AAS

Asian & Asian American Studies

AAS 102: Eastern Religions

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.

DEC: *B*
SBC: *GLO, HUM*

3 credits

AAS 110: 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.

DEC: *G*
SBC: *ARTS*

3 credits

AAS 201: 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, Asohka, Akbar and great emperors, impact of Islam and Western colonization, and Gandhi and the impact of South Asia on the world.

DEC: *J*
SBC: *GLO*

3 credits

AAS 209: 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 Shlokam (poem).

Advisory Prerequisite: Any dance class

DEC: *D*
SBC: *ARTS*

3 credits

AAS 211: 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. May be repeated as the topic changes.

DEC: *F*
SBC: *SBS*

3 credits

AAS 212: 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. May be repeated as the topic changes.

DEC: *G*
SBC: *HUM*

3 credits

AAS 215: 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.

DEC: *D*
SBC: *ARTS*

3 credits

AAS 216: 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: one D.E.C. B or HUM course

DEC: *J*
SBC: *ESI, GLO*

3 credits

AAS 217: 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.

DEC: *J*
SBC: *GLO, HUM*

3 credits

AAS 218: Ancient, Medieval, & Early Modern South Asia

Surveys the history of South Asia (contemporary India, Pakistan, and Bangladesh, with some consideration of Afghanistan, Myanmar, Tibet, and Sri Lanka) in ancient, medieval, and early modern eras. Central themes include the emergence of social orders, religions, and regions; global and regional mobility and connections; relations between social and religious communities (Buddhists, Hindus, Muslims; peasants, elites, genders); changing state structures; and early European presence. This course is offered as both AAS 218 and HIS 218. Formerly offered as AAS/HIS 347; not for credit in addition to AAS/HIS 347.

DEC: *J*
SBC: *GLO, HUM*

3 credits

AAS 219: Japan in the Age of Courtier and Samurai

Surveys the history of Japan from ancient times to the late nineteenth century. Examines the complex processes of political, economic, social, and cultural change in Japan's

transformation from aristocratic rule under the emperor to warrior rule under the samurai. This course is offered as both AAS 219 and HIS 220.

DEC: *J*
SBC: *GLO, SBS*

3 credits

AAS 220: 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.

DEC: *J*
SBC: *GLO, SBS*

3 credits

AAS 222: Indian Cinemas and Cultures

The course examines the contemporary global art form known as 'Indian cinemas' from its advent of the moving picture in the late 1800's to the present. In this Asian film course, we explore the various cinemas of India and the Indian diaspora such as Bollywood cinema, art cinema, films by Indian directors inside and outside India, music videos, and documentaries. Factors behind its ascent to the most popular art form as well as a lucrative medium of entertainment and potent vehicle for social change not only in India but also beyond its shores are examined in some depth. We discover how these various Indian cinemas address and depict the social mores, cultural practices and political issues of the South Asian subcontinent. Themes for our discussions include but are not limited to nationalism, sexuality, censorship, activism, tradition, modernity, identity, gender roles, and the pleasures and politics of song, dance and music, as we look at historical, thematic and aesthetic issues of these cinemas and their impact and influence in India as well as globally.

DEC: *D*
SBC: *ARTS, GLO*

3 credits

AAS 223: China: Society and Civilization

An introduction to Chinese society and civilization, including an overview of major historical dynasties, imperial administration, family and kinship, trade routes and cultural exchange, philosophy and religion, festivals and foods, arts and architecture, science and technology. Explores the influence of major developments and inventions on Western civilization and global history. Not for credit in addition to AAS 221 China: Science and Civilization.

SBC: *GLO, SBS*

3 credits

AAS 228: China: History and Geography

An introductory survey of the history of China and its relations with neighboring peoples, cultures, and civilizations. Explores important events and developments of major historical periods, from the Neolithic across various imperial dynasties to the modern day. Covers arts and culture, politics and economics, gender and society, geography and ecology, foreign policy and domestic government, philosophy and education, technology and innovation, ritual and religion.

SBC: *GLO*

3 credits

AAS 232: 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.

DEC: *G*
SBC: *HUM, USA*

3 credits

AAS 236: Korean Religions

Throughout its long history, Korea has experienced and created various religious traditions and became one of the most religiously diverse societies. Korean culture includes a wide variety of religious elements that have shaped the Koreans' way of thinking and living, in the way rarely seen in the European traditions. The objectives of this course are to understand and appreciate the religious heritage of Korea. Instead of trying to abstractly define religions, this course will serve to identify religious practices in which Koreans are engaged. In the process, students will obtain an understanding of important religious concepts, theories, activities, and lives of the religious leaders from ancient times to the present.

DEC: *J*
SBC: *GLO, HUM*

3 credits

AAS 237: Introduction to Japanese Literature

An introduction in English to the great literary works of Japan from the earliest extant writing to works of the present.

DEC: *G*
SBC: *HUM*

3 credits

AAS 238: Korean American Literature

This course will explore contemporary Korean American literature. We will study works of various genres (three novels, one short story collection, two memoirs, selected works of poetry) and students will collectively assemble an interdisciplinary conversation with fields like Asian American studies and Korean studies.

SBC: *DIV, USA*

3 credits

AAS 240: Confucianism and Daoism

An introduction to the basic philosophies and doctrines of Confucianism and Daoism, such as the concept of Dao, 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.

DEC: *J*
SBC: *GLO, HUM*

3 credits

AAS 247: Modern Korea through Visual Culture

Examines Korea's historical experiences and social transformation from mid-nineteenth century to present through visual materials such as photographs, films, postcards, print materials and paintings as well as historical texts and secondary analysis. Students will acquire in-depth knowledge of Korea's modern experiences as well as its contemporary society and culture. The course aims to cultivate students' visual literacy on modern Korea through interpreting and analyzing historical visual documents and creating their own visual essays. This course is offered as both AAS 247 and HIS 247.

DEC: *F*
SBC: *GLO, SBS*

3 credits

AAS 250: 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.

DEC: *K*
SBC: *SBS, USA*

3 credits

AAS 256: 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.

DEC: *J*
SBC: *GLO, HUM*

3 credits

AAS 260: 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.

DEC: *J*
SBC: *GLO, HUM*

3 credits

AAS 280: 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.

DEC: *J*
SBC: *GLO, HUM*

3 credits

AAS 287: Islam in China

Muslims entered China by the Silk Road shortly after the death of Muhammad in 632 and established permanent communities by the year 1000. Current estimates of the Muslim population in China begin at twenty million and go up. The course will survey the cultural history of the community, showing how it adapted Islamic teachings to a language that had been shaped by three non-theistic traditions Confucianism, Daoism, and Buddhism and illustrating the manner in which it integrated the distinctive monotheistic features of Islam into the cosmological and humanistic visions of the Chinese traditions. This course is offered as both AAS 287 and RLS 287.

SBC: *GLO, HUM*

3 credits

AAS 300: 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).

DEC: *G*
SBC: *HFA+*

3 credits

AAS 305: The Pacific, Travel & Empire

This cultural studies course examines the cultures of travel (i.e. fiction, memoirs, photography, and filmmaking) in narratives by and about the Pacific, South and Southeast Asia. We will study "empire" by analyzing narratives about the former colonies of Spain, France, Britain and the United States. As we discuss the metaphors or tropes of empire, we will also examine the concept of empire as a historical and contemporary formation, or what an empire meant in the 19th century and what it means today in the early 21st century. The course begins with the premise that travel narratives and modern visual culture illuminate the relationship between the violence and romance of travel. The course includes modern travel narratives (i.e. novels by Asian Americans) that focus on the lives of those who are forced to travel or migrate due to civil war, poverty and/or economic instability. Covers the Interdisciplinary topic for the English major. This course is offered as AAS 305 and EGL 305.

Prerequisite: Any 200 and/or 300 level course offered by the Department of Asian and Asian American Studies or the English Department

DEC: *J*
SBC: *HFA+*

3 credits

AAS 320: 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.

Advisory Prerequisite: AAS 201

DEC: *G*
SBC: *HFA+*

3 credits

AAS 321: 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.

DEC: *G*
SBC: *HFA+*

3 credits

AAS 322: 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.

Advisory Prerequisite: AAS 216

DEC: *G*
SBC: *HFA+*

3 credits

AAS 323: Language and Society in South Korea

A multidisciplinary exploration of Korean society and culture through the medium of its language. It examines the complex relationship between Korean language and major historical and sociocultural context of the Korean society and analyses how the language has encoded

culturally and socially constructed practices and experiences of Korean people. The topics include ethno-linguistic identity, nationalism, regionalism and dialects, kinship and gender, English education, popular culture, linguistic hybridization and intercultural communication in globalizing and digitalizing world, as well as historical development of spoken and written system of Korean language.

Prerequisite: U3 or U4 standing

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AAS 324: Language and Society in North Korea

A multidisciplinary exploration of North Korea's history, society, and diaspora, and the Korean conflicts through the window of the language practices from the period of Japanese colonization to present. It examines the complex ideological, historical, cultural and international issues embedded in language policies and practices in North Korea and its interactions with South Korea and the international society, especially the United States, China and Russia. The topics include language and identity, the Cold War rhetoric, linguistic nationalism and purism, and linguistic hybridization of North Koreans defectors. The course also covers the cultural aspects of North Korean linguistic life through gendered practices of language and Confucian tradition, and examines popular culture in media such as music, films, and arts.

Prerequisite: U3 or U4 standing

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AAS 326: Indian Mythology

Study of the major themes in Indian mythology and their evolution, including the relation of these myths to philisophy 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.

DEC: *G*
SBC: *HFA+*

3 credits

AAS 327: 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 Hiduism. The course will compare the two epics with each other.

DEC: *G*
SBC: *HFA+*

3 credits

AAS 328: Race, Humor 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: U3 or U4 status and one 100-level or higher AAS, AMR, EGL, or CLT course

DEC: *K*
SBC: *HFA+, USA*

3 credits

AAS 330: 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

DEC: *J*
SBC: *SBS+*

3 credits

AAS 331: Japanese Literature in the Feminine Domain

This course examines both writings of Japanese women and writings about Japanese women. It will challenge the application of current Western feminist standards to Japanese culture through the analysis of Japanese literary works. We will begin with Japanese mythology focusing on the stories of the creator goddess and Amaterasu, the sun goddess, from whom the imperial line was descended. We will consider the great Heian Era women writers and their culture, examining the difference between men's and women's writing. From the Heian era we will move to the Meiji Era, when Japan's isolationist period had ended and centuries' worth of Western literature was introduced to Japan. We will concentrate on the writings of Higuchi Ichiyo, noting how the position of women had changed by her day and how it affected her literary style. The course will close with a focus on how literature treats Japanese women in our own time. This course is offered as AAS 331 and WST 331.

DEC: *J*
SBC: *HFA+*

3 credits

AAS 332: Japanese Literature in the Meiji Era

This course examines Japanese literature of the Meiji era, an era unique in the history of the world. Until the 1400s, Japan had no contact with the West due to its geographic location. After a brief and limited exposure to Western literature, Japan closed its doors to the West and remained isolated from approximately 1600 until 1868. During the Meiji Era (1868-1912) Japan was flooded with examples of all the phases of Western literature it had missed, and Japanese writers soon responded to the Western developments. This course will deal with that response, from Tsubouchi Shyoyo's criticism of modern Japanese novels and their lack of appreciation for Realism, to the development of the Japanese I-novel. Due to Japan's literary response to the West, it can also be argued that the Meiji Era marked the end of Japanese literature as a unique entity, and this course will explore this issue as well.

DEC: *J*
SBC: *HFA+*

3 credits

AAS 334: English in Asia

Study of the expanding roles of English in South Asia, East Asia, and Southeast Asia. With more non-native speakers than native speakers, and more in Asia than elsewhere, English has acquired new identities. We will study functions of English in colonial and post-colonial times; how it competes with, and complements local languages in business, advertising, media, education, research, administration, judiciary, creative literature, call centers, and on the Internet; the evolution of dynamic new Asian Englishes, such as Indian English, and their social and cultural contexts; controversies regarding English medium education and its impact on local languages, relevance of native English standards, and implications for

theory, description, and method in diverse disciplines, such as, business communication, cultural studies, English, lexicography, speech recognition, journalism, media studies, sociolinguistics, teaching English as a second language, and Asian Studies.

Prerequisite: U3 or U4 status. Advisory prerequisite: LIN 101

DEC: *J*
SBC: *SBS+*

3 credits

AAS 336: 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. This course is offered as both AAS 336 and HIS 338.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *SBS+*

3 credits

AAS 337: History of Korea

Examines Korean history from ancient to modern times. Korea is one of the many ancient, non-European civilizations claiming a cultural influence on the region and one of the main players in the history of East Asia. Reflecting its unique historical experiences, Korean history has raised diverse debatable issues. The primary goal of this course is to provide an overview of Korean history and, at the same time, through introducing multiple debatable issues of historical significance, the course attempts to enhance students' analytical capability in approaching complicated historical issues. This course is offered as both AAS 337 and and HIS 337.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

AAS 338: 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 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: One previous course in AAS or POL; U2 or higher standing

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AAS 339: 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 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; U2 or higher standing

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AAS 340: Topics in Asian History

Designed for upper-division students, this course provides an in-depth study of a specific topic in Asian history. May be repeated as the topic changes. This course is offered as both AAS 340 and HIS 340.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AAS 343: 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. This course is offered as both AAS 343 and HIS 344.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AAS 344: Learning of Asian Languages

Inquiry into issues in the learning of Asian languages. This course introduces the foundational knowledge of first and second language acquisition as well as the characteristics of multiple Asian languages, focusing on their structural similarities and differences. Students are expected to critically analyze the issues in the acquisition of Asian languages in light of their linguistic characteristics as well as the social and educational contexts that surround their learners.

Prerequisite: U3 or U4 status. Advisory Prerequisite: CHI 212, HIN 212, JPN 212, KOR 212, or equivalent proficiency in one of the Asian languages

DEC: *J*
SBC: *GLO, SBS*

3 credits

AAS 351: 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: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

AAS 352: 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.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *H*
SBC: *STAS*

3 credits

AAS 353: 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. This course is offered as both AAS 353 and HIS 353.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AAS 358: China's Lang, Media, Pop Culture in Global Context

Since the launch of a sweeping liberalization policy in 1978, Chinese society has experienced numerous dramatic changes, many of which can be perceived in mass media and popular culture. In this course, we will explore the following questions: What is contemporary Chinese popular culture? How does popular culture relate to media, the state, social change, public spaces, individual freedom, national identity, gender and sexuality, and globalization in Chinese society? And how does contemporary Chinese popular culture influence people¿s everyday lives? Adopting a unique language perspective, the course offers opportunity to look at how language is functioned in all the processes. Students will learn and apply various approaches to analyzing language use in media and understanding popular culture in comparative perspective, using a variety of authentic materials drawn from everyday life in Chinese society. Students will become familiar with various aspects of language, media, and popular culture through required readings, viewings, lectures, group discussions and writing activities. No prerequisite knowledge of Chinese language or Chinese popular culture is required.

Prerequisite: U3 or U4 standing; one HUM course
Advisory Prerequisite: AAS 220

SBC: *DIV, HFA+*

3 credits

AAS 360: Chinese Sociolinguistics

This course (taught in English) introduces you to the to the continuity and heterogeneity of the Chinese language(s) in the Sino-phone world. We explore the complex relationship between linguistic practices and social stratifications as well as cultural changes by examining issues related to language use and their relationship to identity in different parts of the Chinese-speaking world (e.g., Mainland China, Taiwan, Hong Kong, Singapore, and among Chinese diaspora communities overseas). We specifically focus on sociolinguistic aspects that are salient to the Chinese-speaking societies, such as language and place, the linguistic construction identity (gender, nationality, ethnicity), and language policy and planning. We also discuss sociolinguistic research based on English to learn ways of analyzing language phenomenon.

Prerequisite: U3 or U4 status

SBC: *DIV, SBS+*

3 credits

AAS 366: 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.

Advisory Prerequisite: any 200-level or higher RLS course

DEC: *G*
SBC: *HFA+*

3 credits

AAS 368: 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.

Advisory Prerequisite: one previous course in AAS or RLS

DEC: *J*
SBC: *HFA+*

3 credits

AAS 370: 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 SBS+ or one previous course in Linguistics

DEC: *J*
SBC: *SBS+*

3 credits

AAS 371: 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; one D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

AAS 372: 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

DEC: *J*
SBC: *SBS+*

3 credits

AAS 379: Cultural Diversity 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)

DEC: *J*
SBC: *SBS+*

3 credits

AAS 380: 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.

Advisory Prerequisite: AAS/RLS 280

DEC: *G*
SBC: *HFA+*

3 credits

AAS 382: 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.

Advisory Prerequisite: AAS/RLS 260

DEC: *G*
SBC: *HFA+*

3 credits

AAS 385: Translation Studies of Asian Languages

Inquiry into issues in the translation of Asian languages into/from English. This course introduces the recent theories and concepts of translation studies and applies them to the analysis of a variety of Asian texts as source texts or target texts. Students are expected to gain insights into the lexical, grammatical, cognitive, pragmatic, and socio-cultural characteristics of Asian languages as well as social and political issues that surround translation of Asian texts. Texts to be analyzed include, but are not limited to, literary works, newspaper articles, advertisements, brochures, and business letters.

Prerequisite: CHI 212, HIN 212, JPN 212, KOR 212, or equivalent proficiency in one of the Asian languages

SBC: *CER*

3 credits

AAS 387: 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.

Advisory Prerequisite: AAS 260 or RLS 260 or AAS 280 or RLS 280; U3 or U4 standing

DEC: *J*
SBC: *HFA+*

3 credits

AAS 391: Humanities Topics in Asian and Asian American Studies

Past topics have included titles such as Sikhism; Introduction to Indian Philosophy; Modern Indian Literature; and Appreciating Indian Music. 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: Junior or Senior Standing

DEC: *G*
SBC: *HFA+*

3 credits

AAS 392: 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: Junior or Senior Standing

DEC: *F*
SBC: *SBS+*

3 credits

AAS 394: Topics in Asian Art

An in-depth exploration of a particular theme within the field of Asian art, that may include topics on ancient arts or contemporary artists, movements and cultural practices. May be repeated for credit as the topic changes. This course is offered as both AAS 394 and ARH 394.

Prerequisites: U3 or U4 standing; one ARH course

DEC: *J*
SBC: *GLO, HFA+*

3 credits

AAS 396: Topics in Sinophone Literature and Culture

This course studies the experience of Sinophone communities across the globe through cultural productions such as literature, film, and visual culture, etc. Emphasis is placed on the role of culture and identity within the writing, documentation, and evidencing of history. Attention may be focused on a particular era, group, institution, type of object, or event relating to the communities examined.

Prerequisite: U3 or U4 status
Pre- or corequisite: one AAS course

SBC: *GLO, HFA+*

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.

Prerequisite: U3 or U4 status

3 credits

AAS 401: Seminar in Asian and Asian American Studies

Introduces students to qualitative and quantitative research methods commonly used in social sciences and humanities, including

narrative research, phenomenological research, ethnographic research, case study research, correlational research, and survey research. Students are expected to identify a topic of interest of their own choosing within Contemporary Asian and Asian American Studies and develop a pilot research project. The instructor plays the role of a facilitator by leading methodological as well as thematic discussions on research topics initiated by students. This course takes the format of lectures, workshops, student presentations, peer critique, and one-on-one instructor-student conferences.

Prerequisites: U3 or U4 standing; AAS major

SBC: *SPK, WRTD*

3 credits

AAS 440: Inter-Asia Cultural Studies

An examination of critical theory on Inter-Asia cultures and phenomena. Emphasis is placed on the role of culture within the writing, documentation, and evidencing of history. Attention may be focused on a particular era, group, institution, type of object, or event.

Prerequisite: U3 or U4 status
Advisory Prerequisite: one AAS course

SBC: *GLO, HFA+*

3 credits

AAS 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any AAS course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

AAS 459: Write Effectively in Asian and Asian American Studies

A zero credit course that may be taken in conjunction with any 300- or 400-level AAS course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

AAS 472: Topics in Asian Philosophy (I)

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 472 and PHI 472.

Advisory Prerequisite: two courses in PHI, in AAS or one in each

DEC: *J*
SBC: *ESI, HFA+*

3 credits

AAS 473: Orientalism

Investigation of the history and theory of Western engagement with Asian cultures. Following from Edward Said's influential book Orientalism, we examine the alleged imperialism inherent in the study of the Orient, also considering some opponents of Said's thesis. Special attention is paid to the history of interpretation of Asian philosophies in the West, and of Asian postcolonial responses to such portrayals. We conclude by exploring the possibilities for post-orientalist approaches to the study of Asia. This course is offered as both AAS 473 and PHI 473.

Advisory Prerequisite: two courses in PHI, in AAS or one in each

DEC: *J*
SBC: *HFA+*

3 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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

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

ACC

Accounting

ACC 210: Financial Accounting

This course presents an introduction to fundamental financial accounting principles, concentrating on identifying, recording, and communicating the economic events of a business organization. Topics include the accounting cycle, the preparation and presentation of the income statement, retained earnings statement and balance sheet, and an in-depth exploration of the measure and presentation of assets and liabilities.

Prerequisite: Business Major or ACC Minor or MTD or ECO or ISE Major

3 credits

ACC 214: Managerial Cost Analysis and Applications

A study of cost concepts, and theories as it relates to cost accumulation systems for product, process and activity based costing, as well as 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 major or ACC minor or ISE Major

3 credits

ACC 310: Intermediate Accounting I

This course expands upon the basic financial accounting framework and explores the theoretical and analytical applications of Generally Accepted Accounting Principles (GAAP) in a business environment. The student will gain an understanding of financial reporting criteria and the reliance placed upon financial information by external users. Topics include the measurement and reporting of cash, receivables, inventories, and operational assets, revenue recognition and the preparation of financial statements.

Prerequisite(s): BUS major or ACC minor and ACC 210

3 credits

ACC 311: Federal Income Taxation I

Introduces and explores fundamental income taxation concepts for individuals. Topics include gross income, exclusions, adjusted gross income, deductions, exemptions, tax computations, and credits. Introductory tax concepts, including cash and accrual methods, property acquisitions and dispositions, like-kind exchanges, and passive loss rules are also reviewed. Additionally, students will familiarize themselves with tax planning concepts, the legislative process, and professional responsibilities in tax practice.

Prerequisite(s): BUS major or ACC minor

3 credits

ACC 313: Intermediate Accounting II

This course is the second in the intermediate accounting sequence (ACC 310). This course continues in the exploration of the financial accounting framework and the theoretical and analytical applications of Generally Accepted Accounting Principles (GAAP). Topics the study of advanced topics including accounting for investments, stockholders equity, pensions, leases, income taxes, bonds, and other contemporary financial accounting issues.

Prerequisite: BUS major or ACC Minor and ACC 310

3 credits

ACC 314: Federal Income Taxation II

Introduces and explores fundamental income taxation concepts for business entities, with a focus on C corporations, S corporations, and partnerships. Topics include the formation, operation, reorganization and liquidation of C corporations, as well as the formation, operation and liquidation of flow-through entities. Students will also familiarize themselves with specialty topics concerning estates and trusts, transfer taxes and jurisdictional taxation.

Prerequisite: BUS Major or ACC Minor and ACC 311

3 credits

ACC 400: External Auditing

The 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 (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 analysis and testing of internal control, substantive testing, and accounting research.

Prerequisite(s): BUS Major or ACC minor and ACC 210

3 credits

ACC 402: Advanced Accounting

This course provides students with in-depth and up-to-date coverage of accounting for investments, business combinations, consolidated financial statements, segment and interim reporting, foreign currency transactions, and partnerships. The course links theory and practice with consistent emphasis on the logic of procedures.

Prerequisite: ACC 313

3 credits

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 202: Academic Success Seminar

Designed to help students develop essential skills needed to become lifelong, self-regulated and self-motivated learners. Through guided journals and assignments, students will use self-reflection to identify possible self sabotaging thoughts and behaviors and discover what may be getting in the way of their academic and personal success. Students will discover how they learn and develop and strengthen their study skills. Topics to be covered include motivation, how memory works, metacognition, critical thinking, decision making, attention and concentration, goal setting, time management and other study skills strategies.

Prerequisite: Permission of instructor

2 credits, ABC/U grading

ADV 475: Undergraduate Teaching Practicum I

Work as an assistant with an instructor of an ADV 101 regularly scheduled class or with the coordinator/instructor of ADV 488. The student is required to attend all classes, keep current with the regularly assigned work, and meet with the instructor at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course.

Prerequisite: U3 or U4 standing; permission of ADV 101 or ADV 488 coordinator and director of the Academic & Transfer Advising Services Center; completion of ADV 101 or ADV 488 or equivalent experience

SBC: *EXP+*

0-3 credits, S/U grading

ADV 476: Undergraduate Teaching Practicum II

Work as an assistant with an instructor of an ADV 101 regularly scheduled class or with the coordinator/instructor of ADV 488. The student is required to attend all classes, keep current with the regularly assigned work, and meet with the instructor at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. The student assumes greater responsibility in such areas as leading discussions and researching class-appropriate topics.

Prerequisite: ADV 475; permission of ADV 101 or ADV 488 coordinator and director of the Academic & Transfer Advising Services Center

SBC: *EXP+*

0-3 credits, S/U grading

ADV 488: Academic and Transfer Advising Services 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 and Transfer Advising Services Center. Repeatable to a maximum of 12 credits.

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.

SBC: *EXP+*

3 credits, S/U grading

AFH

Africana Studies/Humanities

AFH 101: The Wonders of the Black World

This class is an introductory, general education, diversity class in which students are introduced to global issues that directly impact their lives. Starting with the construction of Blackness in the United States at the intersection between historical memories and American indigenous knowledge, the class analyzes what it means to be Back today: in the United States first, using the students own environment and histories, and then across the general landscape of Global Blackness. The goal is to lay the background for an appreciation of the Black world in its diverse manifestations from Africa to the Americas (Latin America, United States, Canada, the Caribbean), from Asia (India, the Middle East) to Europe (Spain, France, England, etc.).

SBC: *DIV, GLO*

3 credits

AFH 205: Contemporary African Literature

Contemporary African Literature is an introductory course on fictional and nonfictional works by canonized African writers from the African continent and the diaspora. Close readings of literature by authors from the 1950s to the present day, such as Chinua Achebe, Ngugi Wa Thiong'o, and Chimamanda Adichie unveil literary traditions, themes, and motifs specific to African writing. An examination of the writers' attention to topics such as (colonialism, ethnic war, gender oppression, migration, and Afropolitanism) allows for a critical analysis of the historical, social, and political issues on the African continent. The authors' discussions about globalization and its impact on African nations, particularly in relationship to the global marketplace, highlight the paradoxical nature of Africa's rich natural resources (oil, diamonds and coltan) against the continent's economic dependency on global investors. Postcolonialism, Feminism, and Psychoanalytic theory will enrich students' interpretation and analysis of the texts.

DEC: *J*
SBC: *GLO, HUM*

3 credits

AFH 206: 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

DEC: *B*
SBC: *HUM*

3 credits

AFH 215: Hip Hop and the Intellectual Tradition

Examines the world of hip-hop, by framing it within the fields of intellectual theory and examining the scholarly and artistic contributions of rap artists, writers, and scholars who intellectualize the global and cultural phenomenon of Hip Hop. This course will attempt to complicate the largely historical and non-theoretical treatment of hip hop in mass-mediated portrayals by engaging in a cultural studies critique of youth cultural formations and the rapid global industrialization of hip-hop. The course will also highlight how contemporary issues concerning racial and gender politics, sexual orientation, globalization, and neocolonialism are tackled by the music and culture.

DEC: *G*
SBC: *HUM*

3 credits

AFH 249: 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 Henrix 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 or one HUM or ARTS course

DEC: *K*
SBC: *HFA+*

3 credits

AFH 282: Contemporary Caribbean Women's Literature

Examines the political, social, and historical experiences of women from anglophone francophone, and hispanophone Caribbean nations. The readings, movies, and projects selected for the course highlight reccurent themes in Caribbean literature such as exile, migration, identity, colorism, slavery, sexual oppression, transnational motherhood, and identity politics. Feminist criticism, Postcolonialsm, and critical race theory will be applied to our reading of the texts. This course is offered as both AFS 282 and WST 282.

SBC: *DIV, GLO, HUM*

3 credits

AFH 329: 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

DEC: *J*
SBC: *GLO, HFA+*

3 credits

AFH 330: 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

DEC: *J*
SBC: *GLO, HFA+*

3 credits

AFH 339: 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

DEC: *G*
SBC: *HFA+*

3 credits

AFH 368: 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. Covers the Interdisciplinary topic for the English major. 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

DEC: *G*
SBC: *HFA+*

3 credits

AFH 379: 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: one PHI course

DEC: *K*
SBC: *CER, HFA+, USA*

3 credits

AFH 380: African American and Caribbean Theatre

African American and Caribbean Theatre examines the connection between Black theatre and political and social movements of the 1940s to the 2000s. The course studies how playwrights use theatre to educate audiences about specific injustices of the day. An historical reading of the plays by playwrights such as Wole Soyinka, August Wilson, Lorraine Hansberry, and Susan Lori Parks introduces students to major topics for discussion in black theatre, including racial politics, socio-political disenfranchisement, the struggle to define self, and alienation from the community/society.

Prerequisite: U3 or U4 standing

DEC: *G*
SBC: *GLO, HFA+*

3 credits

AFH 382: 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. Covers the Interdisciplinary topic for the English major. This course is offered as AFH 382, EGL 382, and WST 382.

Prerequisite: U3 or U4 standing

DEC: *G*
SBC: *DIV, HFA+*

3 credits

AFH 385: 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: Junior or Senior Standing

DEC: *J*
SBC: *HFA+*

3 credits

AFH 390: 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

DEC: *G*
SBC: *HFA+*

3 credits

AFH 391: 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

DEC: *G*
SBC: *HFA+*

3 credits

AFH 423: 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.

DEC: *J*
SBC: *HFA+*

3 credits

AFH 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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

SBC: *ESI*

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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *ESI*

0-3 credits

AFS

Africana Studies/Social and Behavioral Sciences

AFS 101: 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.

DEC: *F*
SBC: *CER, SBS, USA*

3 credits

AFS 102: 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.

DEC: *F*
SBC: *CER, SBS, USA*

3 credits

AFS 221: 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.

DEC: *J*
SBC: *GLO, SBS*

3 credits

AFS 223: Regional History of Africa

Given the immensity of the African continent, it is often divided into regions (such as east, west, north, or southern, equatorial, the Horn, the Sahel, Atlantic or Indian Ocean) to explore connections and boundaries. This course gives students the opportunity to focus more deeply on a region of Africa. The particular region examined will change each semester. Factors that integrate a region may be environment and land use strategies, long-distance trade networks, religious communities, imperialism, and political regimes. The course will examine the challenges to regional integration, such as conflicts, language diversity, and separatist movements. This course is offered as both AFS 223 and HIS 223. Students may repeat the course when the region changes.

DEC: *J*
SBC: *GLO, SBS*

3 credits

AFS 239: 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 or SBS course

DEC: *J*
SBC: *GLO*

3 credits

AFS 240: 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

DEC: *J*
SBC: *GLO*

3 credits

AFS 277: 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.

DEC: *K & 4*
SBC: *USA*

3 credits

AFS 283: Community Service

The Stony Brook University AFS 283 Community Outreach Mentoring Program, in partnership with Tri Community and Youth Agency, is a mentoring program designed to provide support and guidance for at risk students from underserved neighborhoods in Huntington, Long Island. Through field experience, readings, research, and discussion, students focus on social and educational problems relating primarily to the African-American and Latin experience. May be repeated once.

Prerequisite: Permission of instructor

SBC: *EXP+*

3 credits, S/U grading

AFS 300: 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: Junior or Senior Standing

DEC: *K*
SBC: *SBS+*

3 credits

AFS 306: Gender and Public Health in Africa

Examines approaches to disease prevention and treatment through public health systems in African countries. The impact of global health organizations such as WHO, UNAIDS and other UN bodies and international development organizations on domestic health care policy is also analyzed. An emphasis is placed on identifying the most prominent public health issues in each of the county case studies and identifying points of convergence and divergence among them. More specifically their relationships to gender equality, education, and economic security and population displacement will be evaluated using Intersectionality as a theoretical framework. Disparities in access to health insurance, treatment, and medication, and funding mechanisms will be analyzed.

Prerequisite: U3 or U4 status

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AFS 308: Women Islam and Political Change in Africa

Explores the impact of Islam on political institutions and representation in Africa. Using the example of how Muslim women in West, North, Southern, and East Africa are mobilizing to address gender inequality, explores variations in the formation of Islamist movements and examine the influence of moderate, progressive, and more radical forms of political Islam on the experiences of women. In order to provide students with a comprehensive picture, Islam and politics is contextualized by focusing on the experiences of selected countries from East and West Africa including Tanzania, Kenya, Somalia, Nigeria, Ghana, and Senegal. This course is offered as both AFS 308 and POL 308.

Prerequisite: U2 or higher standing

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AFS 310: 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: Junior or Senior Standing

DEC: *K*

SBC: *SBS+*

3 credits

AFS 319: 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: Junior or Senior Standing

DEC: *F*
SBC: *SBS+*

3 credits

AFS 320: 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: one D.E.C. F or SBS course

DEC: *K*
SBC: *HFA+*

3 credits

AFS 325: Civil Rights and Black Power

The course considers how the 'long civil rights movement' and century-long struggles for Black Power were interwined movements, rather than conventional narratives that conceive them as being opposed to one another. The course will therefore span the whole of the twentieth century, beginning with the founding of the United Negro Improvement Association and the National Association for the Advancement of Colored People (NAACP), and it will conclude with the turn from civil rights to economic justice, Black political empowerment, and campaigns against police brutality. Offered as both AFS 325 and HIS 325.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *SBS+*

3 credits

AFS 337: 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; U2 or higher standing

DEC: *J*
SBC: *SBS+*

3 credits

AFS 339: 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: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K*
SBC: *SBS+, USA*

3 credits

AFS 340: Human Rights and Africa

A study of the significance of Africa in the development of international human rights. The courses focuses on the images of Africa generated by international human rights organizations and activists, the conceptions of human rights developed by African states and people, and the variable impact of human rights discourse and practice on African quests for equality and justice. This course analyzes the political, historical, and ethical complexity of international human rights' engagement with Africa.

