The course includes an examination of characteristic Jewish beliefs, practices, and attitudes. This course is offered as both JDH 230 and RLS 230.

3 credits

RLS 240- J: Confucianism and Taoism

An introduction to the basic philosophies and doctrines of Confucianism and Taoism, such as the concept of Tao, non-action, benevolence, and propriety. The course explores both the similarities and the differences between these two traditions. This course is offered as both AAS 240 and RLS 240.

3 credits

RLS 246- J: Korean and Japanese Religions

An introduction to Korean and Japanese religious history from earliest recorded periods to the 19th century. Emphasis is given to Buddhism, Confucianism, Taoism, Korean Shamanism, and Japanese Shintoism. Relationships between the Korean variant of religious traditions and those of China and Japan are also investigated. Crosslisted with AAS 246.

3 credits

RLS 256- J: Hinduism

Survey of the principal religious and philosophical currents of Hindu civilization in India from the time of the Vedas and Upanishads through the development of the major devotional ways and schools of thought current in India today. These include the polytheism of Hindu mythology, the theism of various forms of devotional practice, and the monotheism and nondualism of Hindu philosophy. This course is offered as both AAS 256 and RLS 256.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

RLS 260- J: Buddhism

An introduction to the basic philosophy and doctrines of Buddhism, beginning with a survey of lives and works of major historical figures of Buddhism. The principal issues of Buddhist thought, drawing from Indian, East Asian, and Western sources, are treated. Particular attention is paid to the meaning of faith, practice, and enlightenment in Buddhism. This course is offered as both AAS 260 and RLS 260.

3 credits

RLS 270- I: Christianity

A critical introduction to the scripture, tradition, history, and religious practices and beliefs of Christianity as one of the principal factors in the shaping of European culture.

3 credits

RLS 280- J: Islam

An introduction to the main features of Islamic revelation as contained in the Koran and its impact on the major spiritual, intellectual, legal, and social teachings and institutions of the Islamic world. The course concludes with an examination of Islam in the modern world. This course is offered as both AAS 280 and RLS 280.

3 credits

RLS 301- G: Sources and Methods

An in-depth inquiry into the application of critical, historical, and philosophical methods to religious texts and experiences. An introduction to the resources and limitations of academic study of religion.

Prerequisite: any 200-level or higher RLS course

3 credits

RLS 310- G: Biblical Theology

Intensive introduction to the theological tendencies and implications of selected major texts from the Christian and Jewish scriptures. The course surveys historical and critical work on the selected texts, but focuses on the religious thinking reflected in them and their influence on later traditions. May be repeated once as the topic changes.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: Varies according to topic

3 credits

RLS 320- G: The Rabbinic Tradition

The origin and development of the Rabbinic tradition, examination of the chief elements of Rabbinic teaching at various times, and analysis of the major types of Rabbinic literature. This course is offered as both JDH 320 and RLS 320.

Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230

3 credits

RLS 366- G: Feminine Spirituality

The role and destiny of human beings as envisaged by the world's great traditions, especially the Chinese and the Islamic. The course focuses on the concept of femininity as a principle in the realms of theology, metaphysics, cosmology, and spiritual psychology; and the theoretical and practical applications of the feminine principle to the place of both men and women in society. Topics include feminine and masculine as metaphysical and cosmological principles; woman and religious law; woman's role in symbolism, mythology, and literature; and the feminine aspects of the self that both women and men need to develop on the path of achieving spiritual perfection. Previously offered as RLS 426, this course is now offered as RLS 366. Not for credit in addition to the former RLS 426. This course is offered as both AAS 366 and RLS 366.

Prerequisite: any 200-level or higher RLS course

3 credits

RLS 367- J: Meditation and Enlightenment

A critical analysis of the traditions, practices, and literature of Zen and other traditions of Buddhism, with particular attention paid to the meaning of enlightenment and the practice of meditation. Previously offered as RLS 341, this course is now offered as both AAS 367 and RLS 367. Not for credit in addition to the former RLS 341.

Prerequisite: AAS/RLS 102 or 260

3 credits

RLS 368- J: Yoga: Theory and Praxis

In this course we investigate Yogic systems of philosophy and self-transformation in their many forms throughout history. Topics include the origins of Yoga in ancient India, the philosophy of the Yoga Sutras and its commentarial traditions, Buddhist Yoga, Hatha Yoga, Tantric Yoga, and the medicalization and globalization of Yoga in the modern period. Students are encouraged to supplement class discussions by participating in Yoga classes at the Stony Brook University Wellness Center. This course is offered as both AAS 368 and RLS 368.

Prerequisite: One previous course in AAS or RLS

Advisory Prerequisite: Junior or Senior standing

3 credits

RLS 380- G: Islamic Classics

A study in depth of Islamic texts in translation. Selections may be made from the Qur'an, the Hadith, the Law, and from one or more of the major intellectual schools, such as Kalam (scholastic theology), Peripatetic philosophy, illuminationist theosophy, Sufism, and the "transcendent theosophy" of the School of Isfahan. May be repeated as the topic changes. Previously offered as RLS 408, this course is now offered as both AAS 380 and RLS 380.

Prerequisite: AAS/RLS 280

3 credits

RLS 382- G: Japanese Buddhism

An introduction to the teachings and practices of two major schools of Japanese Buddhism: Zen and Pure Land. The course focuses on the writings of the founders of the important lineages within these schools. Formerly offered as RLS 406, this course is now offered as both AAS 382 and RLS 382. Not for credit in addition to the former RLS 406.

Prerequisite: AAS/RLS 260

3 credits

RLS 387- J: Islam and Confucianism

The goal of this course is to compare the basic teachings of Islam and Confucianism concerning the correct way to achieve true human status. Special stress will be placed on books that Muslim scholars wrote in Chinese beginning in the seventeenth century. These books employed Neo-Confucian language to introduce Chinese Muslims to their own theology, cosmology, and spiritual psychology, thus providing a rare pre-modern example of inter-religious dialogue. This course is offered as both AAS 387 and RLS 387.

3 credits

RLS 390- G: Special Topics

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

RLS 391- G: Special Topics

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

Prerequisite: U3 or U4 standing

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

RLS 400: Religious Studies Seminar

A seminar for senior majors in religious studies, focusing on the problem of the relation between phenomenology, hermeneutics, and history of religions on the one hand and their theological and philosophic interpretation on the other.

Prerequisite: Permission of the director of undergraduate studies

3 credits

RLS 415- G: Judaic Response to Catastrophe

The response of Judaic thinkers, from the Bible to the Second World War, to the

problem of historical disaster and the need to understand and respond to it. Particular attention is given to the question of long-term continuity and the appearance of innovation in such responses. This course is offered as both JDH 415 and RLS 415.

Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230

3 credits

RLS 447: Readings in Religious Studies

Directed readings with religious studies faculty, limited to religious studies majors or upper-division students working on advanced problems in religious studies. May be repeated.

Prerequisite: Permission of program coordinator

1-6 credits

RLS 475: Undergraduate Teaching Practicum

Students assist instructors in religious studies courses with large enrollments. Under the supervision of the course instructor, they are responsible for conducting discussion and review sections of the course and helping students with course readings and assignments such as research papers.

Prerequisites: U4 standing in religious studies major; permission of instructor and program director

3 credits, S/U grading

RLS 495: Senior Honors Project

First course of a two-semester project for RLS majors who are candidates for the degree with honors. Arranged with the program during the student's junior year, the project involves independent study and the writing of a paper under close supervision of an appropriate faculty member, on a topic chosen by the student. Students receive only one grade upon completion of the sequence.

Prerequisite: Permission of instructor and program director

3 credits

RLS 496: Senior Honors Project

Second course of a two-semester project for RLS majors who are candidates for the degree with honors. Arranged with the program during the student's junior year, the project involves independent study and the writing of a paper under close supervision of an appropriate faculty member, on a topic chosen by the student. Students receive only one grade upon completion of the sequence.

Prerequisite: Permission of instructor and program director

3 credits

RUS

Russian Language and Literature

RUS 101 - S3: Intensive Elementary Russian

An intensive course covering the elementary Russian program (RUS 111, 112) in one semester. RUS 101 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Russian in high school (or who has otherwise acquired an equivalent proficiency) may not take this course without written permission from the supervisor of the course. May not be taken for credit after any other course in Russian.

6 credits

RUS 111: Elementary Russian I

An introduction to Russian. Class work is supplemented by practice in the language laboratory. The course is designed for students who have no prior knowledge of the language. A student who has had two or more years of Russian in high school (or who has otherwise acquired an equivalent proficiency) may not take RUS 111 without written permission from the supervisor of the course.

4 credits

RUS 112 - S3: Elementary Russian II

An introduction to Russian. Class work is supplemented by practice in the language laboratory.

Prerequisite: RUS 111

4 credits

RUS 211 - S3: Intermediate Russian I

Intermediate courses in Russian stressing an active command of the language. May not be taken for credit in addition to RUS 213.

Prerequisite: RUS 112

3 credits

RUS 212 - S3: Intermediate Russian II

Intermediate courses in Russian stressing an active command of the language. May not be taken for credit in addition to RUS 213.

Prerequisite: RUS 211

3 credits

RUS 213 - S3: Intermediate Russian for Students of Russian-Speaking Background

A course intended for students who already speak Russian and who need training in writing, reading, and grammar. May not be taken for credit in addition to RUS 211 or 212. The course is not intended for students who have the equivalent of a Russian high school education.

Prerequisite: Native-speaking proficiency in Russian

3 credits

RUS 311 - S3: Russian Conversation and Composition

A course in the active use of spoken and written Russian. Particular emphasis is placed on contemporary idiom.

Prerequisites: RUS 212 or 213; permission of instructor required for students of Russian-speaking background

3 credits

RUS 312 - S3: Russian Conversation and Composition

A course in the active use of spoken and written Russian. Particular emphasis is placed on contemporary idiom.

Prerequisites: RUS 212 or 213; permission of instructor required for students of Russian-speaking background

3 credits

RUS 323- G & 3: Russian Literary Texts

A survey of representative texts chosen from various periods of Russian literature. Intended to improve the students' command of the literary language; readings and discussions are in Russian.

Prerequisite: RUS 312 or equivalent proficiency in Russian

3 credits

RUS 331: Contemporary Russian Literacy

The study of Russian Language and culture past the intermediate level through the use of internet resources. Intended to develop contemporary cultural literacy through online research, readings in online media and texts, writing essays and blogs in Russian. Note: this course is offered online and is intended for students of Russian-speaking background.

Prerequisites: RUS 212 and 213, or equivalent

3 credits

RUS 332: Professional Russian

This course is intended as an opportunity for students to use class time to research literature written in Russian pertaining to their majors. The course will be taught online but has several mandatory in-person meetings on

campus and will make use of internet resources for research, reading and writing tasks. The primary goals will be the enrichment of professional vocabulary and development of advanced reading and writing proficiency in the student's major field of study.

Prerequisites: RUS 212 and 213, or equivalent

3 credits

RUS 411: Advanced Russian I (Fourth-year)

A proficiency-oriented course intended for fourth-year students of Russian who have completed six semesters of college-level instruction or the equivalent. The course focuses on advanced topics in grammar and syntax and sets as a goal an active vocabulary of 2,250 words. Particular attention will be devoted to oral and written skills through oral presentations and essays respectively. The expected outcome is language ability ranging from intermediate high to advanced low as determined by ACTFL Proficiency Guidelines.

Prerequisite: RUS 312 or equivalent

3 credits

RUS 412: Advanced Russian II (Fourth-year)

A proficiency-oriented course intended for fourth-year students of Russian who have completed seven semesters of college-level instruction or the equivalent. The course focuses on advanced topics in grammar, syntax, word formation and derivation and sets as a goal an active vocabulary of 2,500 words. Particular attention will be devoted to oral and written skills through oral presentations and essays respectively. The expected outcome is language ability ranging from advanced low to advanced mid as determined by ACTFL Proficiency Guidelines.

Prerequisite: RUS 411 or equivalent

3 credits

RUS 439 - S3: Structure of Russian

The study of Russian phonetics, phonology, and morphology, with a discussion of different theoretical approaches as well as practical application. This course is especially recommended for prospective teachers of Russian.

Prerequisite: RUS 212 or equivalent proficiency in Russian

3 credits

RUS 447 - S3: Directed Readings in Russian

A program of independent advanced study for qualified juniors and seniors under the supervision of a faculty member.

Prerequisites: RUS 311, 312 or equivalent proficiency in Russian; a 300- or 400-level course in Russian literature; permission of instructor and department

1-3 credits

RUS 475 - S3: Undergraduate Teaching Practicum in Russian I

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

Prerequisites: Fluency in Russian; permission of instructor and department

3 credits, S/U grading

RUS 476 - S3: Undergraduate Teaching Practicum in Russian II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served.

Prerequisites: Fluency in Russian; permission of instructor and department

3 credits, S/U grading

RUS 491- G & 3: Special Author

A detailed study of the works of a major 19th- or 20th-century author, such as Pushkin, Gogol, Turgenev, or Blok. Readings are in Russian, and classes are conducted largely in Russian. May be repeated as the topic changes.

Prerequisites: HUR 141, 142; RUS 312 or equivalent proficiency in Russian

3 credits

RUS 492- G & 3: Special Genre or Period

A detailed study of a special genre such as the Russian novel or Russian drama, or period such as Soviet literature. Readings are in Russian, and classes are conducted largely in Russian. May be repeated as the topic changes.