Prerequisite: U3 or U4 status

SBC: *CER, DIV, SBS+, SPK*

3 credits

AFS 345: 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: U3 or U4 status

DEC: *J*
SBC: *SBS+*

3 credits

AFS 346: 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.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

AFS 350: 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

DEC: *J*
SBC: *SBS+*

3 credits

AFS 355: Ancient African Civilizations

African archaeology is reshaping global debates on the origins of agriculture and civilization. This course examines the prehistoric economic foundations of Africa's complex societies: intensive hunting and gathering, early herding, and plant domestication. Detailed case studies of ancient civilizations (Egypt, Aksum, Jenne, Swahili, and Great Zimbabwe) reveal distinct processes of prehistoric social change in different parts of Africa. Students consider the implications of archaeology for African 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

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AFS 360: 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: Junior or Senior Standing

DEC: *K*
SBC: *SBS+, USA*

3 credits

AFS 363: 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: Junior or Senior Standing

DEC: *F*
SBC: *SBS+*

3 credits

AFS 365: Global Africa

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: one D.E.C. F or SBS course or U3/U4 status

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AFS 368: Health and Disease in Africa

Health and disease lie at the intersection of social, political, economic, biological, and cultural processes. In other words, they have changed throughout human history, and they are not just defined by scientists and doctors but by many more actors. This course has two goals: to introduce students to the study of disease and health as historical phenomena and to examine Africa's importance within global and regional histories of these subjects. We will explore how the experiences of sickness and well-being have changed over time. This course is offered as both AFS 368 and HIS 368.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

AFS 369: Religion and Politics in Africa

Sub-Saharan Africa is home to many religions' indigenous belief systems, Judaism, Christianity, and Islam It is also arguably a region with a history of peaceful coexistence until recent decades. This course examines African religious transformations, encounters, exchanges, and conflicts. Topics to be covered include medieval and modern theocracies, reformism and jihad, literacy, gender hierarchies, education, European colonialism and Christian proselytization, Islamic evangelism, and religion and resistance to foreign domination. We will also explore theories about charismatic leadership, modernization, secularization, and radicalism. This course is offered as both AFS 369 and HIS 369.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *CER, SBS+*

3 credits

AFS 370: 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

DEC: *K*
SBC: *HFA+, USA*

3 credits

AFS 372: 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

DEC: *K*
SBC: *SBS+, USA*

3 credits

AFS 373: Sexualities: African and Caribbean Perspectives

Designed to introduce students to the complexities of human sexuality from a perspective that places subaltern individuals at the center of the analysis. It locates these individuals, and their sexual practices, in the tropics--or "warm, warm climates"--first in those man-made communities where sexuality was one of the (unspoken) exigencies of the slave economy and later in the modern era where the slave economy gave way to "neo-colonies."

Prerequisite: U3 or U4 standing

DEC: *J*
SBC: *DIV, SBS+*

3 credits

AFS 374: Environment and Development in African History

Provides a critical exploration of the history and political-economy of environmental changes and human activities in Africa from earlier times to the present. It examines the ways in which the dynamics of human-environment relationship have shaped the development of African societies and economies from the rise of ancient civilizations to the contemporary problems of war and famine. Although significant attention will be given to the pre-colonial era (like the impacts of iron-working, irrigation, deforestation and desertification), the focus of the course will be on the 20th and century and after, looking at the impacts of imperialism, colonialism, globalization and the postcolonial quest for development on the state of the environment in Africa. In the discussion, we will demonstrate that the shaping of African environments and ecologies is a product of complex, evolving and interconnected developments between humans and nature within and beyond the African continent. Offered as both AFS 374 and SUS 374. Not for credit in addition to SBC 320 or SBC 374.

Prerequisite: U3 or U4 status

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AFS 375: 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: Junior or Senior Standing

DEC: *F*
SBC: *SBS+*

3 credits

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

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

Prerequisite: U3 or U4 standing
Advisory Prerequisite: AFS 240 or LAC 200

DEC: *J*
SBC: *GLO, SBS+*

3 credits

AFS 381: 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.

Prerequisite: U3 or U4 standing; one D.E.C. E or SNW course

DEC: *H*
SBC: *SBS+*

3 credits

AFS 382: Race, Ethnicity and the Environment

A historical survey of how African Americans, Mexican Americans, and Asian Americans have been the victims of injustice in the way their environments were violated beginning in the nineteenth century. To better understand the birth of the environmental justice movement, we will engage sources about the history of various people's relationship to nature and how they used their knowledge of the environment forged greater community awareness following the civil rights movement. We will also attempt to understand the values that certain cultural groups place on the environment.

Prerequisite: U3 or U4 standing

3 credits

AFS 383: The Global African Diaspora in Comparative Perspective

Provides a conceptual and thematic exploration of the principal issues and forces in the socio-cultural and political history of the global African diaspora. Temporally, the course focuses the pre-16th century, the 16th-20th centuries, and the more recent period. Spatially, the course investigates, by comparing, the experiences of both the Atlantic and Indian Ocean/Red Sea African diasporas and teases out their commonalities and divergences. Thematically, the course will help students develop a deeper and critical understanding of how and why African diasporic identities emerged, converged and diverged over the centuries. Students will engage in class discussions and debates, making presentations, and writing reflective/ evaluative papers on the issues as well as on readings, documentaries, and movies used in the class.

Prerequisite: U3 or U4 status

DEC: *J*
SBC: *DIV, GLO, SBS+*

3 credits

AFS 392: 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

DEC: *K*
SBC: *SBS+*

3 credits

AFS 393: 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: Junior or Senior Standing

DEC: *K*
SBC: *SBS+, USA*

3 credits

AFS 394: 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

DEC: *K*
SBC: *SBS+*

3 credits

AFS 396: Topics in African-American History

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

DEC: *K & 4*
SBC: *SBS+*

3 credits

AFS 410: Computers and Technology in Africa

Examines how African countries utilize information technology (IT) with special emphasis on information communication technologies ICTs, development, and increasing market access. A survey of the basic structures of IT will foreground discussions about the applications of IT, ICTs and social media platforms to leverage social capital and mobilize politically. An emphasis is placed on analyzing the relationships among hardware, social media, software (apps, etc.), databases, networks and variations in infrastructure through country case studies. The selection of case studies include IT incubators such as Kenya and countries with less IT infrastructure to compare sub-regional trends and best practices.

Prerequisite: U3 or U4 status

DEC: *H*
SBC: *STAS*

3 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 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

AFS 447: Readings in Africana Studies

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

Prerequisite: Permission of instructor

SBC: *ESI*

1-3 credits

AFS 459: Write Effectively in Africana Studies

A zero credit course that may be taken in conjunction with any 300- or 400-level Africana Studies course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits, S/U grading

AFS 477: Qualitative & Mixed Methods

Exposes students to qualitative and mixed methods research including epistemological, ontological debates, research design, methodologies, data analysis, and applications in scholarly published works. A combination of mixed methods approaches utilized in political science and the interdisciplinary fields of African Studies, Africana Studies, and Women's and Gender Studies are explored. Key methods that will be covered include interviews (unstructured, semi-structured, structured), oral histories, case studies, analytical narratives, participant observation and ethnography, focus groups, large-N studies, GIS, sequencing of methods, databases, and content analysis. Students will develop a research proposal that can be utilized for senior projects. This course is offered as both AFS 477 and POL 477.

Prerequisite: U3 or U4 status

SBC: *CER, ESI, SBS+*

3 credits

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

SBC: *ESI*

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

SBC: *EXP+*

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 100: EOP Pre-Freshman Summer Academic Bridge

The purpose of the EOP Summer Academic Bridge course is to give students a foundation in math, writing, and a science related to their undergraduate goals. The course will build on their current skills with the goal of increasing the likelihood of their academic success in these areas during their first full semester at Stony Brook University. Students will be placed in the appropriate section based on the university placement recommendations in math and writing. The EOP Summer Academic Bridge will be supported through the EOP Transitional Support Bridge course.

New AIM/EOP students

3 credits, ABC/U grading

AIM 101: EOP Pre-Freshman Summer Support Bridge

The purpose of the EOP Summer Bridge course is to build a strong, supportive foundation by introducing the necessary support and resources needed to be successful at Stony Brook University. The course will build on their current skills with the goal of increasing the likelihood of the student's success in acclimating to college and Stony Brook University culture and lifestyle.

Additionally, the course goal is to help students navigate the challenges that stem from socioeconomic disadvantage. In addition, this course will support the EOP Academic Bridge course.

New AIM/EOP students

3 credits, S/U grading

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

DEC: *B*
SBC: *HUM*

3 credits, ABC/U grading

AMR

American Studies

AMR 101: 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.

DEC: *F*
SBC: *GLO, SBS*

3 credits

AMR 102: 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.

DEC: *G*
SBC: *SBS, USA*

3 credits

AMR 301: 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

DEC: *K*
SBC: *ESI, SBS+, WRTD*

3 credits

AMR 390: 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. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: To be announced with the topic

DEC: *G*
SBC: *HFA+*

3 credits

AMR 392: 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. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: To be announced with the topic

DEC: *F*
SBC: *SBS+*

3 credits

AMR 395: 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. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: To be announced with the topic

DEC: *J*
SBC: *SBS+*

3 credits

AMR 397: 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

DEC: *K*
SBC: *SBS+*

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 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis.

Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any AMR course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

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: 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 or QPS; Non AMS majors only
Anti-requisite: May not be taken by students with credit for AMS 110 or AMS 310.

DEC: *C*
SBC: *QPS*

3 credits

AMS 103: Applied Mathematics in Modern Technology

Technologies that drive our modern world rely critically on applied mathematics. This course explores "How does it work?" for selected technologies that rely on mathematics and statistics, e.g., internet search, social networking, financial markets, online auctions, cell phones, DNA sequencing, GPS, Wii, Google maps, and more.

Prerequisite: Level 3 or higher on the mathematics placement examination

SBC: *QPS, TECH*

3 credits

AMS 104: Spreadsheet Technology and Applications

Spreadsheets are a critically important tool in many careers, particularly in quantitative fields. This course explores how to use spreadsheets and how to use them to model real-world situations, such as project management, optimization, budgeting, finance, and more.

Prerequisite: Level 2+ or higher on the mathematics placement examination or MAT 123 or higher

SBC: *QPS, TECH*

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; tests; and analysis of variance, regression, and contingency tables. May not be taken for credit in addition to AMS 310. 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: AMS 151 or MAT 125 or 131.
Anti-requisite: May not be taken by students with credit for AMS 102 or AMS 310

SBC: *QPS*

3 credits

AMS 151: 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

DEC: *C*
SBC: *QPS*

3 credits

AMS 161: Applied Calculus II

Analytic and numerical methods of integration; interpretations and applications of integration; differential equations models and elementary solution techniques; phase planes; Taylor series and Fourier series. Intended for CEAS majors. Not for credit in addition to MAT 127, 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 level 7 on the mathematics placement examination

DEC: *C*
SBC: *QPS*

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 corequisite MAT 126 or level 7 or higher on the mathematics placement exam

SBC: *STEM+*

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 MPE level 9

SBC: *STEM+*

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

SBC: *SPK, WRTD*

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

SBC: *STEM+*

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. 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: AMS 161 or MAT 132 or MAT 127

SBC: *STEM+*

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 AMS 261

3 credits

AMS 315: Data Analysis

A continuation of AMS 310 that covers two sample t-tests, contingency table methods, the one-way analysis of variance, and regression analysis with one and multiple independent variables. Student projects analyze data provided by the instructor and require the use of a statistical computing package such as SAS or SPSS. An introduction to ethical and professional standards of conduct for statisticians will be provided.

Prerequisite: AMS 310

SBC: *CER, ESI*

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

SBC: *SBS+*

3 credits

AMS 317: Introduction to Linear Regression Analysis

Basic inference procedures and linear regression, model adequacy checking, transformations and weighted least squares, handling with influential observations and outliers, polynomial regression modeling, use of indicator variables, multicollinearity, variable selection, introduction of logistic regression, conventional and less common uses of linear regression in today's cutting-edge scientific research. Understanding of the basic principles for applied regression model-building techniques in various fields of study, including engineering, management and the health sciences.

Prerequisite: AMS 315; AMS 210 or MAT 211

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

SBC: *WRTD*

3 credits

AMS 320: Introduction to Quantitative Finance

The course introduces the main classes of financial securities, the mathematical tools employed to model their prices, and common models for risk and investment management. Building realistic models relies on having a working knowledge of the empirical properties of financial asset returns which is another focus of the course. R is used as an environment for modeling.

Prerequisite: AMS 311

3 credits

AMS 325: Computing and Programming Fundamentals in Applied Mathematics and Statistics

Introduction to programming in MATLAB and Python, including scripting, basic data structures, algorithms, scientific computing, and software engineering. Homework projects will focus on using computation to solve linear algebra, data analysis, and other mathematical problems.

Prerequisite: AMS 210 or MAT 211; AMS major
NOTE: not for AMS2MAJ. Those students should contact the AMS dept.

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. May not be taken for credit in addition to CIV 350 or MEC 320.

Prerequisites: CSE 101; AMS 161; basic skills in using a high-level programming language (C, C++, or Java).
Advisory prerequisite: AMS 210

3 credits

AMS 332: Computational Modeling of Physiological Systems

Introduces students to the fundamental principles underlying computational modeling of complex physiological systems. A major focus of the course will be on the process by which a model of a biological system is developed. Students will be introduced to the mathematical methods required for the modeling of complex systems (including stochastic processes and both temporal and spatial dynamics) as well as to tools for computational simulation. Roughly one half of the class will focus on models for general cellular physiology, while the remaining half will focus on the development of higher-level models of a particular physiological system (for example, the neurobiological systems underlying learning). This course is offered as both AMS 332 and BIO 332 and is intended for STEM majors who have already completed the foundational courses in their major. Students who satisfy the pre-requisites but do not have a deeper background in some STEM field may find the class very challenging and should ask the instructor for guidance before registering.

Prerequisite: MAT 127 or MAT 132 or AMS 161 or MPE level 9 and any one of the following: BIO 202 or BIO 203 or CHE 132 or CHE 331 or PHY 127 or PHY 132

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; U3 or U4 standing; or permission of the instructor

SBC: *EXP+, WRTD*

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 AMS 151; C or higher in ECO 303

SBC: *SBS+*

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. Not for credit in addition to EST 342.

Prerequisites: AMS 210 or MAT 211 or MAT 307 and MAT 308

SBC: *SBS+*

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

SBC: *SBS+*

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: C or higher in AMS 210 or MAT 211 or MAT 220 or MAT 308
Advisory Prerequiste: MAT 200 or CSE 250 or equivalent

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 MPE level 9

SBC: *STEM+*

4 credits

AMS 380: Data Mining

This course will teach the basic ingredients of classical and contemporary statistical data mining methods, including dimension reduction, model selection, pattern recognition, and predictive modeling using traditional general linear models and generalized linear models, and modern statistical learning methods, such as decision trees, random forests, neural networks, etc. This course will teach how to employ these methods with the programming language Python.

Prerequisite: AMS 210 or MAT 211 or MAT 307; AMS 311

3 credits

AMS 394: Statistical Laboratory

Designed for students interested in statistics and their applications. Basic statistical techniques including sampling, design, regression, and analysis of variance are introduced. Includes the use of statistical packages such as SAS and R. Students translate realistic research problems into a statistical context and perform the analysis.

Prerequisite: AMS 310 or AMS 315

SBC: *CER, ESI, EXP+*

3 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; AMS 310; AMS 311 or 315

3 credits

AMS 412: 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

SBC: *CER, ESI, EXP+*

3 credits

AMS 420: Investment Science Foundations

This course focuses on fundamental principles of financial engineering and investment science such as cash flow streams, arbitrage, risk aversion, pricing of finance instruments, interest rate term structure, fixed income instruments duration, bond portfolio immunization, Markowitz mean-variance portfolio theory, Capital Asset Pricing Model and fixed proportion investment strategy.

Prerequisite: B+ or better in AMS 311 Advisory Prerequisite: AMS 341

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: Junior or Senior Standing

3 credits

AMS 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with AMS 475 course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

AMS 459: Write Effectively in Applied Mathematics

A zero credit course that may be taken in conjunction with AMS 487, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+, SPK*

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

SBC: *EXP+, SPK*

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

SBC: *EXP+, WRTD*

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 101: 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. Formerly offered as BIO 101; not for credit in addition to BIO 101.

DEC: *E*
SBC: *SNW*

3 credits

ANP 120: Introduction to Biological Anthropology

An introduction to the evolutionary study of humans and nonhuman primates. The course provides an overview of basic evolutionary thought and principles; human variation and environmental adaptation; the anatomy, ecology, and behavior of nonhuman primates; the fossil record of nonhuman primates and human ancestors; current research on human origins; human behavior in an evolutionary context. When offered, ANP 121 is the associated laboratory component of ANP 120.

DEC: *E*
SBC: *SNW*

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: 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 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

DEC: *E*
SBC: *SNW*

3 credits

ANP 202: People and Pups: Dog Behavior and Human-Canine Relationships

An introduction to the growing literature on dog evolution, behavior, and cognition to understand why dogs are so well adapted to socializing with humans and what role they play in our societies. This course provides students with a foundation in animal behavior, specifically dog behavior and human-canine relationships. Key questions will include: How do dogs communicate with each other and with us? Are dogs smarter than you think? And what is unique about the bond between people and their pups?

SBC: *STAS*

3 credits

ANP 220: 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

DEC: *H*
SBC: *STAS*

3 credits

ANP 250: Forensic Anthropology

This is an introductory survey course to the field of forensic anthropology. Topics that focus on the medicolegal significance of the recovery and analysis of human remains will be covered. Postmortem taphonomic processes that can affect a body, and determination of time since death will be discussed. Particular attention will be paid to the determination of personal identity, such as sex, age and stature, from skeletal remains, and the analysis of skeletal trauma and cause of death. Contemporary issues such as mass disasters and human rights issues will be covered.

Advisory Prerequisite: ANP 120

DEC: *E*
SBC: *SNW*

3 credits

ANP 300: 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 101 or ANP 120 or one BIO course

DEC: *E*
SBC: *STEM+*

4 credits

ANP 304: Ecology: Linking People and Nature (with emphasis on the Turkana Basin)

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 resouces in eastern Africa today.

Prerequisite: Permission of the instructor/ Study Abroad office

DEC: *E*
SBC: *SNW*
SBCP: *This course provides partial credit for the following: TECH_PART*

3 credits

ANP 305: Earth & Life Through Time: Vertebrate Paleontology & Paleoecology (emphasis on 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

DEC: *E*
SBC: *SNW*
SBCP: *This course provides partial credit for the following: TECH_PART*

3 credits

ANP 306: Human Evolution (and evidence from 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

DEC: *H*
SBC: *STEM+*
SBCP: *This course provides partial credit for the following: ESI_PART*

3 credits

ANP 307: Comparing Ecosystems in Madagascar

The major goal of this course is to introduce the biodiversity and diversity of ecosystems on the island of Madagascar. In addition to exploring the different habitats within Ranomafana National Park, we will embark on a ten-day trip across Madagascar.

Prerequisite: Permission of instructor/Study Abroad office

DEC: *E*
SBC: *SNW*

3 credits

ANP 308: Paleoanthropological Field Methods in the Turkana Basin

This course is one of three that constitutes the Turkana Basin Institute Summer Field School, an opportunity to participate in all aspects of a paleoanthropological research project, focusing on practical aspects of vertebrate paleontology, geology, zooarchaeology and taphonomy. Students are trained in field reconnaissance, fossil survey, plotting, preservation, and collection, analysis and interpretation. Hands-on examination of fossils from Plio-Pleistocene or Holocene sites around Lake Turkana will teach students how human ancestors and other animals adapted to the environments around them. Experts from TBI, Stony Brook, and other institutions provide instruction in lectures, labs, and via fieldwork within the context of on-going projects.

Prerequisite: Permission of instructor/Study Abroad office

SBC: *STEM+*
SBCP: *This course provides partial credit for the following: EXP+_PART, TECH_PART*

3 credits

ANP 310: Environments, Ecosystems and Evolution: Evidence from the Turkana Basin

An introduction to the ways scientists use the fossil and archaeological records to learn about past changes in Earth's climates and environments, and how humanity's ancestors responded to those changes physiologically and technologically. Interdisciplinary lectures will show evidence from the Turkana Basin's paleoenvironmental, fossil and archaeological records of the dynamic interactions between the climate, environment, local food webs, and ancient human populations. This background will prepare students for training in paleoanthropological and archaeological field methods.

Prerequisite: Permission of the instructor/ Study Abroad office

DEC: *E*
SBC: *GLO, SNW*
SBCP: *This course provides partial credit for the following: EXP+_PART, TECH_PART*

3 credits

ANP 315: Climate Change and Human Evolution

Earth's climate has always been in a state of flux. Since human ancestors emerged on the landscape approximately 7 million years ago, the planet has faced drastic swings between moist and dry periods, as well as glacial freezes and thaws. It is clear that at least some of our ancestors were able to adapt and survive these climate shifts. Was the changing environment also responsible for shaping the evolutionary innovations that have come to define our species? This course will explore the relationship between climate, environment, and human evolution.

Prerequisite: ANP 120 or ANT 215 or BIO 201

SBC: *STEM+*

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

SBC: *STEM+*

3 credits

ANP 326: Lemurs of Madagascar

The course explores the biology, ecology, social behavior, and conservation of Madagascar's lemurs. We will discuss case studies based on current field and captive research, in this way highlighting important principles in behavior and ecology. Critical thinking on current topics in general primate behavior will be emphasized through various discussion formats. The evolutionary continuum between humans and other primates will be explored. Throughout the course, we will pay attention to conservation threats that menace the well-being of lemur today.

Prerequisite: Permission of instructor/Study Abroad office

SBC: *STEM+*

3 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: Permission of instructor/Study Abroad office

3 credits

ANP 351: Biodiversity Assessment Methods for Tropical Field Research

Offered in Madagascar, this intense experiential learning course is geared towards undergraduate students interested in field research in the tropics. Students will explore both the practical aspects of field biological research and conceptual topics related to tropical biodiversity. Emphasis will be learning to measure the species diversity, and population density of the species of plants, birds, mammals, insects, amphibians and reptiles of Madagascar. Emphasis will be placed on critical thinking with regards to the origins of tropical biodiversity. Practical, hands on field techniques and methods will be conducted including safety, mapping, line transect surveys, mist netting, behavioral observations and collecting and preserving samples, photography, and measurement of environmental variables such climate.

Prerequisite: appropriate interest in subject matter

3 credits

ANP 360: 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 and BIO 204

DEC: *H*
SBC: *STAS*

3 credits

ANP 387: Independent Biodiversity Research Project in Madagascar

Allows students to apply the knowledge and research methods they have acquired in preceding courses during the study abroad experience (including: ANP 351 Biodiversity in Field Methods; ANP 307 Comparing Ecosystems in Madagascar; and ANP 326 Lemurs of Madagascar (3 Credits Each)). Students will design their own research project, and carry it through from hypothesis generating, data collection, statistical analyses and written and oral presentation of results. This project will allow students to showcase both their interests and academic skillsets. This course includes research on biodiversity. Some subjects could include impacts of human disturbance on biodiversity, species and abundance of frogs in large streams vs small streams, infant development and play in lemur groups with single infant vs lemur groups with two or three infants.

Prerequisite: appropriate interest in subject matter and background in ecology and conservation

3 credits

ANP 391: Topics in Biological Anthropology

Discussion of a topic of current interest in physical anthropology. May be repeated as the topic changes.

Prerequisite: ANP 120
Advisory prerequisite: One other ANP course

3 credits

ANP 399: Advanced Field Research in the Turkana Basin

Intended to follow the Turkana Basin Institute (TBI) Field School in NW Kenya. It should facilitate TBI field school alumni participation in ongoing field projects directed by senior researchers within the Turkana Basin. Upper-division Stony Brook undergraduates who demonstrate readiness may undertake a junior role within a larger project focusing on archaeology or human ecology (ANT 399) or paleoanthropology or vertebrate paleontology (ANP 399). The nature of ANT/ANP 399 offerings each semester will depend on which senior scholars are conducting field research and whether their projects are suitable for undergraduate involvement. They may include the opportunity to join a paleoanthropological survey of ancient landscapes for vertebrate remains (ANP 399), or to join an archaeological excavation of a 4000-year-old habitation site (ANT 399). Credit for each offering is determined for by the TBI faculty and is consistent for all registrants.

Prerequisite: Permission of the instructor. One or more of the following courses: ANP 305, ANP 306, ANT 304, ANT 307, GEO 303

3-12 credits

ANP 401: Pastoralism under pressure: Savannas, Societies, and Sustainability in East Africa

An in-depth examination of the linkages and feedbacks that connect water to vegetation production, animal movement, and the economy and health of traditionally pastoralist societies in East Africa. Integrating the fields of ecology, hydrology, biological and cultural anthropology, and sustainability studies, this course challenges students to develop innovative approaches to promote resilience and sustainability in savanna ecosystems and societies. Student-driven discussion and independent research are emphasized.

Prerequisite: one ANT/ANP/EBH/BIO course at the 300-level or higher with grade of C or better

SBC: *ESI, STAS*

3 credits

ANP 403: Seminar in Biological Anthropology

Research and discussion of selected topics in physical anthropology. 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

SBC: *ESI, STEM+*

3 credits

ANP 405: Human Evolution in the Headlines

Exploration of how anthropologists reconstruct the biology and behavior of extinct human species. The class addresses how anthropologists estimate body size in individual fossils, establish the evolutionary relationships among species, and determine what different species ate when they were alive, among other topics. Topics are approached by reading scientific articles and reading popular accounts of anthropological discoveries and research. Students are encouraged to actively participate in class through presentations and discussion of readings. Emphasis is on developing critical thinking and writing skills. The goals of this class are multifaceted and include learning modern techniques for reconstructing the behavior, systematics, and biology of extinct humans, and discerning between facts, analysis, and interpretation in science. Note: students who have taken ANP 403 with this topic may not take ANP 405 for credit.

Prerequisite: ANP 120 or ANP 201

3 credits

ANP 406: Pseudoscience and Anthropology

Course will examine some common misconceptions, as well as deliberate frauds, related to the field of Anthropology. Bigfoot, Atlantis, and ancient astronauts remain common subjects in mainstream media, but what do we, and what can we, really know about such subjects? In this course we will assemble a basic toolkit for skeptical inquiry, and apply it to several examples of anthropological pseudoscience. Dissecting these cases leads to an investigation of how we can distinguish truth from falsehood, and knowable facts from unknowable conjectures. Lastly, we will try to understand the persistence of pseudoscience and other forms of nonsense in our culture, as these clearly thrive despite their lack of grounding in reality.

Prerequisite: ANT 104, ANP 120, and either ANP 201 or ANP 220

DEC: *H*
SBC: *STAS*

3 credits

ANP 407: Building Bones: Bone Development and Evolution

An overview of the evolution, development, and growth of the skeleton, with a focus on mammals, primates, and humans. Students will review fundamental bone biology concepts, then read and discuss classic and current research on the evolution of bone development and the developmental basis for specific evolutionary changes in bone morphology. While much bone biology research has been completed in animal models, this course specifically builds a foundation for students to understand and critique current studies on the evolution and development of primate and human skeletal morphology.

Prerequisite: ANP 120 or BIO 201 or BIO 202

SBC: *SPK, STEM+*

3 credits

ANP 410: Comparative Primate Anatomy

In-depth examination of the relationship between primate anatomical form and function, with an emphasis on adaptations to locomotion and diet. Topics covered by lecture and in-class assignments include primate musculoskeletal anatomy, natural selection and adaptation, methods in functional morphology, primate diet and locomotion, and the reconstruction of behaviors in extinct primates. Students will write a research proposal to investigate an area of study in primate functional morphology.

Prerequisite: ANP 120
Pre- or corequisite: ANP 300

SBC: *ESI, STEM+*

4 credits

ANP 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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.

Prerequisite: 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.

Prerequisite: Permission of the instructor

SBC: *EXP+*

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.

Prerequisite: Permission of the instructor

SBC: *EXP+*

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.

Prerequisite: Permission of the instructor

SBC: *EXP+*

0-6 credits

ANP 488: Internship in Biological Anthropology

Students work under the supervision of a faculty member or approved local, state, and national public and private agencies and organizations to obtain a career-related experience in biological anthropology. Enrollment requires program approval of an EXP+ contract. May be repeated to a limit of 12 credits.

Prerequisite: Permission of the instructor

SBC: *EXP+*

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: Permission of the instructor

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

SBC: *EXP+*

3 credits

ANT

Anthropology, Cultural and Archaeology

ANT 102: What Makes Us Human?

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.

DEC: *F*
SBC: *GLO, SBS*

3 credits

ANT 103: Archaeology for a Better World

An exploration of archaeology's contributions to current issues of global concern. Archaeologists assist law enforcement, promote environmental conservation efforts, challenge popular misconceptions about human health and biology, and more. This course explores archaeology's contributions to contemporary law, health, education, and environmental conservation. It also examines how politicians and others use archaeology for their own ends. Topics include forensic archaeology, paleodiets, climate change, and Native-, African- and Asian-American heritage.

SBC: *GLO, SBS*

3 credits

ANT 104: Archaeology

What is archaeology? How does it work? Archaeology studies human behavior using remains of the past, everything from trash to art and from burials to buildings. Archaeologists examine artifacts, human remains, animal bones, landscape patterns, and more. Students learn essential concepts and methods that archaeologists use to investigate life in the past.

DEC: *F*
SBC: *SBS*

3 credits

ANT 200: 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.

DEC: *J*
SBC: *GLO, SBS+*

3 credits

ANT 203: Native Americans

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

DEC: *J*
SBC: *DIV, GLO*

3 credits

ANT 207: From Cavemen to Vikings: The Prehistoric Archaeology of Europe

Explores the prehistory of Europe from the arrival of the first humans until the end of the Viking Age. We will study Neanderthal and modern human interactions, the ritual systems of Palaeolithic cave painters, the Atlantic societies that built megalithic monuments, the beginnings of agriculture, the Mycenaean culture that became Europe's first civilization, and the Northern European "vikings" and "barbarians" who terrorized Rome and inherited post-classical Europe. The purpose of the course is to critically examine a number of themes and topics, such as subsistence adaptations, island settlement, trade, metallurgy and other technologies, rise of complex societies, early states, writing, religion and mortuary practices, women in ancient society, etc., emphasizing the similarities and differences within areas of Europe.

Advisory Prerequisite: ANT 104

DEC: *F*
SBC: *GLO*

3 credits

ANT 208: Zombiology: What the Walking Dead Can Teach Us About Real Humans

Zombie memes have become very popular in culture and media over the past several years. Many aspects of modern zombie lore, as represented in books, movies, and television programs such as The Walking Dead, are germane to understanding important issues in current affairs, science, and other topics of anthropological interest. In this class, we will use scenes from zombie media as prisms through which to examine topics such as the spread of infectious disease in our globalized and densely populated world, predation on humans, forensic analysis of trace evidence like tooth and cut marks, the collapse of civilizations, human behavior in small band societies, violent conflict, etc.

DEC: *H*
SBC: *STAS*

3 credits

ANT 210: Sunken Cities and Pirates: The World of Underwater Archaeology

Explores the variety of underwater archaeological sites found around the world, including submerged Stone Age sites in the Old and New Worlds and sunken cities such as Alexandria, Egypt and Port Royal, Jamaica. The class also treats the development of global seafaring through the study of sunken ships, starting with the Bronze Age in the Mediterranean Sea through Viking age ships in northern Europe and the later Age of Exploration. Methods of underwater excavation and site interpretation based on anthropological theory will also be discussed.

DEC: *F*
SBC: *SBS*

3 credits

ANT 215: Climate and Culture

Climate change is one of the most important issues facing humans today, but its nature and causes are debated. Interpreting and projecting past, present, and future changes in climate, pinpointing their causes, and understanding their effects on ecosystems and human societies, is extremely challenging. This course acquaints students with the intricacies of climate change debates by 1) Explaining natural causes of climate change; 2) Examining past interactions between climate and human land use; 3) Probing evidence for recent anthropogenic climate change and effects on different populations around the world; and 4) Exploring different viewpoints about climate change today.

DEC: *H*
SBC: *STAS*

3 credits

ANT 230: 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

DEC: *J*
SBC: *SBS+*

3 credits

ANT 250: African Cultures Today

Africa hosts diverse cultures, environments, languages, and economies. This course explores Africa via the voices of Africans themselves, and observations by anthropologists who have spent many years on the continent. Case studies of societies in different regions examine how environments and economies shape cultural traditions and social values. We also consider how African societies have transformed in response to challenges such as the slave trade, colonialism, and globalization.

DEC: *J*
SBC: *GLO*

3 credits

ANT 260: 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.

DEC: *K*
SBC: *SBS, USA*

3 credits

ANT 268: 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. Previously offered as ANT 368; not for credit in addition to ANT 368.

Advisory Prerequisite: ANT 104

DEC: *E*
SBC: *SNW*

3 credits

ANT 270: Great Archaeological Discoveries

King Tutankhamun's tomb in Egypt, the mountain city of Machu Picchu in Peru, and the Terracotta Army of the first Chinese Emperor still thrill and mystify the world, more than a century after discovery. This class will unlock the secrets of these and other famous archaeological sites, including the stone circles of Stonehenge, the ancient ruins of Pompeii and the recently uncovered grave of King Richard III. We will explore scientific methods and cutting-edge forensic techniques used today by archaeologists to reconstruct past events. The global perspective of this class will illuminate our shared past and cultural heritage.

Advisory Prerequisite: ANT 104

DEC: *F*
SBC: *GLO, SBS*

3 credits

ANT 273: The Unstoppable Species?

A survey of the archaeological, paleontological, and genetic evidence for prehistoric human geographic dispersals starting in Africa more than 200,000 years ago and culminating in settlement of remote Pacific Islands. Humans populated most of the world during prehistoric times, fine-tuning their behavior to new and challenging habitats. None of these dispersals failed. The course explores these prehistoric dispersals' implications for our evolutionary future. Formerly offered as ANT 373. Not for credit in addition to ANT 373.

SBC: *SNW*

3 credits

ANT 277: The Origins of Art

Humans make art, and art is all around us. The magnificent prehistoric paintings of multicolored horses, bison, and humans at the Lascaux and Altamira caves were created by artists living 30,000 years ago - but what came before it, and why did humans or their ancestors start being artistic? We will explore this chronologically, examining cave art and other early creative works, including bird-bone musical instruments, carved ivory figurines, shell ornaments, and older more disputed symbolic artifacts. Placed in broader archaeological context, we will learn about prehistoric cultures and debate the shamanistic, ecological, and hunting theories advanced to account for early art.

DEC: *D*
SBC: *ARTS*

3 credits

ANT 290: 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.

DEC: *H*
SBC: *STAS*

3 credits

ANT 305: Culture and Language of Madagascar

The major goal of this course is to introduce students to the Malagasy culture. Students will attend formal classes with native Malagasy speakers meet with local community and school groups, and attend a variety of cultural activities within the towns and villages that surround RNP.

Prerequisite: Permission of instructor/Study Abroad office

SBC: *GLO, SBS+*

3 credits

ANT 307: Prehistoric Archaeology of Africa (with emphasis on the Turkana Basin)

Tools changed early humans from one among many African primates to the equivalent of a global geological force. Stone tools and other technologies enabled early hominins to become the first organisms that could purposefully change their environment to suit their needs. This course traces the development of human technology where it first appears, in Eastern Africa, more than 3 million years ago. Course topics include the cognitive abilities of early humans implied by their technologies, early human adaptation and social behavior, and the inter-relationships between stone tool technology, paleoecology, and hominin biological evolution. Lectures and practical exercises teach students how to document

the archaeological record and how to use it to test hypotheses about early human behavior. Field excursions teach archaeological survey and excavation techniques. Students conduct research and report their findings in writing and in oral presentations. Evaluation is based on quizzes, a final exam, group projects, a research paper, and participation. This course is taught in Kenya during the Turkana Basin Institute Field School Study Abroad program.

Prerequisite: Permission of the instructor/ Study Abroad office

DEC: *H*
SBC: *SBS+, SPK*
SBCP: *This course provides partial credit for the following: ESI_PART*

3 credits

ANT 311: 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

DEC: *J*
SBC: *DIV, SBS+*

3 credits

ANT 315: Following in Darwin's Footsteps: Winter in Ecuador & the Galapagos

Follow along Charles Darwin's voyage of discovery on the Beagle and development of evolution via natural selection by combining 5 days in the Galapagos with cultural and prehistoric site visits in mainland Ecuador. This course will integrate both social and biological science and expose participants to the idea that scientists are always living and working within specific societal and historical contexts. The various environments visited and discussions with local experts will expose students to ongoing issues in climate change, environmental degradation, and conservation efforts. This course is part of a Study Abroad program and does not require any prerequisites.

SBC: *DIV, STAS*

3 credits

ANT 320: Historical Archaeology

Explores the archaeology of North America from the 15th century through the mid-20th century, looking at how historical archaeologists use artifactual, documentary, and oral history evidence to reconstruct and interpret the past. Recent theoretical, methodological, and thematic developments in historical archaeology will be examined, along with the study of how material culture can reflect social identity (race, class, gender, ethnicity).

Prerequisite: ANT 104

3 credits

ANT 321: Archaeological Field Methods

An opportunity to participate in all aspects of an archaeological research project. Students are trained in excavation, recording, artifact retrieval, surveying, field sorting techniques, and interpretation. This course is usually held in the summer and involves excavation of a prehistoric or early historic site.

Prerequisites: ANT 104; permission of instructor

SBC: *SBS+*
SBCP: *This course provides partial credit for the following: EXP+_PART, TECH_PART*

3-6 credits

ANT 350: 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

DEC: *F*
SBC: *SBS+*

3 credits

ANT 351: 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: ANT 102

DEC: *F*
SBC: *SBS+*

3 credits

ANT 355: Ancient African Civilizations

African archaeology is reshaping global debates on the origins of agriculture and civilization. This course examines the prehistoric economic foundations of Africa's complex societies: intensive hunting and gathering, early herding, and plant domestication. Detailed case studies of ancient civilizations (Egypt, Aksum, Jenne, Swahili, and Great Zimbabwe) reveal distinct processes of prehistoric social change in different parts of Africa. Students consider the implications of archaeology for African 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

DEC: *J*
SBC: *GLO, SBS+*

3 credits

ANT 357: 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

DEC: *F*
SBC: *ESI, SBS+*

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

SBC: *SBS+, SPK*

3 credits

ANT 360: 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.

DEC: *J*
SBC: *GLO, SBS+*

3 credits

ANT 363: 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

DEC: *F*
SBC: *SBS+*

3 credits

ANT 367: 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.

DEC: *F*
SBC: *ESI, SBS+*

3 credits

ANT 371: 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; one D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

ANT 372: 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

DEC: *J*
SBC: *SBS+*

3 credits

ANT 377: Animal Tool Use

Tool use and manufacture was once believed to be uniquely human and the distinctive hallmark of human cognitive advancement. The discovery that some non-human animals, including birds, are capable tool users and in some cases tool makers offers exciting opportunities to examine such behaviors in living species. It opens up important implications for understanding animal intelligence, the emergence of culture and the supposed uniqueness of our own species. This class provides an overview of animal tool use and manufacture to compare and contrast the behavior of humans and animals.

DEC: *E*
SBC: *ESI, SNW*

3 credits

ANT 379: Cultural Diversity 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)

DEC: *J*
SBC: *SBS+*

3 credits

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

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

Prerequisite: U3 or U4 standing
Advisory Prerequisite: AFS 240 or LAC 200

DEC: *J*
SBC: *GLO, SBS+*

3 credits

ANT 381: 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.

DEC: *F*
SBC: *SBS+*

3 credits

ANT 387: Independent Cultural Research Project in Madagascar

Allows students to apply the knowledge and research methods they have acquired in preceding courses during the study abroad experience (including: ANP 351 Biodiversity in Field Methods; ANP 307 Comparing Ecosystems in Madagascar; and ANP 326 Lemurs of Madagascar-3 credits each). Students will design their own research project, and carry it through from hypothesis generating, data collection, statistical analyses and written and oral presentation of results. This project will allow students to showcase both their interests and academic skillsets. The subject of this research will be based in human communities. Most research will be questionnaire-based. Some projects will include data collection. Subjects can include medicinal plants, cultural use of forest resources, taboos, and gender roles to name a few.

Prerequisite: appropriate interest in subject matter and background in ecology and conservation

3 credits

ANT 390: Topics in Social and Cultural Anthropology

May be repeated as the topic changes.

Prerequisite: ANT 102

DEC: *F*
SBC: *SBS+*

3 credits

ANT 391: Topics in Social and Cultural Anthropology

May be repeated as the topic changes.

Prerequisite: ANT 102

DEC: *F*
SBC: *SBS+*

3 credits

ANT 393: 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. May be repeated as the topic changes.

Prerequisites: ANT 104 and one other anthropology course

DEC: *F*
SBC: *SBS+*

3 credits

ANT 394: 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. May be repeated as the topic changes.

Prerequisites: ANT 104 and one other anthropology course

DEC: *F*
SBC: *SBS+*

3 credits

ANT 399: Advanced Field Research in the Turkana Basin

Intended to follow the Turkana Basin Institute (TBI) Field School in NW Kenya. It should facilitate TBI field school alumni participation in ongoing field projects directed by senior researchers within the Turkana Basin. Upper-division Stony Brook undergraduates who demonstrate readiness may undertake a junior role within a larger project focusing on archaeology or human ecology (ANT 399) or paleoanthropology or vertebrate paleontology (ANP 399). The nature of ANT/ANP 399 offerings each semester will depend on which senior scholars are conducting field research and whether their projects are suitable for undergraduate involvement. They may include the opportunity to join a paleoanthropological survey of ancient landscapes for vertebrate remains (ANP 399), or to join an archaeological excavation of a 4000-year-old habitation site (ANT 399). Credit for each offering is determined for by the TBI faculty and is consistent for all registrants.

Prerequisite: Permission of the instructor. One or more of the following courses: ANP 305, ANP 306, ANT 304, ANT 307, GEO 303

3-12 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. May be repeated as the topic changes.

Prerequisite: ANT 104
Advisory prerequisite: Two other archaeology courses

SBC: *ESI, SBS+*

3 credits

ANT 410: Ethnobotany and Paleoethnobotany

Explores relations between plants and people, both in present (ethnobotany) and prehistoric (paleoethnobotany, archaeobotany) times. Because ethnobotany and paleoethnobotany are interdisciplinary fields, we will draw on several contributing fields of study, including botany, cultural anthropology, archaeology, conservation. Students will be trained in botanical and social data collection methods in ethnobotanical research and will focus on paleoethnobotanical data collection/analysis: archaeobotanical recovery methods, and principles of curation, identification, and interpretation. Knowledge of ethnobotanical/paleoethnobotanical methods will allow students to evaluate major works during the final weeks of the course.

Prerequisite: ANT 102 and ANT 104. An introductory biology course (BIO 113, BIO 115, or BIO 201) may substitute for one of the ANT courses.

SBC: *SBS+*

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

SBC: *ESI, SPK*

3 credits

ANT 416: Research Design in Archaeology

An examination of the ways in which archaeologists develop successful research strategies for arriving at answers to the key questions in the field. Students will analyze grant proposals that received funding from the major sources of funding for archaeology before developing research proposals of their own. The aims of the course are to (a) help students understand the connections between major questions in archaeology and specific research projects, and (b) provide students with the skills needed to plan research projects they might undertake during more advanced study.

Prerequisite: permission of the instructor

SBC: *ESI*

3 credits

ANT 418: Stone Tools in Human Evolution

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: ANP 120 or ANT 104 with grade of C or better and one other ANT/ANP/EBH course at 200 level or higher with grade of C or better

SBC: *ESI, SPK, TECH*

3 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.

Prerequisites: ANT 104 or ANP 120; permission of instructor
Advisory Prerequisite: One other archaeology course

SBC: *SBS+*

3 credits

ANT 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

ANT 447: Readings in Anthropology

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

Prerequisite: Permission of the instructor

3 credits

ANT 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any ANP or ANT course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

ANT 459: Write Effectively in Anthropology

A zero credit course that may be taken in conjunction with any 300- or 400-level ANP or ANT course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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.

Prerequisite: Permission of the instructor

SBC: *EXP+*

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.

Prerequisite: Permission of the instructor

SBC: *EXP+*

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.

Prerequisite: Permission of the instructor

SBC: *EXP+*

0-6 credits

ANT 488: Internship

Students work under the supervision of a faculty member or approved local, state, and national public and private agencies and organizations to obtain a career-related experience in cultural anthropology or archaeology. Enrollment requires program approval of an EXP+ contract. May be repeated up to a limit of 12 credits.

Prerequisite: Permission of the instructor

SBC: *EXP+*

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: Permission of the instructor

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

SBC: *EXP+*

3 credits

ARB

Arabic

ARB 101: Intensive Elementary Arabic

An intensive course covering the elementary Arabic program (ARB 111, ARB 112) in one semester. This course is designed for students who have no prior knowledge of the language.

DEC: *S3*
SBC: *LANG*

6 credits

ARB 111: Elementary Arabic I

An introduction to Modern Standard Arabic, stressing speaking, comprehension, reading and writing, and to the cultures of Arabic-speaking countries. Course consists of 3 hours per week in group setting plus an online recitation hour. 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.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

ARB 112: Elementary Arabic II

An introduction to Modern Standard Arabic, stressing speaking, comprehension, reading and writing and to the cultures of Arabic-speaking countries. Course consists of 3 hours per week in group setting plus an online recitation hour.

Prerequisite: C or better in ARB 111 or placement into ARB 112 (LVL 2). See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *LANG*

4 credits

ARB 201: Intensive Intermediate Arabic

An intensive course covering the intermediate Arabic language courses (ARB 211, 212) in one semester. May not be taken for credit in addition to ARB 211, 212.

Prerequisite: ARB 101 or ARB 112 or placement into ARB 201 or ARB 211 (LVL3). See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

SBC: *GLO, HUM, LANG*

6 credits

ARB 211: Intermediate Arabic I

Continued study of Arabic at a more advanced level of speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work. No student who has four or more years of Arabic in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for ARB 211 without written permission from the supervisor of the course.

Prerequisite: ARB 101 or ARB 112 or placement into ARB 201 or ARB 211 (LVL3). See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, LANG*

3 credits

ARB 212: Intermediate Arabic II

Continued study of Arabic at a more advanced level of speaking, comprehension, reading, writing, and grammar. Selected texts are read. Practice in the language laboratory supplements class work.

Prerequisite: ARB 211 or placement into ARB 212 (LVL4). See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

ARH

Art History

ARH 106: Art & Science

An introduction to the complex relationship between art and science: their intertwined histories, values, technologies, and ways of interpreting the natural world. Analysis of specific visual and textual examples, as well as engagement of broader social and cultural concerns. Develops critical and creative thinking skills crucial for both the sciences and humanities.

SBC: *ARTS*

3 credits

ARH 107: Art and Medicine

An introduction to the intersections of visual art and medicine from antiquity to today. The course develops skills in observation, analysis, empathy, and self-reflection through the study of the medical body in visual art and the role of art in health care. Topics of study include anatomical imagery, medical illustration, dissection and display of human remains, gender and women's health, the representation of medicine as a profession, art activism, and art therapy.

SBC: *ARTS*

3 credits

ARH 201: Arts of Africa

An introduction to the arts of Africa from pre-colonial times to the present. These arts are examined within their social and cultural contexts in the service of politics, leadership and social integration, as objects of ritual and religious practice, and as evidence of aesthetic choices and individual achievements.

DEC: *D*
SBC: *ARTS, GLO*

3 credits

ARH 202: Arts of the Ancient World

An introduction to the history of art with a focus on the Ancient Mediterranean World from the Neolithic to the rise of Islam. Works of art from this region are studied within the context of contemporaneous developments elsewhere in the world, as individual monuments with intrinsic aesthetic appeal and as expressions of the needs, ideals, and aspirations of the particular society and historical context within which they were created. Not for credit in addition to ARH 101.

DEC: *D*
SBC: *ARTS*

3 credits

ARH 203: Arts of Asia

A general course on Far Eastern art covering India, China, and Japan from its beginnings to the present. Emphasis is on the major arts of painting and sculpture, with some reference to architecture.

DEC: *J*
SBC: *ARTS, GLO*

3 credits

ARH 204: Arts of Europe and the Americas

An introduction to the history of art in Europe and the Americas with a focus on the transition from Medieval times through the Renaissance and Baroque in Europe. 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 within which they were created. Not for credit in addition to ARH 102.

DEC: *D*
SBC: *ARTS*

3 credits

ARH 205: Introduction to Architecture & Design

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.

DEC: *G*
SBC: *ARTS, TECH*

3 credits

ARH 206: Modern Art

An introduction to the history of modern art, beginning with French Rococo and concluding with themes and concerns of a globally interconnected art world. Particular attention will be given to the rise of Modernism in Europe, the role of artists and artistic movements in social and political change, and the relationship of contemporary artistic practice to technology, social media and visual culture.

DEC: *D*
SBC: *ARTS*

3 credits

ARH 207: Digital Media: History/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.

DEC: *D*
SBC: *ARTS, TECH*

3 credits

ARH 208: 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.

DEC: *G*
SBC: *ARTS*

3 credits

ARH 209: Arts of the United States

An introduction to the history of painting, sculpture, and architecture in the United States from the late colonial period to World War II. Particular emphasis will be given to understanding art's changing forms and meanings and its relationship to crucial themes and developments in American history: the impact of national expansion, for example, and of immigration, urbanization, and modernization more generally. The course will also focus on the varied images of American society created by artists of diverse class, racial, and ethnic backgrounds.

DEC: *K*
SBC: *ARTS, USA*

3 credits

ARH 210: The Art and Technology of Film

An introduction to film and video art technologies within modern and contemporary art practice. Surveys canonical works in experimental film, artist's television, video installation and artist's cinema from the 1910s to the present, situating these works in relation to larger movements in the visual and performing arts, and to the changing conventions of mainstream film and television.

DEC: *D*
SBC: *ARTS, TECH*

3 credits

ARH 299: Gallery Management Workshop

Hands-on experience with gallery administration including development of practical skills in nonprofit gallery and museum work. Course involves in-person work in the Zuccaire Gallery as well as readings and short written assignments focused on art gallery and museum curating, public programs and marketing. May be repeated twice.

Prerequisite: one ARH course

SBC: *ARTS, EXP+*

1 credit, S/U grading

ARH 300: 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 202

DEC: *I*
SBC: *HFA+*

3 credits

ARH 301: 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 202

DEC: *I*
SBC: *HFA+*

3 credits

ARH 302: 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 202

DEC: *J*
SBC: *HFA+*

3 credits

ARH 306: Italian Renaissance Art

An introduction to art in Italy from the late 13th through the late 16th centuries, with special emphasis on major centers, such as Florence, Rome, and Venice, and major figures such as Masaccio, Donatello, Leonardo da Vinci, Michelangelo, Raphael, and Titian. This course offered as both ARH 306 and HUI 306.

Prerequisite: U3 or U4 status
Advisory Prerequisite: ARH 204

DEC: *I*
SBC: *HFA+*

3 credits

ARH 308: Writing About Art

An advanced topics course with a focus on research, analytical skills and writing about art. Students analyze essays by different artists, scholars, and critics about a central topic before selecting and developing their own related topic to research. The final project is a research paper that begins with a thesis statement and outline, includes several drafts, peer review, and a final product. This course is offered as both ARH 308 and ARS 308.

Prerequisite: ARH or ARS major/minor or permission of instructor

SBC: *WRTD*

3 credits

ARH 315: Art of Spain and Colonial Latin America

An overview of painting, sculpture, and architecture in Spain and colonial Latin America during the 16th and 17th centuries. Topics of particular study include the arrival of the Renaissance in Spain, traditions of hyper-realistic wooden sculpture, trade and artistic exchange in the Spanish global empire, manuscript and mural painting in the Americas, and cathedral and palace architecture in Mexico and Peru; special attention will be paid to the works of Ribera, Zurbarán, Velázquez, Pedro de Mena, and Luisa Roldán.

Prerequisite: U3 or U4 status
Advisory Prerequisite: ARH 204

DEC: *G*
SBC: *HFA+*

3 credits

ARH 316: Italian Baroque Art

A study of the visual culture of Counter Reformation Italy, with particular emphasis on the painting, sculpture, and architecture of seventeenth century Rome. Topics include the Carracci reform of painting, the rise of naturalism, Caravaggism, the development of illusionistic painting, and developments in science and the arts. Particular emphasis is given to the work of Caravaggio, Annibale Carracci, Bernini, Borromini, Guido Reni, Artemisia Gentileschi, Salvator Rosa, Pietro da Cortona and Andrea Sacchi.

Prerequisite: U3 or U4 status
Advisory Prerequisite: ARH 204

DEC: *I*
SBC: *HFA+*

3 credits

ARH 317: 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.

Prerequisite: one ARH course or permission of the instructor

DEC: *J*
SBC: *HFA+*

3 credits

ARH 322: 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 206

DEC: *G*
SBC: *HFA+*

3 credits

ARH 323: 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. Formerly offered as ARH 420. Not for credit in addition to ARH 420.

Prerequisite: one ARH course or permission of the instructor

SBC: *ESI, SPK*

3 credits

ARH 325: Ancient Middle Eastern 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 202

DEC: *J*
SBC: *GLO, HFA+*

3 credits

ARH 326: 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: one ARH course or permission of the instructor

DEC: *J*
SBC: *HFA+*

3 credits

ARH 328: Exhibiting Africa

An exploration of the way African art has been exhibited in museum and other contexts in the West. We begin with the historical background of colonial expositions and then examine the range of contexts in which African art appears, from art museums to galleries to natural history museums. We also discuss a number of groundbreaking and controversial exhibitions, and we end with reviews of recent Biennales and Arts Festivals. We may also review several permanent and special exhibitions currently on display in Manhattan and the greater Metropolitan area.

Prerequisite: U3 or U4 status

SBC: *CER, SPK*

3 credits

ARH 329: 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: one ARH course or one AFH course

DEC: *G*
SBC: *HFA+*

3 credits

ARH 330: Public Art and Urban Design in New York City

Explores the history of public arts and urban built environments in New York City, from the mid-nineteenth century to the present day. The city itself will be a key resource, and the course will involve site visits to a number of key monuments, institutions, and other locales. The focus of study will include statues, memorials, plaques, parks, and street furniture, and the people, institutions, and events that produced them. Drawing on perspectives from art history, American Studies, and urban and social history, the course will consider the impact of such developments as war, immigration and urbanization, political reconfigurations and commercial expansion, ethnic, racial, and interpersonal conflict, tourism, and terrorism.

Prerequisite: ARH 209

DEC: *G*
SBC: *HFA+*

3 credits

ARH 333: 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: one ARH course

DEC: *K*
SBC: *CER, USA*

3 credits

ARH 334: Performance Art I: The European Avant-Garde

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

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

DEC: *G*
SBC: *HFA+*

3 credits

ARH 336: The Computer and the Arts

An introduction to historical and theoretical issues in computational art. Following discussion of basic concepts in studying digital media, the course focuses on examining the

history of computer technologies as they intersect with the arts and the theoretical, cultural and aesthetic ramifications of this intersection.

Prerequisite: ARH 207

DEC: *H*
SBC: *STAS*

3 credits

ARH 339: The Art and Science of Astronomy

This interdisciplinary course examines how art and science relate in efforts to understand and visualize the cosmos. It traces how discoveries in astronomy and astrophysics have correlated with specific visual technologies and visual techniques, ranging from telescope observations through astrophotography to computational simulations. It explores how aesthetic strategies structure scientific practices of observation and representation, as well as how artists draw on scientific methods and images for creative experimentation. It asks how the mutual influence between science and art shapes the norms and assumptions of both, changing how we image and imagine what exists beyond the limits of ordinary perception.

Prerequisite: one previous ARH, ARS, AST, or PHY course
Advisory prerequisite: either ARH 106 or 107

SBC: *STAS*

3 credits

ARH 344: 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

DEC: *G*
SBC: *HFA+*

3 credits

ARH 346: 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 206

DEC: *I*
SBC: *HFA+*

3 credits

ARH 347: 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 206

DEC: *I*
SBC: *HFA+*

3 credits

ARH 348: Contemporary Art

A survey of art from 1980 to the present. Topics include Site-Specificity, Biennial Cultures, Art Markets, Video Art, Performance, Institutional Critique, Art and Technology, Appropriation, Collectivity and Globalization.

Prerequisite: ARH 206 or ARH 207

DEC: *G*
SBC: *DIV, HFA+*

3 credits

ARH 350: Museum Studies

This museum seminar is designed to introduce the students to the study of museums from their inception in the 18th century in western Europe, as part of the obsessive natural history collections to exploring the evolving role of art museums in a global society. We begin with a review of collecting as a personal obsession to a profession to our examination of the rapidly changing social, political and economic environments is forcing museums to reconfigure themselves and embrace new roles. To this end, we will examine both the creation of these institutions as cultural trendsetters, by the middle of 19th century, and explore how a successful exhibition may help shape societal and cultural concerns with respect to public attitudes towards art. This class will investigate a range of topical issues and processes within the context of cultural change. Formerly offered as ARH 406. Not for credit in addition to ARH 406.

Prerequisite: U3 or U4 status

SBC: *CER, SPK*

3 credits

ARH 355: Modern and Contemporary Korean Art

An examination of the rich development of arts and visual culture in modern and contemporary Korea, from the late 19th century to the early 21th century, including critical discourses of colonial modernity, nationalism, democracy, and globalization as well as art movements, individual artists, and various modalities of visuality. The mediums and genres to be discussed may include: ethnographic photography, war photography, illustrations, oil and ink painting, abstract painting, protest art, sculpture, installation, public art, video art and film.

Prerequisite: U3 or U4 standing; one ARH course or two AAS courses
Advisory Prerequisite: ARH 206 and ARH 203

DEC: *G*
SBC: *GLO, HFA+*

3 credits

ARH 390: Topics in European Art

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.

Prerequisite: one ARH course

DEC: *I*
SBC: *HFA+*

3 credits

ARH 391: Topics in Global Art

An in-depth exploration of a particular theme, movement or approach to transcultural artistic forms and practices. May be repeated for credit as the topic changes.

Prerequisites: U3 or U4 standing; one ARH course

DEC: *G*
SBC: *GLO, HFA+*

3 credits

ARH 392: Topics in Modern Art

An in-depth exploration of particular themes related to the theories and practices of modern art between 1850 and 1950, including such topics as: avant-garde art movements, color theories and practices, Modernism, the influence of science, technology, and industry on art making, Utopian beliefs, art criticism, and the role of fine and applied art within sociopolitical movements. Specific topics will primarily focus on European and American art, though the ideas and practices from other geographical regions may also be discussed. May be repeated for credit as course topic changes.

Prerequisite: ARH 206 and U3 or U4 standing

DEC: *G*
SBC: *HFA+*

3 credits

ARH 393: Topics in Middle Eastern Art

An in-depth exploration of particular themes within the field of Middle Eastern art, that may include topics on ancient art from Mesopotamia to Rome, and/or on contemporary Middle Eastern artists, artistic forms and practices. May be repeated for credit as course topic changes.

Prerequisite: U3 or U4 standing; one ARH course

DEC: *G*
SBC: *GLO, HFA+*

3 credits

ARH 394: Topics in Asian Art

An in-depth exploration of a particular theme within the field of Asian art, that may include topics on ancient arts or contemporary artists, movements and cultural practices. May be repeated for credit as the topic changes. This course is offered as both AAS 394 and ARH 394.

Prerequisite: U3 or U4 standing; one ARH course or two AAS courses

DEC: *J*
SBC: *GLO, HFA+*

3 credits

ARH 395: Topics in Visual Culture

Examines issues in the interdisciplinary field of visual culture. Explores the dynamic state of visual media in contemporary life and their historical origins, seeking interrelationships between art and film, science and technology, mass media and digital culture. May be repeated for credit as the topic changes.

Prerequisite: one ARH course or one CCS course

DEC: *H*
SBC: *ESI, STAS*

3 credits

ARH 396: 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

DEC: *K*
SBC: *HFA+*

3 credits

ARH 397: Topics in Photography

Develop an advanced understanding of one or more key periods, genres, or styles of photographic practice by means of an intensive examination of exemplary works, and an exploration of the broader social, political and cultural histories with which they are intertwined.

Prerequisite: any 200-level ARH course and U3 or U4 standing
Advisory Prerequisite: ARH 208

DEC: *G*
SBC: *HFA+*

3 credits

ARH 398: Topics in Film and Video Art

An in-depth exploration of particular artists, ideas, and/or movements within the field of experimental film and video art, building on the broad survey provided in ARH 210. May be repeated for credit as course topic changes.

Prerequisite: ARH 210 and U3 or U4 standing
Advisory Prerequisite: ARH 206, EGL 220

DEC: *G*
SBC: *HFA+*

3 credits

ARH 400: Seminar in Art History 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. May be repeated as the topic changes.

Prerequisites: U3 or U4 standing; two additional ARH courses

SBC: *ESI, WRTD*

3 credits

ARH 407: Seminar in Media/Art/Culture

An advanced seminar for juniors and seniors that prepares students for continued study or work in the fields of media, art, culture and technology and other related areas. May be repeated as the topic changes.

Prerequisite: permission of the instructor; enrollment in the Media/Art/Culture major

3 credits

ARH 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

ARH 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any arh course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

ARH 459: Write Effectively in Art History

A zero credit course that may be taken in conjunction with any 300- or 400-level ARH course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic

writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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.

Prerequisite: ARH major, sponsorship of instructor and permission of department

SBC: *EXP+*

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.

Prerequisite: ARH 475, permission of department

SBC: *EXP+*

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: two ARH courses; sponsorship of instructor and permission of department

SBC: *EXP+*

0-6 credits

ARH 487: Independent Reading and Research in Art

May be repeated up to a maximum of 12 credits.

Prerequisite: sponsorship of instructor and 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: sponsorship of instructor and permission of department

SBC: *EXP+*

0-6 credits, S/U grading

ARH 495: Senior Honors Project in Art History and Criticism

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

Prerequisite: Art History major; sponsorship of instructor and permission of department

SBC: *EXP+*

3 credits

ARS

Art, Studio

ARS 105: The Creative Process

An introduction to the creative process in art making and conceptual tools for understanding the visual arts from the perspective of the artist. Students learn about various methods, terms and approaches of the creative process through demonstrations, lectures and discussions on related themes. By placing art in context of today's issues, this course enables students to gain insight into the significance of creativity in its many physical and intellectual manifestations.

DEC: *D*
SBC: *ARTS*

3 credits

ARS 154: Foundations: Drawing

Fundamentals of drawing with a focus on developing technical and perceptual skills in hand-eye coordination and the ability to draw from observation using a variety of media. Conceptual and expressive possibilities of drawing explored within a range of subject matter that includes still life, the figure, landscape, and the study of the drawings of major artists, past and present.

DEC: *D*
SBC: *ARTS*

3 credits

ARS 205: Foundations: Idea and Form

An exploration of the basic building blocks of artistic practice and aesthetic analysis. Projects, readings, presentations, and discussions are used to examine the impact cultural, environmental and social context have on meaning and perception in art and visual culture. Projects are organized around themes such as line, plane, volume, color, composition, pattern, scale, narrative, performance, light and time. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

DEC: *D*
SBC: *ARTS*

3 credits

ARS 225: Introduction to Digital Art

A hands-on introduction to the use of computers in the fine arts. Students explore image creation/manipulation, digital publishing and moving image through lecture, lab and discussion. Emphasis is on the expressive potential of the technology. No prior computer experience is required. Study of the history and impact of digital media on the arts and contemporary culture contextualize practical assignments. This course serves as preparation for further study in electronic media. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Advisory Prerequisite: ARS 205

DEC: *D*
SBC: *ARTS, TECH*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 154 or ARS 205

3 credits

ARS 264: Introductory 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 154

3 credits

ARS 274: Introductory Printmaking

An introduction to printmaking. Demonstrations and lectures treat printmaking techniques and print shop procedures. Students are introduced to intaglio (etching, drypoint, engraving), relief (wood block, line block) monoprinting, and if time permits, lithography. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 154

3 credits

ARS 281: Introductory Photography

An introduction to the creative techniques and visual grammar of contemporary photographic image production. This course presents core camera operations, lens-based techniques, and software applications used in digital image processing and output. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Estimated cost of supplies is $450, in addition to the course fee.

DEC: *D*
SBC: *ARTS, TECH*

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 308: Writing About Art

An advanced topics course with a focus on research, analytical skills and writing about art. Students analyze essays by different artists, scholars, and critics about a central topic before selecting and developing their own related topic to research. The final project is a research paper that begins with a thesis statement and outline, includes several drafts, peer review, and a final product. This course is offered as both ARH 308 and ARS 308.

Prerequisite: ARH or ARS major/minor or permission of instructor

SBC: *WRTD*

3 credits

ARS 324: Digital Arts: Design

An introduction to the practice and theory of digital imagery, art and design through lecture, labs, readings and production. Students use contemporary page layout and design techniques to create image centered works of art, including digital prints, and artist's book. Study of the history and impact of digital print media on the arts and contemporary culture contextualize practical assignments. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CDT 208 or ARS 225

3 credits

ARS 325: Digital Arts: Print

An exploration of the practical, aesthetic, social, political, and ethical issues at stake in digital imaging. Students use contemporary compositing techniques as well as 2 and 3D printing to create digital art, including digital prints, artist's books, and data visualization. Hybrid digital and analog image making techniques are also explored. An introduction to the practice and theory of constructed digital art and design through lecture, labs, readings and art production. Students use contemporary compositing, page layout and design techniques to create image centered works of art, including digital prints, artist's books, data based visualization, and installations. Hybrid combinations of digital and analog image making techniques are also explored. Study of the history and impact of digital print media on the arts and contemporary culture contextualize practical assignments. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 225 or ARS 281 or CDT 208

SBC: *HFA+*

3 credits

ARS 326: Video Art: Narrative Forms

An exploration of the practice, theory, and history of narrative video art and independent cinema through lecture, production and critique. Students script, plan, shoot and edit short narrative video works for screen and projection. Emphasis is on story development, technical proficiency, creative execution and critical thinking. Video production and editing is done digitally. Video production is supported by the study of historical and contemporary examples of narrative-based video art. This course is repeatable to a maximum of 6 credits. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 225 or ARS 281 or CDT 208

SBC: *HFA+*

3 credits

ARS 327: Digital Arts: Web Design and Culture

An exploration of the practice and history of art on the Internet through lecture, project production, discussion and critique. Students create content for the web and mobile platforms while examining historical, and theoretical issues related to art and design on the Internet. Images, text, sound, and code are used to create web-based artworks and informational sites in response to course content. Emphasis is on creative use of current web technologies and software, as well as an examination of the cultural implications of the web. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CDT 208 or ARS 225

DEC: *H*
SBC: *STAS*

3 credits

ARS 328: 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: CDT 208 or ARS 225

SBC: *HFA+*

3 credits

ARS 329: Video Art: Experimental Forms

An exploration of video as an experimental art form. Video can be displayed on screen, integrated into objects, installations and performances, or harnessed for its light and time bending capacities. Students explore the potential of moving images as fine art material through production, lecture, discussion and critique. Includes an overview of important experimental, contemporary and historic film, video and moving image projects. Readings, art viewing and critique support art production. Emphasis is on experimentation in the creation of time-based artworks. This course may be repeated to a maximum of 6 credits. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 225 or ARS 281 or CDT 208

SBC: *HFA+*

3 credits

ARS 350: Life Drawing and Painting

Drawing and painting of the human figure. May be repeated once. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 255

SBC: *HFA+*

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: ARS 154 and ARS 255

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 351

SBC: *HFA+*

3 credits

ARS 355: Anatomical/Bio Illustration

This course is intended to develop skills and approaches to design, scientific visualization and illustration not specific to any particular academic background or intended career path. It encourages the development of analytical observational skills and better brain/eye/hand coordination, providing an opportunity to explore the specialist rendering techniques used in scientific illustration. It is open to students with either a science or art background. It includes a historical overview of medical, biological, archaeological, botanical, technical, geological, paleontological, and anatomical illustration, but the focus is on student projects. Grading is on an individual basis, rather than against absolute standards, and students are expected to show that their skills have improved during the course by providing evidence of their work in the form of sketchbooks, preparatory studies as well as more finished pieces. This course is offered as both HBA 325 and ARS 355. Summer, 3 credits, Letter graded (A, A-, B+, etc.)

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARH 206 and ARS 255

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 264

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 256

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 256

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 274

SBC: *HFA+*

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 274

SBC: *HFA+*

3 credits

ARS 381: Color and Light Photography

An exploration of the creative aspects of color and light relationships with natural and artificial lighting. This course presents digital imaging techniques, critical color output, and use of the lighting studio. This course is repeatable to a maximum of 6 credits. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Estimated cost of supplies is $300 in addition to the course fee.

Prerequisite: ARS 281

SBC: *HFA+*

3 credits

ARS 382: Analog Black and White Photography

A study of analog black and white photography using traditional materials, processes and analog imaging techniques. Use of black and white photographic film formats, and the darkroom. This course is repeatable to a maximum of 6 credits. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ARS 281

SBC: *HFA+*

3 credits

ARS 384: Art, Media and Technology

A critical practice-based inquiry into the intersection of art and technology in contemporary culture. This studio/theory hybrid course familiarizes students with a variety of technologies and platforms that increasingly impact and shape the production and interpretation of contemporary art, culture, and society. Through a combination of studio exercises, focused readings of contemporary artists' work, training sessions, and discussions that explore the course's texts, students are given the opportunity to experiment with emerging digital technologies in their artistic practice as well as critically reflect on the diverse systems, infrastructures, and histories that inform the role of technology in the arts. Situated within an interdisciplinary frame, the course broadly reflects on the relationships between the sciences and the humanities through the study of technology and the arts, examining their disciplinary, methodological, and philosophical underpinnings. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CDT 208 or ARS 225

DEC: *H*
SBC: *STAS*

3 credits

ARS 390: Topics in Studio Art

May be repeated as the topic changes. Not for major credit.

Prerequisite: ARS 154 or ARS 205

DEC: *G*
SBC: *HFA+*

3 credits

ARS 401: Critical Issues Seminar

An in-depth investigation of the relationship between current events, popular culture, and visual art practice. This seminar is designed to engage social, political and ethical issues through readings, discussion, and written responses to current events in the art world. The course includes reading, debating and responding to a wide array of critical writings and work by selected theorists, philosophers, artists, cultural producers, and public intellectuals. Active participation required. May be repeated for credit as topics vary to a maximum of 6 credits.