Prerequisites: HUR 141, 142; RUS 312 or equivalent proficiency in Russian

3 credits

RUS 495 - S3: Senior Honors Project in Russian

A one-semester project for seniors. Arranged in consultation with the department, the project involves writing a paper, under the close

supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors take this course.

Prerequisite: Permission of department

3 credits

SBC

Sustainability Block Curriculum

SBC 104- B: Introduction to Moral Reasoning

An introductory inquiry into the formation and evaluation of moral judgments and reasoning. The major theories and problems of ethics are surveyed, such as utilitarianism, Kant's categorical imperative, ethical relativism, egoism, and various concepts of the good and virtue. Readings from historical and contemporary figures.

3 credits

SBC 111: Introduction to Sustainability Studies

Survey course introduces concept of sustainability. Sustainability is often defined as the ability to provide for the needs of the world's current population without damaging the ability of future generations to provide for themselves. This course reviews the needs of the current population and future generations, trends that affect our ability to provide those needs, and possible solutions that are environmentally, economically, and socially acceptable.

3 credits

SBC 113- E: Physical Geography Lecture

This study of geosystems examines modern environmental problems through quantitative methods, analysis, and modeling grounded in basic and applied science and research. The goal of the course is to introduce students to the fundamental processes that dominate the atmosphere, hydrosphere, lithosphere, and biosphere, their characteristics and complex interactions, and their impact on human life and society.

3 credits

SBC 114: Physical Geography Lab

This laboratory course provides hands on experience in understanding the geosystems, including distribution and interrelationships of climate, vegetation, soils, and landforms.

Pre- or corequisite: SBC 113

1 credit

SBC 115: Introduction to Human Demography

An introductory course on the study of human population. Measurement issues and data in demographic analysis, as well as demographic perspectives on the basis of a review of major sources of information about population studies will be presented. Theories incorporating social, economic and political explanations for influences on human population growth will be considered. Population processes, with focus on fertility, mortality and migration, are reviewed. Population structure and characteristics, the interaction of the population processes and the number of people in a society of a given age, sex, race, ethnicity, socio-economic levels, marital status, and gender, are reviewed. Major issues related to sustainability (such as economic development, food and pollution, urbanization, gender and minority empowerment, and the human relationship and ecology with other organisms and species) are reviewed.

Prerequisite: MAT 125, MAT 131, MAT 132, or level 6 or higher on math placement exam.

3 credits

SBC 116: Introduction to Human Geography

Survey course introduces geography as a social science by emphasizing the relevance of geographic concepts to human problems. Course emphasizes globalization and cultural diversity.

3 credits

SBC 117- D: Design Drawing

This introductory course exposes the student to the fundamental theories and practices employed in visually representing design concepts from observational through technical and speculative drawing. The course content introduces the student to contour drawing, rendering, orthographic projection, and pictorial drawing. Project work engages the student in the application of the above-mentioned drawing techniques and develops skills through the solution of student tailored problems.

3 credits

SBC 200- F: Human Settlement: History and Future

The history of city growth over the millennia as affected by technological change is a basis for understanding the future of human settlement. More than half the world's population currently live in cities and urbanization continues on a global scale. The universality of urban development and

resulting patterns will be presented as well as limits on growth of cities. Architectonic and socioeconomic planning theories and strategies for sustainable growth are presented. The development of Long Island, which is a microcosm of national and global patterns, will be discussed in detail.

3 credits

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, formulations, and analysis of systems. Students will learn about systems with positive and negative feedbacks, the effects 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; EHI, EDP, SUS, COS, or EHM major, or permission of the instructor

1 credit

SBC 203- G: Interpretation and Critical Analysis

An introduction to interdisciplinary inquiry and representation in arts, culture, and theory with emphasis on the roles of analysis, argument, and imagination in multiple media. Requires serious engagement with sophisticated texts.

Pre- or Corequisite: WRT 102

3 credits

SBC 204- E: Population Studies

The course will present basic mathematics of population growth and introduce various approaches for modeling populations, including population viability analysis (PVA). PVA, the quantitative assessment of the extinction risk of rare species or populations, takes biological information (habitat requirements, birth and death rates, population size) and makes predictions about future population sizes. Real examples will be discussed for a range of organisms, from bacteria to plants and mammals. This course will provide also the background for understanding human population growth. The impacts of human population growth in the developed and developing world on the ecology of other organisms, habitats and systems will also be discussed.

Prerequisite: MAT 125, SBC 201

3 credits

SBC 205: Introduction to Geospatial Analysis (lab course)

Introduction to geographic information systems (GIS) and remote sensing techniques as applied to documenting, mapping, analyzing, interpreting, and managing natural and cultural resources. Types of GIS data, computer hardware and software used for geospatial analysis, basic cartography, and global positioning system (GPS).

1 credit

SBC 206- F: Economics and Sustainability

Introduction to the basic economic concepts used in sustainability analysis. Students will learn the basic concepts and how to apply them in various context. Topics include the analysis of situations in which the behavior of individuals indirectly affect the well-being of others, strategic behavior and the environment, and the use of market-oriented policies to help in the stewardship of the environment.

Prerequisite: ECO 108

3 credits

SBC 307- K & 4: American Environmental History

This course provides an overview of the history of how Americans have used, viewed and valued the natural environment. Beginning with the Indians and the early colonists (15th-16th centuries), the course will examine the cultural, social, economic, political, and technological currents that shaped North Americans' relationships with their environment in early and later industrial eras, after World War II, and finally, in the late 20th and early 21st centuries. Historical snapshots will center on people living in more natural places, such as farms and forests, as well as more built places, such as factories, cities, and suburbs. Events in the northeastern U.S. will provide a geographic focus, but the course will also look at related happenings elsewhere on the North American continent and beyond. Finally, it will examine at the growing array of movements that have identified themselves as 'environmental,' at the 'greenness' of modern culture, and at the environmental dimensions of a globalizing era.

Prerequisite: U3/U4 standing

3 credits

SBC 308- K: American Environmental Politics

This course will survey the politics of environmental policy-making in the United States. It examines how contrasting political, economic and social interests and values have clashed and contested with one another, and

the exerted power, in the environmental policy realm. The course will explore past precedents and roots, but with a view to explain the shape of this realm in the modern United States, including the many actors and institutions: local, regional and national governments, non-governmental organizations and interest groups, as well as the public. It will look at the main patterns by which these groups have defined environmental problems and formulated and implemented solutions. A chief goal is to illuminate how and why solutions of real-world environmental problems, if they are to be effective, differ from those of scientific or engineering puzzles.

Prerequisite: POL 102

3 credits

SBC 309: Global Environmental Politics

This course will explore the politics of environmental policy-making within the international realm. Focused especially on environmental dilemmas that cross national boundaries (i.e., pollution), or that are shared by multiple nations (i.e., global warming) it will look at the ways that such problems have been defined and their solutions sought, both with and without an over-arching state or governance. It will survey the many groups, interests and values that have clashed and competed with one another to exert power and influence international environmental policies, as well as the variety of international institutions and agreements that have sought to formulate and implement solutions. One goal is to illuminate how and why effective solutions to global environmental problems differ from those to scientific or engineering puzzles. The course also aims to spur student engagement with the sometimes overwhelming nature of global environmental threats, the tenuous and sometimes counterproductive ways that knowledge and power can be linked, and the ways individuals may act powerfully in service of "sustainability."

Prerequisite: SBC 111, ENV 115, ENS 101, GEO 101, or permission of instructor

3 credits

SBC 310: Migration, Development and Population Redistribution

This course draws upon the contributions of various social and natural sciences (including population and urban geography, demography, political science, sociology, history, economics, public health and environmental sciences) to explore the effects of migratory and demographic shifts on the environment, social welfare, public health, economic development, ethnic diversity, urbanization,

public policy and planning. It will examine the political, social, environmental, health and economic effects on sustainability.

Prerequisite: SBC 115

3 credits

SBC 311- H: Disasters and Society: A Global Perspective

This class introduces students to the sociological examination of natural, technological, and industrial disasters. Students will explore how and why disasters are fundamentally social events: What do disasters reveal about society? Why are the human consequences of disasters unequally distributed? What are the typical ways in which states, organizations, and communities respond to disasters? Focusing on case studies from around the world, students will discuss: What are the long-term/short-term causes of particular disasters? What forms of suffering the disasters under consideration generated? What state/civil society actions did they trigger? What advocacy networks were put in place in their aftermath?

Prerequisite: SBC 111, or ENS 101, or GEO 101; POL 102 or SOC 105

3 credits

SBC 312- F: Environment, Society, and Health

This class examines the interactions between environment, social structures, and institutions. The first part of the class examines the ways in which environmental issues are perceived and constructed by various social actors (lay public, state officials, scientists, activists, media). The second part of the class will examine the differential impact of class, race, and gender on the distribution of hazards and risks (what is commonly known as 'environmental inequality'). In the third part of the class, students will be introduced to different cases of 'contested environmental illnesses' (cancer, lead-poisoning, asthma).

Prerequisite: SBC 111, or ENS 101, or GEO 101; POL 102 or SOC 105

3 credits

SBC 313: GIS Design and Application

This course provides the basic concepts underlying modern geographic information science and technology. Emphasis is placed on the principles of GIS for characterizing environmental systems and computer-based techniques for processing and analyzing spatial data. The course includes three hours of lecture and three hours of laboratory exercises each week.

Prerequisite: MAT 125 or MAT 131

4 credits

SBC 320- J: Sub-Saharan Africa: Geography, Cultures, and Societies

This course presents a broad perspective on Sub-Saharan Africa, a region of sharp geographic, cultural, and economic contrasts. The legacy of the region's triple heritage (indigenous, Islamic, and European) is presented as a framework for understanding the complexity and diversity of contemporary Sub-Saharan Africa in terms of distribution of languages, religions, ethnicity, family relations, and governance systems. The influence of globalization, migration, HIV/AIDS, conflicts, population growth, and socioeconomic development policies on modern Sub Saharan African are discussed.

Prerequisite: U3 or U4 standing

3 credits

SBC 321- G: Ecology and Evolution in American Literature

This course is a review of 19th- and 20th-century American writers who trace the evolution of the US with respect to ecological practices through various multicultural perspectives. Literature covered will include transcendentalist essays, utopian/dystopian novels, ecofeminist fiction, and journalism.

Prerequisite: SBC 203 or EGL 204

3 credits

SBC 325: Environmental Writing and the Media

An examination of multiple genres (including: photo journalism, literary nonfiction, fine art and advertising and documentary film) in order to understand ways in which these genres are utilized to inform and manipulate public opinion regarding the environment. The culmination of the course will be a final project using multiple genres.

Prerequisite: WRT 102

Advisory Prerequisite: SBC 203

3 credits

SBC 330- G: Extreme Events in Literature

A course that examines the depiction of extreme events (both natural and human-related) in literature, journalism, art, and film, with special emphasis paid to the extended political and social issues that are raised by the events in question.

Prerequisite: SBC 203 or EGL 204

3 credits

SBC 331- G: City, Suburb, Sprawl

A course that traces the shift from city to suburb to sprawl in texts that span the late-nineteenth century through the early twenty-first century, with special attention paid to phenomena such as industrialization, immigration, mass society, globalization, and postmodern hyperspace. An interdisciplinary set of texts will include works by novelists, artists, architects, and literary theoreticians.

Prerequisite: SBC 203 or EGL 204

3 credits

SBC 354: Drawing for Design--CAD

Techniques and Theory of Drawing; Architectural Drawing; Learning Computer Assisted Design (CAD). This course will serve as an introduction to CAD tools relevant to design and architectural rendering.

3 credits

SBC 401: Integrative, Collaborative Systems Studies

Problem-based capstone course.

Prerequisite: U3/U4, CSK 102

3 credits

SBC 475: Undergraduate Teaching Practicum

Work with a faculty member as assistant in a regularly scheduled course. The student must attend all classes and carry out all assignments; in addition the student will be assigned a specific role 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.

Prerequisites: Permission of instructor and undergraduate director

3 credits, S/U grading

SBC 476: Undergraduate Teaching Practicum II

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

Prerequisites: Permission of instructor and undergraduate director

3 credits, S/U grading

SBC 488: Internship

Participation in local, state, and national public and private agencies and organizations. May be repeated to a limit of 12 credits.

Prerequisites: U3/U4 status and permission of the Undergraduate Program Director

0-12 credits, S/U grading

SBU

Stony Brook University

SBU 101: Introduction to Stony Brook

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

Prerequisite: First-semester freshman or transfer student, according to section

1 credit, S/U grading

SBU 300: Global Issues

Global issues involving international politics, sociology, and economics. the course addresses topics and regions that are currently of global importance, each class session focussing on a particular issues presented by an expert and coordinated by the instructor. Meeting times may be variable. May be repeated as the topic changes.

1 credit, S/U grading

SBU 301: Global Issues

Global issues involving international politics, sociology, and economics. the course addresses topics and regions that are currently of global importance, each class session focussing on a particular issues presented by an expert and coordinated by the instructor. Meeting times may be variable. May be repeated as the topic changes.

1 credit, S/U grading

SCH

University Scholars Program

SCH 101: Introduction to Stony Brook

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

HDV 101, ITS 101, SSO 101, SBU 101, or LSE 101.