Prerequisite: U3 or U4 status; one upper-level ARS course

SBC: *CER, WRTD*

3 credits

ARS 402: Documentary Media Art

Research, project development and creative production of documentary media art. Advanced self-directed project-based work, contextualized by readings, discussions, critiques and presentations. Use of photographic, sound and digital video production techniques applied toward actual events and non-fiction subject matter. The course takes an inclusive approach to documentary, considering experimental practices, as well as the artistic implications of new media, networked, crowd-sourced images, surveillance, forensics and data. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: U3 or U4 status; one 300- or 400-level ARS or CDT course

SBC: *ESI, WRTD*

3 credits

ARS 403: Socially Engaged Art

Research, project development and creative production of socially engaged art. Advanced project-based work, contextualized by readings, discussions, critiques and presentations. The course takes an inclusive and interdisciplinary approach to forms of creative expression including collaboration, action and performance, intervention, audiovisual media and documentation, drawing, painting, sculpture or installation art, with projects sharing a common focus on the social, the participant, the audience and the public.

Prerequisite: U3 or U4 status; one upper-level ARS course

SBC: *HFA+, SPK*

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

SBC: *ESI, SPK*

3 credits

ARS 425: Advanced New Media Art

Advanced study of the practice and theory of new media art through production, lecture, discussion, exhibition and critique. Students create self-defined projects that revolve around new media methodologies and techniques. Artwork created in class can include but is not limited to 2 and 3D digital print, video, animation, interactive objects, data, installation and performance. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. May be repeated once.

Prerequisite: 2 or more of the following courses: ARS 324, ARS 325, ARS 326, ARS 327; ARS 328; ARS 381; ARS 382; ARS 329; CDT 317; CDT 318; or permission of instructor

SBC: *SPK*

3 credits

ARS 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another

class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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: ARH 206, ARS 351, and ARS 352

3 credits

ARS 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any ARS course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

ARS 459: Write Effectively in Studio Art

A zero credit course that may be taken in conjunction with any 300- or 400-level ARS course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits, S/U grading

ARS 481: Advanced Photography

Advanced photography production and independent self-directed project based work, contextualized by readings, discussions, critiques and presentations. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Estimated cost of supplies is $300 in addition to the course fee.

Prerequisite: 2 or more of the following courses: ARS 324, ARS 325, ARS 326, ARS 327; ARS 328; ARS 381; ARS 382; ARS 329; CDT 317; CDT 318; or permission of instructor

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

SBC: *EXP+*

0-6 credits

ARS 488: Internship

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

SBC: *EXP+*

0-6 credits, S/U grading

ARS 491: Special Topics in Studio Theory and Practice

May be repeated as the topic changes. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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

SBC: *EXP+*

3 credits

ASC

Academic Success & Tutoring Center

ASC 101: Practicing Engaging Presentations

An introduction to the basics of public speaking, including how to engage audiences with relevant and engaging resources. Each week, students prepare and give presentations on various topics, and develop skills including using appropriate body language, effectively utilizing audio and visual aids, finding a personal presentation style, and handling the unexpected. Presentation formats addressed include introductory, instructional, and informational. Students receive feedback from instructors and peers, and are expected to build upon this feedback each week.

SBC: *SPK*

0 credit, S/U grading

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.

SBC: *SPK*

1 credit

AST 101: 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 or QPS

DEC: *E*
SBC: *SNW*

3 credits

AST 105: 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.

DEC: *E*
SBC: *SNW*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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: 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 with be held during the semester.

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

DEC: *E*
SBC: *STEM+*

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 125/133 or PHY 131/133 or PHY 141/133

SBC: *STEM+*

3 credits

AST 248: 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. E or SNW course

DEC: *H*
SBC: *STAS*

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

SBC: *EXP+*

0-3 credits

AST 301: 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 or PHY 125/133 or PHY 131/133 or PHY 141/133

DEC: *H*
SBC: *STAS*

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; PHY 277; MAT 203 or 211 or 307 or AMS 261

3 credits

AST 345: Undergraduate Research in Astronomy

Student participation in faculty-directed research projects.

Prerequisite: Permission of instructor

SBC: *EXP+*

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.

Prerequisite: AST 203; PHY 251/252; MAT 203 or 211 or 307 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 211 or 307 or AMS 261

3 credits

AST 389: 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. Covers the Genre / Media topic for the English major. This course is offered as both AST 389 and EGL 389.

Prerequisite: WRT 102; one D.E.C. B or HUM course; one D.E.C. E or SNW course

DEC: *H*
SBC: *CER, STAS*

3 credits

AST 390: Special Topics in Astrophysics and Cosmology

Covers selected topics in astrophysics and cosmology, such as black holes, neutron stars, and gravitational waves; computational astrophysics; astrobiology and exoplanets; high-energy astrophysics; etc. Topics may be repeated every few years. May be repeated to a maximum of 6 credits under different course topics.

Prerequisite: permission of the department and the following: AST 203, PHY 277, MAT 203 or 211 or 307 or AMS 261

3 credits

AST 443: Observational Techniques in 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: AST 203; PHY 277; WRT 102

SBC: *ESI, SPK*

4 credits

AST 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any AST course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

AST 459: Write Effectively in Astronomy/Planetary Sciences

A zero credit course that may be taken in conjunction with any 300- or 400-level AST course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic

writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

0-6 credits

ATM

Atmospheric and Oceanic Studies

ATM 102: 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.

DEC: *E*

SBC: *SNW*

3 credits

ATM 103: Extreme Weather

Provides a working knowledge of the causes of extreme weather around the world, how these extremes have changed over time, how technology has aided in preparedness, advancements in forecasting, human impacts of weather, and the vulnerability and adaptability of societies. Throughout the course, recent extreme events from around the world will be analyzed as case studies to explore the complex interaction of weather, technology and society. These examples will span the globe and will include, but not be limited to: hurricanes (e.g., Hurricane Sandy); air pollution (also termed 'chemical weather') in Beijing and Mexico City; extreme heat waves in western Europe; monsoonal flooding in Southeast Asia; and drought in Central and East Africa.

DEC: *H*
SBC: *STAS*

3 credits

ATM 201: 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-scales.

DEC: *E*
SBC: *SNW*

3 credits

ATM 205: Introduction to Atmospheric Sciences

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

Prerequisite: MAT 125 or 131 or 141 or AMS 151
Pre- or corequisite: ENS/PHY 119 or PHY 121 or 125 or 131/133 or 141

DEC: *E*
SBC: *STEM+*

3 credits

ATM 237: 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.

DEC: *H*
SBC: *STAS*

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

SBC: *STEM+, TECH*

3 credits

ATM 305: Global Atmospheric Change

This course will explore processes that determine Earth's climate and its response to change. We will apply techniques to understand how dynamic, thermodynamic, and radiative processes distribute energy throughout the climate system, drive climate feedbacks, and determine climate sensitivity. The course will apply these concepts to explore how atmospheric, hydrologic, solar/orbital, natural, and human processes influence past, present, and future climate. We will also study characteristic modes of atmospheric and climate variability (e.g., El Niño-Southern Oscillation).

Prerequisite: MAT 125 or 131 or 141 or AMS 151; CHE 131 or 152; PHY/ENS 119 or PHY 121 or PHY 125 or PHY 131/133 or PHY 141

DEC: *E*
SBC: *STEM+*

3 credits

ATM 320: Problem Solving with Python

This class provides a working knowledge of Python. Students learn to write Python programs, manipulate data structures, produce

figures and animations, and carry out statistical and mathematical applications. Each student works on an individual project that applies Python to analyze weather or climate data.

Prerequisite: MAT 126 or MAT 132 or MAT 142 or MAT 171 or level 8 on the MPE

SBC: *ESI*

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 or PHY 142; ATM 320 or 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 365: Tropical Meteorology

The goal of this class is to provide a working knowledge of the dynamics and thermodynamics of the tropical atmosphere. A variety of tropical circulations and phenomena will be studied in detail, including regional and large-scale tropical circulations and their role in the global general circulation, tropical wave dynamics, convection and convective systems, synoptic, intraseasonal, and seasonal variability; monsoons, the El Niño/Southern Oscillation, tropical cyclones.

Prerequisite: ATM 345, ATM 346, ATM 348

3 credits

ATM 383: Doppler Weather Radar

Designed to provide students with a working knowledge of Doppler weather radar, including: what the basic components of a weather radar are, a theoretical background of how radars operate, an in-depth understanding of the wide variety of weather radar applications used in atmospheric science careers, and an overview on the use of emerging radar technologies in new and updated Doppler weather radar systems. Students also will gain hands-on experience working with Doppler radar data and radar viewing and editing software.

Corequisite: ATM 345

3 credits

ATM 387: Weather and Climate Data Analysis

Introduces students to the process of research, putting into practice computational skills learned in ATM 320, and working with publicly available weather and climate data or research data provided by the faculty. Under the guidance of the instructor(s), students will develop a research plan, engage in research and data analysis based on the proposed activities, make adjustments to the research plans based on research outcomes, draw conclusions from the research outcomes, and synthesize and present their results and findings to their peers.

Prerequisite: ATM 205 or MAR 350 or MAR 352; ATM 320 (passed with grade B or above)

SBC: *EXP+*

3 credits

ATM 397: Air Pollution and Global Warming

This course provides a detailed introduction of the formation of gaseous and particulate pollutants and the role they play in affecting global warming. The pollutants discussed include carbon monoxide, sulfur oxides, nitrogen oxides, ozone, hydrocarbons, particulate matter, and greenhouse gases. 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. The impact of these pollutants on the planet's climate are outlined. Current proposals of renewable energy supply and combatting temperature increase by geoengineering solutions are examined. This course discusses technical, ethical, and commercial perspectives that have shaped pollution producing industrial processes during historical times and in the present era. The efforts to formulate regulatory control mechanisms to limit the impact of air pollution and to ameliorate global warming are outlined in this class.

Prerequisites: ENS/PHY 119 or PHY 125 or 131 or 141; CHE 129 or 131 or 152; MAT 125 or 131 or 141 or AMS 151; U3 or U4 standing

SBC: *CER*

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 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and

approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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

SBC: *EXP+*

0-6 credits

ATM 488: Internship

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

Prerequisite: permission of instructor and SoMAS Undergraduate Program Director

SBC: *EXP+*

0-6 credits, S/U grading

BCP

Pharmacology

BCP 111: American Drug Use and Abuse: Biomedical, Socio-economic and Political Factors

This course, to be offered primarily online, introduces beginning students to the current pharmacology landscape, both in the United States and abroad. New drug discovery and the US drug approval process, for both over-the-counter and prescription pharmaceuticals, will be considered in detail and will be compared with comparable processes in other parts of the world. The ethics of American direct-to-consumer marketing of prescription pharmaceuticals will be presented and discussed.

DEC: *H*
SBC: *STAS*

3 credits

BCP 201: Introduction to Pharmacology: Drug Use & Its Molecular Basis

This course, to be offered primarily face-to-face, introduces scientifically sophisticated students to all aspects of modern pharmacology including pharmacodynamics (how drugs elicit biological responses) and pharmacokinetics (drug absorption, distribution, metabolism, and excretion). We will discuss major classes of drugs commonly used to treat illness in modern medical and veterinary practice. Agents considered will include those acting on the nervous system, the immune system, the cardiovascular, respiratory and gastrointestinal systems, and those used in treating cancer and infectious diseases. We will also consider vaccination to prevent illness.

Prerequisite: BIO 202 and CHE 132
Advisory Prerequisite: BCP 111

DEC: *E*
SBC: *STEM+*

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

SBC: *WRTD*

0 credit, 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 autocoids, anti-inflammatories, immunosuppressants, and antiasthmatics. Rational drug design and drug receptor interactions using computer molecular modeling techniques.

Prerequisites: BCP 401 and 403; minimum of B- in BCP 401
Corequisite: BCP 404

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

SBC: *ESI*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: BCP 401 and 403; permission of instructor
Corequisite: BCP 402

SBC: *ESI*

2 credits

BCP 405: Pharmacology to Pharmacy: Practical Clinical Aspects for Non-Clinicians (Didactic)

This course, to be offered exclusively online, is designed for undergraduates interested in health care (either basic medical science-oriented or clinical). The class introduces many aspects of clinical pharmacology, but is geared toward non-clinicians. Clinical vignettes and case discussions will be presented. Several medical procedures will be first described and then demonstrated. Understanding these procedures will be integral to appreciating the vignettes and clinical case discussions. The multidisciplinary course faculty will include physicians, scientists, educators, nurses and pharmacists. Enrolled students will have the opportunity to ask questions directly through online chats.

Prerequisite: U3 or U4 status or permission of the instructor

SBC: *ESI*

3 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

SBC: *SPK*

2 credits

BCP 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

BCP 475: Undergraduate Teaching Practicum in Pharmacology

Prerequisites: Pharmacology major; U4 standing; permission of department

SBC: *EXP+*

3 credits, S/U grading

BCP 480: Introduction to Research Topics in Pharmacology

Introduces undergraduate students to the research that is occurring in the laboratories of Pharmacology faculty. We will discuss experimental techniques and how they are utilized to investigate scientific questions within the various fields under the umbrella of Pharmacological Sciences. Areas covered will include immunology, neuroscience, cancer, development, structural biology, cell signaling, and stem cells. Students will be required to prepare a presentation on research actively occurring within the Pharmacology department.

Prerequisite: BCP 201 or BCP 401 or BIO 310 or BIO 361

SBC: *TECH*

1 credit

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

SBC: *EXP+*

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

SBC: *EXP+*

0-6 credits, S/U grading

BIO

Biology

BIO 103: 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.

DEC: *E*
SBC: *SNW*

3 credits

BIO 113: General Ecology

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

DEC: *E*
SBC: *SNW*

3 credits

BIO 114: Dinosaur Paleontology

A study of paleontology that includes evolution of dinosaurs, their classification system, a study of the important dinosaur families, dinosaur behavior, ecology, current controversies, hot topics and the KT extinction. Dinosaur paleontology will also cover the excavation of dinosaurs and the colorful history of the 'dinosaur hunters.' This course will emphasize the science and research involved in studying dinosaurs. Using dinosaurs as a vehicle, students will be exposed to the scientific method of inquiry and will leave this course with a better understanding on how to evaluate science in the real world. Not for Biology major credit.

Advisory prerequisite: Entry level biology

DEC: *E*
SBC: *SNW*

3 credits

BIO 115: Evolution and Society

An introduction to the historical and theoretical aspects of evolutionary biology, and also considers the implications of evolution for current social and public issues. The course examines both the original Darwinian and Modern Synthetic arguments for evolution by natural selection, how to differentiate scientific and non-scientific theories, and how historical sciences are practiced by scientists. Evolution is the key to understanding much of biology and influences

a number of issues that we as citizens will have to consider in coming years. In particular, the evolutionary perspective and its implications for the development of humans and other social systems, the advent of agriculture, and its integral role in human health are considered. Not for Biology major credit.

DEC: *E*
SBC: *SNW*

3 credits

BIO 201: Fundamentals of Biology: Organisms to Ecosystems

An introduction to the major concepts in evolution, ecology, and biodiversity at the genetic, organismal, community, and ecosystem levels. Topics are presented in relation to five overall themes: Nature and Process of Science, Evolution, Information Flow, Systems, and Structure-Function. 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 or higher on the mathematics placement examination or Corequisite MAT 123 or higher
Advisory Prerequisite: High School Biology

DEC: *E*
SBC: *SNW*

3 credits

BIO 202: 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: C or higher in CHE 129 or CHE 131 or Corequisite CHE 152

DEC: *E*
SBC: *STEM+*

3 credits

BIO 203: 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: C or higher in CHE 129 or CHE 131 or Corequisite CHE 152
Pre- or Corequisite: MAT 125 or higher or AMS 151 or higher

DEC: *E*
SBC: *STEM+*

3 credits

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

First 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. This course includes assignments that can be used to satisfy the SBC objective SPK if co-registered for BIO 458.

Prerequisite: C or higher in CHE 129, CHE 131, or Corequisite: CHE 152
Pre- or Corequisite: BIO 201 or BIO 202 or BIO 203

2 credits

BIO 205: Fundamentals of Scientific Inquiry in the Biological Sciences IIA

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. Not for credit in addition to BIO 207. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in BIO 204
Pre- or Corequisite: BIO 201 or BIO 202 or BIO 203

2 credits

BIO 207: Fundamentals of Scientific Inquiry in the Biological Sciences IIB

An alternative to BIO 205, this course focuses on a relatively narrow range of current research topics but in greater depth. BIO 207 is the second course in the foundational laboratory sequence for all biology majors and students in related fields. Students will experience the laboratory process, research process, a wide range of laboratory tools, methods, and skills, learn to read and write scientific works, 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. Not for credit in addition to BIO 205. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in BIO 204
Pre- or Corequisite: BIO 201 or BIO 202 or BIO 203

2 credits

BIO 208: Cells, Brains, Minds

An interdisciplinary exploration and critique of neuroscience. The course will present biological, anthropological and philosophical perspectives on how nervous systems work and how brains evolve, develop and give rise to human and other minds. Not for Biology major credit.

Advisory Prerequisite: High school chemistry

DEC: *H*
SBC: *STAS*

3 credits

BIO 211: Statistics and Data Analysis: A Conceptual Approach

A conceptually-focused introduction to probability and data analysis emphasizing statistical literacy and critical thinking. Topics will include probability, t-tests, chi-squared tests, correlation, regression, and Analysis of Variance, as well as special topics of interest to undergraduate Biology majors such as case-control studies and meta-analysis. This course includes a one-hour recitation in which students will do hands-on activities, discuss papers from the primary literature, and gain experience with data analysis. May not be taken by students with credit for AMS 110, 310, 311, 412, EBH 230, or ECO 320.

Pre- or Corequisite: MAT 123 or higher, or level 4 or higher on the mathematics placement examination

DEC: *C*
SBC: *STEM+*

4 credits

BIO 231: Cannabis: History, Culture, Science & Medicinal Uses

Provide a sound background in all aspects of cannabis, including the history of use worldwide, cannabis plant biology, the chemistry of cannabinoids and endocannabinoids, and the relationship to political, legal, and racism issues throughout history to the present. The purpose of this broad familiarization is to prepare students to contribute knowledgeably to the discussion and debate regarding the present and future uses of cannabis.

Advisory prerequisite: BIO 202

SBC: *STAS*

3 credits

BIO 299: Advanced Microbiology for Nursing & Allied Health

This hybrid course will include synchronous online lectures and in-person laboratory sessions focused on fundamental clinical microbiology techniques. The lectures will cover Bacteria, Helminths, and medically important Protozoans. In the laboratory, students will learn basic and applied clinical microbiology methods, including microscopy; staining and quantitative analysis of bacteria; analysis of throat and urine cultures; and determination of bacterial sensitivity to various antimicrobial agents. This course will be limited to allied health, pre-nursing, and pre-veterinary students. This course cannot be used by biology majors for credit towards their biology major requirements. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Formerly offered as BIO 266; not for credit in addition to BIO 266.

Prerequisite: C or higher in BIO 202 and C or higher in BIO 204

4 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 C or higher in BIO 203; and CHE 321 or CHE 331 or CHE 341

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. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 312.

Prerequisites: C or higher in BIO 202; and C or higher in BIO 204; and MAT 125 or higher or AMS 151 or higher
Advisory Pre- or Corequisite: AMS 110, or BIO 211

SBC: *ESI, TECH*

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: C or higher in BIO 202

3 credits

BIO 315: Microbiology

The organization, structure, energetics, and reproduction of microorganisms. Interactions of bacteria and viruses are discussed. This course does not include a laboratory component. Not for credit in addition to HBM 320. 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 BIO 202
Advisory Pre- or Corequisite: BIO 201

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: C or higher in BIO 202 and C or higher in BIO 203
Pre- or corequisite: CHE 322 or CHE 326 or CHE 332

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. The roles of membrane and nuclear receptors, second-messenger pathways and gene regulation in controlling diverse mammalian systems such as sensory physiology, organic metabolism, growth control, and neuronal development are discussed.

Prerequisite: C or higher in BIO 202
Advisory Prerequisite: BIO 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
Advisory Prerequisites: AMS 110 or BIO 211; and BIO 351

SBC: *ESI*

3 credits

BIO 320: General Genetics

Integrates classical and molecular approaches to the transmission and expression of biological information. Topics include: Mendelian and non-Mendelian inheritance; linkage analysis; population genetics; DNA replication, mutation and recombination; gene expression and its regulation; current genetic technology; developmental and cancer genetics, quantitative and complex traits, and relevant ethical issues. Cannot be taken for major credit with BIO 321 (applies to Biology majors Only). This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 320.

Prerequisite: C or higher in BIO 202; and C or higher in MAT 125 or AMS 151, or completion of MAT 126 or higher, or MPE score of 6+

3 credits

BIO 321: Ecological Genetics

An introduction to the concepts, research questions, and methods involved in modern ecological genetics. The goal of the course is to provide a broad conceptual framework and an introduction to basic quantitative methods for students planning to engage in empirical work in conservation, management, ecology, and evolutionary biology. The course will cover basic Mendelian genetics, meiosis, and mating systems, standard population genetics methods for describing variation within and between populations, basic quantitative genetics, methods for molecular marker genotyping, informatic and genomic concepts, and organism-specific methods and case studies. Cannot be taken for major credit with BIO 320 (applies to Biology majors only). This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 321.

Prerequisites: C or higher in BIO 201 and C or higher in BIO 202
Advisory Pre- or Corequisite: BIO 351

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, stem cells, 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 Drosophila and Nematostella, 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. This course includes assignments that can be used to satisfy the SBC objective SPK if co-registered for BIO 458. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 327. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: C or higher in BIO 325; and C or higher in BIO 205 or BIO 207
Pre- or corequisite: BIO 320 or BIO 321 or EBH 302

SBC: *ESI*

3 credits

BIO 328: Mammalian Physiology

A continuation of the fundamental principles of cellular and organ physiology introduced in BIO 203. The subject matter includes advanced topics covering the origins of membrane potentials, describing properties of synaptic transmission, identifying the genetics and consequences of channelopathies in cellular and organ cardiac physiology, and advanced treatment of selected topics in endocrine, cardiac, respiratory, renal and nervous system physiology. The focus is on mammals in general and humans more particularly. May not be taken for credit in addition to HBY 350.

Prerequisite: C or higher in BIO 203 and C or higher in CHE 132 or CHE 152 or CHE 331

3 credits

BIO 332: Computational Modeling of Physiological Systems

Introduces students to the fundamental principles underlying computational modeling of complex physiological systems. A major focus of the course will be on the process by which a model of a biological system is developed. Students will be introduced to the mathematical methods required for the modeling of complex systems (including stochastic processes and both temporal and spatial dynamics) as well as to tools for computational simulation. Roughly one half of the class will focus on models for general cellular physiology, while the remaining half will focus on the development of higher-level models of a particular physiological system (for example, the neurobiological systems underlying learning). This course is offered as both AMS 332 and BIO 332 and is intended for STEM majors who have already completed the foundational courses in their major. Students who satisfy the pre-requisites but do not have a deeper background in some STEM field may find the class very challenging and should ask the instructor for guidance before registering.

Prerequisite: MAT 127 or MAT 132 or AMS 161 or MPE level 9 and any one of the following: BIO 202 or BIO 203 or CHE 132 or CHE 331 or PHY 127 or PHY 132

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.

Prerequisite: C or higher in BIO 203

3 credits

BIO 335: Neurobiology Laboratory

A laboratory course in physiology with a focus on neuromuscular function. Topics include acquisition and analysis of electrophysiological data; ion channels, electrical excitability and action potentials; synaptic transmission and muscular contraction; development of physiological functions; central control of movement; sensory function and behavior; cardiac function and regulation; and ethical and political issues of physiological relevance. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 335. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in BIO 203; and C or higher in BIO 205 or 207; and C or higher in
PHY 122 or PHY 127 or PHY 132

SBC: *ESI*

3 credits

BIO 336: 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. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 336.

Prerequisite: C or higher in BIO 201
Advisory Pre- or Corequisite: BIO 320 or BIO 321; and BIO 351

DEC: *H*
SBC: *STAS*

3 credits

BIO 337: Neurotransmission and Neuromodulation: Implications for Brain Function

Exploration of fundamental concepts of neurotransmission and neuromodulation of synaptic transmission. The subject matter includes an overview of the basic principles of neurotransmission and of the neuromodulatory systems in the brain. The involvement of these systems in behavior and neurological disorders is emphasized. We will discuss how specific neurological disorders can be investigated experimentally and how experimental results can contribute to understanding and treating these disorders.

Prerequisite: C or higher in BIO 203

3 credits

BIO 338: From Synapse to Circuit: Self-organization 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: Instructor permission and BIO 203 or CHE 132 or CHE 331 or PHY 122
Advisory Prerequisite: BIO 334

3 credits

BIO 339: Neurobiology of Disease

An introduction to the molecular events that underlie the normal function of the nervous system, with a focus on the origins of neuronal diseases including neurodevelopmental disorders (e.g. autism, intellectual disability), neurodegenerative diseases (e.g. Parkinson's, Alzheimer's) and neuro-immune disorders (e.g. Multiple sclerosis). Molecular and genetic approaches for the study of these disorders as well as therapeutic approaches and ethical aspects are discussed.

Prerequisite: C or higher in BIO 202 or C or higher in BIO 203

3 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: C or higher in the following: BIO 201; and BIO 202; and BIO 204

4 credits

BIO 342: Invertebrate Zoology

Aspects of the diversity, comparative and functional morphology, natural history, evolution, and water-land transitions of invertebrate animals. Three hours of lecture per week. Must be taken concurrently with the Invertebrate Zoology Laboratory, BIO 343.

Prerequisite: C or higher in BIO 201 or MAR 104
Corequisite: BIO 343

SBC: *STEM+*

3 credits

BIO 343: Invertebrate Zoology Laboratory

Aspects of the diversity, comparative and functional morphology, natural history, evolution, and water-land transitions of invertebrate animals. One three-and-one-half hour laboratory per week plus a recitation. Must be taken concurrently with the Invertebrate Zoology lecture, BIO 342. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information

Prerequisites: C or higher in BIO 201 or MAR 104
Corequisite: BIO 342

2 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. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 344. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in BIO 201

4 credits

BIO 347: Introduction to Neural Computation

A broad introduction to neural computation. This course will discuss what counts as 'computation' and in what sense the brain computes, how it computes, and whether those computations look anything like those performed by digital computers. These ideas and concepts will be introduced through examples of computation in the brain, including the neural bases of sensory perception, decision making, learning and memory, and motor control. Students will learn through in-class demonstrations and activities, as well as homework assignments that give students the opportunity to analyze real neural recordings relevant to each of the topic modules.

Prerequisite: MAT 126, MAT 132, AMS 161, or higher; and BIO 211, or AMS 110, or AMS 310; and any one of BIO 202, BIO 203, CHE 132, CHE 331, PHY 127 or PHY 132. It is recommended that students take MAT 127.

SBC: *STEM+*

3 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: C or higher in BIO 201

3 credits

BIO 351: Ecology

An examination of the interactions of living organisms with their physical and biological environments. Attention is given to population dynamics, the interactions among organisms, the structure and function of biological communities, the evolution of organisms and their interactions, spatial relationships and scale, and patterns and explanations for biodiversity and its loss.

Prerequisite: C or higher in BIO 201

DEC: *H*
SBC: *STEM+*

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. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology major. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 352. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in BIO 205 or BIO 207
Pre- or corequisite: BIO 351

SBC: *ESI*

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 routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 353.

Prerequisite: C or higher in BIO 201 or MAR 104
Advisory Prerequisite: BIO 343

SBC: *STEM+*

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. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 354.

Prerequisites: C or higher in BIO 201 and C or higher in BIO 202
Advisory pre- or corequisite: BIO 320 or 321

3 credits

BIO 356: Population and Community Ecology Computer Laboratory

A computer laboratory course where population and community ecology concepts are applied to real-world datasets and simulated data. Laboratories are based on free interactive software. Techniques for data wrangling and computer simulation of ecological models are emphasized.

Prerequisite: C or higher in BIO 201, or C or higher in BIO 202, or C or higher in BIO 203; and C or higher in BIO 204; and MAT 126 or higher

SBC: *STEM+*

2 credits

BIO 358: 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; and one of the following: ANP 101, BIO 115, BIO 201, BIO 202, or BIO 203

DEC: *H*
SBC: *ESI, STAS*

3 credits

BIO 361: Biochemistry I

First course of an advanced two-semester study 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.

Prerequisite: C or higher in BIO 202 and C or higher in CHE 322 or 332 or 326

3 credits

BIO 362: Biochemistry II

Second course of an advanced two-semester study of biochemistry. BIO 362 is the Molecular Biochemistry section that treats nucleic acid structure, replication, and transcription, both in vivo and in vitro. The machinery and regulation of prokaryotic and eukaryotic 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 or CHE 346

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). This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 364. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in BIO 205 or BIO 207
Pre- or corequisite: BIO 314 with a grade of C or higher if used as a prerequisite

3 credits

BIO 365: Biochemistry Laboratory

This course consists of lecture and laboratory components. In the lecture portion of the course, students are introduced to modern technologies used to study proteins, nucleic acids, and other macromolecules as well as the application of these methods in contemporary

research. Scientists at Stony Brook University will be invited to present and discuss with students the application of these methods in their current research and in assigned primary publications. The laboratory component is divided into four modules designed to teach basic biochemistry techniques as well as develop the skills of problem solving and analytical thinking. The laboratory modules include: (1) classical biochemistry techniques to extract and quantify cellular constituents such as chlorophyll, DNA, RNA and proteins from Euglena gracilis, (2) characterize bovine catalase enzyme kinetics and design experiments to measure student's blood catalase levels, (3) purification of a His-tagged protein and the evaluation of its purity using SDS gel electrophoresis and western blot analysis, and (4) students will amplify and sequence their mitochondrial control region DNA and compare their sequence to known sequences dating back to the earliest hominids. For each set of experiments the students will need to write a lab report describing their own work and discuss their results in the light of previously published research. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 365. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in BIO 205 or BIO 207
Pre- or corequisite: BIO 310 or BIO 361

SBC: *ESI*

3 credits

BIO 366: Molecular Microbiology Laboratory

This course will include both lectures as well laboratory sessions focused on conventional and contemporary Molecular Microbiological techniques. The lectures will cover a variety of microorganisms; Bacteria, Fungi, Viruses, and Protozoans based on textbook readings and current research articles. In the laboratory, students will learn fundamental and applied microbiological methods, biochemical and DNA profiling of microorganisms, and the molecular basis of physiological processes used for the identification of unknown bacteria. This course will serve as an upper-division elective for BIO majors. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 366. The course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: BIO major; and C or higher in BIO 205 or 207; and C or higher in BIO 315

4 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. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 367. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in BIO 201; and C or higher in BIO 202; and C or higher in BIO 205 or BIO 207
Advisory pre- or corequisite: One of the following: BIO 320, BIO 321, BIO 351, or BIO 354

3 credits

BIO 368: Food Microbiology

This course is designed to give students an understanding of subtle relationship between food borne microorganisms and human health. Course will cover various topics focused on microorganisms involved in food processing, preservation, spoilage, and methods to control their growth in food items. The lectures will be presented based on textbook readings and current research articles and cover in depth the role of food borne microorganisms in illness as well health promotion. This course will serve as an upper-division elective for BIO majors.

Prerequisite: C or higher in BIO 315

2 credits

BIO 369: Animal Nutrition

Nutrient classes, requirements, use, and sources will be explored. Gastrointestinal anatomy and feeding standards for small, large, and exotic animal species during reproduction, growth, maintenance, and in disease are evaluated in the context of mechanisms underlying differences in nutritional requirements. Finally, laws, labeling, and marketing of animal feed will be examined. This course satisfies the prerequisite of an upper division animal nutrition course for AVMA-accredited veterinary schools.

Prerequisite: C or better in BIO 201 and BIO 202
Pre- or corequisite: BIO 203

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: C or higher in BIO 201; and C or higher in BIO 202; and C or higher in BIO 204
Advisory Prerequisite: BIO 353

DEC: *H*
SBC: *STAS*

4 credits

BIO 383: Paleobiology

Fossils are a fundamental component of the rock record and provide the only direct evidence of past life on Earth. They provide basic information for both geologists and biologists on topics like climate change, tectonic plate motion, the evolution of biological novelty, the nature of mass extinction, and the history of biodiversity. They are also increasingly used to establish natural baselines to inform modern conservation efforts. This course represents a process and systems-based study of the marine and terrestrial fossil record. The course will focus on preservation and taphonomy, macroevolution, biomechanics, paleoecology, ecomorphology, biogeography, and the extinction of biotas in the context of the environmental history of Earth. The course format consists of a mix of lecture, discussion, and lab activities. This course will additionally take advantage of connections with the Turkana Basin Institute here at Stony Brook University, where researchers play an important role in understanding the evolution and paleoecology of East African ecosystems, including that of our own ancestors. This

course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in BIO 201

SBC: *STEM+*

3 credits

BIO 384: Intermediate Statistics

This is an intermediate-level course in biostatistics, emphasizing the use of statistics as a tool to answer scientific questions in ecology and other biological disciplines. Topics from introductory statistics courses will be explored in greater depth using the R software package. Additional advanced topics will include experimental design, meta-analysis, general linear models, complex regression, multifactor analysis of variance, and multivariate analyses. Within each topic, the assumptions of statistical tests will be examined, as well as methods to cope with violations of those assumptions. Students will develop skills in graphical display of quantitative data, exploratory data analysis, and critical evaluation of published statistical analyses. Students will use R software throughout the course to develop their coding skills.

Prerequisite: BIO 211, AMS 110, or EBH 230; and BIO 201, BIO 202, or BIO 203

SBC: *STEM+*

3 credits

BIO 385: 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. This course routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 385.

Prerequisite: C or higher in BIO 201
Advisory Pre- or Corequisite: BIO 351

DEC: *H*
SBC: *STAS*

3 credits

BIO 386: 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 routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 386. This course is offered as both BIO 386 and ENS 311.

Prerequisites: C or higher in BIO 201; and CHE 129 or CHE 131 or CHE 141 or CHE 152
Advisory Prerequisite: MAR 104

DEC: *H*
SBC: *STAS*

3 credits

BIO 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; Permission of Instructor; Approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, 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.

Prerequisite: Undergraduate Biology program approval and permission of instructor

SBC: *ESI*

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.

Prerequisite: Undergraduate Biology program approval and permission of instructor

SBC: *ESI*

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.

Prerequisite: Undergraduate Biology program approval and permission of instructor

SBC: *ESI*

1-2 credits, S/U grading

BIO 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any BIO course that provides an opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Corequisite: BIO 204 or BIO 486 or BIO 487 or BIO 488 or BIO 489 or departmental permission

SBC: *SPK*

0 credit, S/U grading

BIO 459: Write Effectively in Biology

A zero credit course that is taken in the same semester as a 300- or 400-level BIO course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's WRTD learning objective. For information on approved co-requisite courses and the registration form for Biology and Biochemistry majors see: https://www.stonybrook.edu/commcms/biology/advising/BIO-459.php

Corequisite: an approved upper-division course for Biochemistry, Biology BS and Biology BA majors; or departmental permission

SBC: *WRTD*

0 credit, 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.

Prerequisite: Permission of instructor; and Undergraduate Biology Program approval

SBC: *EXP+*

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. The student should have different and/or greater responsibilities as a Teaching Assistant if the course is not different from a prior teaching practicum experience. Not for BIO major or minor credit.

Prerequisite: BIO 475; and permission of instructor; and Undergraduate Biology Program Approval

SBC: *EXP+*

0-3 credits, S/U grading

BIO 477: Undergraduate Teaching Practicum in College Biology III

Study of the literature, resources, and teaching strategies in a field of biology, coordinated with a supervised practical experience in instruction. In the practical instructional experience, the Undergraduate Teaching Assistant works with guidance from a faculty sponsor to provide support to students in labs, recitations, conferences, tutorials, or demonstrations associated with a course being taught by the sponsor. The student should have different and/or greater responsibilities as a Teaching Assistant if the course is not different from a prior teaching practicum experience. Not for BIO major or minor credit. May be repeated.

Pre- or Corequisite: BIO 476; permission of instructor; Undergraduate Biology Program Approval

SBC: *EXP+*

0-3 credits, S/U grading

BIO 484: Research in Biology and Society

Students work 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 reports on the project in a format agreed upon with their faculty sponsor that allows reflection on learning outcomes. This course may be repeated, but no more than four credits of research may be used for Biology major requirements. With prior permission from the faculty sponsor, this course could include assignments that can be used to satisfy the SBC objective SPK if co-registered for BIO 458, and/or the SBC objective WRTD if co-registered for BIO 459.

Prerequisite: Permission of instructor; and Undergraduate Biology Program approval

SBC: *EXP+*

0-6 credits, S/U grading

BIO 486: Research in Neurobiology and Physiology

Students work 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 reports on the project in a format agreed upon with their faculty sponsor that allows reflection on learning outcomes. This course may be repeated, but no more than four credits of research may be used for Biology major requirements. With prior permission from the faculty sponsor, this course could include assignments that can be used to satisfy the SBC objective SPK if co-registered for BIO 458 and/or the SBC objective WRTD if co-registered for BIO 459.

Prerequisite: Permission of instructor; and Undergraduate Biology Program approval

SBC: *EXP+*

0-6 credits, S/U grading

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

Students work 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 reports on the project in a format agreed upon with their faculty sponsor that allows reflection on learning outcomes. This course may be repeated, but no more than four credits of research may be used for Biology major requirements. With prior permission from the faculty sponsor, this course could include assignments that can be used to satisfy the SBC objective SPK if co-registered for BIO 458 and/or the SBC objective WRTD if co-registered for BIO 459.

Prerequisite: Undergraduate Biology program approval and permission of instructor

SBC: *EXP+*

0-6 credits, S/U grading

BIO 488: Internship in Biological Sciences

Students work under the supervision of a faculty member or approved professional sponsor to obtain a career-related experience in the life sciences. The student reports on the project in a format agreed upon with their sponsor that allows reflection on learning outcomes. Students must be accepted into an internship program before registering for credit. May be repeated up to a limit of 12 credits. Not for biology major credit.

Prerequisite: Undergraduate Biology Program approval and permission of sponsor

SBC: *EXP+*

0-6 credits, S/U grading

BIO 489: Research in Ecology and Evolution

Students work 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 reports on the project in a format agreed upon with their faculty sponsor that allows reflection on learning outcomes. This course may be repeated, but no more than four credits of research may be used for Biology major requirements. With prior permission from the faculty sponsor, this course could include assignments that can be used to satisfy the SBC objective SPK if co-registered for BIO 458 and/or the SBC objective WRTD if co-registered for BIO 459.

Prerequisite: Permission of instructor; and Undergraduate Biology Program approval

SBC: *EXP+*

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

SBC: *TECH*

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 or BNG Minor

3 credits

BME 200: Bioengineering in Extreme Environments

Technology at the human-engineering interface that enables human life in harsh environments, including high temperatures, high altitude, deep sea and outer space. Emphasis on the technical design requirements of the bio-engineering interface that will enable life to thrive. Physiological limits to survival will be examined within the context of when the bio-engineering technology is required. This course may not be taken for major credit.

SBC: *SNW, TECH*

3 credits

BME 203: Emergent Biodesign

This course is designed to provide students with early team-based design experience. Students will learn CAD, 3D printing, microcontroller programming and have hands-on experience in prototyping to solve bite-sized real engineering problems. Students will engage in teamwork, and be exposed to clinical settings to learn how to identify clinical needs.

Prerequisites: BME major; U2 or higher

3 credits

BME 205: Clinical Challenges of the 21st Century

Technology used by current medical practice, focusing on weekly topics associated with a specific disease state. Technology used to diagnose and treat these disease states will be rigorously examined. Weekly topics will include: cancer, cardiovascular disease, Alzheimer's, obesity, diabetes, osteoporosis, osteoarthritis, and organ transplant. Key disease states will be presented in physiological and cellular depth. This course may not be taken for major credit.

SBC: *SNW, TECH*

3 credits

BME 210: Applied Biostatistics

Students will learn an array of biostatistical techniques to correctly describe and analyze experimental data. The emphasis will be on how to select and apply statistical methods for common statistical tasks encountered in biomedical engineering, rather than on the math underlying individual methods. Statistical software will be heavily used for active learning. Not for credit in addition to AMS 102, 110, POL 201, PSY 201 and SOC 202.

Prerequisite: BME 100; BME Major; U2 standing

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: BME major; BME 100
Pre- or Corequisite: BIO 202

3 credits

BME 260: Statics and Dynamics in Biological Systems

Fundamentals of engineering statics and dynamics on biological systems will be covered using vector methods. Covered topics will include free body diagrams, equilibrium of systems, rectilinear kinetics and kinematics, angular kinetics and kinematics, work, energy and momentum of biological systems. In parallel, the necessary anatomy and physiology of the organ systems including the musculoskeletal system, the nervous system and the cardiovascular system will be covered. This material will lead to a discussion on kinesiology.

Prerequisites: BME 100; AMS 161; PHY 125 or 131 or 141

4 credits

BME 271: Introduction to Electric Circuits and Bioelectricity

As an introductory course to circuit design, we begin with fundamental theory of circuit analysis, including lumped time-invariant models of resistors, capacitors, inductors, Ohm's Law, Kirchoff's Laws, nodal and mesh analysis techniques, two-port equivalent circuits, and steady-state AC circuits. The applications of basic circuit analysis techniques in biomedical instrumentation and biological circuitry will be discussed throughout the entire class. In the final part of the course, the principles of cell electrophysiology, bio-potentials and electrical interactions with tissue will be studied. Not for credit in addition to ESE 271.

Prerequisites: AMS 161 or MAT 127 or 132; PHY 127/134 or PHY 132/134 or PHY 142

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

0 credit, S/U grading

BME 301: Bioelectricity

In this course, we will study how electrical signals are generated and propagated in biological tissue. From the basics of Ohm's Law, as well as the laws that govern diffusion and electric field theory, we will develop mathematical models of bioelectric processes as well as perform simulations of these processes using Matlab. Understanding these signals at the cell and membrane level will provide a foundation for understanding proper nerve, cardiac and muscle function, as well as disease conditions. Using this understanding, we will examine state-of-the-art applications in current literature.

Prerequisites: BME 120; BME 271 or ESE 271; BIO 202
Pre or Corequisite: BME 212

3 credits

BME 302: Research Fundamentals and Communication

Students will learn about scientific research and how to become a scientist. Specifically, course content will revolve around the experimental design process, securing of research funding, and the execution of experiments, data analysis, and interpretation. Emphasis will be placed on conveying

scientific results in oral and written form, adhering to professional standards in Biomedical Engineering. As a capstone project, students will design and perform their own experiments in groups and submit an individual manuscript suitable for publication in a scientific journal.

Prerequisite: BIO 204; BME 100; BME 210

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: BME 260 or MEC 260
Pre- or Corequisite: BIO 202

DEC: *H*
SBC: *STAS*

3 credits

BME 304: 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

DEC: *H*
SBC: *STAS*

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; AMS 361 (or MAT 303 or MAT 305); BME 260 (or MEC 260 and MEC 262)
Pre- or Corequisite: BIO 202; BME 212

3 credits

BME 310: Introduction to Biomedical Optics and Ultrasound

The course will introduce fundamental concepts of tissue optics and ultrasound, light/ultrasound tissue interaction, and optical/ultrasound instrumentation, as well as current preclinical and clinical applications of light and ultrasound for diagnosis and therapy in biomedicine.

Prerequisite: BME 271

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 312: LabVIEW Programming in Engineering

LabVIEW is the leading software development platform that enables engineers and scientists to create and deploy powerful measurement and control applications and prototypes with minimal time. This course will systematically teach LabVIEW programming with the focus on the data flow model. The highlighted course topics are basic programming logics, graphic user interface design and parallel programming. It will also teach hardware integration using LabVIEW built-in functions for data acquisition, instrument control, measurement analysis and data presentation. Hands-on projects and demonstrations will be implemented throughout the course to enhance the knowledge learned in classroom. At the end of the course, students will be offered the free exam for Certified LabVIEW Associated Developer provided by National Instruments for future career development.

3 credits

BME 313: Bioinstrumentation

The course content is directed to the basic concept of biomedical instrumentation and medical device. Main focus is on the application of the latest computer technology in bioinstrumentation. The course covers the topics such as basic sensors in biomedical engineering, biological signal measurement and conditioning, data acquisition and data analysis. In addition, the course will teach in detail the LabVIEW programming, a graphics tool for virtual instrumentation. The students will learn the techniques of collecting biological signals using basic sensors, and acquisition and analysis of biological signals using software and data acquisition hardware. The students will gain the hands-on experience in design of medical devices. This course will help students to develop skills to build instrumentation for laboratory research and prototyping medical devices.

Prerequisite: BME 271 or ESE 271

3 credits

BME 353: Introduction to Biomaterials

This course provides an introduction to materials, including metals, ceramics, polymers, composites, coatings, and adhesives that are used in the human body. It emphasizes the physiochemical properties of materials that are considered important to meet the criteria specified for the implant and device applications (e.g. strength, modulus, fatigue and corrosion resistance, conductivity), and to be compatible with the biological environment (e.g. nontoxic, noncarcinogenic, etc.). Not for credit in addition to CME 371/ESM 453 or BME 504.

Prerequisites: BME100 and BME 212

3 credits

BME 354: Advanced Biomaterials

This course is an overview of the applications of biomaterials. Here the emphasis is on the unique challenges in the design, fabrication, and evaluation of biomaterials for a particular application/field. Since biomaterials applications entail their direct or indirect contact with humans, the various practical aspects associated with biomaterials such as sterilization, packaging, evaluating device failures as well as regulatory guidelines will be covered.

Prerequisite: BME 353 or ESM 453

3 credits

BME 361: Data Science with Python

This course will introduce the basics of Python programming and how to address real-world data analysis challenges by programming. It provides an overview of standard library and coding techniques with functions, loops, classes and objectives, strings, lists, tuples, and also introduces a few advanced packages to process biomedical data and images. Students will learn this object-oriented programming language to address practical problems in the class. Both lectures and laboratories are provided for this course.

Prerequisites: BME 120 and MAT 125/126 or AMS 151 or MAT 131

3 credits

BME 371: Biological Microfluidics

This one semester course will outline theory and applications of special fluid handling conditions associated with living systems. Microfluids 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 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 cel-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
Advisory Prerequisites: CHE 321 and 322

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

3 credits

BME 430: Quantitative Human Physiology

This course will provide an introduction to the study of quantitative physiology. This course will introduce the physical, chemical and mathematical foundation of physiology. That knowledge will then be applied to membranes, transport, metabolisms, excitable cells and various organ systems.

Prerequisites: BIO 202 and AMS 261 or MAT 203

3 credits

BME 440: Biomedical Engineering Design

Introduction to product development from the perspective of solving biomedical, biotechnological, environmental, and ergonomic problems incorporating appropriate engineering standards and multiple realistic constraints. 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

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

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 multiple realistic constraints in which the product designed should function in terms of the settings (corporal, ex-corporal, biological, etc.), the engineering standards, 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: BME 440

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

BME 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and

approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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

SBC: *EXP+*

3 credits

BME 476: Undergrad Teaching Practicum II

Students assist the faculty in teaching and learn independent teaching skills while observed by the instructor. May be used as an open elective.

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; instructor and departmental approval.

SBC: *EXP+*

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; BME 271 or 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

SBC: *EXP+*

3-6 credits

BME 494: Honors Seminar on Research

The course outlines components of biomedical research vs design that includes experimental design, data recording, analysis and presentation at scientific meetings, as well as engineering design schematics, patents, and presentations to angel investors. The course culminates with an Honors Thesis Proposal that follows either a research (hypothesis testing) or design (prototype construction) pathway.

Prerequisite: U3 standing and acceptance into the BME Honors program.

1 credit

BME 495: Honors Independent Research

The course involves research (hypothesis testing) or engineering design (prototype construction) that the student completes under the supervision of the faculty member. The course culminates with an Honors Thesis draft (Fall semester) or Honors Thesis that is orally defended (Spring semester). Both BME 494 and BME 495 must be taken to qualify to graduate with Honors in BME.

Prerequisite: BME 494

3 credits

BME 499: Research in Biomedical Engineering

An independent research project with faculty supervision.

Prerequisites: Permission of instructor

0-3 credits

BUS

Business Management

BUS 115: Introduction to Business

The course provides a general framework for students to develop an understanding of how businesses work, how they are managed, and how different business models are applied to existing businesses in today's fast paced business environment. Introduces students to major business topics to form a foundation for understanding the general functional areas of business, the environment businesses operate in, and general principles of management and leadership. The course materials and coverage provides the fundamentals necessary for Business majors and minors understanding of more advanced business topics encountered in upper division Business courses while introducing students from other majors to the importance of business in the development of ideas into products and services and their distribution to customers through markets. As part of the course, students must participate in experiments and/or a library research project.

3 credits

BUS 215: Introduction to Business Statistics

The application of current statistical methods to problems in the modern business environment. Topics include probability, random variables, sampling techniques, confidence intervals, hypothesis testing, and regression. Students analyze real data sets using standard statistical software, interpret the output, and write extensively about the results.

Prerequisite: BUS Major, CME Major, or ISE Major; and MAT 122 or higher.

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 Major, MTD, ECO, ISE, or CME major; BUS 215; MAT 122 or higher

SBC: *STEM+*

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, 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

SBC: *WRTD*

0 credit, S/U grading

BUS 301: Business Communications

The purpose of BUS 301 - Business Communications is to provide Stony Brook College of Business undergraduates with a conceptual framework and specific tools for communicating in complex environments and accomplishing strategic academic and professional business goals. This core course provides writing, oral and collaborative skills necessary for future business courses, internships, and professional positions.

Prerequisite(s): BUS major or Communication and Innovation minor; WRT 102; and U2 standing or higher

SBC: *SPK, WRTD*

3 credits

BUS 302: Social Media Marketing Strategy

Social Media Marketing Strategy covers theoretical and practical perspectives for developing and implementing social media marketing strategies. The course is designed to expose students to state-of-the-art practices in social media marketing with an emphasis on leveraging insights from social media to inform strategic firm decisions.

Prerequisites: WRT 102; BUS 348; U2 standing or above

3 credits

BUS 317: Estate & Financial Planning

The Retirement, Estate, and Financial Planning course is designed for students interested in pursuing careers in Insurance, financial planning and asset management. This course will also be highly beneficial for those wishing to learn how to manage their own financial affairs and how to make wise financial decisions.

Prerequisite(s): BUS major or REI minor

3 credits

BUS 325: Legal Environment of Business

Explores competing interests of buyers and sellers, creditors and debtors, suppliers and consumers. Studies the Uniform Commercial Code from the initiation of a sales contract through financing of transactions, examines the rights of debtors and creditors in bankruptcy, and introduces basic concepts of law and regulation in the areas of securities, environmental protection, employment, and anti-trust.

Prerequisite: ACC Minor

SBC: *CER*

3 credits

BUS 326: Organizational Behavior

As members of many types of organizations throughout our lives, we are all affected at some time or another by their internal dynamics. These dynamics consist of the behaviors of individuals and students as they work and interact together within the organization. To help us best understand and address these issues, the field of organizational behavior has developed as the study of the behavior of individuals and students in organizations.

Prerequisite: Business major and WRT 102

SBC: *DIV*

3 credits

BUS 330: Principles of Finance

The goal of the course is to introduce students to the basic concepts and tools in finance. Upon completion of the course students should understand the role of a financial manager, be able to develop and analyze financial statements of a corporation, recognize the corporation's main sources and uses of funds, and develop understanding of the corporation's capital budgeting process.

Prerequisite: BUS, AMS, MTD, ISE, or ECO major.
Advisory Prerequisite: ECO 108

3 credits

BUS 331: International Finance

Course will focus on understanding how firms meet and manage their financial objectives in today's international financial environment. The topics include the management of foreign exchange exposure, foreign direct investment decisions, and multinational capital budgeting.

Prerequisites: Business major or AMS or ISE or MTD or ECO major and BUS 330.

3 credits

BUS 332: Entrepreneurial Finance

Before going public, companies like Facebook, LinkedIn and Zynga relied on venture capital financing to grow. Similar companies are increasingly choosing private market solutions. A focus on the development of secondary markets that provide an alternative to the traditional IPO. This course teaches the necessary tools for investors and entrepreneurs to build and evaluate these early-stage companies.

Prerequisites: Business Major and BUS 330

3 credits

BUS 333: Introduction to the Business of Real Estate

This foundation course is a multi-dimensional program whose main objective is to provide students with a comprehensive understanding of the real estate profession. The core subjects will include real estate development, legal issues, real estate finance and investment, appraisals, environmental issues, real estate economics and capital markets. Highly qualified guest speakers will be invited for presentations and discussions to provide the student with in-depth hands on knowledge and experience in all facets of the real estate profession.

Prerequisite(s): BUS major or REI minor; Advisory Prerequisite: BUS 330

3 credits

BUS 334: Integrated Mktg Communications

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 or PSY major with a marketing concentration; BUS 348 and U3 or U4 standing.

3 credits

BUS 336: Mergers & Acquisitions

Corporate mergers and acquisitions continue to play a significant role in many companies' value and growth strategies. This course provides a comprehensive introduction to mergers and acquisitions (M&A) from the perspective of corporate finance. The primary objective of the course is for each student to gain a well-rounded understanding of the major strategic, economic, financial, and governance issues of mergers and acquisitions.

Prerequisites: Business Major and BUS 330

3 credits

BUS 337: Entrepreneurship Compared Across Countries

Starting and managing a business is a risky albeit potentially rewarding undertaking. The complexity and challenges (as well as potential payoffs) facing entrepreneurs and business managers vary across different countries. The origins and development of entrepreneurs and entrepreneurship has similarities and differences across countries. The development of value is common across countries. The way that value is developed differs historically in Great Britain, Europe, Asia, and the Middle East compared to development in the United States. Value is distinguished from financing and taxing.

Prerequisite: Business major
Advisory Prerequisite or Co-requisite: BUS 353

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 or CME Major; U3 or U4 standing.

SBC: *TECH*

3 credits

BUS 346: Operations Management

Analysis and design of service and manufacturing 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, scheduling, waiting line model, just-in-time systems, and supply chain management.

Prerequisites: BUS Major or ISE Major: BUS 215 or AMS 102 for non-business majors, and BUS 220.

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 or ISE Major or PSY major admitted to the marketing concentration.

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 or MTD Major

3 credits

BUS 353: Entrepreneurship

Entrepreneurship is the study of new venture creation and management and it could occur in a myriad of ways depending on the interactions of entrepreneurs and opportunities. This course provides an overview of issues of creating a business, ranging from opportunity recognition and evaluation to resource acquisitions and management. It is designed to appeal to individuals with strong desires to become entrepreneurs, to join start up companies, or to work in the venture capital industry. The course objectives are threefold: 1) to develop a scientific understanding of entrepreneurship, and the empirical evidence in support of theories; 2) to transform this scientific understanding to practice; and 3) to provide firsthand experience with dealing with uncertainty and managing the start-up process.

Prerequisite: Business majors, Engineering majors or Communication and Innovation minors: U4 Standing
Co-requisite for engineering majors: Enrollment in relevant senior design course

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

3 credits

BUS 355: Investment Analysis

Investment Analysis helps students make informed investment decisions in their personal and professional lives by providing a solid foundation of practical applications to introduce the topics and techniques used by investors and money managers. Course topics include: the investment environment, securities markets and transactions, finding investment data and information, return and risk, modern portfolio concepts, common stocks, analyzing common stocks, stock valuation, market efficiency and behavioral finance, fixed-income securities, mutual funds and exchange-traded funds.

Prerequisite(s): BUS, AMS, ECO, MTD, ISE major or REI minor; BUS 330

3 credits

BUS 356: Financial Analysis with Excel

The course focuses on issues in finance and investing, computational techniques related to corporate finance and investment decisions will be the core of the course. Using excel this class will explore the financial mathematics of: foreign currency transactions, corporate valuation, capital budgeting, inventory

valuation, profit margins, financial modeling, leveraged buyouts, and financial forecasting.

Prerequisite(s): BUS major or ECO major and BUS 330

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.

Prerequisites: Business major and BUS 348

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 or PSY major admitted to the marketing concentration; U2 standing or higher; BUS 348; BUS 215 for BUS majors, one of the following for PSY majors: AMS 102, ECO 320, POL 201, PSY 201 or SOC 202.

SBC: *ESI*

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 or PSY major admitted to the marketing concentration; BUS 348; U3 or U4 standing

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: Business major and BUS 348

3 credits

BUS 365: Financial Management

Financial management techniques and analysis for improving business decision-making will be explored. Topics include: Long and short term financial decisions, debt and equity funding, capital structure, net working capital, inventory management, account receivable management, and how to deal with financial distress related to reorganization and/or liquidation in bankruptcy. The basics of payout policy will be discussed including dividends and stock repurchases. In addition, students will learn how companies finance merger and acquisition decisions, including leveraged buyouts.

Prerequisite: BUS, AMS, MTD, ISE, or ECO major; BUS 330

SBC: *ESI*

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.

Prerequisite: BUS, AMS, MTD, ISE, or ECO major; BUS 330

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

Businesses engage in a diverse set of activities in their daily operations including production planning, resource procurement, inventory management, distribution, and interaction with other firms. The goal of supply chain management is to maximize the economic value of these activities through system level coordination. A successful supply chain streamlines the flow of materials, goods, information, and capital along each component of the supply chain.

Prerequisite: BUS major and pre/co-requisite 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 375: Data Mining

Given today's massive size of data, data mining aims to address the data analytics problems by discovering useful patterns and information hidden in the data. Importantly, awareness of the importance of data mining for business is becoming wide spread. The industry has created an increasing number of job opportunities for people who have data analytic skills. The key objectives of the course are two-fold: (1) to teach the fundamental concepts of data mining and (2) to provide hands-on experience in applying the concepts to real-world applications. The core topics to be covered in this course include classification, clustering, association analysis and anomaly analysis. * Computer skills: Some applications of data mining models introduced in class will be demonstrated in R, so students can expect to learn basic programming skills in this class.

Prerequisite: BUS major

3 credits

BUS 376: Risk Management & Insurance

Risk Management and Insurance course will explore the principles of risk and insurance. The course will include an analysis of risk and strategies to eliminate, minimize, or transfer risk. Students will become familiar with key components and life, accident, and health insurance policies as well as property and casualty insurance.

Prerequisite(s): BUS major or REI minor

3 credits

BUS 377: Risk Management & Insurance II

Risk Management and Insurance II will continue to explore the principles of risk and insurance. The course will include an analysis of risk and strategies to eliminate, minimize, or transfer risk. Students will become familiar with the key components of life, auto, accident and health insurance policies as well as property and casualty insurance. Annuity, 401K and other retirement plans will be discussed.

Prerequisite(s): BUS major or REI minor

3 credits

BUS 378: Marketing Ethics, Public Policy, and Social Change

This course examines ethical and legal issues associated with marketing practices as well as how marketing can be used to exact change to improve societal health and well-being. These concepts will be examined primarily from the point of view of the behavioral sciences including psychological, sociological, economics, and cultural perspectives. Students will apply this basic knowledge to analyze ethical problems associated with marketing practices, analyze effectiveness of public policy based on scientific knowledge, and develop ideas for social change and social justice through marketing.

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

SBC: *ESI*

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: Business Major or Communication and Innovation minor

3 credits

BUS 389: Honors Research in Marketing

The student writes the Business Honors Program thesis under the supervision of a faculty member thesis advisor and the program director. The thesis advisor will direct and assist the student as he or she develops the thesis topic, formulates the research hypotheses, performs the basic research, writes the thesis, and presents the thesis research. The faculty member will also assist the student in acquiring necessary knowledge in the area of marketing as required to perform the thesis research. Students are required to present their thesis at the Undergraduate Research and Creativity (URECA) program in April.

Prerequisite: Business Honors Program membership and department consent required.

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: U3 or U4 standing

3 credits

BUS 393: Principles of Project Management

Anything we do in both our personal and professional lives that delivers something unique within a finite time frame is a project. Applying project management tools and techniques improves the likelihood of success. Beyond schedules and budgets, project managers must demonstrate high emotional intelligence to lead teams, effectively solve problems, and understand the nuances of culture and contracts. In this "get-out-of-your-chair" classroom exercise laden course, students will experience project management concepts. Class discussions will focus on the "real world" application of these concepts. Students will also gain hands-on experience with Microsoft Project.

Prerequisites: BUS Major
Pre or Co-requisite: BUS 346

3 credits

BUS 399: Intellectual Property Strategy

Concepts and techniques of strategic management are examined and applied to relevant cases involving the management of intellectual property as applied to a wide range of industries and innovations. The course will begin with a brief overview/review of some principals of management strategy. We will then survey the types of intellectual property, and some of the laws that support exclusivity in intellectual property rights. This will provide the foundation for more in-depth discussion of the relevant issues and examination of how companies and individual innovators utilize intellectual property to protect their innovations and profit from them. Course lecture and discussion will focus on the strategic uses of various forms of intellectual property, including patents, trade names, trade secrets, and copyrights. Students will explore the use and importance of intellectual property in building and sustaining a competitive advantage, as well as strategies used to realize the highest value from intellectual property.

Prerequisite: Business major or Communication and Innovation minor; U3 or U4 standing

3 credits

BUS 401: Negotiation Workshop

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

Prerequisites: Business Major; U4 Standing

3 credits

BUS 406: Real Estate Finance

The course is designed for undergraduate students with a strong interest in real estate capital markets. Its target audience is students interested in Real Estate, but the course is also open to finance-oriented students who wish to gain an in-depth understanding of real estate investment analysis. The course addresses public and private providers of real estate debt and equity capital and how this capital is channeled into commercial real estate. An introduction to the real estate investment market with descriptions of different types of ownership, financing, and income tax laws. This course provides analysis of the various types of real estate investments and how to put those concepts into practical use. The purpose of this course is to prepare the student for employment or interacting with the mortgage and real estate industry. This course will help students develop the understanding and skills necessary to become successful real estate practitioners and or investors. Investment Principles are not just about textbook learning: it challenges students to use their critical/ creative skills in all aspects of the Real Estate Industry, not just those covered in this course.

Prerequisite(s): BUS major or REI minor and BUS 376 and BUS 333

3 credits

BUS 408: Property & Casualty Insurance

Foundations of Property & Casualty (P&C) course will explore the foundational coverages of homeowners, personal auto, personal excess, commercial general liability, commercial property, commercial excess, workers compensation, inland marine, package policy, business owner's policy, and management liability insurance coverages. The course will include real life examples of P&C coverage and claims scenarios. Students will learn how to apply the coverages in certain personal and business environments. Students will become familiar with the basic P&C coverages and help prepare them for a career in various risk management and insurance organizations.

Prerequisite(s): BUS major or REI minor and BUS 376

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 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 446: Ethics: Critical Thinking through Film

This course combines critical thinking, discussion of moral values, and ethical considerations applied in a business setting. Using narrative film (i.e. a fictional scenario) to depict challenging ethical dilemmas, students will engage in critical thinking, evaluation of moral standards, and display of various ethical positions pertaining to contemporary society and business. A simulated situation as presented in a narrative film and supported by research from the humanities, will add to experiential learning, emphasized in contemporary business education.

Prerequisite(s): BUS Major; WRT 102 ; U4 standing

SBC: *CER*

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 ECO, ISE, or MTD Major; WRT 102; U4 standing.

SBC: *CER*

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 or PSY major admitted to the marketing concentration and U4 Standing; Pre or Co-requisite BUS 358.

3 credits

BUS 449: Marketing in Action

An advanced project-based course for students specializing in Marketing. Students will apply all concepts and frameworks learned from prior marketing courses. This course provides an experiential, project-based learning environment in which students will gain a personal feel for strategic marketing planning and decision making working for a real business client. Students will address critical decision issues involved in marketing planning at a strategic level, including segmentation and positioning, product development, customer acquisition and retention, brand management, marketing research, and the use of advertising and promotion. Particular emphasis will be placed on digital and social media marketing and it's increased role in communication and tracking results. The environment firms face today is increasingly complex and fast-changing. Hence, the core job of marketing -- attract, retain, grow customers; earn profits -- is ever more important. This course will attempt to provide the strategic marketing experience you will need to help jumpstart and succeed in your career.

Prerequisite: BUS Major; U4 Standing; BUS 348 and BUS 358

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

0-3 credits

BUS 488: Internship

Participation in local, state, national, or international private enterprises, public agencies, or nonprofit institutions.

Prerequisites: BUS major; permission of undergraduate program director

SBC: *EXP+*

0-3 credits

BUS 495: Business Honors Program Thesis

The student writes the Business Honors program thesis for two semesters under the supervision of a faculty member thesis advisor and the program director to satisfy the requirements of the Business Honors Program. The thesis advisor will direct and assist the student as he or she develops the thesis topic, formulates the research hypotheses, performs the basic research, writes the thesis, and presents the thesis research. The faculty member will also assist the student in acquiring necessary knowledge in their area of research. Students are required to present their thesis at the Undergraduate Research and Creativity (URECA) program in April. Students receive only one grade upon completion of the sequence BUS 495-496.

Prerequisite: Business Honors Program membership and department consent required.

3 credits

BUS 496: Business Honors Program Thesis

The student writes the Business Honors program thesis for two semesters under the supervision of a faculty member thesis advisor and the program director to satisfy the requirements of the Business Honors Program. The thesis advisor will direct and assist the student as he or she develops the thesis topic, formulates the research hypotheses, performs the basic research, writes the thesis, and presents the thesis research. The faculty member will also assist the student in acquiring necessary knowledge in their area of research. Students are required to present their thesis at the Undergraduate Research and Creativity (URECA) program in April. Students receive only one grade upon completion of the sequence BUS 495-496.

Prerequisite: Business Honors Program membership and department consent required.

SBC: *EXP+*

3 credits

CAR

Career Development

CAR 151: Career & Life Design I: Introduction

This course employs a design thinking approach to help students develop a point of view about their life and career. Students will consider their values, talents, and personality attributes, and the integration of work views with life views. They will investigate the relationship between academic majors and career options, and consider Stony Brook Curriculum courses (SBCs) as a venue for career exploration. By the end of the course, students will have developed a plan to manage habits and routines that support personal growth and long-term career development.

2 credits

CAR 251: Career & Life Design II - Employability Skills

This course is for students who have declared a major and want to simultaneously explore career options and obtain experiences for skill development. This active learning course focuses on the development of skills employers want, known as career readiness competencies and introduces financial literacy concepts. You will be expected to actively apply to on-campus jobs/internships/research as part of the course, and you will be guided through that process. By the end of this course, you will develop an action plan for experiential learning and career development throughout college.

2 credits

CAR 351: Career & Life Design III: Special Topics

This course is for students with a career concept who need deep industry sector exploration: Career Pathways in Engineering, Career Pathways in Healthcare, etc. You will use a design-thinking approach to prototype three different career paths within an industry sector, then conduct in-depth research about these pathways, including a networking assignment. You will compare your unique experiences and strengths to market intelligence, and develop a plan to present your qualifications via e-Portfolio, resume, personal branding statement, and LinkedIn profile. Students will acquire marketable industry skills through better alignment of education, training and employment.

2 credits

CAR 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

CAR 451: Career & Life Design IV - After College Transitions

This course provides enhanced practice for the post-college destination, such as elevated ability to articulate career readiness competencies and qualifications in context of a specific role, industry sector, or graduate program. Students will review their workview/lifeview and consider meaningful work as an essential component for life-long wellbeing. Advanced level strategies for job search and career entry will be covered. A significant portion of the course is dedicated to financial literacy and financial wellness topics with a focus on salary negotiation, credit, debt and repayment, and savings/investing.

2 credits

CAR 475: Undergraduate Teaching Practicum I

Undergraduate teaching assistants support the student learner and the instructor. TAs develop knowledge of course content, as well as skills in teaching, explaining content to a novice audience, classroom management, and peer mentoring. TAs in this course will support either CAR 151, CAR 251, or EXT 288 and lead in-class activities, prepare and deliver supplemental modules, facilitate feedback sessions, and assist with class management, attendance, and discussions. TAs will monitor student experience in the course and share feedback and bring concerns to the instructor.

Prerequisite: Permission of instructor

SBC: *EXP+*

0-3 credits, S/U grading

CAR 476: Undergraduate Teaching Practicum II

Undergraduate teaching assistants support the student learner and the instructor. TAs develop knowledge of course content, as well as skills in teaching, explaining content to a novice audience, classroom management, and peer mentoring. TAs in this course will support either CAR 351, CAR 451, EXT 288, or EXT 488 and lead in-class activities, prepare and deliver supplemental modules, facilitate feedback sessions, and assist with class management, attendance, and discussions. TAs will monitor student experience in the course and share feedback and bring concerns to the instructor.

Prerequisite: Permission of instructor

SBC: *EXP+*

0-3 credits, S/U grading

CCS

Cinema and Cultural Studies

CCS 200: Media History

Explores the emergence, development, and use of media technologies over time, from the spoken word and the printing press to computer graphics and the Internet. Through an investigation of social, economic, and technological conditions we will investigate how and why various media were developed, used, and repurposed by industries, governments, artists, and users. The course will also serve as a general introduction to historical analysis and research methods.

DEC: *D*
SBC: *ARTS*

3 credits

CCS 202: Film Genres

An introduction to the study of film through the examination of a single or multiple genres. Special attention is given to genre theory and cultural considerations or genre.

DEC: *D*
SBC: *ARTS*

3 credits

CCS 203: Cinema History

An introductory study of cinema history either via a historical survey, or focus on a particular period. Emphasis is placed on global cinema history within the contexts of: exhibition, audience, regulation, technology, film form, style, and movements, industry, distribution, and select national contributions. Previously offered as CCS 205 and CCS 206. Not for credit in addition to CCS 205 or 206.

DEC: *D*
SBC: *ARTS, GLO*

3 credits

CCS 204: The Stony Brook Film Festival: Films and Contexts

Course offered in summer only. 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.