Prerequisite: Admission to the University Scholars Program

1 credit, S/U grading

SCI

Science Teacher Preparation

SCI 410: Pedagogy and Methods for Science Education I

Fundamental science teaching strategies, theories, and practices are introduced to students. Implementation of the New York State Math, Science, and Technology Standards and core science curricula is emphasized, in addition to the importance of inquiry based learning, laboratory activities, and laboratory safety. Students plan lessons and make several presentations. Students complete an action research project based on field observations made in conjunction with SCI 449.

Prerequisites: Acceptance to a Science Teacher Preparation program; minimum g.p.a. of 2.75

Corequisite: SCI 449 Note: you must register for the same sections of SCI 410 and 449

3 credits

SCI 420: Pedagogy and Methods for Science Education II

Builds on the practical application of science pedagogy introduced in SCI 410. Advanced science teaching strategies are presented. Emphasis is placed on the integration of theory and practice, extension of scientific inquiry for diverse learners and assessment of student progress. Essential themes and critical issues in the science disciplines are explored in the context of teaching in secondary schools. Experiences in SCI 450 are incorporated into SCI 420. Note: you must register for the same sections of SCI 420 and 450.

Prerequisites: C or higher in SCI 410; minimum g.p.a. of 2.75

Corequisite: SCI 450

3 credits

SCI 447: Directed Readings in Science Education

Advanced study in science education under the supervision of a science education faculty member.

Prerequisite: Permission of the science education program

1-6 credits

SCI 449: Field Experience, Grades 7-12

Students visit science classes in secondary schools and participate in selected school-based outreach programs for a total of 50 hours during the semester. The observations made during these visits serve as the basis for the action research project that is completed in SCI 410, as well as for discussions that occur in class. Due to public school schedules, the majority of these experiences occur during morning hours.

Prerequisites: Acceptance to a Science Teacher Preparation program; minimum g.p.a. of 2.75

Corequisite: SCI 410 Note: you must register for the same sections of SCI 410 and 449

1 credit, S/U grading

SCI 450: Field Experience, Grades 7-12

Students visit science classes in secondary schools and participate in selected school-based outreach programs for a total of 50 hours during the semester. The observations made during these visits serve as the basis for discussions that occur in class and for the research component of SCI 420. Due to public school schedules, the majority of these experiences occur during morning hours. Note: you must register for the same sections of SCI 420 and 450.

Prerequisites: C or higher in SCI 410; minimum g.p.a. of 2.75

Corequisite: SCI 420

1 credit, S/U grading

SCI 451: Supervised Teaching-Science: Middle Level Grades 7-9

Prospective science teachers participate in full-time supervised student teaching in partnership schools, grades 7-9. Frequent consultation with the University supervisor helps the student interpret and evaluate the teaching experience. Applications must be filed in the semester preceding student teaching.

Prerequisites: C or higher in SCI 420; SSE 327 and 350; 2.75 cum gpa.; completion of all graduation requirements; Dept permission.

Corequisites: SCI 452 and 454; Note: students must register for equivalent sections of SCI 451, 452, 454

6 credits, S/U grading

SCI 452: Supervised Teaching-Science: High School Grades 10-12

Prospective science teachers participate in full-time supervised student teaching in partnership schools, grades 10-12. Frequent consultation with the University supervisor helps the student interpret and evaluate the teaching experience. Applications must be filed in the semester preceding student teaching.

Prerequisites: C or higher in SCI 420; SSE 350, PSY 327, and LIN 344; 2.75 cum GPA; completion of all grad reqs; Permission of dept
Corequisites: SCI 451 and 454; Note: students must register for equivalent sections of SCI 451, 452, 454.

6 credits, S/U grading

SCI 454: Science Student Teaching Seminar

Includes discussions of teaching techniques that are critical to success as a science teacher, such as classroom management and effective questioning techniques. Analysis of actual problems and issues encountered by the student in his or her student teaching experience are part of each seminar session.

Prerequisites: C or higher in SCI 420; SSE 350, PSY 327, and LIN 344; 2.75 cum GPA; completion/grad reqs; successful compl./LAST Exam; Dept perm. Corequisites: SCI 451 and 452; Note: students must register/equiv sections of SCI 451, 452, 454.

3 credits

SCI 475: Undergraduate Teaching Practicum

Study of the literature, resources, and teaching strategies in science education with a supervised clinical experience in undergraduate instruction.

Prerequisites: Permission of instructor and science education program

3 credits, S/U grading

SCI 487: Applied Research

Repeatable to a maximum of 6 credits.

Prerequisite: Permission of science education program

0-3 credits

SKT

Sanskrit

SKT 111: 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 - S3: 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

SLN

Sign Language

SLN 111: Elementary American Sign Language I

An introduction to American Sign Language, the visual-gestural language of the deaf. It incorporates nonverbal communication techniques, basic vocabulary, basic grammar principles, and basic conversational skills. This course is designed for students who have no prior knowledge of the language. A student who has acquired an equivalent proficiency may not take SLN 111 without written permission from the supervisor of the course.

3 credits

SLN 112 - S3: Elementary American Sign Language II

An introduction to American Sign Language, the visual-gestural language of the deaf. It incorporates nonverbal communication techniques, basic vocabulary, basic grammar principles, and basic conversational skills.

Prerequisite: SLN 111

3 credits

SLN 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Students may not serve as teaching assistants in the same course twice.

Prerequisites: U3 or U4 standing; permission of instructor

3 credits, S/U grading

SLN 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. In SLN 476, students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students

may not serve as teaching assistants in the same course twice.

Prerequisites: SLN 475; permission of instructor

3 credits, S/U grading

SOC

Sociology

SOC 105- F: Introduction to Sociology

A general introduction to the science of sociology, emphasizing sociological theory and methods. Students are taught what is unique about the way in which sociologists analyze human behavior and society. Differences between the sociological perspective and perspectives of other social sciences are emphasized. There is also a heavy emphasis on the types of methods and data that sociologists use to test the validity of their ideas.

3 credits

SOC 150: Topics in Introductory Sociology

A supplementary seminar for students enrolled in SOC 105, providing a small-group setting to discuss key concepts and topics in introductory sociology.

Corequisite: SOC 105

1 credit

SOC 200: Medicine and Society

An examination of some traditional concerns of the humanities and social sciences as they occur in basic health care and its delivery. Practicing physicians or other health care professionals present clinical cases to emphasize such topics as allocation of scarce resources, issues of dying and refusing treatment, confidentiality, and cultural factors and disease. Discussion focuses on the social, historical, ethical, and humanistic import of the cases. This course is offered as both HMC 200 and SOC 200.

3 credits

SOC 201: Research Methods in Sociology

Methods of collecting and analyzing empirical data to test sociological hypotheses. Emphasis is on multivariate analysis of tabular and statistical data.

Prerequisite: SOC 105

3 credits

SOC 202- C: Statistical Methods in Sociology

An introduction to the use and interpretation of statistical methods in social research; descriptive and inferential statistics. May not be taken for credit after AMS 102, ECO 320, POL 201, or PSY 201

Prerequisites: SOC 105; *satisfaction of entry skill in mathematics requirement*

3 credits

SOC 204- F: Intimate Relationships

The dynamics of forming, maintaining, and dissolving intimate relationships. Attention is focused on dating, partner selection, sexuality, marriage, divorce, and remarriage.

3 credits

SOC 243- F: Sociology of Youth

Adolescent socialization; age structures and intergenerational conflict; peer groups and youth subcultures.

3 credits

SOC 247- K: Sociology of Gender

The historical and contemporary roles of women and men in American society; changing relations between the sexes; women's liberation and related movements. Themes are situated within the context of historical developments in the U.S. This course is offered as both SOC 247 and WST 247.

3 credits

SOC 248- F: Social Problems in Global Perspective

Examination of contemporary social problems in the United States, identifying how each problem is experienced in other countries, and how each is connected to global level processes or institutions. Such problems as urbanization, drugs and crime, unemployment, and environmental degradation are considered.

Prerequisite: SOC 105

3 credits

SOC 268: Theory and Practice in Student Leadership

Leadership theory, leadership qualities, and group dynamics are explored with an emphasis placed on experiential learning and group observation. Effective communication skills, understanding group dynamics, and appreciating cultural diversity are topics of significant relevance. This course is intended for students who are interested in serving in leadership positions on campus.

Prerequisites: SOC 105; *permission of instructor*

3 credits

SOC 302- K: American Society

Intended for students who wish to look at American society through the eyes of the sociologist. Included in the course is the sociological view of American social structure in terms of power and patterns of inequality, the legal system, ethnic and cultural pluralism, social mobility, and urban problems. Sociological issues are considered within the context of the developments of society throughout U.S. history.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

SOC 303- F: Social Inequality

Theories of social stratification; patterns of differentiation in wealth, prestige, and power; social mobility; power structures and elites.

Prerequisites: SOC 105; U3 or U4 standing

3 credits

SOC 304- F: Sociology of the Family

An historical and cross-cultural analysis of the family as a major social institution in society; the demography of contemporary American families; selected policy issues involving the family.

Prerequisites: SOC 105; U3 or U4 standing

3 credits

SOC 309- F: Social Conflicts and Movements

An examination of aggregate phenomena; revolutionary and counterrevolutionary programs and organizations. Historical and cross-cultural examples are emphasized.

Prerequisites: SOC 105; U3 or U4 standing

3 credits

SOC 310- K: Ethnic and Race Relations

The comparative experience of ethnic and other minority groups within the United States, including formation, migration, and conflict; prejudice, discrimination, and minority self-hatred. Consideration of the developments of U.S. society from the colonial period to the present provide the context for consideration of the changing experiences of ethnic groups.

Prerequisites: SOC 105; *two other courses in the social sciences*

3 credits

SOC 315- H: Sociology of Technology

Social systems and the various "tools" they develop to shape their environment. Concentration on technologies of highly developed, modern societies and on ethical

issues involved in attempts to guide the development and effects of these technologies. Consideration is given to the role of technology in all societies, from the simplest to the most developed.

Prerequisites: SOC 105; *two other courses in the social sciences; one D.E.C. category E course*

3 credits

SOC 320- F: Population and Society

Sources and consequences of changes in population size and composition; the "demographic explosion."

Prerequisites: SOC 105; U3 or U4 standing

3 credits

SOC 323- K: Urban Society

The emergence of cities and the process of urbanization; an examination of urban structure; the consequences of the urban milieu for interpersonal relations and institutions.

Prerequisites: SOC 105; U3 or U4 standing

3 credits

SOC 330- F: Media and Society

The course examines changes in the use of mass communications media, such as newspapers, radio, television, and the Internet, over time, and assesses the implications of these changes for society. Consideration of the commercial use of mass media and the media's role in providing news for democratic societies. Emphasis on the global dimensions of the mass media, including how they shape Americans' understandings of other countries and peoples, and vice versa.

Prerequisites: U3 or U4 standing; SOC 105 or POL 101 or 102 or 103

3 credits

SOC 336- F: Social Change

Development and modernization are studied in a historical and comparative perspective that emphasizes the universality of social change in human societies. The approach is macrosociological, focusing on broad patterns of change in economic, social, and political organization in the modern era. Revolutions as dramatic instances of socio-political change receive particular attention.

Prerequisites: SOC 105; U3 or U4 standing

3 credits

SOC 337- F: Social Deviance

Competing theories of the nature of social deviance; stigmatizing, labeling, and application of informal social controls; technical, legal, and ethical issues related to "non-victim" crimes.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 338- F: The Sociology of Crime

The application of formal social control to criminally prosecutable offenses; the relationship of law and society; the criminal justice system.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 339- F: Sociology of Alcoholism and Drug Abuse

An examination of the sociological literature on alcoholism and drug abuse. Topics include addictive careers, the epidemiology (spread) of abuse, history of attempts to control alcohol and drugs, treatment approaches, and policy alternatives.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 340- H: Sociology of Human Reproduction

A study of the links between biological reproduction and the socioeconomic and cultural processes that affect and are affected by it. The history of the transition from high levels of fertility and mortality to low levels of both; different kinship, gender, and family systems around the world and their links to human reproduction; the value of children in different social contexts; and the social implications of new reproductive technologies. This course is offered as both SOC 340 and WST 340.

Prerequisites: SOC 105; one D.E.C. category E course in biology
3 credits

SOC 344- F: Environmental Sociology

Analysis of how populations gain sustenance from their environments through organization, information, and technology. Evolution of technology and its ecological consequences for population growth, urbanization, social stratification, environmental destruction, and the quality of life. Problems in managing the human environment and communities.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 348- F: Global Sociology

The impact of globalization on human societies, cultures, organizations, and identities. Consideration of the roles of institution such as the United Nations, organizations such as media conglomerates and transnational corporations, and religious associations in shaping an emerging global

society including a survey of contemporary global issues such as the environment, human rights, and economic development.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 351- F: Sociology of the Arts

Theories on the arts and society; the social role of the artist; processes of cultural production. Examples are drawn from one or more of the arts, including literature and the visual and performing arts.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 355- H: Social World of Humans and Animals

Comparison of basic social processes in human and animal groups. Topics covered include dominance, hierarchies, the distribution of scarce resources, cooperation, and the division of labor.