DEC: *D*
SBC: *ARTS*

3 credits

CCS 301: Cinema and Media Theory

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

DEC: *G*
SBC: *CER, DIV, HFA+*

3 credits

CCS 311: 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. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing and one D.E.C. B or HUM course

DEC: *G*
SBC: *DIV, HFA+*

3 credits

CCS 312: 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: one D.E.C. B or HUM course and one course from the following: CCS 101, CCS 201, CCS 202, CCS 203, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUR 241, THR 117

DEC: *I*
SBC: *HFA+*

3 credits

CCS 313: 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 digital technologies.

Prerequisite: one D.E.C. B or HUM course

DEC: *H*
SBC: *ESI, STAS*

3 credits

CCS 325: Culture in Context

Theoretical and methodological examination of culture within specific contexts, settings, or time-periods. Emphasis may include historical, social, economic, political, ecological or material contexts. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing

DEC: *F*
SBC: *SBS+*

3 credits

CCS 381: Topics in Cinema Studies

An examination of cinema within diverse cultural, historical, social, or technological contexts. Emphasis is placed on the study of cinema from an interdisciplinary perspective. Attention may be focused on a particular era, director, genre, area, practice, or phenomenon. May be repeated as the topic changes, to a maximum of 6 credits.

Prerequisite: U3 or U4 Standing

SBC: *HFA+, WRTD*

3 credits

CCS 382: Topics in Media and Popular Culture

This course examines the historical, political, and social forces that surround media and popular culture. In this class students learn to read critically across multiple media forms. Attention may be focused on a particular era, group, institution, type of object, or event. May be repeated as the topic changes, to a maximum of 6 credits.

Prerequisite: EGL 220 and U3 or U4 status

3 credits

CCS 383: Topics in Game Studies

The course critically examines video games within cultural, social, political, and historical contexts. It is designed to afford an immersive study of a range of topics pertinent to the scholarly study of video games. Possible topics include: game history, games art and design, game preservation, game play and experience, games and culture, racial and gendered subjectivities. This course is offered as both CCS 383 and DIA 383. May be repeated as the topic changes, to a maximum of 6 credits. Previously offered as CCS/DIA 396 and CCS/DIA 397. Not for credit in addition to CCS/DIA 396 and CCS/DIA 397.

Prerequisite: EGL 220 and U3 or U4 status

DEC: *H*
SBC: *ESI, STAS*

3 credits

CCS 391: Topics in 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. Repeatable as the topic changes, for a maximum of 6 credits.

Prerequisite: one D.E.C. B or HUM course and one course from the following: CCS 101, CCS 201, CCS 202, CCS 203, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUR 241, THR 117

DEC: *J*
SBC: *ESI, HFA+*

3 credits

CCS 392: Topics in 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. Repeatable as the topic changes, for a maximum of 6 credits.

Prerequisite: one D.E.C. B or HUM course and one course from the following: CCS 101, CCS 201, CCS 202, CCS 203, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUR 241, THR 117

DEC: *K*
SBC: *ESI, HFA+*

3 credits

CCS 393: Topics in 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. May be repeated as the topic changes, to a maximum of 6 credits.

Prerequisite: one D.E.C. B or HUM course and one course from the following: CCS 101, CCS 201, CCS 202, CCS 203, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUR 241, THR 117

DEC: *I*
SBC: *ESI, HFA+*

3 credits

CCS 394: Topics in 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. Repeatable as the topic changes, for a maximum of 6 credits.

Prerequisite: one D.E.C. B or HUM course and one course from the following: CCS 101, CCS 201, CCS 202, CCS 203, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUR 241, THR 117

DEC: *J*
SBC: *ESI, HFA+*

3 credits

CCS 395: Topics in Digital Technology and Culture

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. Repeatable for credit as the topic changes to a maximum of six credits.

Prerequisite: one D.E.C. B or HUM course

DEC: *H*
SBC: *ESI, STAS*

3 credits

CCS 401: Senior Seminar in Cinema & 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

SBC: *SPK, WRTD*

3 credits

CCS 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

CCS 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any CCS course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

CCS 459: Write Effectively in Cinema and Cultural Studies

A zero credit course that may be taken in conjunction with any 300- or 400-level CCS course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

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.

Prerequisite: Permission of program advisor

SBC: *EXP+*

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

CDS

Cross Disciplinary Studies

CDS 101: Energy, Climate, and Society

The energy consumption of 21st century societies is causing the Earth's climate to warm at an alarming rate, threatening terrestrial life as we know it; this impasse scientists sometimes call a "wicked problem." What is the history of energy consumption that has brought us to this point? How did we become aware - culturally and scientifically - of the crisis? What are the cascading impacts of climate change on biodiversity and ecosystem services? How can we imagine moving through the impasse and emerging on the other side? What are the political opportunities and blockages? How can we change our societies to be less energy intensive and more adaptable to the warming already baked into the climate system? What kinds of engineered solutions

- carbon sequestering and clean energy, for example - are here or on the horizon? This class will explore these issues from several transdisciplinary perspectives, from climate science to chemistry to urban planning to literature and film.

SBC: *STAS*

3 credits

CEF

School of Professional Development

CEF 347: Introduction to Special Education

An overview that will provide core knowledge of special education practices and legislation. Students will refine their knowledge of the values, issues, practices, and policies that guide the field of special education. Students will develop and improve skills in topics of special education, education efficacy, instructional issues, early intervention, transitions, family, and community concerns. As of Fall 2011, this course meets the NYS special education requirement for all pre-service candidates for teacher certification.

3 credits

CHE

Chemistry

CHE 115: 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. May not be taken by students with credit for CHE 129, CHE 131, or CHE 152. This course is offered as both CHE 115 and ENV 115.

DEC: *E*
SBC: *SNW*

3 credits

CHE 129: General Chemistry IA

This is the initial course of the four-semester General-Chemistry/Organic-Chemistry sequence CHE 129/132/321/322. This sequence provides the necessary foundation for students who wish to pursue further coursework in chemistry. The General Chemistry Courses provide a broad introduction to the fundamental principles of chemistry, including substantial illustrative material drawn from the chemistry of inorganic, organic, and biochemical systems. The emphasis is on basic concepts, problem-solving, and factual material. Students will be placed into CHE 129 based on their performance in the Online Chemistry Placement and Preparation (OCPP) process. Specifically, CHE 129 is for students with chemistry knowledge above the required OCPP minimum but who do not meet the math corequisite of CHE 131. The level and content of CHE 129 match that of CHE 131, but since the corequisite differs, students must also attend a CHE 130 session each week. CHE 130 builds essential skills in information processing, critical and analytical thinking, quantitative reasoning, and problem solving. The CHE 129 four-semester sequence is inappropriate for students who satisfy the corequisites of CHE 131. It is also inappropriate for students who have completed an AP course in chemistry and received a score of 4 or 5; such students must enroll in CHE 152. Three lecture hours, one 80-minute workshop, and one CHE 130 session per week. CHE 129 may not be taken for credit in addition to CHE 131 or CHE 152. 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: Online Chemistry Placement and Preparation (OCPP) Process. For information on the OCPP, copy and paste the following link into your browser. go.stonybrook.edu/ocpp
Mandatory co requisites: MAT 123 and CHE 130

DEC: *E*
SBC: *SNW*

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: General Chemistry IB

This is the initial course in the four-semester General-Chemistry/Organic-Chemistry sequence CHE 131/132/321/322. This sequence provides the necessary foundation for students who wish to pursue further coursework in Chemistry. The General Chemistry courses provide a broad introduction to the fundamental principles of chemistry, including substantial illustrative material drawn from the chemistry of inorganic, organic, and biochemical systems. The emphasis is on basic concepts, problem-solving, and factual material. 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. Students will be placed into CHE 131 based on their performance in an Online Chemistry Placement and Preparation (OCPP) process. The four-semester sequence is inappropriate for students who have completed an AP course in chemistry and received a score of 4 or 5; these students are placed into CHE 152. Three lecture hours and one 80-minute workshop per week. May not be taken for credit in addition to CHE 129 or CHE 152. 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: Online Chemistry Placement and Preparation (OCPP) Process. For information on the OCPP, copy and paste the following link into your browser. go.stonybrook.edu/ocpp Corequisite: MAT 125 or higher

DEC: *E*
SBC: *SNW*

4 credits

CHE 132: 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. Three lecture hours and one 80-minute workshop per week. May not be taken for credit in addition to CHE 152. 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. Pre/Corequisite: MAT 125 for those who took CHE 129 or 130 or BA BIO majors; all others MAT 126 or higher

DEC: *E*
SBC: *SNW*

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. Three hours of laboratory or related activity per week. CHE 133 and CHE 134 may not be taken for credit in addition to CHE 154. 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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. Three hours of laboratory or related activity per week. CHE 133 and CHE 134 may not be taken for credit in addition to CHE 154. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: CHE 133
Pre- or Corequisite: CHE 132

1 credit

CHE 152: Molecular Science I

This is the initial course of the three-semester Molecular Science sequence CHE 152/331/332. The topics covered in CHE 152 include atomic and molecular structure, chemical bonding, thermodynamics, equilibrium and aqueous chemistry, electrochemistry, kinetics and basics of organic chemistry. Students will be placed into CHE 152 based on their performance in the Online Chemistry Placement and Preparation (OCPP) process or upon receipt of a score of 4 or 5 in AP chemistry. (Such students cannot enroll in any of the courses CHE 129/130, 131, or 132). May not be taken for credit in addition to CHE 129, 131, or 132. Three lecture hours and one 80-minute workshop per week.

Prerequisite: AP Chem score of 4-5 & satisfactory score on the Online Chemistry Placement & Prep Process (OCPP) or satisfactory score on the OCPP (http://go.stonybrook.edu/ocpp); co-registration in MAT 131 (preferred), MAT 125, AMS 151 or higher calculus

DEC: *E*
SBC: *SNW*

4 credits

CHE 154: Molecular Science Laboratory I

Designed to familiarize students with chemical and physical properties of substances, techniques of quantitative chemistry, and aspects of scientific methodology. Four hours of lab per week. CHE 154 may not be taken for credit in addition to CHE 134. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Corequisite: CHE 152

2 credits

CHE 301: Physical Chemistry I

This course is the first half of a two-semester overview of modern physical chemistry, introducing students to the quantitative study of chemical systems. The fundamentals of thermodynamics from both macroscopic and microscopic standpoints are covered, with applications to chemical problems. May not be taken for credit by students who have completed CHE 312.

Prerequisite: CHE 132 or 152; MAT 132 or 142 or 127 or 171 or AMS 161
Pre/Co Requisite: MAT 203 or MAT 211 or AMS 210 or AMS 261; PHY 125, 131/133, or 141

SBC: *STEM+*

4 credits

CHE 302: Physical Chemistry II

Introduction to quantum theory and its application to the study of chemical bonding, molecular spectroscopy, statistical thermodynamics, chemical kinetics and molecular reaction dynamics.

Prerequisites: CHE 301; MAT 203 or MAT 211 or AMS 210 or AMS 261
Pre- or Corequisite: PHY 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CHE 134 or CHE 154
Corequisite: CHE 301

SBC: *ESI, WRTD*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CHE 303
Corequisite: CHE 302 Advisory Prereq: Knowledge of computer programming

SBC: *TECH, WRTD*

2 credits

CHE 310: 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 CHE 152

DEC: *H*
SBC: *STAS*

3 credits

CHE 312: Physical Chemistry for the Life Sciences

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 credit toward the chemistry major.

Prerequisite: CHE 132 or 152; MAT 132 or 142 or 127 or 171 or AMS 161
Pre- or Corequisite: PHY 121 or 125 or 131/133 or 141

SBC: *STEM+*

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. CHE 321 may not be taken for credit in addition to CHE 331. 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

SBC: *STEM+*

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 332. 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 CHE 321 or 322. Four laboratory hours and one lecture hour per week. Not for credit in addition to CHE 383. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CHE 134
Pre- or Corequisite: CHE 321

2 credits

CHE 328: Synthetic and Spectroscopic Laboratory Techniques

Application of fundamental laboratory techniques to organic and inorganic problems including multistep syntheses and structural and mechanistic determinations. Lectures cover material pertaining to the experimental work, with an emphasis on spectroscopy. Not for credit in addition to CHE 384. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CHE 327
Pre- or corequisite: CHE 322

SBC: *TECH*

3 credits

CHE 331: Molecular Science II

Topics include the structural, mechanistic and synthetic aspects of organic chemistry, transition metal chemistry, catalysis, supramolecular chemistry, and polymer chemistry. This is the second course in a three semester sequence. Students with a strong background prior to entering the University can take the 152-331-332 sequence, which covers the same material as 131-132-321-322. Three lecture hours and one 80-minute workshop per week. The laboratory component, CHE 383, must be taken the same semester as the CHE 331 lecture. May not be taken for credit in addition to CHE 321.

Prerequisite: C or higher in CHE 152
Corequisite: CHE 383

SBC: *STEM+*

4 credits

CHE 332: Molecular Science III

Topics include advanced structural, mechanistic and synthetic aspects of organic chemistry, the organic chemistry of biological pathways and biosynthesis. This is the final course in a three semester sequence. Students with a strong background prior to entering the University can take the 152-331-332 sequence, which covers the same material as 131-132-321-322. Three lecture hours and one 80-minute workshop per week. May not be taken for credit in addition to CHE 322.

Prerequisite: C or higher in CHE 331

4 credits

CHE 345: Structure and Reactivity in Organic Chemistry

Electronic and stereochemical theories relating to organic structure and reactions. Topics such as bonding, strain, aromaticity, MO theory, molecular rearrangements, pericyclic reactions, and photochemistry are covered.

Prerequisite: CHE 322 or CHE 332
Pre- or Corequisite: CHE 301 or CHE 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 CHE 332; CHE 301 or CHE 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 332

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: CHE 304; CHE 327 or CHE 383

2 credits

CHE 358: Computing in Chemistry

The basic elements of scripting, design of computer programs, and numerical analysis are discussed within the framework of solving a variety of exciting problems chosen from all areas of chemistry. Topics include automation of repetitive tasks, fitting of data, numerical integration of rate equations, signal and image analysis, and quantum chemistry. No previous knowledge of computer programming is assumed.

Prerequisite: CHE 302 and CHE 304

3 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 CHE 332

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 377: Inorganic Chemistry Laboratory

The synthesis of inorganic materials and their characterization using a variety of physical techniques. This laboratory course will emphasize both the synthesis of inorganic compounds and the study of their physical properties. Laboratory exercises will introduce synthetic techniques. Molecular and solid-state compounds will be characterized by UV-visible absorption, infrared, and multinuclear NMR spectroscopies, and x-ray diffraction. Measurements of electrochemical behavior, magnetic susceptibility, and chemical reactivity will be performed. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CHE 303 and 328 or 384
Pre- or Corequisite: 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 379: Electrochemistry and Electrochemical Materials Science

This course will survey electrochemistry and electrochemical materials science. Topics will include fundamental measurements in electrochemistry, galvanostatic and potentiostatic methods, the electrochemical double layer, corrosion and passivation. Relevant applications such as fuel cells, batteries, and supercapacitors will be discussed.

Prerequisite: CHE 132 or CHE 152

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 in the Molecular Sciences sequence. Not for credit in addition to CHE 327. Three lecture hours and one 80-minute workshop per week. The lecture component, CHE 331, must be taken the same semester as the CHE 383 laboratory. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CHE 154
Corequisite: CHE 331

SBC: *ESI*

2 credits

CHE 384: Intermediate Synthetic and Spectroscopic Laboratory Techniques

Application of fundamental laboratory techniques to organic and inorganic problems including multistep syntheses and structural and mechanistic determinations. Lectures cover material pertaining to the experimental work, with an emphasis on spectroscopy. Not for credit in addition to CHE 328. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CHE 383
Corequisite: CHE 332

SBC: *TECH, WRTD*

3 credits

CHE 385: Tools of Chemistry

A seminar course covering topics common to all areas of chemistry: scientific ethics; diversity, equity, and inclusion in the chemical sciences; chemical literature and information retrieval; scientific writing; and oral presentation.

Pre- or corequisite: CHE 327 or CHE 383

SBC: *CER, DIV, SPK*

1 credit, ABC/U grading

CHE 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

CHE 459: Write Effectively in Chemistry

A zero credit course that may be taken in conjunction with any 300- or 400-level CHE course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, 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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

0 credit, 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

SBC: *EXP+*

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 328 or 384; permission of instructor and department

SBC: *EXP+*

0-6 credits, S/U grading

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

SBC: *EXP+*

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

SBC: *ESI, EXP+, SPK*

3 credits

CHI

Chinese Language

CHI 101: 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 instructor of the course. May not be taken for credit after any other course in Chinese.

DEC: *S3*
SBC: *LANG*

6 credits

CHI 111: Elementary Chinese I

The first half of a one-year introductory course to spoken and written Mandarin Chinese, with equal attention to speaking, reading, and writing. Laboratory practice supplements class work. This course is designed for students who have no prior knowledge of the language. No student who has had one 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 instructor of the course.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

CHI 112: Elementary Chinese II

The second half of a one-year introductory course to spoken and written Mandarin

Chinese, with equal attention to speaking, reading, and writing. Laboratory practice supplements class work. 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 112 without written permission from the instructor of the course.

Prerequisite: C or better in CHI 111 or equivalent or placement into 112. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *LANG*

4 credits

CHI 120: Elementary Chinese for Heritage Speakers

An elementary level Chinese language course for students who have had some exposure to the Mandarin 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. 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 120 without written permission from the instructor of the course.

DEC: *S3*
SBC: *GLO, LANG*

4 credits

CHI 201: 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 112 or CHI 120 or equivalent or proficiency in Chinese or placement into 201 or 211. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

6 credits

CHI 211: Intermediate Chinese I

The first part of an intermediate one-year course to spoken and written Mandarin Chinese. This course is designed to consolidate basic grammar knowledge and develop functional competence in speaking, listening, reading and writing in interpersonal, interpretive and presentational modes of communication. This course is not intended for students who already speak Chinese natively. A student who has had three or more years of Chinese in high school or who has otherwise acquired an equivalent proficiency may not take CHI 211 without written permission from the instructor of the course.

Prerequisite: C or better in CHI 101 or CHI 112 or CHI 120 or equivalent or proficiency in Chinese or placement into 201 or 211. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, LANG*

3 credits

CHI 212: Intermediate Chinese II

The second part of an intermediate one-year course to spoken and written Mandarin Chinese. This course focuses on language skills including listening, speaking, reading, and writing. It also expands the students' exposure to some aspects of Chinese culture. This course is not intended for students who already speak Chinese natively. A student who has had four or more years of Chinese in high school or who has otherwise acquired an equivalent proficiency may not take CHI 212 without written permission from the instructor of the course.

Prerequisite: C or better in CHI 211 or equivalent or placement into 212. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

CHI 220: Intermediate Chinese for Heritage Speakers

An intermediate level Chinese language course for Chinese heritage students who can communicate in Chinese orally on topics of daily routines and can read and write short passages in Chinese with a command of 800-1000 Chinese characters. The course continues to focus on reading and writing skills and expand the depth and scope of exposure to Chinese culture beyond the elementary level. The course is conducted in Mandarin Chinese. This course is not intended for students who already speak Chinese natively. A student who has had three or more years of Chinese in high school or who has otherwise acquired an equivalent proficiency may not take CHI 220 without written permission from the instructor of the course.

Prerequisite: CHI 120 or equivalent

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

CHI 311: 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, read and write Chinese natively.

Prerequisite: C or better in CHI 212 or CHI 201 or CHI 220 or equivalent or placement into CHI 311. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

CHI 312: 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, read and write Chinese natively.

Prerequisite: C or better in CHI 311 or equivalent or placement into CHI 312. See https://llrc.stonybrook.edu/placement-exams for more information.

DEC: *S3*
SBC: *HFA+, LANG, SPK*

3 credits

CHI 320: Advanced Chinese for Heritage Speakers

An advanced level Chinese language course for Chinese heritage students who can communicate in Chinese orally on topics of general interest and can read and write mid-length passages in Chinese with a command of 1500-2000 Chinese characters. The course continues to focus on reading and writing skills and expand the depth and scope of exposure to Chinese culture beyond the intermediate level. Students learn to read and comprehend a variety of texts from Chinese newspapers/ magazines, TV/films, and literary works and to write creatively and professionally in Chinese using sophisticated vocabulary and advanced Chinese characters.

Prerequisite: CHI 220 or equivalent

DEC: *S3*
SBC: *HFA+, LANG*

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, speak effectively in front of the intended audience in Chinese, read authentic materials related to business and economics in China, and write business correspondence in proper styles and formats.

Advisory Prerequisite: CHI 312

DEC: *S3*
SBC: *SBS+, SPK*

3 credits

CHI 411: 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.

Advisory Prerequisite: CHI 312

DEC: *J & 3*
SBC: *HFA+*

3 credits

CHI 412: 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.

Advisory Prerequisite: CHI 312

DEC: *J & 3*
SBC: *HFA+*

3 credits

CHI 421: 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.

Prerequisite: Advanced level proficiency in Chinese

DEC: *J & 3*
SBC: *HFA+*

3 credits

CHI 422: 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.

Prerequisite: Advanced level proficiency in Chinese

DEC: *J & 3*
SBC: *HFA+*

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.

Advisory Prerequisite: CHI 312

DEC: *S3*
SBC: *ESI, SBS+*

3 credits

CHI 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

CHI 447: 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

DEC: *S3*
SBC: *EXP+*

1-6 credits

CHI 475: Undergraduate Teaching Practicum I

Each student conducts a weekly recitation section that supplements a lecture course. The student receives regularly scheduled supervision from the instructor. Responsibilities may include preparing material for discussion and helping students with practice sessions.

Prerequisites: Interview; permission of instructor

SBC: *EXP+*

3 credits, S/U grading

CHI 476: Undergraduate Teaching Practicum II

Each student conducts a weekly recitation section that supplements a lecture course. The student receives regularly scheduled supervision from the instructor. Responsibilities may include preparing material for discussion and helping students with practice sessions.

SBC: *EXP+*

3 credits, S/U grading

CHI 487: Supervised Research in Chinese

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

CIS

Collaborative Interdisciplinary Studies

CIS 101: Pop-Up: Climate Change and You

Climate change will impact all our lives. But change brings opportunity. What can you do? You personally? Your community? Your university? Your county? Your country? This course presents an overview of topics in climate change, ranging from empirical description (how do we know that climate change is real?) to political prescription (what can we do to mitigate against the extreme effects of climate change, and to adapt to the effects that we can¿t prevent?) to ethical decision-making (what can we do? what should we do?). The course will also present you with ideas for careers and plans of action. It offers a wide range of ways to engage with the issue, while introducing you to our climate-change experts across many disciplines represented at Stony Brook University.

1 credit, S/U grading

CIV

Civil Engineering

CIV 101: Introduction to Civil Engineering

This course explores the science and engineering of the built environment and the important role of infrastructure in daily life. Students will learn about major infrastructure systems including transportation, water resources, environmental, energy, and structural infrastructure. Not for credit in addition to CIV 100.

Pre- or co-requisites: AMS 151 or MAT 125 or MAT 131 or MPE level 6 or greater and PHY 125 or PHY 131 or PHY 141

SBC: *TECH*

3 credits

CIV 203: Autocad Basics

An introduction to Autocad with applications in Civil Engineering and related fields.

Prerequisite: CIV major

1 credit

CIV 210: Land Surveying

Introduces the general mathematical and physical concepts related to engineering surveying. Covers plane surveying, geodesy, geodetics, measurement techniques and instruments, leveling, error theory, survey adjustments, coordinate systems and datums. Practical measurement techniques and instruments, and survey staking. Introduces photogrammetry and remote sensing, geographic information systems (GIS).

Prerequisites: PHY 127 or 132; MAT 127 or 132 or AMS 161; CIV major

1 credit

CIV 300: Technical Communication

Aims to ensure proficiency in the types of communication necessary for success in the engineering professions. 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. Combined with laboratory courses to create practical application of writing skills to civil engineering laboratory reports.

Prerequisites: WRT 102 and CIV major

1 credit

CIV 305: Transportation Systems Analysis I

Focused on highway transportation planning and traffic analysis. Topics include transportation planning, performance analysis of highway and road design, highway segments, highway and airport pavement design, geometric design, sight elevations and alignment, highway traffic operations, queuing theory and modeling, traffic analysis and control, travel demand models, ethics, sustainability, and environmental considerations during transportation planning.

Prerequisites: AMS 361 or MAT 303; CIV major; U3 or U4 standing
Corequisite: CIV 101

3 credits

CIV 306: Transportation Systems Analysis II

This course covers the fundamental principles of transportation systems planning, analysis,and operations. Topics include: Metropolitan Planning Organization (MPO) transportation planning and operations processes, planning for operations and integrating operations into the transportation planning process, demand management, mobility/accessibility, traveler/urban/freight transportation, transportation policy, modeling and benefit/cost analysis tools in planning for operations, and the role of advanced technology (Intelligent Transportation Systems) in transportation planning for operations.

Prerequisite: CIV 305

3 credits

CIV 310: Structural Engineering

The role and ethical responsibilities of a structural engineer. Structures and their structural systems. Loads and load paths through structures. Analysis, behavior, and design of determinate and indeterminate beams, trusses and framed structures under static loads using various methods. Shear, moment, and deflection diagrams. Influence lines. Computer aided structural analysis.

Prerequisites: C or better in MEC 363; CIV or MEC or ESG major.
Corequisite: CIV 101

SBC: *TECH*

3 credits

CIV 312: Steel and Reinforced Concrete Design I

Strength limit states, behavior, and proportioning of steel and reinforced concrete members. Design principles also address serviceability and constructability limit states. Steel tension member and connection design including gross and net yielding and block shear. Steel and reinforced concrete flexural members and columns. Shear capacity design for reinforced concrete beams. Reinforced concrete T-beams, doubly reinforced beams, and one-way slabs. Introduction to combined loading for both steel and concrete members.

Prerequisite: CIV 310 and CIV 340

3 credits

CIV 320: Water Supply and Wastewater Treatment Design

This course will cover the planning, design, and operation of water and wastewater infrastructure. Specific topics include: water and wastewater planning; environmental laws and regulations; water quality; physical water and wastewater treatment processes; chemical water and wastewater treatment processes; biological wastewater treatment processes; mass, material and energy balances; economics and financial calculations; resiliency and sustainability.

Prerequisites: CIV 364; CIV major

3 credits

CIV 330: Introduction to Geotechnical Engineering

This course will introduce students to the origin of soils and weight-volume relationships; Soil classification for engineering applications; soil compaction; flow of water through soils; stresses in soil masses: total, pore pressure, and effective stresses; stresses in soil masses due to external loads: foundations and excavations; consolidation of saturated clay deposits; time rate of consolidation; stresses in solids: Mohr's circle; shear strength of soils and Mohr-Coulomb failure criteria; lateral earth pressure: at-rest conditions; in-situ tests: ground exploration for civil engineering applications.

Prerequisite: MEC 363; CIV major
Corequisite: CIV 341

3 credits

CIV 340: Civil Engineering Materials Laboratory

Laboratory experiments that illustrate the basic analysis and behavior of civil engineering materials and structures. Mechanical loading and analysis of steel, wood, and concrete; quality control tests and field testing; testing of concrete structures. Lab report writing, measurement analysis, and error propagation theory. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MEC 363
Corequisite: CIV 310

2 credits

CIV 341: Geotechnical Engineering Laboratory

Laboratory experiments that illustrate the basic analysis and behavior of soils, including liquid and plastic limits, grain size, compaction, permeability, consolidation, compression and shear strength. Lab report writing, measurement and error analysis. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MEC 363
Corequisite: CIV 330

2 credits

CIV 342: Civil Engineering Hydraulics Laboratory

Laboratory experiments are conducted that illustrate the fundamentals of hydraulics including pipes under pressure (water mains and networks), and open channel flow (sewers, drains, and channel sections). The fundamental concepts of energy, momentum and continuity will be discussed. Topics covered include but are not limited to fluid statics, orifice and free jet flow, hydrostatic pressure, flow over weirs, energy loss in pipes and bends, and critical, subcritical and supercritical flow. Lab report writing, measurement and error analysis. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CIV 364
Pre- or Corequisite: CIV 320

1 credit

CIV 350: Numerical Analysis for Civil Engineers

Introduction to the formulation and techniques for numerically solving a wide range of engineering problems. Basic principles of digital computing for engineering applications and coding of numerical algorithms to solve civil engineering problems. May not be taken by students with credit for AMS 326 or MEC 320.

Prerequisite: MEC 102; MEC 260
Corequisite: AMS 361 or MAT 303 or MAT 305

3 credits

CIV 355: Data Analytics for Civil Engineering Systems

An introduction to the fundamentals of descriptive and predictive analytics. Basic methods, models, and tools of data analytics for analyzing, understanding, and managing civil engineering systems in a data-driven approach.

Prerequisite: CIV 305

3 credits

CIV 364: Fluid Mechanics for Civil Engineers

Fluid statics and dynamics, including pressurized flow in pipe systems and open channel flows. Partial differential equation formulations of the conservation laws are solved to obtain solutions to special cases such as boundary layers and pipe flow. Empirical equations and statistical analysis are introduced for turbulent flows, drag, lift, and open channels. May not be taken for credit in addition to MEC 364.

Prerequisites: MEC 262; CIV major
Corequisite: CIV 101

3 credits

CIV 393: Construction Engineering, Management, and Technology

Introductory course in construction engineering and management with an emphasis on construction methods, equipment, estimating, scheduling, project delivery, and emerging construction technologies such as automation, robotics, and building information modeling (BIM).

Prerequisites: EST 392; AMS 361 or MAT 303 or MAT 308

3 credits

CIV 394: Sustainability of Building and Infrastructure Systems

The course introduces the different challenges associated with making building and infrastructure systems sustainable. Students will learn tools to evaluate economic, environmental, and social aspects of building sustainability.

Prerequisites: AMS 361, MAT 303 or MAT 308; PHY 132; PHY 134; CIV major or permission of department

3 credits

CIV 402: Introduction to Transportation Planning

Focused on transportation planning as an aspect of civil engineering. Covered topics include fundamentals of transportation planning, geography of transportation, impact of land use on travel behavior and mode choice, accessibility and equity in transportation, freight transportation, four-

step transportation demand modeling, energy and environmental impacts of transportation activities. The course also includes individual reading and presentation assignments and class projects on contemporary issues in transportation planning.

Prerequisite: CIV 305

3 credits

CIV 407: Transportation Economics

Microeconomics principles applied in the transportation field. Transportation demand and supply. Transportation costs (fixed costs, variable costs) and externalities. Economic and social benefits of transportation. Economic principles for transport pricing , e.g. toll pricing. Cost benefit analysis of a transportation project. History of government regulation of transportation.

Prerequisites: CIV 305 and EST 392 or ECO 108

3 credits

CIV 410: Principles of Foundation Engineering

Strength, deformation and stress distributions in soils. Drained and undrained soil strength, soil exploration and sampling, in-situ subsurface characterization, in-situ testing and field instrumentation. Soil-structure interactions. Bearing capacity, footings and mats. Settlement and consolidation. Single piles and pile groups, load transfer to soils, pile driving, and pile load tests. Lateral loading of piles. Auger cast piles. Drilled shafts. Modeling and computer applications.

Prerequisites: CIV 312 and CIV 330

3 credits

CIV 411: Matrix Structural Analysis

Development of matrix methods of structural analysis from first principles. Application of the direct stiffness method to calculate deflections and forces in beams, and two-and three-dimensional trusses and frames.

Prerequisite: CIV 310

3 credits

CIV 412: Steel and Reinforced Concrete Design II

Behavior and design of steel and reinforced concrete elements addressing safety and serviceability limit states. Steel analysis and design of beam-columns, bolted and welded connections, and composite elements. Reinforced concrete analysis and design of continuous beams, footings, slender columns and two-way slabs. Introduction to steel plate girders and prestressed concrete design.

Prerequisite: CIV 312

3 credits

CIV 414: Advanced Construction Materials

This course is targeted at senior undergraduate or graduate students in civil engineering specializing in structural materials. Students from material science engineering or mechanical engineering may also take this course. This course introduces emerging structural materials in construction which includes high performance concrete, fiber-reinforced polymers, calcium sulfoaluminate cement, and high performance steel.

Prerequisite: CIV 340 or MEC 317 or ESM 335

3 credits

CIV 418: Subsurface Infrastructure

This course explores the fundamental principles of subsurface space utilization, aiming to equip students with the knowledge and skills to conduct the analysis and design of tunnels, shafts and other subsurface infrastructure. The course has three major components: subsurface geology and geomaterial characterization, subsurface structure analysis and design and construction methods. The course will also cover safety measures and monitoring for the operation of tunnels, as well as an introduction to new types of subsurface infrastructure, such as gas storage and geothermal.

Prerequisite: CIV 330

3 credits

CIV 420: Hydraulics

Fundamentals of hydraulics. Open channel hydraulics, sediment transportation in open channels. Coastal engineering hydraulics. Simulation in hydraulics. Water resources planning and management, storm sewers and flood detention. River flood waves. Storm analysis, intensity, and frequency. Stochastic hydraulics and risk assessments. Eco-hydraulics. Modeling and computer applications.

Prerequisites: CIV 364; CIV major

3 credits

CIV 422: Introduction to Coastal Engineering

Basic hydrodynamics of water waves. Topics include linear wave theory, energy, power and energy propagation, wave refraction, shoaling and breaking in the nearshore, diffraction by breakwaters and gaps, reflection and basin oscillations, wave statistics and spectra, wind-wave hindcast/forecast, wave forces on piles and pipes. Some coastal processes due to nonlinearity, including wave set-up/set-down, nearshore circulations and storm surges. Physical interpretations of mathematical formulas are particularly emphasized.

Prerequisite: MEC 364

3 credits

CIV 423: Coastal Engineering Planning and Design

Planning and design of various types and function of coastal structures and shore protective measures. Considerations of site conditions; Design processes; Design of sloping - and vertical- front coastal structure; Scour and scour protection; coastal sediment transport; shore protection measures such as coastal armoring, beach restoration, and beach stabilization; and introduction to harbor and marina.

Prerequisite: CIV 364 or permission of instructor.
Advisory Prerequisite: CIV 422

3 credits

CIV 424: Stormwater Management & Design

The main focus of this course is on the design of stormwater management practices to reduce runoff pollutants from impacting local waterways. Topics to be discussed will include an overview on regulations governing stormwater activities, stormwater impacts, basic hydrology, urban hydrology (rational method and TR55), stormwater runoff calculations, design and criteria for various standard practices, erosion and sediment control practices, with emphasis on the New York State stormwater management design requirements for meeting water quality and flood control. Policy discussion will include site redevelopment, flooding and drainage issues.

Pre- or Corequisite: CIV 420

3 credits

CIV 426: Introduction to Environmental Biotechnology

This undergraduate course covers the fundamental concepts of biological processes that are important in natural and engineered environmental systems. The course will incorporate basic fundamental microbiology into a quantifiable engineering context in order to describe, predict and control behavior of environmental biological system.

Prerequisite: CIV 320 or permission of the instructor

3 credits

CIV 432: Vibration Mechanics

Free and forced dynamic response of structures and structural components; single-degree-of-freedom and multi-degree-of-freedom systems; matrix formulation for discrete multi-degree-of-freedom systems; numerical methods for integration of the equations of motion; Lagrange's equations; analysis of continuous vibrating systems.