Prerequisite: One sociology or biology course
3 credits

SOC 361- F: Historical Development of Sociological Theory

Main currents in the development of modern sociology, with an emphasis on Marx, Weber, and Durkheim, among other leading theorists.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 362- F: Contemporary Sociological Theory

A systematic treatment of the dominant general orientations in sociology including structural-functional analysis, symbolic interactionism, and modern versions of Marxism.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 364- J: Sociology of Latin America

A survey of Latin American societies, social structures, and processes of social, political, and economic change. Topics include social stratification; occupational structure; demographic characteristics; the state; class structure; military intervention in politics; conditions for democracy, political stability, and revolution; policy making; and popular social movements.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits

SOC 365- J: Introduction to African Society

Examination of the ways that the slave trade and colonization affected African societies' incorporation into the world economy as well as the development of their social and political institutions. The nature of African institutions, organizations, belief and value systems before the colonial impact and how these histories were understood and experienced by African men and women are considered. The historical continuities and discontinuities in contemporary African societies as well as the effects of globalization and modernization in Africa are examined. This course is offered as both AFS 365 and SOC 365.

Prerequisite: SOC 105 or AFS 101 or 102 or POL 101 or 103

Advisory Prerequisite: AFS 221

3 credits

SOC 371- K: Gender and Work

Gender differences in workforce participation and occupational attainment as they have changed throughout U.S. history. Covers such topics as historical changes in workforce participation; economic, legal, and social factors affecting employment; career options; and pay equity. Readings and lectures focus on the historical and contemporary experience of American men and women, including differences by ethnicity and class. This course is offered as both SOC 371 and WST 371.

Prerequisites: SOC 105 or WST 102 (formerly SSI/WST 102) or WST 103; two other courses in the social sciences

3 credits

SOC 374- F: Global Issues in the United Nations

An overview of key issues and contemporary debate in the United Nations toward an understanding of its formal and informal operations. Issues include peace and security; human rights; development and trade; and the global environment. Consideration of perspectives of people from outside the United States and the West; the major obstacles to effective international cooperation in the U.N. and the ways these obstacles might be overcome; and how democratic governance is affected by the rise of global institutions and governance. This course offered as both POL and SOC 374.

Prerequisite: SOC 105 or POL 101 or 103
3 credits

SOC 378- F: War and the Military

The causes and origins of wars, and the impact of war on social change, considered in the context of various wars and battles.

Topics covered include issues of military organization, recruitment, training, morale, war planning, and the integration of women, gays, and minorities in the military. This course is offered as both HIS 378 and SOC 378.

Prerequisite: One HIS course or SOC 105
3 credits

SOC 380- F: Social Psychology

Individual and social factors in human behavior; the structure of personality; identity development; communication processes; and attitudes.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 381- F: Sociology of Organizations

Bureaucracy as a form of organization; the structure of relations between and within organizations.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 384- F: Sociology of the Life Course

Change and stability of individuals through the life course (from childhood to old age) in the context of social structure and interactional processes. Covers such topics as socially structured periods and transitions in the life course; identity formation; continuity and change; life crises; changing roles and transitions.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 386- J: State and Society in the Middle East

State building and modernization in the Middle East during the last century and a half are studied in the context of the Middle Eastern social structure and institutions. The analysis of political change - reform and revolution - in the Middle East is viewed from a socio-historical perspective.

Prerequisites: SOC 105; two other courses in the social sciences
3 credits

SOC 387- F: Sociology of Education

Educational institutions as social systems; social patterns in the life cycles of students and teachers; class and ethnic factors in educational development.

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 390- F: Special Topics

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

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 391- F: Special Topics

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

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 392- F: Special Topics

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

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 393- F: Special Topics

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

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 394- F: Special Topics

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

Prerequisites: SOC 105; U3 or U4 standing
3 credits

SOC 395- H: Topics in Science, Technology, and Society

Selected topics in sociology that examine significant examples of the impacts of science and technology on culture and society. Semester supplements to this Bulletin contain description when course is offered. May be repeated as the topic changes.

Prerequisites: SOC 105; one D.E.C. category E course
3 credits

SOC 401: Honors: Sociology of Global Issues

Honors topics course in the sociology of global issues. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisites: Permission of instructor and department
3 credits

SOC 447: Independent Readings

Selected readings, usually in a special area, to be arranged by the student and the instructor. May be repeated. A total of no more than six credits of SOC 447, 487, and 488 may be counted toward the major.

Prerequisites: Written permission of instructor and director of undergraduate studies

1-6 credits

SOC 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisite: U3 or U4 standing; 12 credits of sociology; permission of instructor and director of undergraduate studies

3 credits, S/U grading

SOC 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served.

Prerequisite: SOC 475; permission of instructor and director of undergraduate studies

3 credits, S/U grading

SOC 487: Independent Research

Participation in local, state, and national public and private agencies and organizations. Students are required to submit written progress reports and a final written report on their experiences to the faculty sponsor and the department. A total of no more than six credits of SOC 447, 487, and 488 may be counted toward the major.

Prerequisites: Written permission of instructor and director of undergraduate studies

0-6 credits

SOC 488: Internship

Participation in local, state, and national public and private agencies and organizations. Students are required to submit written progress reports and a final written report on their experiences to the faculty sponsor and the

department. A total of no more than six credits of SOC 447, 487, and 488 may be counted toward the major.

Prerequisite: Twelve credits in sociology; permission of instructor and department

0-6 credits, S/U grading

SOC 495: Senior Honors Project I

First course of a two-semester project for candidates for the degree with honors in sociology, arranged in consultation with the director of undergraduate studies. The project involves independent readings or research and writing a paper under the close supervision of an appropriate faculty member on a suitable topic selected by the student. Students receive only one grade upon completion of the sequence SOC 495-496.

Prerequisite: Admission to the sociology honors program

3 credits

SOC 496: Senior Honors Project II

Second course of a two-semester project for candidates for the degree with honors in sociology, arranged in consultation with the director of undergraduate studies. The project involves independent readings or research and writing a paper under the close supervision of an appropriate faculty member on a suitable topic selected by the student. Students receive only one grade upon completion of the sequence SOC 495-496.

Prerequisite: SOC 495

3 credits

SPN

Hispanic Languages and Literature

SPN 111: Elementary Spanish I

An introduction to spoken and written Spanish, stressing pronunciation, speaking, comprehension, reading, and writing. Language laboratory supplements class work. Designed for students who have no prior knowledge of the language. No student who has had two or more years of Spanish in high school (or who has otherwise acquired an equivalent proficiency) is permitted to register for SPN 111 without written permission from the supervisor of the course.

4 credits

SPN 112 - S3: Elementary Spanish II

An introduction to spoken and written Spanish, stressing pronunciation, speaking,

comprehension, reading, and writing. Language laboratory supplements class work.

Prerequisite: SPN 111

4 credits

SPN 210 - S3: Intermediate Spanish I (Emphasis on Spain)

A comprehensive review of the Spanish language as it is spoken in Spain. The course is intended to develop competence in reading, writing, and speaking Spanish through the study of grammar and interpretation of selected literary texts. May not be taken for credit in addition to SPN 211 or 213. Not intended for students of Spanish-speaking background.

Prerequisite: SPN 112

3 credits

SPN 211 - S3: Intermediate Spanish I (Emphasis on Latin America)

A comprehensive review of the Spanish language as it is spoken in Latin America. The course is intended to develop competence in reading, writing, and speaking Spanish through the study of grammar and interpretation of selected literary texts. May not be taken for credit in addition to SPN 210 or 213. Not intended for students of Spanish-speaking background.

Prerequisite: SPN 112

3 credits

SPN 212 - S3: Intermediate Spanish II

A comprehensive study of the Spanish language, taking into account its regional variations. The course is intended to develop greater competence in reading, writing, and speaking Spanish through continued study of grammar and interpretation of more advanced literary texts. Not intended for students of Spanish-speaking background. May not be taken for credit in addition to SPN 213.

Prerequisite: SPN 210 or 211

3 credits

SPN 213 - S3: Intermediate Spanish for Speakers of Spanish

A course intended for students of Spanish-speaking background whose formal training in the language has been limited to a year or less. It is designed to improve competence in Spanish as it is spoken and written in the Americas. May not be taken for credit in addition to SPN 210, 211, or 212.

Prerequisite: Native speaking proficiency in Spanish

3 credits

SPN 310 - S3: Spanish Grammar and Composition for Students of Hispanic-American Background

A course designed to improve writing through the study of Hispanic-American literature and culture. May not be taken for credit in addition to SPN 311.

Prerequisite: SPN 213 or equivalent fluency in Spanish

3 credits

SPN 311 - S3: Spanish Conversation and Composition

A thorough review of Spanish grammar and of the active use of spoken and written forms. Not intended for students of Spanish-speaking background. May not be taken for credit in addition to SPN 310.

Prerequisite: SPN 212

3 credits

SPN 312- G & 3: Introduction to Literary Studies

Reading of selected passages of prose and poetry in class, with special concentration on improving students' written and oral skills, and introducing them to the basic elements of literary analysis of Spanish and Latin American works.

Prerequisite: SPN 310 or 311

3 credits

SPN 321 - S3: Advanced Spanish Grammar and Composition

A review of advanced Spanish grammar with emphasis on improving writing skills and increasing mastery of Spanish syntax. Extensive practice in composition and in translation.

Prerequisites: SPN 312

3 credits

SPN 322 - S3: Practical Spanish

A course for students who wish to become more proficient in reading, writing, and translating Spanish, to be used in business, administration, and in other fields of everyday professional life. Emphasis is placed on the idiomatic peculiarities of the Spanish language and the relation of Spanish to the structure of English.

Prerequisites: SPN 312

3 credits

SPN 323 - S3: Advanced Spanish Conversation

A course designed to develop and maintain complete fluency in the language. Not open to native-background speakers or students who

have been in a Spanish-speaking country for a considerable length of time.

Prerequisites: SPN 312

3 credits

SPN 391- I & 3: The Culture and Civilization of Spain

The evolution of the culture and civilization of Spain as seen through its history, art, and literature.

Prerequisites: SPN 312

3 credits

SPN 392- G & 3: The Culture and Civilization of Spanish America

The evolution of the culture and civilization of Spanish America as seen through its history, art, and literature.

Prerequisites: SPN 312

3 credits

SPN 393: Introduction to Hispanic Linguistics

The study of Spanish linguistics, including an analysis of the Spanish sound system and the structure of words and sentences. Topics include the origin and evolution of the Spanish language and the dialects of Latin American and Peninsular Spanish.

Prerequisite: SPN 321

3 credits

SPN 395- J & 3: Introduction to Spanish-American Literature I

Readings in Spanish-American literature from its native origins through colonial rule.

Prerequisites: SPN 312

3 credits

SPN 396- J & 3: Introduction to Spanish-American Literature II

Readings in Spanish-American literature from the late colonial period to the present.

Prerequisites: SPN 312

3 credits

SPN 397- I & 3: Introduction to Spanish Literature I

Readings in Peninsular literature from its origins through the 17th century.

Prerequisites: SPN 312

3 credits

SPN 398- I & 3: Introduction to Spanish Literature II

Readings in Peninsular literature from the 18th century to the present.

Prerequisites: SPN 312

3 credits

SPN 405 - S3: Issues in Hispanic Cultural Studies

Readings, viewings, and theoretical discussion of Spanish or Latin American culture with special focus on one or more issues (colonialism, imperialism, national identity, indigenism, subjectivity) as manifested in a specific cultural form or forms (testimonial literature, popular culture, cinema, novel, short story, poetry, television). Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 395 or 396 (for a Latin American topic), or one course from each group (for a cross-cultural topic)

3 credits

SPN 410 - S3: Theory in Contexts

The critical analysis of texts as they relate to Spanish or Latin American political, social, and gender relations and institutions. Sample topics include gender and representation, Marxism and Freudianism, the body, carnival, orality, the picaresque. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 395 or 396 (for a Latin American topic), or one course from each group (for a cross-cultural topic)

3 credits

SPN 415 - S3: Hispanic Cultures in Contact

Contemporary perspectives on Hispanic cultures in contact with each other and with non-Hispanic cultures. Sample topics include the literature of exile, border literature, ethnicity and culture, Amerindian literatures, Latino/Latina literature, Spanish and Latin American cultural contacts. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 395 or 396 (for a Latin American topic), or one course from each group (for a cross-cultural topic)

3 credits

SPN 420: Topics in Spanish and Latin American Cinema

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

Prerequisite(s): SPN 391 or 397 or 398 (for a Spanish topic), or SPN 392 or 395 or 396 (for a Latin American topic), or one course from each group (for a cross-cultural topic)

3 credits

SPN 435 - S3: Topics in Latin American Literature from the Colonial Period to the Present

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

Prerequisite: SPN 392 or 396

3 credits

SPN 445 - S3: Topics in Spanish Literature from the Middle Ages to the Present

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

Prerequisite: SPN 391 or 397 or 398

3 credits

SPN 447 - S3: Directed Readings

Individually supervised studies in selected topics of Hispanic language, literature, and culture. May be repeated. Normally no more than three credits are allowed toward the major requirements; other credits are considered as electives.

Prerequisites: Permission of instructor and department

1-6 credits

SPN 462 - S3: Contrastive Spanish-English Phonology

A study of Spanish and English phonology and phonetics from a contrastive linguistics perspective. Its relation to the analysis of bilingualism.

Prerequisite: SPN 393 or LIN 101 or HUL 324
3 credits

SPN 463 - S3: Contrastive Spanish-English Grammar

In-depth investigation of particular areas of Spanish and English grammar for purposes of language teaching.

Prerequisite: SPN 393 or LIN 101 or HUL 324
3 credits

SPN 465 - S3: Topics in Hispanic Linguistics

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

Prerequisite: SPN 393 or LIN 101 or HUL 324
3 credits

SPN 475 - S3: Undergraduate Teaching Practicum in Spanish

An opportunity for selected upper-division students to collaborate with the faculty in teaching a language class. Responsibilities may include preparing material for practice sessions and helping students with problems. Application for approval must be submitted to the director of undergraduate studies the previous semester.

Prerequisites: U3 or U4 Spanish major; preferably U4 standing; permission of director of undergraduate studies

3 credits, S/U grading

SPN 495 - S3: Spanish Senior Honors

Prerequisites: 3.50 g.p.a. in major; Spanish courses in major; 3.00 overall g.p.a.; U4 standing; permission of department

3 credits

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

SSE 350: Foundations of Education

An interdisciplinary study of the foundations of education focusing on the findings of the social and behavioral sciences as related to education and teaching. The course is designed to meet the needs of students enrolled in the secondary teacher preparation programs.

Prerequisite: U3 or U4 standing

3 credits

SSE 397: Teaching Social Studies

Social studies as taught in the secondary schools: the nature of the social studies, curricula models, scope and sequence of topics offered, new programs of social studies instruction, etc. Designed for prospective teachers of social studies in secondary schools.

Prerequisites: Admission to a Social Studies Teacher Preparation program;

Corequisite: SSE 449 (formerly SSI 449)
3 credits

SSE 398: Social Studies Teaching Strategies

An examination of the instructional methods and materials for teaching social studies at the secondary school level. Designed for prospective teachers of social studies in secondary schools.

Prerequisite: Admission into a Social Studies Teacher Preparation program; C or higher in SSE 397 (formerly SSI 397)

Corequisite: SSE 450 (formerly SSI 450)
3 credits

SSE 447: Directed Readings in Social Studies Education

Individually supervised reading in selected topics of the social sciences. May be repeated, but total credit may not exceed more than six credits.

Prerequisite: Permission of instructor
1-3 credits

SSE 449: Field Experience, Grades 7-12

Observation, inquiry, and practice in social studies education at the secondary level including 50 hours of documented visitations and observation at documented sites. Field experience writing logs are the basis for group discussion. Satisfactory/Unsatisfactory grading.

Prerequisites: Admission to a Social Studies Teacher Preparation program;
Corequisite: SSE 397 (formerly SSI 397)

1 credit, S/U grading

SSE 450: Field Experience, Grades 7-12

Observation, inquiry, and practice in social studies education at the secondary level including 50 hours of documented visitations and observation at documented sites. Field experience writing logs are the basis for group discussion. Satisfactory/Unsatisfactory grading.

Prerequisite: Admission to a Social Studies Teacher Preparation program
Corequisite: SSE 398 (formerly SSI 398)

1 credit, S/U grading

SSE 451: Supervised Student Teaching -- Middle Level Grades 7-9

Prospective secondary school social studies teachers receive supervised practice teaching by arrangements with selected Long Island secondary schools. The student teacher reports to the school to which he or she is assigned

each full school day for the entire semester. Frequent consultation with the supervising teacher helps the student to interpret and evaluate the student teaching experience. Applications must be filed in the semester preceding that in which the student plans to student teach. The dates by which applications must be completed are announced in PEP Guide to Teacher Education.

Prerequisites: C or higher in SSE 398 (formerly SSI 398); 3.00 g.p.a. in the major; enrollment in the Social Studies Secondary Teacher Preparation Program; approval of social studies director

Corequisites: SSE 452 and 454 (formerly SSI 452 and 454)

6 credits, S/U grading

SSE 452: Supervised Student Teaching-High School Grades 10-12

Prospective secondary school social studies teachers receive supervised practice teaching by arrangements with selected Long Island secondary schools. The student teacher reports to the school to which he or she is assigned each full school day for the entire semester. Frequent consultation with the supervising teacher helps the student to interpret and evaluate the student teaching experience. Applications must be filed in the semester preceding that in which the student plans to student teach. The dates by which applications must be completed are announced in PEP Guide to Teacher Education.

Prerequisites: C or higher in SSE 398 (formerly SSI 398); 3.00 g.p.a. in the major; enrollment in the Social Studies Secondary Teacher Preparation Program; approval of social studies director

Corequisites: SSE 451 and 454 (formerly SSI 451 and 454)

6 credits, S/U grading

SSE 454: Student Teaching Seminar

Seminar on problems and issues of teaching social studies at the secondary school level. Analysis of actual problems and issues encountered by the student in his or her student teaching experience. The course includes a unit on identifying and reporting child abuse and maltreatment. Students in this course are required to pay a fee that is used solely to secure the New York State Certificate in Identifying and Reporting Child Abuse and Maltreatment.

Prerequisite: C or higher in SSE 398 (formerly SSI 398)

Corequisites: SSE 451 and 452 (formerly SSI 451 and 452)

3 credits

SSE 475: Undergrad Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

3 credits, S/U grading

SSE 476: Undergrad Teaching Practicum II

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

3 credits, S/U grading

SSE 487: Independent Project in Social Sciences Education

Independent projects in social studies secondary school education designed for students enrolled in the social studies teacher preparation program. May be repeated.

Prerequisites: 18 credits in the social and behavioral sciences; permission of program

0-6 credits

SSO Science and Society

SSO 101: Introduction to Stony Brook

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

Prerequisites: admission to the SSO Undergraduate College

1 credit, S/U grading

SSO 102: Undergraduate College Seminar: Science and Society

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

Prerequisites: admission to the SSO Undergraduate College

1 credit, ABC/U grading

SSO 275: Undergraduate College Fellows Seminar

Creates a curricular component for the second year of the Undergraduate College Experience. College fellows will enroll in SSO 275 in the spring semester of their freshman year and SSO 276 in the fall semester of their sophomore year. 275 (spring) engages students in four main content areas: student development theory, scholarship on mentoring and leadership development, concepts of teaching and learning, and programming and event planning. These areas prepare students for supervised learning and teaching experiences that will occur primarily in the fall 276 course.

Prerequisites: Grade of "S" in SSO 101 and a strong desire to help other students. Enrollment in the corresponding Undergraduate College; permission of the instructor.

1 credit, S/U grading

SSO 276: Undergraduate College Fellows Practicum

The second semester in the sequence following SSO 275. Students assume higher responsibility and are given opportunities to apply teaching theories and concepts as learned in SSO 275. Students act as a TA for SSO 101.

Prerequisites: A grade of "S" in SSO 275. Enrollment in the corresponding Undergraduate College; permission of the instructor

1 credit, S/U grading

SSO 475: Undergraduate College Teaching Practicum

The purpose of this course is to allow upper-division students the opportunity to work with a faculty member as an assistant in one of the faculty member's scheduled Undergraduate College seminars. 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. May be repeated up to a limit of 2 credits.

Prerequisite: Permission of the instructor and department

1 credit, S/U grading

SSO 488: Undergraduate College Internship

Students learn about contemporary issues in higher education, community building, and teaching at a research university through hands-on work with faculty mentors. Work assigned will include participation in the planning and operation of events and initiatives sponsored by the Undergraduate Colleges. Students are required to submit written reports on their experiences to the Undergraduate Colleges office and Faculty Directors. May be repeated up to a limit of 6 credits.

Prerequisite: Permission of the instructor and department

0-3 credits, S/U grading

SUS

Sustainability Studies

SUS 301: Environmental Ethics

Historically, ethical and moral notions have been concerned with the relations of humans to one another. How does the natural world fit into those traditional views about ethical and moral obligations? Do these views need revision? A selection from issues such as the following will be discussed: animal rights; the intrinsic value of nature; our obligations to nature; the "land ethic"; global environmental justice; "deep ecology", and ecofeminism. Readings will include both historical sources, and recent and contemporary authors.

Prerequisite: SBC 104

3 credits

SUS 302: Integrative Assessment Models

Use, evaluation, and development of integrated assessment models. These model typically integrate environmental concerns with variables from other disciplines for the purpose

of providing policy advice to decision-makers. Students will learn about the most frequently used integrated assessment models and what we can learn from them. The models studies will include the World3 model, which was the basis of the famous book "The Limits to Growth."

Prerequisite: SBC 201, U3 or U4

3 credits

SUS 303: Demographic Change and Sustainability

This course will assess the unprecedented demographic changes and diversity of the 21st century, through an interdisciplinary approach. It will explore themes such as population ageing and decline, migration in population replacement, demographic change and sustainable public health, social welfare programs, environmental degradation, and differential vulnerabilities (e.g., gender, poverty, age, education, ethnicity and race, empowerment and rights).

Prerequisite: SBC 115

3 credits

SUS 305- F: Collective Action and Advocacy

This course will address the ways in which people act collectively to address social problems or to change social policy. The course will be divided into two sections: a general introduction to the study of collective action, and a set of case studies in environmental activism.

Prerequisite: SBC 111, ENS 101 or GEO 101; POL 102 or SOC 105

3 credits

SUS 306: Business and Sustainability

This course examines the interface between business and sustainability. It considers opportunities for the development and growth of profit and not-for-profit businesses associated with the promotion of sustainability. It also covers how environmental concerns and related governmental regulations influence business operations and profitability. Students will apply career skills and concepts from environmental economics to understand how business functions (e.g., operations, public relations, sales, health and safety, and corporate social responsibility) are influenced by environmental concerns. The course will highlight current issues and cases, provide an overview of theory and practice, and generate research to test students' hypotheses, and generally explore opportunities and threats to business viability. Review of current affairs, case analyses, role plays, field trips, and guest

speakers will be included along with required reading in seminal theory and research.

Prerequisite: SBC 206, completion of three CSK 100-level modules

3 credits

SUS 307: Environmental Economics and Management

This course presents advanced concepts in environmental economics and management through a series of detailed case studies. The cases include those concerning the US sulfur-dioxide permit trading system, the Kyoto Protocol, zoning, coastal fisheries, the use of ethanol in gasoline, tradable development rights in the Long Island Pine Barrens and the conservation of endangered species.

Prerequisite: SBC 206, MAT 125 or 131

3 credits

SUS 308: Economic Development

This course teaches students about economic development and its relationship to the environment. Students learn about both the theory of economic growth and way development has proceeded in various regions of the world. Examples will come from the Asian tiger economies of East Asia and the development disasters in Sub-Saharan Africa. The relationships between the levels and rates of growth of output and various environmental indices will be explored.

Prerequisite: SBC 206, MAT 125 or 131

3 credits

SUS 341- H: Environmental Treaties and Protocols

A multi-disciplinary study of the scientific basis, objective, development, implementation, and intended and unintended consequences of a single major Environmental Treatise or Protocol, such as the Kyoto Protocol. Official documents, secondary literature, as well as commentary on the Treatise or Protocol are studied.

Prerequisite: SBC 111, or ENS 101, or GEO 101; U3 or U4 standing

3 credits

SUS 342- H: Energy and Mineral Resources

The origin, distribution, and importance of energy and mineral resources to modern civilization. The emphasis in this course is on fossil fuels and non-renewable mineral resources extracted from Earth. Geological processes responsible for the formation and distribution of energy and mineral resources, as well as current and future supply and demand are discussed. The environmental

implications of the extraction and use of energy and mineral resources as well as techniques to minimize the impact on the environment will be discussed.

Prerequisite: One DEC E course

3 credits

SUS 350: Contemporary Topics in Sustainability

This course deals with the meaning and the application of the idea of sustainability. First, the mathematics of exponential and linear growth, and the concept of stability in complex systems will be developed. The idea of stable equilibrium and the long-term/short term distinction will also be discussed. Then, various subjects of sustainability--populations, species, habitats, ecosystems, resources, cultures, modes of production, economic systems, and political systems will be considered. Various purposes of sustainability for its own sake, for human welfare, for the welfare of nature will also be discussed.

Prerequisite: SBC 111, U3 or U4

3 credits

SUS 487: Research in Sustainability Studies

Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.

1-6 credits, S/U grading

THR

Theatre Arts

THR 100- D: Performing and Performance

Study and practice in performance and communications: interpersonal communication, public presentations, and theatrical performance.

3 credits

THR 101- D: Introduction to Theatre Arts

An overview of performance, design, and production in the theatre. Specific texts are explored through lectures, demonstrations, and a close examination of the rehearsal process. Professionals working in the theatre are invited to speak on such topics as stage management, technical production, and direction. Not for theatre arts major credit.

3 credits

THR 103- D: Introduction to Theatre Design and Technology

An introduction to theatrical design and technology using examples from Broadway to the avant-garde. The course will examine genres, innovations, cultural context, and creative processes for the use of theatre space and the creation of design. The course will take a cross-disciplinary approach while examining traditional modes of design and the rapidly expanding use of media arts and new technologies in theatre productions.

3 credits

THR 104- B: Play Analysis

A close reading of several plays of different periods and styles and a general examination of the elements out of which all plays are made -- dialogue, character, plot.

3 credits

THR 105- D: Acting I

The basic vocabulary and skills of the actor's craft. Students explore acting techniques through theatre games and improvisation.

3 credits

THR 110: Public Speaking

An introduction to public speaking techniques that includes increased awareness of physical and vocal expression and speech content. Not for theatre arts major credit.

3 credits

THR 115: Stagecraft I

An introduction to topics in the areas of theatrical costume and lighting covering practical skills and approaches to design. In addition to class periods and independent projects, lighting and costumes labs are required.

3 credits

THR 116: Stagecraft II

A study of the tools and technology involved in the creation of theatrical scenery and properties.

3 credits

THR 117: Media: Analysis and Culture

This introductory course addresses the cultural production and reception of media that influence public discourse. It involves textual, social, and cultural analysis of film, television, and new media. Debates about mass culture, interpretation, media characteristics, aesthetic choices, and the effect of content choices are explored.