Prerequisites: AMS 361 or MAT 303 or MAT 305; MEC 262; CIV 310

3 credits

CIV 436: Prestressed Concrete Design

Introduction to the behavior, analysis, and design of prestressed concrete structural members and structural systems. Limit states addressed will include flexure, shear, torsion, and deflection. Design examples will include indeterminate systems such as multi-span bridges and their construction. The design of prestressed composite beams and prestressed slabs will be presented.

Prerequisite: CIV 312

3 credits

CIV 440: Senior Design I

Students will participate in structured engineering projects under supervision. They will be assigned to carry out significant professional responsibilities and whatever additional assignments are determined by their advisors. Assignments will cover in-situ data management and testing, specific limits, engineering judgments and reporting.

Prerequisites: CIV 305 and 312 and 320 and 330 and 340

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

CIV 441: Senior Design II

Students will participate in structured engineering projects under supervision. They will be assigned to carry out significant professional responsibilities and whatever additional assignments are determined by their advisors. Assignments will design of civil engineering structures, design of special structures, comprehensive and realistic design project using the systems approach, design choices and their effect upon the environment, design constraints including constructability, minimization of environmental impact, and cost-effectiveness, managerial and professional aspects of design practice. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CIV 440

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

CIV 475: Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that supplement a lecture course, or other duties assigned by the instructor. The student receives regularly scheduled supervision from the faculty instructor. May be repeated once.

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

SBC: *EXP+*

0-3 credits, S/U grading

CIV 476: Instructional Laboratory Development Practicum

Students work closely with a faculty advisor and staff in developing new laboratory experiments and/or improving the existing experiments for scheduled laboratory courses in civil engineering. A comprehensive technical report and the instructional materials developed must be submitted at the end of the course. May be used as a specialization course for civil engineering majors. May be repeated once.

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

SBC: *EXP+*

0-3 credits

CIV 488: Civil 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. The proposal should identify the location, immediate supervisor, nature of the project, learning objectives, 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 may be used for specialization credit.

Prerequisite: Permission of undergraduate program director

SBC: *EXP+*

0-6 credits

CIV 491: Topics in Civil Engineering

Treatment of an area of civil engineering that expands upon the undergraduate curriculum. Topics may include advanced material in any area of specialization. Topics may vary from semester to semester. 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

CIV 499: Independent Research

This course is designed to allow undergraduates an opportunity to do independent research with a faculty member in Civil Engineering. Permission to register requires the agreement of the faculty member to supervise the research. May be repeated but only three credits may be counted as technical elective.

Prerequisite: Permission of department

0-3 credits

CLL

Classics of Literature

CLL 215: 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

DEC: *I*
SBC: *HUM*

3 credits

CLL 315: Gender, Sexuality, Race & Ethnicity in Ancient Greek and Roman 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 and Rome. Major issues will include: the role of women in the Greek and Roman society, gender and sexual identities and practices in Greece and Rome, the role of race and ethnicity in the treatment and status of men and women in Greece and Rome, and the disjunction between ancient and modern understandings of sex, gender, race and ethnicity, among others. This course is offered as both CLL 315 and WST 315.

Prerequisite: one D.E.C. G or HUM course; U3 or U4 standing

DEC: *I*

SBC: *DIV, HFA+*

3 credits

CLL 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

CLS

Classics

CLS 113: 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.

DEC: *B*
SBC: *HUM*

3 credits

CLS 225: The Classical Tradition

The literature of Greece and Rome has had a profound impact in 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, the Greek Tragedians, Thucydides, Cicero, Virgil, Ovid and Tacitus.

DEC: *I*
SBC: *GLO, HUM*

3 credits

CLS 325: The Latin and Greek Origins of Medicine

An introduction to the scientific and medical vocabulary derived from ancient Greek and Latin as well as the historical and cultural legacy of our key sources on Ancient Medicine in the Greek and Roman world. This course is language-based, where students study the Greek and Latin word elements (words, roots and forms) from which medical and scientific vocabularies are created. Through this study of language, students will gain a greater understanding of our medical terms and concepts. Students will learn many medical terms as well as etymological techniques they can use to interpret and understand other medical words. In addition to the language study, students will read excerpts from works on ancient medicine from sources such as the Hippocratic authors, Galen, and Celsus. A previous knowledge of Greek or Latin is not required for this course.

Prerequisite: one D.E.C. G or HUM course

SBC: *STAS*

3 credits

CLS 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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.

SBC: *EXP+*

3 credits, S/U grading

CLT

Comparative Literature

CLT 101: Introduction to World Literatures

A survey of world literatures from an array of cultures, eras, languages, places, and traditions. This global sampling of literatures focuses on the exploration of significant historical moments and phenomena, and their influence on literary and cultural production.

DEC: *B*
SBC: *GLO, HUM*

3 credits

CLT 109: 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 CLT 109 and PHI 109.

DEC: *B*
SBC: *CER, HUM*

3 credits

CLT 121: 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.

DEC: *B*
SBC: *CER, HUM*

3 credits

CLT 122: 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.

DEC: *B*
SBC: *HUM*

3 credits

CLT 123: 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.

DEC: *B*
SBC: *CER, HUM*

3 credits

CLT 220: 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: WRT 102

DEC: *J*
SBC: *GLO*

3 credits

CLT 221: 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. May be repeated as the topic changes.

Prerequisite: one D.E.C. B or HUM course

DEC: *G*
SBC: *HFA+*

3 credits

CLT 235: 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.

DEC: *K*
SBC: *USA*

3 credits

CLT 266: 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: WRT 102 or equivalent

DEC: *G*
SBC: *HUM*

3 credits

CLT 301: 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

DEC: *G*
SBC: *HFA+, SPK, WRTD*

3 credits

CLT 330: Literary Genres

Historical, cultural, and analytical study of an important literary genre such as poetry, drama, epic, prose fiction, and autobiography. May be repeated as topic changes.

Prerequisite: U3 or U4 standing
Advisory prerequisite: Two courses in literature

DEC: *G*
SBC: *HFA+*

3 credits

CLT 334: Other Literary Genres

Historical and analytical study of such literary genres as satire, fable, romance, epistle, saga, allegory, etc. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in literature

DEC: *G*
SBC: *HFA+*

3 credits

CLT 335: 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: one D.E.C. B or HUM course and one course from the following: CCS 101, CCS 201, CCS 202, CCS 203, CLL 215, CLT 235, HUF 211, HUG 221, HUI 231, HUR 241, THR 117

DEC: *G*
SBC: *HFA+*

3 credits

CLT 361: 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

DEC: *G*
SBC: *HFA+*

3 credits

CLT 362: 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. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in literature

DEC: *G*
SBC: *HFA+*

3 credits

CLT 371: Literature and Justice (III)

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: one D.E.C. B or HUM course; U3 or U4 status

DEC: *G*
SBC: *CER, HFA+*

3 credits

CLT 393: 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: one D.E.C. B or HUM course and one lower-division course from one of the following subject designators: CLT, CCS, or EGL

DEC: *I*
SBC: *HFA+*

3 credits

CLT 394: Asian Comparative Literature

This course is an overview of the development of Asian literature 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: one D.E.C. B or HUM course and one lower-division course from one of the following subject designators: CLT, CCS, or EGL

DEC: *J*
SBC: *GLO, HFA+*

3 credits

CLT 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

CLT 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any CLT course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

CLT 459: Write Effectively in Comparative Literature

A zero credit course that may be taken in conjunction with any 300- or 400-level CLT course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *CER, ESI*

0-6 credits

CLT 495: Comparative Literature Honors Project

A one-semester project for comparative literature majors who are candidates for the degree with departmental honors. The project involves independent study under close supervision of an appropriate faculty member, and the written and oral presentation to the department faculty colloquium of an honors thesis.

Prerequisites: Permission of instructor and department

SBC: *ESI*

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.

2 credits

CME 160: Introduction to Nanoscience and Nanotechnology

Many benefits of nanotechnology depend on the fact that it is possible to tailor the structures of materials at extremely small scales to achieve specific properties, thus greatly extending the materials science toolkit. Using nanotechnology, materials can effectively be made stronger, lighter, more durable, more reactive, more sieve-like, or better electrical conductors, among many other traits, with respect to their conventional counterparts. The emerging field of nanotechnology develops solutions to science and engineering problems by taking advantage of the unique physical and chemical properties of nanoscale materials. This interdisciplinary course

introduces nanomaterials and nano-fabrication methods with applications to composites, coatings, transportation, construction, electronics and biomedical engineering. Basic concepts in research and design methodology and characterization techniques will be demonstrated.

SBC: *TECH*

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: 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.

DEC: *H*
SBC: *TECH*

3 credits

CME 233: Ethics and Business Practices for Engineers

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. Introduction to patents and patent infringement using case studies.

2 credits

CME 240: Introduction to Food Technology

This course will introduce students to various topics of food science, such as food processing, nutrition, sensory science, and food safety. Students will examine current challenges facing food scientists in today's global society. Selected chapters from the textbook, as well as articles from news sources, will be assigned.

SBC: *TECH*

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

0 credit, 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 and CHE 132 and AMS 161

3 credits

CME 310: Chemical Engineering Laboratory I: Unit Operation Fundamentals

Introduction to general rules and safety in chemical engineering laboratory. Accuracy and precision of instruments; experimental error; error propagation and significant figures. Unit components: pipe, tubing, fittings, valves, pressure gauges and flowmeters. Practical applications of theories: compressed gas setup (equations of state) and Reynolds experiment (fluid dynamics). Operation of positive displacement and centrifugal pumps. Design of experimental setup. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: CME 314 and CHE 383 or CHE 327
Corequisite: CME 300

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: CHE 132 and 134 or CHE 152 and 154; 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

3 credits

CME 315: Numerical Methods for Chemical Engineering Analysis

Critical analysis of experimental data development of engineering models by integrating a variety of computer-based programs: (1) cover the fundamental mathematical bases of numerical methods used to describe physical phenomena encountered in chemical processes and will then describe how to implement them using Python. (2) process using a simulation for typical chemical engineering processes (unit operation, distillation, etc.) using a simulation program.

Prerequisite: ESG 111; CME Major
Pre or Corequisite: AMS 361 or MAT 303

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; PHY 131 (or 125 or 141); CME Major or ESG Major

3 credits

CME 320: Chemical Engineering Lab II: Unit Operation

An introduction to unit operation as encountered in plants in a commercial setting. Students conduct experiments on heat exchangers, batch unit systems and pumping liquids under high-pressure conditions. These are complemented by simulated experiments to train students in application of chemical engineering principles and understand process control. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CME 310; CME Major

SBC: *TECH*

2 credits

CME 321: Introduction To Working In The Good Manufacturing Practice (GMP) Environment

The objective of CME 321 is to introduce students to the fundamentals of the current Good Manufacturing Practice (cGMP). This course is intended to give the student theoretical knowledge and practical experience of working under cGMP and good laboratory practice (GLP) requirements by simulation of chemical engineering process development for pharmaceutical industry.

Prerequisite: CME 304; U4 standing

3 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: CME 314; CME 318

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
Pre or Corequisite: CME 315

3 credits

CME 350: Comparative Energy Technologies

An introduction to the major energy technologies, both traditional fossil fuel-based and renewables. Review of economics, technical basis, environmental impacts, advantages and disadvantages of each. Discussion of contemporary energy issues via assigned readings from major news outlets.

Prerequisites: AMS 261 or MAT 203; CHE 321; CME 304

3 credits

CME 355: Chemical Process Safety

Fundamentals of chemical process safety: Industrial hygiene, toxicology, hazard identification, risk assessment, loss prevention, accident investigation.

Prerequisites: CHE 321 or CHE 331; CHE 327 or CHE 383; CME 314; CME 318

3 credits

CME 360: Nanomaterials and Applications

Fundamentals of nanomaterials physics, chemistry and structure, nanostructure characterization and practical applications.

Prerequisite: CME 304

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. May not be taken for credit in addition to ESM 469.

Prerequisites: CME 304 or ESG 302

3 credits

CME 371: Biomaterials

This course focuses on the clinical performance of metals, ceramics and polymers and discusses the chemical, physical, mechanical and biological questions raised by the unique use of these materials within the human body. The material's response to the various components of its biological environment are addressed, followed by the response of the host to the presence of the implanted material. Applications to tissue engineering and the relevance of nanoscale phenomena are also discussed. This course is offered as both ESM 453 and CME 371. Not for credit in addition to BME 353.

Prerequisites: U3 or U4 standing; BME, CME or ESG 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 375: Fundamentals of Industrial Corrosion and Corrosion Protection

Fundamentals of corrosion and corrosion protection as applicable to modern process plant design, microelectronics, and medical implants.

Prerequisite: CHE 131 or equivalent

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 405: Process Control in Engineering Design

Learn basic principles of process designs for various applications to chemical engineering processes; closed and open control loop systems, learn terminology associated with process control such as dead time, feedback control and type of available control systems. Identify hardware associated with control systems and their applications in plant-wide control. Learn how to apply the use of software for process control in chemical engineering design.

Prerequisites: CME 312; CME 314

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: CME 410

2 credits

CME 425: Introduction to Catalysis

This course introduces students to the fundamentals of homogeneous and heterogeneous catalysis, kinetics, and catalyst characterization. This course is intended to give the student a background of the fundamentals of the catalytic process and the selection of catalysts for specific applications.

Prerequisites: CME 304; CME 312; CME 314
Pre or Corequisite: CME 323

3 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 440: Process Engineering and Design I

Fundamentals of process control and its role in process design. Process synthesis and reactor design parameters. Process flow sheet, P&ID symbols. Incorporation of environmental and safety aspects into process design. Design project selection with multiple realistic constraints. Team assignments, final project title and industrial mentor assignments. Introduction to CHEMCAD. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: CME Major; U4 Standing; CME 320; CME 315; CME 405

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

CME 441: Process Engineering and Design II

Review of engineering design principles; engineering economics, economic evaluation, capital cost estimation; process optimization; profitability analysis for efficient and accurate process design. HAZOP analysis. Application of CHEMCAD in a commercial process. Final process flowsheet design preparation incorporating engineering standards. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: CME 401 and 440

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

CME 460: Nanomaterials: Synthesis, Processing and Characterization

This course will introduce fundamental approaches and general strategies to the syntheses and processing of nanomaterials. We will discuss methods such as chemical vapor deposition (CVD), soft lithography, dippen nanolithography (DPN) and self-assembly. Several examples from the literature will be utilized in order to demonstrate the design and implementation of various methodologies intended to achieve nanostructures that can be useful in a variety of technologically-relevant applications. Such nanostructures include quantum dots, carbon nanotubes, hierarchical assemblies and molecular patterns (block co-polymers). We will describe a variety of spectroscopic and microscopic techniques that are particularly useful for the characterization of such nanostructures, such as atomic force microscopy (AFM), x-ray photoelectron spectroscopy (XPS) and vibrational spectroscopy (FTIR and Raman).

Prerequisites: CHE 321 or CHE 331; CHE 383 or CHE 327; CME 314
Advisory Prerequisite: CME 360

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

SBC: *EXP+*

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. Emphasis will be placed on the fundamentals of nanotechnology in biological and biomedical research from an engineering perspective.

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: CME Major; Permission of Undergraduate Program Director

SBC: *EXP+*

0-12 credits

CME 490: Preparation for the Chemical Engineering/Fundamentals of Engineering Examination

Preparatory class that provides an overview of professional licensure testing procedures for the Fundamentals of Engineering Examination and includes the section specific to Chemical Engineering. This class reviews subject areas on the general section of the test as well as the profession-specific section dealing with chemical engineering.

Prerequisite: CME Major

1 credit, S/U grading

CME 491: Sustainable Future through Renewable Energy

So what is required to achieve manageable atmospheric CO2 levels by 2035? Renewable sources could play a role but to what extent? What types of renewables are feasible and their applications that match to replace fossil fuels? Are all renewables sustainable? The course setting is ideal- Turkana Basin, by its geographic location, is blessed with abundant renewable sources. This course will answer the above posed questions with focus on fundamentals of renewable energy sources, the feasibility of renewable source development and their impact on local Turkana communities.

Prerequisite: U3 or U4 standing in any discipline

DEC: *H*
SBC: *TECH*

3 credits

CME 499: Research in Chemical Engineering

Independent research project under the supervision of a chemical engineering or interdisciplinary faculty member. Project to cover some or all of the following chemical engineering principles: experiment design, data collection, date 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: CME major; Permission of supervising faculty member

0-3 credits

COM

Communication

COM 100: Introduction to Communication

A survey of key topics within the interdisciplinary field of communication. The course explores how communication is defined and how research in the field is performed and evaluated from a variety of methodological perspectives. Students are introduced to the history of communication as an academic area of study, the development of major theories and subdisciplines, namely communication studies, rhetorical studies, and mass communication. The course will introduce a number of prominent conversations in communication, including but not limited to interpersonal communication, organizational communication, science communication, health communication, intercultural communication, and small group communication. Students will also be introduced to basic quantitative, qualitative, and rhetorical methodological approaches. Students will apply the knowledge they gain to various aspects of their personal and professional lives, engage in critical thinking skills, and become familiar with the abundant career paths that a study in communication can provide.

SBC: *HUM, SBS*

3 credits

COM 106: Introduction to Mass Media

A survey of the historical evolution, content, and structural elements of mass media. This introduction to social science research approaches to the study of mass communication enables participants to understand mass media's political, economic, social, psychological influences on individuals and broader U.S. society. Students examine the effect and impacts of mass communication on contemporary society and consider how global media influence and are influenced by U.S. media. This course was previously known as JRN 106.

SBC: *SBS, USA*

3 credits

COM 120: Fundamentals of Public Speaking

Focuses on the core principles underlying effective oral presentations and the development of effective presentations in public and professional settings. There is an emphasis on analyzing audiences, composing meaningful, coherent messages, conducting responsible research, developing effective arguments, and improving delivery skills to strengthen confidence and credibility. Students will develop skills that lay the foundation for success in future speaking endeavors in both professional and personal settings. This course will also focus on how to make critical judgments as an audience to public discourse. Upon completion of this course students will be more confident and effective speakers and listeners.

SBC: *SPK*

3 credits

COM 202: Intercultural Communication

An introduction to the field of intercultural communication that investigates and helps students apply theory and research in everyday communication. In an era of rapid globalization, it is critical that we be able to communicate across cultures in our personal lives and workplaces in ways that demonstrate dignity and respect. This course focuses on intercultural communication in everyday life, providing students with an overview of how culture influences communication. Covering a range of focus areas that include stereotyping and discrimination; formation of beliefs and values; and the relationship of communication to race, class, gender, and sexuality, the course will build students' intercultural awareness and prepare them to be responsive, responsible communicators.

SBC: *DIV, GLO*

3 credits

COM 206: Interpersonal Communication

A survey of major interpersonal communication theories and their applications in offline and online contexts. Students will

learn research-based pragmatic theories and principles which explain what happens, why it happens, and the consequences in our relationships and lives. It enables students to develop a comprehensive and deeper understanding of themselves, the other person, the relationship, and the process of interpersonal communication. Students will become competent participants in interpersonal relationships online and off.

3 credits

COM 207: Media Writing

A hands-on approach to different forms of media writing online and in print. Careful examination of professional media writing enables students to understand informational and persuasive writing, evaluation, and judgment. Participants will understand the difference between journalistic writing and other forms of media writing and learn how media professionals construct different story forms based on ethical principles.

Prerequisites: Mass Communication Major or Minor; WRT 102

3 credits

COM 208: History of Mass Communication

A survey of the history of mass communication in the American colonies and the United States. Students examine the ways in which mass communication has shaped, and has been shaped by, technological, economic, political, social, and cultural changes across the globe. Students will apply the skills and tools used by historians and journalists to understand the presence of the past in their lives and the critical role they play in the ongoing history of mass communication.

Prerequisite: Journalism or Mass Communication Major or Minor

SBC: *USA*

3 credits

COM 225: Introduction to Video Production

This course is designed to prepare students to communicate and tell stories using the medium of video. Upon completion of this course, students should demonstrate competence in basic studio and field video production including camera operation, editing, lighting, and audio. The course will also introduce students to the various roles of multi-camera studio productions as well as remote single-camera productions.

Prerequisite: Communication, Mass Communication or Journalism Major; U2 and above standing.

3 credits

COM 305: Mass Communication Law & Ethics

Provides students with a model by which they can analyze, understand, and act upon the law and ethical considerations that journalists and mass media professionals and consumers face in the 21st century. The class will use case studies, the Society of Professional Journalists Code of Ethics, the First Amendment Handbook from the Reporters Committee for the Freedom of the Press, and current newsworthy stories to build an analytical model.

Prerequisites: Journalism or Mass Communication Majors and Minors; U3 or U4 Standing

SBC: *ESI*

3 credits

COM 306: Modes of Media Criticism

An introduction and overview of methods of criticism that guides participants to analyze contemporary forms of media and media culture. Students systematically work through different types of critical media analysis, including textual, production, and audience-centered approaches. Participants learn to situate these methodological approaches within a critical and cultural studies framework. Each methodological approach is paired with a screening and readings that model the respective forms of criticism being explored in class. Through hands-on analysis of media (television, film, Internet, video games, advertising, etc.) and application of media/cultural studies theory, participants build the required skills to produce methodologically rigorous critical media analyses.

COM Maj/Min U3 or U4

3 credits

COM 307: Critical Media Theory

An introduction to critical theory as it relates specifically to media and mass communication. The course will survey the most significant theoretical developments in media and cultural studies in a chronologically structured order, following the Frankfurt School through contemporary critical/cultural studies of the media to cover the diverse and important debate on the relationship between individuals, society, and the media we create and consume. Participants engage in thoughtful debate and undertake their own examination of a specific theory or body of theory.

Prerequisites: Mass Communication Major or Minor; U3 or U4 Standing; One course that meets the HUM, ARTS, or LANG SBC requirements

SBC: *HFA+*

3 credits

COM 314: Communication Research

An introduction to the logic and methods of social science research as it is employed to study topics in communication. Students will be introduced to key principles of social scientific reasoning, including aspects of concept explication and effective measurement, evaluation and demonstration of causality, and reliance on empirical data. Topics include effective question wording, ethical treatment of research participants, experimental research designs, sampling and survey research, content analysis, interview, and projective techniques. In addition, students address key ideas in statistical analysis, including principles of inference, common descriptive statistics, and widely used tests of both bivariate and multivariate relationships. Presentation of this material includes training in effective use of appropriate statistical software. Based on this training, students should be able to contribute to sound research on communication-related topics in both the academic and professional environments.

Prerequisites: Communication Major or Minor; U3 or U4 Standing; C or higher in COM 202 or COM 206; Completion of the QPS requirement

SBC: *CER, SBS+*

3 credits

COM 315: Communication Theory

An overview of the study of communication theories with an emphasis on their development and application on practicum and research. Theories shape how we make judgments about reality, relationships, circumstances, and decisions in our lives. This course exposes students to theories of communication, both large and small, with the intention of better equipping them to make sense of the communicative aspects of their world.

Prerequisites: Communication Major or Minor; U3 or U4 Standing; C or higher in COM 202 or COM 206

3 credits

COM 316: Mass Communication Research Methods

A systematic overview of key contemporary research methods in media and mass communication. Based in social science methods, participants pursue a deeper understanding of quantitative and qualitative research methods. The course provides

opportunities to apply those methods through individual and team-based research projects. Participants will build on and apply their existing understanding of media and mass communication to explore the principles behind well-conducted research, including the design of research questions, a range of methodological approaches, development and application of these approaches, and standards related to research on human subjects.

Prerequisites: Mass Communication Major or Minor; U3 or U4 Standing; C or higher in COM 106 or COM 208; Completion of the SBC QPS requirement

SBC: *SBS+*

3 credits

COM 317: Mass Communication Theory

An overview of historical and contemporary theories of mass communication, media, and culture with particular focus on social and behavioral theory. The course covers key empirical theoretical perspectives on mass communication processes and examines the foundations of theoretical inquiry and applications of theory.

COM Maj/Min U3 or U4

3 credits

COM 346: Race, Class, and Gender in Media

A critical examination of race, class, and gender in contemporary media. The class will explore traditional and social media to understand how identity and social configurations shape and are shaped by media. Participants will analyze how media industries and media representations relate to national and global diversity and explore theories that seek to explain media's role in representing race, class, and gender and how media influence our experience of diversity. Course participants will produce a collaboratively designed media project that comments on and challenges misrepresentations.

Prerequisites: Communication, Journalism or Mass Communication Majors and Minors; U3 or U4 Standing

3 credits

COM 351: Team Collaboration

This course takes a team science approach to enhance project-based, cross-disciplinary collaboration. There is an emphasis on small group communication for enhanced collaboration among team members who offer a range of expertise, perspectives, and experiences. Students will work together on a variety of short projects that seek to address community needs, both within Stony Brook University and the broader Long Island community. Each project requires students to answer complex questions, communicate effectively and efficiently in small group settings, and assess their team's ongoing performance. Through this process students will gain clarity on their own communication styles, and learn key communication skills for effective leaders.

Prerequisites: Communication and Innovation (CBI) Minor; U3 or U4 Standing

SBC: *EXP+*

3 credits

COM 357: Health Communication

An exploration of the emerging specialty field of health communication. This course provides an overview of the field of health communication with attention to analysis and practice of health communication relationships and messages. Specifically, students will be provided the knowledge and skill sets of how to inform, empower, and/or persuade individuals to adopt healthier lifestyles as well as foster public debate and health policy change.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

3 credits

COM 358: Nonverbal Communication

A systematic overview of the foundational knowledge of nonverbal communication. Students will learn the major theoretical and methodological approaches to studying nonverbal communication and relate them to specific nonverbal behaviors including touch, time, environmental contexts, emotion, physical appearance, and social communication cues. Drawing on the latest developments in nonverbal communication research, students will be asked to examine the ways in which nonverbal and verbal communication interact in daily life with the goal of improving communication outcomes. Contexts of focus include interpersonal settings, relationships, business settings, and public communication.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

3 credits

COM 365: Talking Science

Designed to help undergraduate students in the sciences communicate effectively and responsively with multiple audiences, from peers and professors to potential employers and the media. Rather than a bag of tricks and techniques, this course will push a shift in the students' understanding of communication: 1) audience-centered, 2) goal oriented, and 3) dynamic. Among the techniques we use are improvisational theater exercises that will help you connect with an audience, pay close and dynamic attention to others, read non-verbal cues, and respond freely without self-consciousness. We also will strongly focus on storytelling as a medium through which this communication shift occurs.

Prerequisite: U3 or U4 Standing

SBC: *SPK*

3 credits

COM 386: Special Topics: Issues in Communication

Selected topics in communication. This course enables students to engage with timely and contemporary issues in the field of communication. May be repeated as the topic changes.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

3 credits

COM 399: Special Topics in Mass Communication

Selected topics in Mass Communication. Topics may include U.S. and international contexts. This course enables participants to engage with timely and contemporary issues in mass communication and media. May be repeated as the topic changes.

Prerequisite: U3 or U4 Standing

3 credits

COM 400: Advanced Communication Research

An introduction to data analysis techniques commonly employed in the Communication field and related disciplines. The course will employ a commonly-used statistical package to illustrate concepts (e.g., Statistical Package for the Social Sciences, SPSS), and instruction will be provided on how to employ statistical software to conduct a variety of specific analysis techniques. These techniques will include descriptive statistics, analysis of variance, correlation and regression, and exploratory factor analysis.

Prerequisite: C or higher in COM 314 or Permission of Instructor

3 credits

COM 401: Organizational Communication

An overview of organizational communication that examines key theories and research on communication processes in organizations and enables participants to apply theory to case studies and real-world contexts. Class materials introduce contemporary approaches

to studying communication systems within organizations of varying sizes, and considers organizational needs assessment along with a range of methods designed to help improve communication in organizations.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

3 credits

COM 402: Crisis Communication

A rigorous examination of the processes and effects of communication associated with crises. The course will explore crisis typologies, theoretical approaches and applications, case studies, with contemporary peer-reviewed research forming the foundation of the course. Students will examine crises from the standpoint of culpable organizations, affected audiences, government entities, the media environment, and academics. Pre-crisis, crisis response, and post-crisis strategies will be considered in this course from a social scientific approach. The importance of ethical communication before, during, and after crises will also be emphasized.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

3 credits

COM 403: Strategic Communication

An introduction to the dynamic field of strategic communication. Students who are interested in advertising, public relations, and integrated marketing communication will find themselves well suited in this course. The course addresses key factors that influence strategic communication processes. Students will be introduced to the basic terms and conceptual frameworks that strategic communication practitioners employ in their professions, and use that knowledge to assess real-world cases and engage in hands-on strategic communication planning.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

3 credits

COM 404: Communication for Social Change & Public Advocacy

An examination of the theories and practices of social change communication and public advocacy. Students will analyze the roles of various forms of communication in catalyzing social and policy changes. It provides an overview of advocacy campaigns, legislative lobbying, issue branding, and community organizing in the United States, and other communication campaigns tied to public issues such as sustainability, social justice, and human rights. The course is devoted to providing real-world and hands-on experiences for students by including guest lectures from public advocacy experts and a semester-long campaign project. Along the way, students will be exposed to social marketing, stakeholder power analysis, communication strategies and tactics, and evaluation.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

3 credits

COM 405: Political Communication

An exploration of the interdisciplinary field of political communication, looking at how media, political elites, and citizens interact. The course approaches political communication from both normative and empirical perspectives. The course begins with discussions on normative models for how political communication should contribute to democratic citizenship and governance. Students will then examine the deviations, limitations, and distractions of those normative ideals in practice across different contexts. The roles of various forms of communication will be examined in the US and international political processes. Course content explores macro perspectives on culture, ideology, and political economy; organizational models of news production and deliberation; and micro approaches in the political psychology of media use and cognition.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

3 credits

COM 406: Risk Communication

An overview of theory-based knowledge about risk perceptions and empirically tested principles of designing effective risk communication messages. This course examines risks from the perspective of organizations, affected publics, and government entities. Students will learn concepts and theories about measuring, analyzing, and influencing risk perceptions in a variety of contexts including public health, science, and business settings. The importance of connecting risk and crisis communication will also be considered. Ethical principles of risk communication are integrated throughout the course.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

3 credits

COM 407: Social Media Analytics

An introduction to analyzing social media data with an emphasis on the implications and applications for market research, communication strategy, and technology history. How do we know whether a new product is gaining market share? What features of the product are consumers discussing online? What type of consumers are most likely to buy a given product? How does the perception of a platform change after a crisis (e.g., COVID-19)? Social media data can provide valuable insights into users, brands, audiences, and technologies. This course provides the latest practical skills for collecting, analyzing, and visualizing social media data using real-world social analytics software.

Prerequisites: Communication Major or Minor; U3 or U4 Standing

SBC: *TECH*

3 credits

COM 414: Studies in Visual Culture

An exploration of the interdisciplinary field of visual culture that builds, among others, on the fields of art, cinema and media studies, gender studies, (post)structuralism, and critical/cultural studies. Participants explore key texts in visual culture that examine the diverse roles of looking and seeing in contemporary culture. Readings and discussions provide an overview of debates on a range of areas including: the gaze, bodies, and power; consumer culture and globalization; colonialism/postcolonialism; and scientific looking. Readings are paired with screenings to facilitate the application of theory and lively, interactive discussion. Objects of study include film & television, advertising, fashion, architecture, photography, painting, graphic design, and digital culture. The course integrates theory and methods in the analysis and critique of visual culture.

Prerequisite: WRT 300 or U3 or U4 Standing

3 credits

COM 415: Data Analysis and Storytelling

A skill-building exploration of communicating empirical data to different audiences using stories. Using existing data, students practice interpreting data and implementing storytelling tools to create clarity and meaning within goal oriented narratives about topics from climate change, to population health, and plant science. Through the Alda Method® for science communication, students learn to engage in clear and vivid communication that ensures data is communicated with integrity and accuracy, which leads to improved understanding by the public, media, patients, elected officials, and others outside of their own discipline. The Alda Method® supports experiential learning by integrating teaching strategies from improvisational theater, communication, journalism, public health, and other relevant fields.

Prerequisites: Mass Communication Major or Minor; U3 or U4 Standing

SBC: *STAS*

3 credits

COM 434: Argumentation and Persuasion

An introduction to persuasive communication and social influence and study of foundational theories and important frameworks that guide the practice of persuasion in applied settings. Students will learn how changes in attitudes and behavior may generally result and particular attention will be paid to message features that are believed to generate predictable effects. How such effects may be moderated by source, audience, and context factors will also be examined. Students will practice persuasive arguments through both written and oral communication.

Prerequisites: Communication Major or Minor; C or higher in COM 100; U3 or U4 Standing

3 credits

COM 436: Environmental Communication

An overview of the growing field of Environmental Communication. Over the past decades, an important body of scholarship has emerged in Environmental Communication that includes a number of edited books, dozens of peer-reviewed publications in a wide range of prestigious journals, a series of edited conference proceedings, and an international, peer-reviewed journal, Environmental Communication: A Journal of Nature and Culture. The course gives students an opportunity to participate in engaged research with a local community on an environmental or sustainability problem and link what they have learned through the course materials with action.

Prerequisite: Communication or Mass Communication Major or Minor; U3 or U4 Standing

3 credits

COM 487: Independent Study

Intensive study of a special topic undertaken with close faculty supervision. May be repeated with a different topic.

Prerequisite: Permission of Undergraduate Program Director

0-6 credits, S/U grading

COM 491: Mass Communication Senior Project

A required capstone course for all mass communication majors. Students produce a major project that combines a strong research base with creative elements. Each project will have written, visual, and/or interactive components and must include a public outreach component. Students may choose between (1) a creative multimedia project (e.g., short film, documentary, podcast, etc.) that centers on a mass communication topic that is research-based, or (2) an academic research paper that is an original analysis of a mass communication topic (e.g., gender portrayals in the media). Students attend a weekly seminar and work independently to create public-facing work that meets professional standards. They interact with members of the community and because the work is publicly available, students are exposed to the full range of community response.

Prerequisites: Grade of C or higher in COM 306 and COM 307 or COM 316 and COM 317

SBC: *EXP+, WRTD*

3 credits

COM 494: Mass Communication 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 6 credits.

Prerequisites: U3 or U4 standing; Permission of Undergraduate Program Director

SBC: *EXP+*

0-6 credits, S/U grading

COM 495: Communication Senior Project

A required capstone course for all communication majors. Students produce a major project that combines a strong research base with creative elements. Each project will have written, visual, and/or interactive components and must include a public outreach component. Students may choose between (1) a creative multimedia project (e.g., short film, documentary, podcast, etc.) that centers on a communication topic that is research-based, or (2) an academic research paper that is an original analysis of a communication topic (e.g., the role of communication in presidential election). Students attend a weekly seminar and work independently to create public-facing work that meets professional standards. They interact with members of the community and because the work is publicly available, students are exposed to the full range of community response. The final project will be judged on the accuracy, thoroughness, and originality of the project, the clarity and power of the writing and production, and the value added through presentation of research and findings using multimedia platforms. Students will be expected to work independently, demonstrate initiative and enterprise, and meet deadlines.

Prerequisites: C or higher in COM 314 and COM 315

SBC: *ESI, WRTD*

3 credits

COM 496: Communication 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 6 credits.