3 credits

THR 201- B: Theatre History I: Greeks to Moliere

A survey of the developments in theatre from the ancient Greeks to Moliere. The course will introduce the major periods and dramatic forms in theatre history, and explore the historical and social context in which dramatic work was created. Topics will include major plays and dramatists, theatre practitioners, innovations, and the role of theatre in a particular culture and society.

Advisory Prerequisites: THR 101 or THR 104

3 credits

THR 202- B: Theatre History II: Restoration to the 20th Century

A survey of the developments in theatre from the English Restoration to the 20th Century. The course will introduce the major periods and dramatic forms in theatre history, and explore the historical and social context in which dramatic work was created. Topics will include major plays and dramatists, theatre practitioners, innovations, and the role of theatre in a particular culture or society.

Prerequisite: THR 201

Advisory Prerequisites: THR 101 or THR 104

3 credits

THR 205: Acting II

The development of acting skills through improvisation and selected scenes and monologues from the contemporary theatre. Requires significant rehearsal hours outside of class. Designed for students seriously interested in performing.

Prerequisites: THR 105; permission of instructor

3 credits

THR 208: Introduction to Media Technology

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

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

3 credits

THR 216- D: Introduction to Visual Interpretation

A design and analysis course emphasizing the construction of space in the two dimensions of the computer screen and the three dimensions of everyday reality. The course examines the way space is constructed and meanings are assigned to it and considers the effects of race, gender, ethnicity, and class on those interpretations. Projects involve use of digital programs for video manipulation and editing.

3 credits

THR 223- D: Stage Costume

An intermediate level study of stage costume design and technology, combining theory and practice. Students study the tradition and history of costume design and dress, do exercises in conceiving and rendering designs and learn about costume shop equipment, techniques, and materials.

Prerequisite: THR 115 or permission of instructor

3 credits

THR 230: Voice for the Actor

A practical course in voice production for the actor designed for theatre arts majors. Students participate in exercises for developing the speaking voice with an emphasis on the involvement of the body. Increasing resonance, range, and articulation and their link to acting and improvisation are explored.

Prerequisite: THR 105

3 credits

THR 232: Improvisation

Drill in both verbal and nonverbal exercises and assorted theatre games leading to the development of improvisational skills.

Prerequisite: THR 105

3 credits

THR 246: Stage Lighting

An introduction to the aesthetics and traditions of stage lighting design and technology, combining theory and practice. The course includes an exploration of color, intensity, and control through classroom and laboratory exercises using equipment and computer boards in the Staller Center for the Arts.

Advisory Prerequisite: THR 115

3 credits

THR 277: The Media Industry

A seminar in which the interlocking structure of media production firms, advertising agencies, sponsors, broadcasters, and cable

and satellite operators is examined. Among the many political and social issues arising from the making and distribution of media that are considered is the effect of this structure on a democratic society's need for a free exchange of opinion and information.

3 credits

THR 298: Student Media Leadership

A review of the decision-making processes involved in campus media organizations and an investigation of the similarities and differences between the obligations of student and professional media managers. Class meetings are devoted to the discussion of problems related to media production and management, to talks by professionals about their specialties, and to the development of critical skills useful to practitioners and managers.

Prerequisite: Permission of instructor

1 credit, S/U grading

THR 301: Stage Management Laboratory

Development of skills needed to accomplish the functions of the stage manager. May be repeated once.

Prerequisite: Permission of department

1 credit

THR 303: Costume Crafts Laboratory

Development of skills needed for costume and accessory construction. May be repeated once.

Prerequisite: Permission of department

1 credit

THR 304: Marketing Laboratory

Development of skills needed in marketing theatre. May be repeated once.

Prerequisite: Permission of department

1 credit

THR 305: Lighting and Sound Laboratory

Development of skills needed in installation and control of lighting and sound equipment. May be repeated once.

Prerequisite: Permission of department

1 credit

THR 306: Stagecraft Laboratory

Development of skills needed in theatre construction. May be repeated once.

Prerequisite: Permission of department

1 credit

THR 307: Performance Laboratory

Development of skills in performance through the preparation and rehearsal of a production. Student must audition, be cast in a role in a major department production, and engage in the entire rehearsal process. May be repeated once.

Prerequisite: Permission of department

0-3 credits

THR 308: Prevention Through the Arts

Prevention through the Arts is a project-based class that creates and performs an educational theatre piece about alcohol, tobacco, and other drug use. Participants will experience writing and performing as well as peer education and leadership. Admission into this class is through audition, and accepted participants are expected to commit a full year to the project and register for the continuation course in the spring of the same year.

Prerequisite: Enrollment by audition only

3 credits

THR 309: Prevention Through the Arts II

The second half of this two-semester course focuses heavily on performing. A rigorous show schedule is required of the show that was created during the fall semester. Students will develop advanced improvisational techniques and explore different actor/audience/peer relationships. This course is only open to students who took THR 308 the preceding fall semester.

Prerequisite: THR 308

3 credits

THR 312- K: American Theatre and Drama

The history of American theatre and dramatic literature from its earliest origins through the influence of the European tradition, emphasizing major events and various cultural, religious, and ethnic influences in American society. Original American contributions to world theatre in the 19th century, particularly staging techniques and the development and growth of the musical theatre, are covered.

Prerequisites: Completion of D.E.C.

categories A, B, and D

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

THR 313- J: Asian Theatre and Drama

A comprehensive overview of Asian theatre with special emphasis on drama, theatrical aesthetics, conventions of production, and actor training in India, China, Korea, and

Japan. This course is offered as both AAS 313 and THR 313.

Prerequisites: Completion of D.E.C. categories A, B, and D
3 credits

THR 314- G: Modern Drama on Stage

A seminar examining the forms of modern drama in the context of production from 1860 to the present.

Prerequisites: Completion of D.E.C. categories A, B, and D
3 credits

THR 315- I: European History and Drama: The Classical Era

Advanced studies in select topics in theatre history. Developments in theatre from its origins to the 17th century. Periods covered include ancient Greek and Roman theatre, the Middle Ages, Italian Renaissance, Commedia dell'Arte, the English Renaissance, the Golden Age of Spain, French neo-classicism, German theatre, the English Restoration, and the early 18th century. Discussions cover the historical and cultural context in which different forms of theatre occurred, changes in theatrical convention, and the drama of the period.

Prerequisite: THR 201 and THR 202
3 credits

THR 316- I: European History and Drama: The Modern Era

Advanced studies in select topics in theatre history. Developments in theatre from the beginnings of the Industrial Revolution to the present. Topics covered include melodrama, romanticism, realism, expressionism, the birth of the avant garde, post-war modernism, and trends at the end of the twentieth century. Discussions cover the historical and cultural context in which different forms of theatre occurred, changes in theatrical convention, and the drama of the period.

Prerequisite: THR 201 and THR 202
3 credits

THR 317: Interactive Media, Performance, and Installation

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

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

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

3 credits

THR 318: Movie Making: Shoot, Edit, Score

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

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

3 credits

THR 320: Production I

The application of practical skills in a theatrical production environment. The course provides experience in several areas of theatre technology through participation in full-scale theatrical productions. Costume crafts, stage management, lighting, and sound may be among the areas of focus. THR 320 and 321 may be taken in either order.

Prerequisites: THR 115 and 116

3 credits

THR 321: Production II

The application of practical skills through participation in full-scale theatrical productions. Marketing, performance, theatre management, and stagecraft may be among the areas of focus. THR 320 and 321 may be taken in either order.

Prerequisites: THR 115 and 116

3 credits

THR 322: Acting III

Advanced work in scene study limited to one or two major playwrights.

Prerequisites: THR 205, 230, and 264

3 credits

THR 323: Costume Design

Advanced study in costume design involving play analysis, design, and presentation techniques with special emphasis on historical research.

Prerequisite: THR 223

3 credits

THR 325: Scriptwriting for Film and Television

Preparation and construction of scripts for use in media: radio, television, and motion pictures.

Prerequisites: Completion of D.E.C. categories A, B, and D

3 credits

THR 326: Playwrighting

A workshop devoted to planning and writing finished scripts for the stage. This course offered as both EGL 387 and THR 326.

Prerequisites: Completion of D.E.C. categories A, B, and D

3 credits

THR 334- G: Performance Art I: The European Avant-Guard

This course explores the history and theory of avant-guard performance from its inception in the early 20th century through Surrealism. Questions addressed focus on the choices made by artists, and the forces within the culture that encourage the forms they use. Course projects include a performance that reconstructs an event from one of the periods studied and a term paper. This course is offered as both ARH 334 and THR 334.

Prerequisites: U3 or U4 standing; one ARH, ARS, MUS, or THR course

Advisory Prerequisite: ARS/MUS/THR 208

3 credits

THR 336: Stage Management

Various aspects of stage management, including analysis of scripts and reading of blueprints and light plots.

Prerequisite: THR 321

3 credits

THR 337: Advanced Technical Theatre

Advanced study of materials and techniques of problem solving in stagecraft, including theatre sound, technical direction, advanced drafting, budgeting, crew organization, and planning.

Prerequisites: THR 115 and 116

3 credits

THR 341: Sound Design

An investigation into the scientific, formal and artistic qualities of sound developed for students who may or may not have had formal musical training. Students will write reviews of sound pieces, create film or game soundtracks, and create sound-based art-works in response to course content, and write a paper on acoustic or psycho-acoustic phenomena. Emphasis is on studio production techniques, history of sound art and basic acoustics. Students will work on Apple computers in the SINC site and LTA. This

course is offered as ARS 341, MUS 341, and THR 341.

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

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

3 credits

THR 344- G: Performance Art II: World War II to the Present

This course explores the history and theory of performance art from World War II to the present, using an international perspective to identify different forms and practices from Happenings to Body Art and the introduction of new technologies. Questions addressed focus on the choices made by artists, and the forces within the culture that encourage the forms they use. Course projects include developing a site specific performance and a term paper. This course is offered as both ARH 344 and THR 344.

Prerequisites: U3 or U4 standing; one ARH, ARS, MUS, or THR course

Advisory Prerequisite: ARH/THR 334

3 credits

THR 346: Lighting Design

Advanced topics in lighting design intended to acquaint the student with highly specialized lighting genres. Subjects include lighting for repertory theatres, the dance, and musical theatre.

Prerequisite: THR 246

3 credits

THR 351: Special Topics in Performance

A concentration in one aspect of acting, such as preparation for the work of a specific playwright, readers' theatre, oral interpretation, improvisation, or musical theatre. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated once, as the topic changes. THR 351 and THR 352 are treated as equivalent courses.

Prerequisite: Permission of instructor

3 credits

THR 352: Special Topics in Performance

A concentration in one aspect of acting, such as preparation for the work of a specific playwright, readers' theatre, oral interpretation, improvisation, or musical theatre. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated once, as the topic changes. THR 351 and THR 352 are treated as equivalent courses.

3 credits

THR 356: Scene Design

Principles of design for the theatre, including color composition and rendering techniques. These techniques are related to the aesthetics of dramatic composition and the flexibility of modern staging.

Pre-requisite: THR 216

3 credits

THR 380: Company I

A concentrated study of one play in preparation for a production of the play in the following semester. Students study the play in depth, including historical context, a complete analysis, critical writings, and a production history. In conjunction with the director and designer, the class conceptualizes the various design elements for the production and develops designs based on appropriate research. The cast and designers are drawn from students in the course. Students are expected to spend time outside of class developing web pages and other computer-based assignments for the course.

Prerequisites: theatre arts major; U3 or U4 standing

3 credits

THR 381: Company II

A continuation of THR 380. Students rehearse, design, build, market, and produce the text discussed during the first course in the sequence. Students explore different approaches to rehearsing, styles of acting, building techniques, and the process of technical rehearsal. The course ends with a public production of the play. Students are expected to spend time outside of class developing web pages and other computer assignments for the course.

Prerequisite: THR 380

3 credits

THR 401: Senior Seminar

An intensive investigation of theatre theorists with particular emphasis on the application of theory to practice. This course is offered as both LIA 401 and THR 401.

Prerequisites: U4 standing; permission of instructor

3 credits

THR 403: Media: Theory and Criticism

Theoretical approaches and practices are used for a critical analysis of the content, structure, and context of significant media in our society. Background readings and examination of current theories of media are used to develop a practice in media criticism.

Prerequisite: U3 or U4 standing

3 credits

THR 405: Advanced Topics in Acting

Advanced work in classical or contemporary text analysis, scene study, monologues and/or soliloquies limited to one or two major playwrights. May be repeated for credit once as the topic changes.

Prerequisites: THR 205 and THR 230

Advisory Prerequisite: THR 322

3 credits

THR 406: Eastern Styles in Acting

Study in and practice of the various principles of stylized acting, based on Asian models. Possible models include, but are not limited to, noh, kabuki, the Suzuki method, Beijing opera, and kutiyattam of India. Topics may vary by semester according to availability of guest artists and to productions scheduled in the season. May be repeated once.

Prerequisites: THR 205, 230, and 264

3 credits

THR 438: Directing I

The work of the director, including selection of a play for production; problems of style, interpretation, and execution; and the director's approach to the actor. Not for credit in addition to THR 333.

Prerequisites: THR 205; THR 320 or 321

3 credits

THR 447: Readings In Theatre Arts

Special readings in a special area, to be arranged by the student and the instructor.

Prerequisites: At least four theatre arts courses; sponsorship of a faculty member; permission of department

3 credits

THR 475: Undergraduate Teaching Practicum I

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student is required to attend all the classes, do all the regularly assigned work, and meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Not for major credit.

Prerequisite: Theatre arts major; U4 standing; permission of instructor and department

3 credits, S/U grading

THR 476: Undergraduate Teaching Practicum II

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. Students assume greater

responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. The course in which the student is permitted to work as a teaching assistant must be different from the course in which he or she previously served. Not for major credit.

Prerequisite: THR 475; permission of instructor and department

3 credits, S/U grading

THR 480: Projects in Media

Advanced work on a particular problem in media. May be repeated up to a maximum of six credits. Only six credits of THR 480, 483, 484 and 487 may be used to satisfy major requirements.

Prerequisite: Permission of department

0-3 credits

THR 483: Projects in Theatrical Design

Advanced work on a particular problem in theatrical design. May be repeated up to a maximum of six credits. Only six credits of THR 480, 483, and 487 may be used to satisfy major requirements.

Prerequisite: Permission of department

0-3 credits

THR 484: Projects in Theater

Advanced work on a particular problem in theatre. May be repeated up to a maximum of six credits. Only six credits of THR 480, 483, and 487 may be used to satisfy major requirements.

Prerequisite: Permission of department

0-3 credits

THR 487: Independent Research

Designing and developing a research project selected by the student in consultation with a faculty member. May be repeated. Only six credits of THR 480, 483, 484 and 487 may be used to satisfy major requirements.

Prerequisite: Permission of department

0-6 credits

THR 488: Internship

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

Prerequisites: Permission of instructor and department

0-6 credits, S/U grading

WRT

Writing

WRT 101- A & 1: Introductory Writing Workshop

Frequent short papers are designed to help students develop fluency and correctness. The basic requirements of academic writing are introduced. A through C/Unsatisfactory grading only. The Pass/No credit option may not be selected for this course. WRT 101 Does not count towards D.E.C. A requirement for students matriculating before fall 1999. WRT 101 is not for credit in addition to EGC 100. Due to the content of the course, enrollment after the first week of class is not permitted.

Prerequisite: successful completion of ESL 193 or a score of less than 1000 on the combined SAT verbal and written exams

3 credits, ABC/U grading

WRT 102- A & 2: Intermediate Writing Workshop A

Writing for academic purposes is emphasized. Students learn strategies for extended writing assignments at the university. At least three major essays, multiple drafts, and short papers are required. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used. Due to the content of the course, enrollment after the first week of class is not permitted.

Prerequisite: WRT 101; or 3 or higher on the AP English/Comp or English/Lit exams; or 1000 or higher on the combined verbal and writing portions of the SAT I; or C or higher in a college writing course judged equivalent to WRT 101

3 credits, ABC/U grading

WRT 200: Grammar and Style for Writers

Students will study the aspects of grammar that are most relevant to punctuation and to clear writing, including nouns, verbs, adjectives, adverbs, conjunctions, nominative and accusative cases, phrases, clauses, gerunds, participles, infinitives, and complete sentences. Sentence imitation, sentence combining, and sentence invention techniques will also be used to help students become more flexible in their syntactic fluidity. There will be five tests, three short papers, and a final exam.

3 credits

WRT 201: Writing in the Disciplines: Special Topics

Writing in specified academic disciplines is taught through the analysis of texts in appropriate fields to discover discourse conventions. Students produce extended written projects. Different sections emphasize different disciplines.

Prerequisite: Completion of D.E.C. category A
3 credits

WRT 301: Writing in the Disciplines: Special Topics

Writing in specified academic disciplines is taught through the analysis of texts in appropriate fields to discover discourse conventions. Students produce a variety of written projects typical of the genres in the field. Different sections emphasize different disciplines. Typical topics will be Technical Writing, Business Writing, Legal Writing, and Writing for the Health Professions. May be repeated for credit as the topic changes.

Prerequisite: Completion of D.E.C. category A
3 credits

WRT 302- G: Critical Writing Seminar: Special Topics

A writing seminar, with rotating historical, political, social, literary, and artistic topics suggested by the professors each semester. Frequent substantial writing projects are central to every version of the course. May be repeated for credit as the topic changes.

Prerequisite: Completion of D.E.C. category A
3 credits

WRT 303: The Personal Essay

The personal essay is a form that has recently come back into fashion. In this class we will engage the form by writing our own personal essays as well as reading and responding to the work of writers who have come to define the genre: examples include E. B. White, Langston Hughes, and Raymond Carver as well as more contemporary writers such as Joan Didion and Gene Shepherd. We will explore the differences between shaping experience as truth in a personal essay or memoir and as a work of fiction. As a definition of personal essay evolves, we will consider whether personal writing and essay writing (or 'essaying') have a place in academic writing. Students in this class will also be able to prepare a personal statement for their application for graduate or professional school.

Prerequisite: Completion of D.E.C. category A
3 credits

WRT 381: Advanced Analytic and Argumentative Writing

An intensive writing course, refining skills appropriate to upper-division work. Content varies: focus may be on analysis or various intellectual issues, rhetorical strategies, or compositional problems within or across disciplines. Frequent substantial writing projects are central to every version of the course. May be repeated as the topic changes. This course is offered as both EGL 381 and WRT 381.

Prerequisite: Completion of D.E.C. category A
3 credits

WRT 392: Theories and Methods of Mentoring Writers

Closely examines the difficulties implicit in mentoring writers, with special consideration for the roles of cultural expectations and social dynamics on both the teaching of writing and writers themselves. In small groups and one-to-one interactions, students explore theories and practices upon which composition instruction and writing center work depend. Building on the understanding that writing is a recursive process (a cycle of planning, drafting, revising, and editing), students also learn to analyze and problem-solve issues that become barriers for effective writing and communication.

Prerequisites: WRT 102 or 103; permission of instructor

3 credits

WRT 487: Independent Project

Qualified upper-division students may carry out advanced independent work under the supervision of an instructor in the program. May be repeated.

Prerequisite: Permission of instructor and program director

0-6 credits

WRT 488: Internship

Participation in local, state, and national public and private agencies and organizations. May be repeated to a limit of 12 credits.

Prerequisites: g.p.a. of 2.50 or higher; permission of instructor and program director

0-6 credits, S/U grading

WSE

Women in Science & Engineering**WSE 187: Women in the Laboratory: Introduction to Science, Engineering, and Mathematics Research**

An introduction to and hands-on experience in doing research in mathematics, engineering, and several science disciplines within a group setting. The students rotate among several research environments: computer science, mathematics, social sciences, natural sciences and engineering. Within each environment they are given background readings, instructed in the problem to be studied, jointly carry out a small experiment related to the problem, and discuss the social implications of the research problem. Students make presentations related to one of the projects in which they participate. Enrollment limited to first-year women in the WISE program.

3 credits

WSE 242- H: Society and Gender in Science and 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

WSE 487: Independent Project in WISE

The design and implementation of a research project selected by the student and arranged by the student and the instructor. May be repeated once.

Prerequisites: Permission of instructor and department

0-6 credits

WSE 488: WISE Internship

Participation in public and private agencies, laboratories and organizations. Students are required to submit written reports on their experiences to the faculty sponsor and the WISE program. May be repeated up to a limit of six credits.

Prerequisites: Permission of instructor and department

0-6 credits, S/U grading

WST

Women's Studies**WST 102- F: Introduction to Women's Studies in the Social Sciences**

An introductory social sciences survey examining the continuities and changes women have made in marriage systems, child-rearing practices, and work patterns inside and outside the home. Within this context, the course considers how women have balanced labor force participation and changing child-care responsibilities in a variety of countries. Using the experimental design and case study methods of anthropology, sociology, economics, psychology, and history, and employing texts drawn from these disciplines, the course shows the changes women's lives have undergone over the past 150 years.

3 credits

WST 103- G: Women, Culture, and Difference

An introductory humanities survey focusing on women's traditional association with the home and men's association with public life and how writers, artists, philosophers, and religious thinkers have reflected upon those relationships over the past 150 years. Through lectures and critical analyses of novels, poetry, art, philosophy, and religious texts, the course explores how changing intellectual, artistic, and religious precepts have affected gender identity and different genres in the humanities.

3 credits

WST 111- G: Introduction to Queer Studies in the Humanities

A survey of historical representations of queer difference from the late 19th century to the present. Works of visual art, literary representations and poetry are examined as evidence of the shifting understanding of lesbian/gay/bisexual/transgendered/queer identity.

3 credits

WST 112- F: Introduction to Queer Studies in the Social Sciences

An introduction to the field of queer studies from the perspectives of the social and behavioral sciences. Themes include the construction of sexual and political difference, heterosexism and the nature of oppression, race/class/gender and sexuality, psychological theories of sexuality, and historical roots of these issues.

3 credits

WST 121: Library/www Research Skills for Women's Studies

An introduction to basic library skills and bibliographic resources for research in women's studies. Reference and other library materials of special interest to students majoring or minoring in women's studies are covered, with an emphasis on the interdisciplinary nature of the field. Such topics as the efficient use of the online catalog, bibliographies, computerized sources, and specialized reference titles are treated. Workshop sessions are held throughout the semester.

1 credit

WST 210- F: Contemporary Issues in Women's and Gender Studies

A survey of contemporary issues in the field of Women's and Gender Studies. Potential topics for the course are timely and topical. Topics examples include Gender and Political Activism, Gender and Music Culture, Gender and Reality TV, Gender, Race, and Sports, Gender and Education, Sexual Medicine, and Gender and Social Media. May not be repeated for credit.

Prerequisite: WST 102 or WST 103

3 credits

WST 237- K: Images of Italian-American Women

Examination of the role of Italian-American women through literature, film, politics, and music. The specific ways they have contributed artistically and socially to the American cultural scene from the first wave of Italian-American immigration to the present is considered. This course is offered as both HUI 237 and WST 237.

Advisory Prerequisite: Completion of D.E.C. category B

3 credits

WST 247- K: Sociology of Gender

The historical and contemporary roles of women and men in American society; changing relations between the sexes; women's liberation and related movements. Themes are situated within the context of historical developments in the U.S. This course is offered as both SOC 247 and WST 247.

3 credits

WST 276- B: Feminism: Literature and Cultural Contexts

An examination of works written by or about women reflecting conceptions of women in drama, poetry, and fiction. The course focuses on literature seen in relation to women's

sociocultural and historical position. This course is offered as both EGL 276 and WST 276.

Prerequisite: Completion of D.E.C. category A
3 credits

WST 284- G: Introduction to Feminist Theory

The social construction of gender and how this construction affects philosophical thought and practice. The course provides an introductory survey of current feminist issues and analyses. It also examines the meaning of feminism for philosophy by examining the effect of introducing a political analysis of gender into a discipline that is supposedly universal and neutral. This course is offered as both PHI 284 and WST 284.

Advisory Prerequisite: U2 standing or one PHI or WST course

3 credits

WST 287: Research in Women's Studies

Supervised research under the sponsorship of a women's studies faculty member. Students assist faculty in various aspects of ongoing research. Assignments depend on the nature of the project. May be repeated up to a limit of six credits, but only three credits may count toward the minor or major.

Prerequisite: Permission of the program research coordinator

0-6 credits, S/U grading

WST 291- G: Introduction Feminist Theory

An introductory survey of historical and contemporary interdisciplinary theories used in Women's and Gender Studies. Theoretical debates on sex, gender, sexuality, race, class, knowledge, discourse, representation are among the topics to be considered. The course will provide a strong theoretical foundation for further studies in Women's and Gender Studies.

Prerequisite: WST 102 or WST 103

3 credits

WST 301- K: Histories of Feminism

An historical study of the theoretical and practical developments that form contemporary feminism. Beginning with the 18th century critiques of women's rights, the course traces the expansion of feminist concerns to include a global perspective, as well as attention to race and class. Representative texts include Mary Wollstonecraft's *A Vindication of the Rights of Women*, poems by Phyllis Wheatley and

Sojourner Truth, Charlotte Perkins Gilman's *The Yellow Wallpaper*, Virginia Woolf's *Three Guineas*, and Simone de Beauvoir's *The Second Sex*. This course is offered as both HIS 301 and WST 301.

Advisory prerequisite: WST major or minor or WST 102 or WST 103

3 credits

WST 305- G: Feminist Theories in Context

A study of major texts of the feminist tradition in social sciences and humanities, focusing on theories of subjectivity from a feminist point of view. Theoretical debates on gender, feminism, psychoanalysis, discourse, ideology, and representational systems are included.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses

3 credits

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

WST 314- G: Women Making Music

A study of the contributions made by women to music-making in various contemporary and historical cultures of the world, with emphasis on Western traditions. Topics include women as composers, performers, and listeners; genres designed for women; women's roles in relation to men's; gender implications in musical style; and depictions of women in musical dramas. All types of music are considered: "classical," rock, pop, folk, jazz, various "fusions," and non-Western musics such as those from India, China, Indonesia, and the Middle East. This course is offered as both MUS 314 and WST 314.

Prerequisite: MUS 101 or 119 or 130

3 credits

WST 315- I: Gender and Sexuality in Ancient Greek Literature

This course offers a comparative overview of the ways in which the roles of men and women were depicted in the literature and thought of ancient Greece. Major issues will include: the shift from matriarchal to patriarchal pantheons,

sanctioned and unsanctioned homoeroticism, the sorceress and the hysteric as dominant tropes in the mythology of the period, and the role of women in the polis, among others. This course is offered as both CLL 315 and WST 315.

Prerequisite: Completion of DEC G

3 credits

WST 320- F: Women in Judaism

A survey of women in Judaism and in Jewish life from the Biblical period to the present, focusing on such topics as the representation of women in the Bible, Jewish law concerning women, the role of women in the Enlightenment in Germany and America, immigrant women in America, women in the Holocaust, and women in Israel. This course is offered as both JDS 327 and WST 320.

Prerequisite: One JDS or WST course

3 credits

WST 330- K: Gender Issues in the Law

A critical exploration of American law that specifically addresses the issues of (in)equality of women and men in the United States. The course surveys and analyzes cases from the pre-Civil War era to the end of the 20th century dealing with various manifestations of sex discrimination, decided in the federal court system, typically by the Supreme Court, and the state court system. The course also considers how the political nature of the adjudicative process has ramifications for the decisions rendered by a court. This course is offered as both POL 330 and WST 330.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105 or WST 102 (formerly SSI/WST 102)

3 credits

WST 333- K & 4: Women in U.S. History

An interpretation of the history of women in relation to the major themes in American history such as industrialization and urbanization. Emphasis is placed on topics of special interest to women, i.e., the cult of domesticity, the birth control movement, feminism, women and reform, and changing attitudes toward female sexuality. This course is offered as both HIS 333 and WST 333.

Prerequisite one of the following: HIS 103, HIS 104, WST 102 (formerly SSI/WST 102), or WST 103

Advisory Prerequisites: Completion of D.E.C. categories I and J

3 credits

WST 334- I: Women, Work, and Family in Modern European History

An analysis of the effect of urbanization and industrialization on women and the family in Europe from 1750 to the present. Special emphasis is placed on the development of the ideology of the "angel in the house" and the growth of female participation in the work force. Among the topics covered are domestic work, prostitution, sexual attitudes and mores, child-rearing practices, women and revolutionary movements, and the growth of feminism. This course is offered as both HIS 336 and WST 334.

Prerequisite: HIS 102 or WST 102 (formerly SSI/WST 102) or WST 103

3 credits

WST 335- K & 4: Women at Work in Twentieth-Century America

Women have always worked but as Americans entered the 20th century the conditions of labor--and workers' relationship to their work--changed for both men and women wage-earners. This course will explore the various changes as they directly affected American women economically, socially, and politically and will open up discussions of the impact of race and class as well as gender. This course is offered as both HIS 335 and WST 335.

3 credits

WST 340- H: Sociology of Human Reproduction

A study of the links between biological reproduction and the socioeconomic and cultural processes that affect and are affected by it. The history of the transition from high levels of fertility and mortality to low levels of both; different kinship, gender, and family systems around the world and their links to human reproduction; the value of children in different social contexts; and the social implications of new reproductive technologies. This course is offered as both SOC 340 and WST 340.

Prerequisites: SOC 105; one D.E.C. category E course in biology

3 credits

WST 345- J: Women and Gender in Chinese History

Exploration of traditional cultural practices and values, and the 20th-century changes in Western and Asian relations in China brought about by nationalism, interaction with Western influences, and socialist rule. This course is offered as HIS 345 and WST 345.

Prerequisite: One of the following: HIS 219, HIS 220, CNS 249, CNS 250, or any WST course

3 credits

WST 347- K: Women and Politics

Analysis of the role of women in current American politics -- their electoral participation, office seeking, and political beliefs -- and policy issues that have special relevance to women. The course traces the history of American women's political involvement and the historical trajectory of gender-related policy from the mid-19th century to today. This course is offered as both POL 347 and WST 347.

Prerequisite: U3 or U4 standing

Advisory Prerequisite: POL 102 or 105

3 credits

WST 350- J: Black Women and Social Change: A Cross-Cultural Perspective

A cross-cultural survey of the history of black women in the context of the struggles for social justice in the Caribbean (English- and Spanish-speaking), Africa, and the United States. Several major topics are covered: the slave resistance and the anti-slavery movement; the anti-colonial struggle in Africa and the Caribbean; the trade union movement in the United States and Africa; the struggle against underdevelopment in Cuba, Puerto Rico, and Jamaica; and the anti-apartheid movement in South Africa. This course is offered as both AFS 350 and WST 350.

Prerequisite: U3 or U4 standing

Advisory Prerequisites: Completion of D.E.C. category F

3 credits

WST 360- I: Women in Premodern Europe

An examination of the position of women in European society from ancient Greece through the Italian Renaissance. The course examines women's roles in the family and political life; women's economic activities; women and the Christian church; cultural attitudes concerning women; and women's own writing and creativity. This course is offered as both HIS 360 and WST 360.

Prerequisite: One HIS course or any WST course

3 credits

WST 361- G: Women in the Biblical World

Consideration of how we define, on the basis of biblical and other contemporaneous literature, women's position in the socio-political sphere, including women in professions and institutions, such as goddesses, leaders of the community, queens, "wise women", writers, prophetesses, magicians, and prostitutes; and examination of literary types such as the Wife (and concubine), the

Mother, the Daughter, the Temptress, and the Ancestress. This course is offered as both JDH 361 and WST 361.

Prerequisite: One JDH or JDS or WST or literature course at the 200 level or higher
3 credits

WST 371- K: Gender and Work

Gender differences in workforce participation and occupational attainment as they have changed throughout U.S. history. Covers such topics as historical changes in workforce participation; economic, legal, and social factors affecting employment; career options; and pay equity. Readings and lectures focus on the historical and contemporary experience of American men and women, including differences by ethnicity and class. This course is offered as both SOC 371 and WST 371.

Prerequisites: SOC 105 or WST 102 (formerly SSI/WST 102) or WST 103; two other courses in the social sciences
3 credits

WST 372- G: Topics in Women and Literature

The study of texts written by and about women and of issues they raise relating to gender and literature. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes. This course is offered as both EGL 372 and WST 372.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher
3 credits

WST 374- F: Historical Perspectives on Gender Orientation

An examination of contemporary American gender orientation from an historical perspective. Topics include gay marriage, gay clergy, medical definitions of gender orientation and gays in the military. This course is offered as both HIS 374 and WST 374.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One HIS or WST course
3 credits

WST 377- F: Psychology of Women

The psychological impact of important physiological and sociological events and epochs in the lives of women; menstruation, female sexuality, marriage, childbirth, and menopause; women and mental health, mental illness and psychotherapy; the role of women

in the field of psychology. This course is offered as both PSY 347 and WST 377.

Prerequisite: WST major or minor; or one of the following: WST 102, WST 103, PSY 103, WST/SOC 247
3 credits

WST 381- H: AIDS, Race, and Gender in the Black Community

Review of current biological and epidemiological knowledge about the HIV virus, and examination of the virus' social impact on the Black community. This course is offered as both AFS 381 and WST 381.

Prerequisites: U3 or U4 standing; one D.E.C. category E course
3 credits

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.

3 credits

WST 383- G: Philosophical Issues of Race and Gender (III)

Issues of race and gender and how the notion that racism and sexism are analogous forms of oppression aids and detracts from consideration of these issues. Examination of the dynamics of race and gender in various contexts such as activism, art, law, literature, the media, medicine, and philosophy. This course is offered as both PHI 383 and WST 383.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One PHI or WST course
3 credits

WST 384- G: Advanced Topics in Feminist Philosophy (III)

An intensive philosophical study of selected topics of feminist concern. Topics are selected to further the understanding of what effect feminism has upon traditional areas of philosophy as well as providing a detailed understanding of particular feminist theories. Semester supplements to this Bulletin contain specific description when course is offered.

May be repeated as the topic changes. This course is offered as both PHI 384 and WST 384.

Prerequisites: One PHI course; one WST course
Advisory Prerequisites: PHI/WST 284; one other PHI or WST course
3 credits

WST 390- G: Special Topics in Women's Studies in the Humanities

Designed for upper-division students, this course provides an in-depth study of specific current topics in women's studies within humanities disciplines such as literature, art, music, religion, and philosophy. Past topics include World Women Writers, Music and Sexuality, Contemporary Memoirs, and Alice Walker. May be repeated as the topic changes.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses
Advisory prerequisites: may be announced with topic
3 credits

WST 391- G: Special Topics in Women's Studies in the Humanities

Designed for upper-division students, this course provides an in-depth study of specific current topics in women's studies within humanities disciplines such as literature, art, music, religion, and philosophy. Past topics include World Women Writers, Music and Sexuality, Contemporary Memoirs, and Alice Walker. May be repeated as the topic changes.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses
Advisory prerequisites: may be announced with topic
3 credits

WST 392- H: Special Topics in Women and Science

Current topics in women's studies such as social issues in science or women in science. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses
Advisory prerequisites: may be announced with topic
3 credits

WST 393- I: Special Topics in Women and the European Tradition

Designed for upper-division students, this course provides an in-depth study of a topic in women's studies relating to western civilization, specifically within the European tradition. Topics may include, for example, patriarchy and the status and roles of women in early European history, or women and film in Europe. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated as the topic changes.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses
Advisory prerequisites: may be announced with topic

3 credits

WST 394- H: Special Topics in Medicine, Reproduction, and Gender

Selected topics in gender and medicine and in human reproduction. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses
Advisory prerequisites: may be announced with topic

3 credits

WST 395- J: Topics in Global Feminism

Designed for upper-division students, this course provides an in-depth study of a specific topic relating to non-western world civilizations. With a focus on the development of feminism beyond the United States and Europe, topics may include such titles as Global Feminism and Latinas: History, Society, and Culture. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses
Advisory prerequisites: may be announced with topic

3 credits

WST 396- K & 4: Special Topics in the History of American Women

The changing roles of women in the family, community and the work force in historical perspective. Topics may include the suffragette

movement, before and after; and women's roles in America's wars. May be repeated as the topic changes.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses

Advisory prerequisites: may be announced with topic

3 credits

WST 397- F: Social Sciences Topics in Women's Studies

Designed for upper-division students, this course provides an in-depth study of a specific topic within social sciences disciplines such as history, economics, sociology, political science, and linguistics. Past topics have included Gender, War, and Peacemaking, and The Psychology of Sexual Orientation. Semester supplements to this Bulletin contain specific descriptions when course is offered. May be repeated as the topic changes.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses
Advisory prerequisites: may be announced with topic

3 credits

WST 398- K: Topics in Gender, Race, and Ethnicity

Past topics include 20th-Century Latina Literature; Race and Gender in Opera; and Gender, Ethnicity, and Capitalism.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses

Advisory prerequisites: may be announced with topic

3 credits

WST 399- G: Topics in Gender and Sexuality

Past topics have included titles such as Sexual Citizens and Queer Theory. Designed for upper-division students, this course provides an in-depth study of a specific topic within humanities disciplines such as music, art, literature, religion, and philosophy. Students will be expected to demonstrate knowledge of the conventions and methods used in the humanities discipline(s) studied. May be repeated as the topic changes.

Prerequisite: WST major or minor, or WST 102 (formerly SSI/WST 102), or WST 103, or WST 301, or WST/PHI 284, or 6 credits of departmentally approved courses

Advisory prerequisites: may be announced with topic

3 credits

WST 401: Seminar in Women's Studies

Seminars on selected topics in women's studies. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisites: WST major or minor, or WST 102, or WST 103, or WST 301, or WST/PHI 284, or 6 credits of WST or related classes in other departments (approved list in the WST office); and at least one other course specified when the topic is announced

3 credits

WST 402: Seminar in Women's Studies

Seminars on selected topics in women's studies. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as the topic changes.

Prerequisites: WST major or minor, or WST 102, or WST 103, or WST 301, or WST/PHI 284, or 6 credits of WST or related classes in other departments (approved list in the WST office); and at least one other course specified when the topic is announced

3 credits

WST 407: Senior Research Seminar for Women's Studies Minors

An exploration of significant feminist scholarship in various disciplines designed for students who are majoring in disciplines other than women's studies. Seminar participants present and discuss reports on reading and research.

Prerequisites: WST 301; 15 credits of the women's studies minor

3 credits

WST 408: Senior Research Seminar for Women's Studies Majors

An exploration of significant feminist scholarship in various disciplines, designed for senior women's studies majors. Seminar participants present and discuss reports on their reading and research.

Prerequisites: WST 305; 15 additional credits in the major; U4 standing; women's studies major

3 credits

WST 447: Directed Readings in Women's Studies

Intensive readings in women's studies for qualified juniors and seniors under close supervision of a faculty instructor. Topic to

be chosen in consultation with the faculty member. May be repeated once.

Prerequisites: Permission of instructor and undergraduate director

1-3 credits

WST 475: Undergraduate Teaching Practicum I

Students aid instructors and students in women's studies courses in one or several of the following ways: leading discussion sections, helping students improve writing and research skills, and library research. Students meet regularly with the supervising instructor.

Prerequisites: U3 or U4 standing; permission of instructor; WST major or minor

3 credits, S/U grading

WST 476: Undergraduate Teaching Practicum in Women's Studies II

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

Prerequisite: Permission of department

3 credits, S/U grading

WST 487: Independent Project in Women's Studies

The design and conduct of a research project selected by the student and arranged by the student and the instructor. May be repeated once.

Prerequisites: Permission of instructor and undergraduate director

0-6 credits

WST 488: Internship

Participation in public and private agencies and organizations. Students are required to submit written reports on their experiences to the faculty sponsor and the women's studies program. May be repeated up to a limit of six credits.

Prerequisites: Six credits toward the women's studies minor; permission of instructor and undergraduate director

0-6 credits, S/U grading