Prerequisites: Communication Major or Minor; U3 or U4 Standing; Permission of Undergraduate Program Director

SBC: *EXP+*

1-6 credits, S/U grading

CSE

Computer Science

CSE 101: Computer Science Principles

Introduces central ideas of computing and computer science, instills practices of algorithmic and computational thinking, and engages students in the creative aspects of the field. Also introduces appropriate computing technology as a means for solving computational problems and exploring creative endeavors. Includes weekly computer programming assignments, but assumes no previous programming experience. May not be taken by students with credit for CSE 114 or CSE 160.

Prerequisite: Level 2+ or higher on the mathematics placement examination
Anti-requisite: May not be taken by students with credit for CSE 114 or CSE 160

SBC: *TECH*

4 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

SBC: *TECH*

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

SBC: *TECH*

3 credits

CSE 113: Foundations of Computer Science I

Introduction to the mathematical foundations of computer science. Topics include logic (propositional and predicate); proof techniques (induction/recursion, contradiction, and others); and key concepts of mathematical structures (sequences, sets, functions, relations, and graphs). Not for credit in addition to CSE 215.

Prerequisite: AMS 151 or MAT 125 or MAT 131 or level 6 on the mathematics placement examination

4 credits

CSE 114: Introduction to Object-Oriented Programming

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. Includes required laboratory. 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 or higher on the math placement exam
Advisory Prerequisite: CSE 101 or ISE 108

SBC: *TECH*

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.

Prerequisite: one MAT course that satisfies D.E.C. C or QPS or score of level 4 on the math placement exam; admission to Honors in Computer Science or the Honors College or the WISE Honors Program or University Scholars or Simons STEM Scholars Program.

4 credits

CSE 160: Computer Science A: Honors

First part of a two-semester sequence, CSE 160 and CSE 260. An introduction to procedural and object-oriented programming methodology and basic data structures. Topics include program structure, conditional and iterative programming, procedures, arrays, object classes, encapsulation, information hiding, inheritance, polymorphism, file I/O, exceptions and simple data structures, such as lists, queues and stacks.

Prerequisite: Honors in Computer Science or the Honors College or the WISE Honors Program or University Scholars or the Simons STEM Scholars Program.
Advisory Prerequisite: CSE 101

SBC: *TECH*

3 credits

CSE 161: Laboratory for Computer Science A: Honors

Must be taken concurrently with lecture component, CSE 160; a common grade for both courses will be assigned. Laboratory sessions will focus on development of pragmatic programming skills and use of programming environments and tools in a supervised setting.

Corequisite: CSE 160

1 credit

CSE 190: Special Topics in Practice and Applications of Computer Science

A lecture course on a current topic in the practice and application of computer science. May be repeated as the topic changes.

SBC: *TECH*

3 credits

CSE 191: Special Topics in Practice and Applications for Computer Science

A lecture course on a current topic in the practice and application of computer science. May be repeated as the topic changes.

SBC: *TECH*

3 credits

CSE 192: Special Topics in Practice and Applications for Computer Science

A lecture course on a current topic in the practice and application of computer science. May be repeated as the topic changes.

SBC: *TECH*

3 credits

CSE 214: Data Structures

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

4 credits

CSE 215: Foundations of Computer Science

Introduction to the logical and mathematical foundations of computer science. Topics include functions, relations, and sets; recursion; elementary logic; and mathematical induction and other proof techniques. Not for credit in addition to CSE 113.

Prerequisite: AMS 151 or MAT 125 or MAT 131

4 credits

CSE 216: Programming Abstractions

Intermediate-level programming concepts and paradigms, including functional programming, object-orientation, basics of type systems, memory management, program and data abstractions, parameter passing, modularity, and parallel programming. Includes weekly recitations, which provide students with experience in the practice of programming in a variety of high-level languages.

Prerequisites: C or higher in CSE 214; CSE major

4 credits

CSE 220: Systems Fundamentals I

Introduces systems-level programming concepts using the C language and assembly language, and explores the correspondence of programming constructs in these languages. Topics include internal data representation, basic instructions and control structures, bitwise operations, arithmetic operations, memory management, pointers, function calls and parameter passing, linking and loading. Included is an overview of foundational topics in computer architecture, organization and networks.

Prerequisites: C or higher in CSE 214 or co-requisite CSE 260 and CSE major

4 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. Applies object-oriented programming methodology to data storage and manipulation on complex data sets, such as, 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. Intermediate-level programming language concepts and paradigms, including functional programming, basics of type systems, program and data abstractions, and modularity.

Prerequisite: CSE 160
Corequisite: CSE 261

3 credits

CSE 261: Laboratory for Computer Science B: Honors

Must be taken concurrently with lecture component, CSE 260; a common grade for both courses will be assigned. Weekly laboratories provide students with experience in the practice of programming in a variety of high-level languages such as Java, Scala, Haskell, Python or Javascript.

Corequisite: CSE 260

1 credit

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 or DAS major; U3 or U4 standing

SBC: *SPK, WRTD*

3 credits

CSE 301: 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

DEC: *H*
SBC: *STAS*

3 credits

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. Not for credit in addition to CSE 350.

Prerequisites: C or higher: CSE 160 or CSE 214; CSE 150 or CSE 215; CSE major

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: C or higher: CSE 216 or CSE 260; CSE 220
Advisory Prerequisites: CSE 303 or CSE 350

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: C or higher: CSE 214, CSE 216 or CSE 260; CSE or DAS major

SBCP: *This course provides partial credit for the following: ESI_PART, EXP+_PART, SBS+_PART, STEM+_PART*

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. This course focuses on teaching the skills required to design and build modules of an operating system kernel. It covers key algorithms and architectures. A companion course, CSE 320, teaches complementary skills from the application programmer's point of view.

Prerequisites: C or higher: CSE 320 or ESE 280; CSE Major or ECE major.

SBCP: *This course provides partial credit for the following: ESI_PART, EXP+_PART, SBS+_PART, STEM+_PART*

3 credits

CSE 307: Principles of Programming Languages

An introduction to programming languages paradigms, including functional and logic programming, and the suitability of various languages for particular programming tasks. Students write sample programs in the studied languages. The languages are used to illustrate programming language constructs such as scoping and binding, type systems, storage management and operating environments. This illustration is accompanied by an introduction to the implementation of programming languages, such as parsing, semantic analysis, symbol tables, memory allocation and code generation. Students complete a series of assignments to implement a language chosen by the instructor.

Prerequisites: C or higher: CSE 214, CSE 216 or CSE 260; CSE Major

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 ESE 346.

Prerequisites: C or higher: CSE 214 or 260; CSE 220 or ISE 218; CSE major or ISE major. 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. This course is offered as both CSE 311 and ISE 311.

Prerequisites: CSE 214 or CSE 230 or CSE 260 or ISE 208; ISE or CSE major

3 credits

CSE 312: Social, Legal, and Ethical Issues in Computing

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 ways we work, play, and interact with other people. These changes have created a flood of new social, legal and ethical issues that demand critical examination. This course is offered as both CSE 312 and ISE 312.

Prerequisites: CSE, ISE or DAS major; U3 or U4 standing; one D.E.C. E or SNW course

SBC: *CER, ESI, STAS*

3 credits

CSE 316: Fundamentals of Software Development

Introduction to systematic design, development and testing of software systems, including event-driven programming, information management, databases, principles and practices for secure computing, and version control. Students apply these skills in the construction of large, robust programs.

Prerequisites: C or higher in CSE 216 or CSE 260 or CSE 307; CSE major

SBCP: *This course provides partial credit for the following: ESI_PART, EXP+_PART, SBS+_PART, STEM+_PART*

3 credits

CSE 320: Systems Fundamentals II

This course introduces essential concepts of operating systems, compilers, concurrency, and performance analysis, focused around several cross-cutting examples, such as memory management, error handling, and threaded programming. In this course, operating systems concepts are considered from the point of view of the application programmer, and the focus is on APIs for interacting with an operating system. A companion course, CSE 306, considers operating systems from the point of view of the OS kernel implementer.

Prerequisite: C or higher: CSE 220 and CSE major.

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. Course is cross-listed as CSE 323, EST 323 and ISE 323.

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.

Prerequisite: CSE 110 or CSE 101 or CSE 114

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; CSE or ISE or DAS major

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: C or higher: CSE 220; CSE or DAS major

3 credits

CSE 331: Computer Security Fundamentals

Introduces the basic concepts and terminology of computer security. Covers basic security topics such as cryptography, operating systems security, network security, and language-based security.

Prerequisite: CSE 220; CSE major
Advisory pre-or corequisite: CSE 320

3 credits

CSE 332: Introduction to Visualization

This course is an introduction to both the foundations and applications of visualization and visual analytics, for the purpose of understanding complex data in science, medicine, business, finance, and many others. It will begin with the basics - visual perception, cognition, human-computer interaction, the sense-making process, data mining, computer graphics, and information visualization. It will then move to discuss how these elementary techniques are coupled into an effective visual analytics pipeline that allows humans to interactively think with data and gain insight. Students will get hands-on experience via several programming projects, using popular public-domain statistics and visualization libraries and APIs. This course is offered as both CSE 332 and ISE 332.

Prerequisites: CSE 214 or CSE 260; MAT 211 or AMS 210; AMS 110 or AMS 310; CSE or ISE or DAS major

3 credits

CSE 333: User Interface Development

Survey of user interface systems, with emphasis on responsive and adaptive strategies to accommodate cross-platform deployment across multiple devices such as desktops and mobile devices. Demonstration of the use of tool kits for designing user interfaces. Additional topics include human factors, design standards, and visual languages. Students participate in a project involving the design and implementation of user interface systems. This course is offered as both CSE 333 and ISE 333.

Prerequisite: CSE 214 or CSE 260; CSE or ISE major

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; CSE or ISE major

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.

Prerequisites: C or higher in CSE 214 or CSE 260; CSE major

3 credits

CSE 337: Scripting Languages

Scripting languages are widely used in the IT industry. Programming with scripting languages, also known as scripting, has several advantages compared to programming with other types of languages in that scripts facilitate rapid program development; can automate high-level jobs or tasks very effectively; and can be used to compose various software components, even binaries, into more complex and powerful applications. This course introduces the principles of scripting, covers one or two selected scripting languages in depth, and illustrates the advanced use of scripting by extensive case studies in application areas such as system administration, web application development, graphical user interface development, and text processing.

Prerequisites: CSE 214 or CSE 260; CSE or ISE or DAS major; U3 or U4 standing

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. Not for credit in addition to CSE 303.

Prerequisites: CSE 113 or CSE 150 or CSE 215; AMS 210 or MAT 211; Honors in Computer Science or the Honors College or the WISE Honors Program or University Scholars or the Simons STEM Scholars Program.

4 credits

CSE 351: Introduction to Data Science

This multidisciplinary course introduces both theoretical concepts and practical approaches to extract knowledge from data. Topics include linear algebra, probability, statistics, machine learning, and programming. Using large data sets collected from real-world problems in areas of science, technology, and medicine, we introduce how to preprocess data, identify the best model that describes the data, make predictions, evaluate the results, and finally report the results using proper visualization methods. This course also teaches state-of-the art tools for data analysis, such as Python and its scientific libraries.

Prerequisites: CSE 214 or CSE 260; AMS 310; CSE or DAS major

3 credits

CSE 352: Artificial Intelligence

Topics covered include critique of artificial intelligence research; state-space problem representations and search algorithms; game-playing programs; theorem-proving programs; programs for the study and simulation of cognitive processes and pattern recognition. Further topics in current research as time permits.

Prerequisites: CSE 316 or CSE 351; CSE or DAS major

3 credits

CSE 353: Machine Learning

Covers fundamental concepts for intelligent systems that autonomously learn to perform a task and improve with experience, including problem formulations (e.g., selecting input features and outputs) and learning frameworks (e.g., supervised vs. unsupervised), standard models, methods, computational tools, algorithms and modern techniques, as well as methodologies to evaluate learning ability and to automatically select optimal models. Applications to areas such as computer vision (e.g., character and digit recognition), natural-language processing (e.g., spam filtering) and robotics (e.g., navigating complex environments) will motivate the coursework and material.

Prerequisites: CSE 316 or CSE 351; CSE or DAS major
Pre- or Co-requisite: AMS 310 or AMS 311 or AMS 412

3 credits

CSE 354: Natural Language Processing

Natural language processing techniques power many intelligent language based applications. This course will introduce basic language analysis tasks such as language modeling and syntactic analysis, as well as core applications such as text classification, information extraction, question answering, and machine translation. The course will cover relevant algorithms, machine learning solutions, and evaluation methodologies.

Prerequisites: CSE 316 or CSE 351; CSE or DAS major

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 356: Cloud Computing

Creating online services capable of handling millions of users requires a different mindset compared to traditional software development and deployment. Rather than building monolithic software packages from the ground up, bringing up modern online services calls for architecting systems by gluing together mature existing technologies deployed across many unreliable servers, working in concert to provide high-availability robust services. In this course, students will be exposed to the concepts and technologies behind deploying and scaling online services on the computing resources available in modern datacenters.

Prerequisites: C or higher: CSE 316; CSE 320; CSE major

3 credits

CSE 357: Statistical Methods for Data Science

This interdisciplinary course introduces the mathematical concepts required to interpret results and subsequently draw conclusions from data in an applied manner. The course presents different techniques for applied statistical inference and data analysis, including their implementation in Python, such as parameter and distribution estimators, hypothesis testing, Bayesian inference, and likelihood.

Prerequisite: C or higher in CSE 214; AMS 310; CSE or DAS major

3 credits

CSE 360: Software Security

This course will describe the principles and practice of securing software systems. Topics will include: software vulnerabilities; static and dynamic analysis techniques for vulnerability detection; exploit detection and prevention; secure software development techniques and defensive programming; malware detection and analysis; security policies and sandboxing; information flow.

Prerequisites: CSE 220; CSE major
Advisory Pre-or corequisite: CSE 320

3 credits

CSE 361: Web Security

This course will cover all aspects of web security, including browser security, web server security, and web application security. Topics include: SOP and JavaScript; application and protocol vulnerabilities; probing, surveillance, and tracking; penetration testing; modern social engineering techniques; monetary incentives and monetization.

Prerequisites: CSE 220; CSE major
Advisory Pre-or corequisite: CSE 320

3 credits

CSE 362: Mobile Security

The course covers the latest security technologies for mobile platforms (e.g., Android and iOS). It first introduces the security issues plaguing mobile apps and discusses defensive mechanisms, such as code signing, app permissions, and sandbox. It then peeks into mobile OS, explaining how jailbreaking/rooting works and the internals of iOS/Android security designs. Finally, it surveys modern hardware-level security features, such as secure booting, TrustZone, and biometrics.

Prerequisites: CSE 220; CSE major
Advisory Pre-or corequisite: CSE 320

3 credits

CSE 363: Offensive Security

Hands-on course with the goal of understanding various security problems in depth, through a more adversarial way of thinking. By focusing on finding and exploiting vulnerabilities, the course will cover a broad range of topics, including the ethics of offensive security, reverse engineering, software vulnerability discovery and exploitation, malicious code analysis, network traffic interception and manipulation, reconnaissance and information gathering, physical security, and social engineering. All topics will be covered from a highly practical perspective, following a hands-on approach and tutorial-like sessions, along with programming assignments.

Prerequisites: CSE 220; CSE major
Advisory Pre-or corequisite: CSE 320

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 mutlimedia 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

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 214 or CSE 260; MAT 211 or AMS 210; CSE or ISE major

3 credits

CSE 370: Wireless and Mobile Networking

The fundamentals of wireless communication. Link, network and transcript layer protocols for wireless and mobile networking. Cellular networks. Wireless LANs. Wireless multihop networks. Mobile applications.

Prerequisite: CSE 310; CSE major

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 113 or CSE 150 or CSE 215 or MAT 200 or MAT 250

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. Not for credit in addition to CSE 385.

Prerequisites: C or higher in: CSE 113 or CSE 150 or CSE 215 or MAT 200 or MAT 250; MAT 211 or AMS 210; CSE 214 or CSE 260; CSE or MAT or DAS major

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.

Prerequisites: C or higher: CSE 320; CSE major

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; 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; AMS 210 or MAT 211 or MEC 262

3 credits

CSE 380: 2D 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 220; CSE major

3 credits

CSE 381: 3D Game Programming

This course explores the concepts and technologies behind making 3D, networked games. This will include the examination of game engine creation as well as the use of middleware to build graphically sophisticated game systems.

Prerequisite: CSE 220; CSE major

3 credits

CSE 385: Analysis of Algorithms: Honors

Algorithmic design and analysis for Computer Science Honors students. 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. Randomization. Introduction to NP completeness. Some machine computation is required for the implementation and comparison of algorithms. Not for credit in addition to CSE/MAT 373.

Prerequisites: CSE 113 or CSE 150 or CSE 215 or MAT 200 or MAT 250; AMS 210 or MAT 211; CSE 214 or CSE 260; Honors in Computer Science or the Honors College or the WISE Honors Program or University Scholars or Simons STEM Scholars.

4 credits

CSE 390: Special Topics in Computer Science

A lecture or seminar course on a current topic in computer science. May be repeated as the topic changes, but cannot be used more than twice to satisfy CSE major requirements.

Prerequisite: CSE 214 or CSE 260; CSE or ISE Major

3 credits

CSE 416: 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.

Prerequisites: C or higher in CSE 316; U4 standing; CSE major.

SBCP: *This course provides partial credit for the following: ESI_PART, EXP+_PART, SBS+_PART, STEM+_PART*

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: U3 or 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 and permission of department.

SBC: *EXP+*

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

0-3 credits

CSE 488: Internship in Computer Science

Participation in local, state, national, or international private enterprise, public agencies, or nonprofit institutions. To obtain permission to register for the courses, students are required to submit proof that the work is related to their studies and the work will include a minimum of 180 hours during the semester. During the semester, the student will submit 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 can only be used once as a technical elective to satisfy CSE major requirements.

Prerequisites: CSE major, U3 or U4 standing; permission of department

SBC: *EXP+*

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 Honors in Computer Science; permission of instructor and department.

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; permission of instructor and department

3 credits

CWL

Creative Writing and Literature

CWL 190: Introduction to Contemporary Literature

Seminar surveying recent works in a genre or topic, to introduce students to poetry, creative nonfiction, fiction or a combination of selections focusing on a particular theme. Participants will develop skills of interpretation and analysis through reading and writing about contemporary literature.

Pre- or corequisite: WRT 102

DEC: *B*
SBC: *HUM*

3 credits

CWL 202: Introduction to Creative Writing: Writing Everything

Creative writing workshop in multiple genres, from fiction to poetry to scriptwriting, intended to introduce students to the basic tools and terminology of the fine art of creative writing. Participants also read contemporary works, give a public reading, and attend Writers Speak, the Wednesday reading series, or an equivalent.

DEC: *D*
SBC: *ARTS*

3 credits

CWL 250: Join the Conversation

A craft course with substantial reading component. This class explores enduring tropes in literature across time and cultures, introducing students to the idea that writing is a live and ever evolving, and thus ever significant medium. By taking contemporary works and tracing them back to their origins, students learn to place the work of various writers, including their own, in a meaningful literary continuum. Sequences might include Ovid to Kafka to Francine Prose; Shakespeare to Angela Carter or Jane Smiley; Beowulf to Grendell; The Tempest to Brave New World; Charlotte Bronte to Jean Rhys; Sophocles to Anne Carson.

Prerequisite: CWL 190 and CWL 202; Creative Writing (CWL) major

3 credits

CWL 300: Forms of Creative Nonfiction

Study of the genre through readings, discussion and regular submission of original work. Course explores methods for expressing the human condition made available through creative nonfiction, with examples from the tradition and exploration of the nature of fact, memory, subjectivity and perspective. Areas of study include Personal Essay, Memoir, Blogs and Alternate Forms, the Journal, Historical Inquiry and Social Commentary. Course may be repeated as the topic changes.

Prerequisite: CWL 202

DEC: *G*
SBC: *HFA+, WRTD*

3 credits

CWL 305: Forms of Fiction

Study of the genre through readings, discussion and regular submission of original work. Course explores methods for expressing the human condition made available through fiction, with examples from the tradition that illustrate point of view, character development, dialogue, plot, setting, theme, motif, and other elements. Areas of study include Short Story, Novella, The Popular Novel, Graphic Novels and Writing Funny. Course may be repeated as the topic changes.

Prerequisite: CWL 202

DEC: *G*
SBC: *HFA+, WRTD*

3 credits

CWL 310: Forms of Poetry

Study of the genre through readings, discussion and regular submission of original work. Course explores methods for expressing the human condition made available through poetry, with examples from the tradition of such tools as metaphor and image, sound, line, form, and juxtaposition. Areas of study include Powers of Poetry, Bright Containers: Form & Meter, and Methods & Madness, a study of the philosophical vs. visionary strains in poetry. Course may be repeated as the topic changes.

Prerequisite: CWL 202

DEC: *G*
SBC: *HFA+, WRTD*

3 credits

CWL 315: Forms of Scriptwriting

Study of the genre through readings, screenings, discussion and regular submission of original writing for film or theater. Course explores methods for expressing the human condition made available through these collaborative media. Areas of study include Fundamentals of Dramatic Action, Visual Storytelling, Message Movies, Writing the One Act, and Extreme Events. Course may be repeated as the topic changes.

Prerequisite: CWL 202

DEC: *G*
SBC: *HFA+, WRTD*

3 credits

CWL 320: Forms of Interdisciplinary Arts

Regular submission, discussion, and analysis of students' work in conjunction with active engagement with the world beyond the page in order to explore methods for expressing the human condition not available through study in a single genre. Areas of interdisciplinary involvement include writing across genres (Writing Nature); production of the written word (Poetry Bookmaking, Performing & Production); and partnering to write (Endangered Languages: Poetry & the Oral Tradition, Documentary Screenwriting in a Sustainable World, and Testimony in Creative Nonfiction). Students may repeat this course as the genre and topic in the humanities change.

Prerequisite: CWL 202

DEC: *G*
SBC: *EXP+, WRTD*

3 credits

CWL 325: Forms of Science Writing

Regular submission, discussion and analysis of students' work in one or more areas of science writing in order to examine the impact of science and literature on one another. Areas of

study include Introduction to Science Writing, Environmental Writing and the Media, and Elegance & Complexity: Researched Writing and Writing the Interview. Course may be repeated as the topic changes.

Prerequisite: 1 D.E.C. E and 1 D.E.C F or 1 SNW and 1 SBS; CWL 202

DEC: *H*
SBC: *STAS, WRTD*

3 credits

CWL 330: Topics in European Literature for Writers

A lecture for writers concentrating on one area of European literature, to be announced in the course schedule. The course may examine a historical trend in Western literature from multiple viewpoints, the rise of a specific genre, a social issue expressed in literature, or an issue in literary theory, as, for example, The Russian Novel; Classic Plots; Ibsen, Shaw and the Introduction of Feminism to Great Britain; Political Comedy on the Modern European Stage; and Reading Nature. The emphasis will be on scholarly analysis, but with engagement of student writers. Students may repeat this course as the topic changes.

Prerequisite: one D.E.C. B or HUM course Advisory Prerequisite: CWL 190

DEC: *I*
SBC: *GLO, HFA+*

3 credits

CWL 335: Topics in American Literature for Writers

A seminar for writers concentrating on one area of American literature, to be announced in the course schedule. The course may examine a contemporary or historical trend in American literature, the rise of a specific genre, a social issue expressed in literature, an issue in literary theory, or any other exploration of American pluralism as, for example, Ethics and the Crime Novel; Varieties of American Humor; Southern Renaissance; and Contemporary Poetry Wars. The emphasis will be on scholarly analysis, but with engagement of student writers. Students may repeat this course as the topic changes.

Prerequisite: one D.E.C. B or HUM course Advisory Prerequisite: CWL 190

DEC: *K*
SBC: *HFA+, USA*

3 credits

CWL 340: Topics in World Literature for Writers

A literature course for writers concentrating on one area, to be announced in the course schedule, of non-Western culture. Topics could include a contemporary or historical trend, a social issue, or any other topic of expression that illuminates national, regional or cultural difference, as, for example, Contemporary Poetry from the Middle East, Asia and Beyond; Contemporary World Fiction for Writers; Reading Nature in Japanese Poetry; Varieties of the Short Story; and Asian Theatre and Drama. The emphasis will be on scholarly analysis, but with engagement of student writers. Students may repeat this course as topic changes.

Prerequisite: one D.E.C. B or HUM course Advisory Prerequisite: CWL 190

DEC: *J*
SBC: *GLO, HFA+*

3 credits

CWL 390: The Ethics of the Creative Imagination

Seminar focused on the ethical questions raised by the literary imagination. Is it moral for a memoirist to spill family secrets, for a fiction writer to use the biographical facts of a real person for a character, or for a poet to appropriate language from another poem? Do the moral standards for writers differ over time and place? Students read a range of excerpts, essays, articles, and books by authors ranging from Plato to Gioia. They conduct biographical, historical, or sociological research on a specific ethical dilemma and present it to the class for debate. Required for the major.

Prerequisite: a grade of B or better in CWL 250

SBC: *CER, SPK*

4 credits

CWL 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; Permission of Instructor; Approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0-3 credits

CWL 450: Senior Project

A weekly seminar in planning and executing an independent, interdisciplinary creative writing project, the culmination of the major or minor, to be taken while writing the manuscript. The nature of the manuscript is up to the individual, though the concept must be approved by the program director before the student can enroll in this course. Projects could incorporate a theme or insight from the writer's major area of study or from any discipline beyond creative writing that engages the writer. Weekly class meetings give structure to the independent writing process, helping minors to plan, research and locate the resources they need. In the second half of the course, guest speakers with expertise in the areas students are encountering will be brought in.

Prerequisite: permission of the department

SBC: *EXP+*

3 credits

CWL 487: Mind the Gap: Independent Reading

Independent or small group study intended to close gaps in the student's reading life and hone their research skills. With a mentor, students develop a list of at least ten major works in the literary canon that the student has not read, then they read, research, discuss, and write about those works. Among the research skills taught are using academic databases, interviewing experts, finding primary sources, and using visual/audio sources, along with proper citation, assessments of credibility, and ethical uses of information. Required for the major.

Prerequisite: CWL 250
Corerequisite: CWL 450

SBC: *ESI*

4 credits

CWL 499: Thesis

Mentorship in generating, revising and polishing a manuscript. One or two credits of this course are taken in conjunction with CWL 450, the Senior Project seminar. The remaining credits are taken in the semester immediately following the Senior Project seminar. Students repeat this course for credit as the topic changes from drafting to revision. Required for the major.

Prerequisite: permission of the department

1-6 credits

DAN

Dance

DAN 101: Movement & Somatic Learning

Introduction to the human body and its potential for creative experiences focused on the existential whole. Theory and practice are woven together throughout the course. Content includes sensory attunement, augmented rest, somaesthetics, instrinsic motivation, creativity, visualization of motor imagery, and reprogramming of neuromuscular patterns.

SBC: *ARTS*

3 credits

DAN 102: 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.

DEC: *D*
SBC: *ARTS, GLO*

3 credits

DAN 164: Tap Technique and History

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

DEC: *D*
SBC: *ARTS*

3 credits

DAN 165: 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

DEC: *D*
SBC: *ARTS*

3 credits

DAN 166: 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

DEC: *D*
SBC: *ARTS*

3 credits

DAN 167: 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

DEC: *D*
SBC: *ARTS*

3 credits

DAN 168: 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

DEC: *D*
SBC: *ARTS, GLO*

3 credits

DAN 203: Laban Movement Analysis

Investigates the fundamentals of movement through theories, principles and techniques represented in the written and embodied work of Laban, Bartenieff, Dell, and Hackney. Approaches from Body Mind Centering, Feldenkrais, Human Development, and Somatic Therapy/Education will also be incorporated. Students will study the interrelated processes of awareness, biological function and interaction with the environment through interplay of theory and practice. The goal is to perceive, describe and make meaning of human movement in order to decode and develop physical language.

Prerequisite: DAN 101, DAN 165, DAN 166, DAN 167 or DAN 168

SBC: *HFA+*

3 credits

DAN 264: Movement Awareness and Analysis

A course covering the fundamentals of movement, linking theory and techniques from the disciplines of dance and theatre. Using anatomical principles to understand effective use of the skeletal and muscular systems, students are guided, through an interplay of theory and practical work, toward efficient posture and movement habits and test the presence, action, and performance necessary for effective communication and the development of a physical language.

DEC: *D*
SBC: *ARTS*

3 credits

DAN 353: Special Topics in Dance Performance

A concentration in one aspect of dance. May be repeated as the topic changes.

Prerequisite: One of the following: DAN 165, DAN 166, DAN 167, DAN 168 or permission of the instructor

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: One of the following: DAN 165, DAN 166, DAN 167, DAN 168

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: One of the following: DAN 165, DAN 166, DAN 167, DAN 168

SBC: *HFA+*

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: One of the following: DAN 165, DAN 166, DAN 167, DAN 168

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: One of the following: DAN 165, DAN 166, DAN 167, DAN 168, DAN 264

SBC: *HFA+*

3 credits

DAN 369: 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.

Prerequisite: One of the following: DAN 165, DAN 166, DAN 167, DAN 168 or permission of the instructor

DEC: *J*
SBC: *GLO, HFA+*

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

SBC: *EXP+, HFA+*

3 credits

DAN 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

DAN 465: Contemporary Dance Theatre and Repertory

Investigates hybrid genres resulting from weaving text, body, movement, dance, music, and design through the notion of character, narrative, abstraction and story in performance. Through dance theatre repertory training the goal is to make the performer more complete, fully expressive and open to creative possibilities and choices in live performance. The examination of dance theatre performance springs from an interconnected view of performance. Students will focus on performance skills and techniques through the creation and performance of repertory. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition; Permission of Instructor

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition; Permission of Instructor

SBC: *HFA+*

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 credit in addition to THR 475.

Prerequisites: U3 or U4 standing; permission of instructor and department

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

0-6 credits, S/U grading

DIA

Digital Arts

DIA 383: Topics in Game Studies

The course critically examines video games within cultural, social, political, and historical contexts. It is designed to afford an immersive study of a range of topics pertinent to the scholarly study of video games. Possible topics include: game history, games art and design, game preservation, game play and experience, games and culture, racial and gendered subjectivities. This course is offered as both CCS 383 and DIA 383. May be repeated as the topic changes, to a maximum of 6 credits. Previously offered as CCS/DIA 396 and CCS/DIA 397. Not for credit in addition to CCS/DIA 396 and CCS/DIA 397.

Prerequisite: EGL 220 and U3 or U4 status

DEC: *H*
SBC: *ESI, STAS*

3 credits

DIA 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

EAS

Engineering and Applied Science

EAS 101: Engineering and Applied Sciences

A course intended to integrate first-semester Stony Brook freshmen into the university community and particularly into the College of Engineering and Applied Sciences. Special emphasis is placed on basic computing skills, internet access, and the programs, laboratories, and library of the college.

1-3 credits, S/U grading

EAS 310: Global Design Engineering Innovation

This field course would expose students to apply the design thinking and mission-centric Lean LaunchPad methodology for discovering both the technical problems and the customers for the local community. The students will identify such problems in the proper socio-economic and cultural context by deep observation and engagement with the local community by taking an empathy-oriented approach. They will be led to follow the engineering design cycle of need identification, generation of problem statement, product design specifications and criteria to creation, evaluation, and selection of conceptual designs. Examples of the problems could include activities of daily living (ADL), resource generation and conservation, and disability assistance. The multi-disciplinary students working in groups will collaboratively identify and define the problems and propose ethical, socially-responsible, and innovative solutions that maximize the value proposition of the innovation.

Prerequisites: WRT 102 and permission of the instructor or Study Abroad Office

SBC: *GLO, SPK, TECH*
SBCP: *This course provides partial credit for the following: ESI_PART, EXP+_PART*

3 credits

EAS 312: Engineering for the Developing World

This class introduces students to the main principles of engineering and discusses the details of providing a standard of living that is adequate for human settlement in developing countries. The discussion will be based on the social, geo-political, and infrastructural elements. Students will be exposed to a comparison between the resources available in developed countries against those available in rural areas and/or areas of limited resources. More specifically, students will be exposed to the obstacles encountered during the engineering process of developing means for infrastructure, water availability, and other essential components for sustainable human inhabiting. This experience will be enhanced by witnessing firsthand the conditions of the limited-resource environments.

Corequisites: EAS 310 and permission of the instructor or Study Abroad Office

SBC: *STAS*
SBCP: *This course provides partial credit for the following: ESI_PART, EXP+_PART*

3 credits

EBH

Human Evolutionary Biology

EBH 200: The Evolution of Human Behavior

An examination of how evolutionary theory informs our understanding of human behavior, psychology and culture. Topics include assessing what behavioral traits are unique to humans and critical to our ecological expansion. Course will provide a synthetic overview of current topics in human behavioral ecology, evolutionary psychology, and gene-culture coevolution. Formerly offered as ANP 200. Not for credit in addition to ANP 200.

Prerequisite: ANP 120 or BIO 201 or BIO 202

DEC: *F*
SBC: *SBS+*

3 credits

EBH 204: Research Skills

Gives students an understanding of and experience with the basic research skills that are needed to do biological and anthropological research. The course includes practical skills in reading and understanding anthropological and biological scientific literature, presentation skills, making scientific posters in biology and anthropology, writing complex arguments, and database management. The accompanying lab section introduces the software that is used to acquire these skills and provides students with practical experience in using them with respect to their own research interests. Formerly offered as ANP 204. Not for credit in addition to ANP 204.

Prerequisite: one course chosen from the following: ANP 120, ANT 104, BIO 201, BIO 202, BIO 203

SBC: *ESI, SPK*

3 credits

EBH 230: Computer-based Biostatistics

An introductory course in statistical analyses, specifically focusing on techniques relevant to research designs in the biological and anthropological sciences. The accompanying lab section will provide students with practical experience in using statistical software to run analyses. Formerly offered as ANP 230. Not for credit in addition to ANP 230.

Prerequisite: satisfaction of entry skill in mathematics requirement or level 2+ on the mathematics placement examination

DEC: *C*
SBC: *QPS*

4 credits

EBH 302: Human Genetics

An introduction to human genetics. Topics include the principles of inheritance, physical properties of DNA and proteins, molecular techniques for studying DNA, the genetic basis of mutations, using DNA to study ancient human history and human evolution, forensic applications of DNA fingerprinting, and the genetic basis of immunity and cancer. Human genetic diseases are discussed and an introduction is given to human chromosome maps, the Human Genome Project, and methods for mapping disease mutations. Formerly offered as BIO 302. Not for credit in addition to BIO 302.

Prerequisite: C or higher in BIO 201 and BIO 202

3 credits

EBH 316: The Evolution of the Human Brain

Provides a detailed overview of how the human brain has evolved, placing it in a broader primate, mammalian, and vertebrate context. Emphasizing the interaction between brain and behavior, the course will detail how adaptation has shaped the brain across millions of years of evolution. The central theme throughout the course will be to what extent we can consider the human brain as 'special' compared with other species, and, if so, what sets it apart. Formerly offered as ANP 316. Not for credit in addition to ANP 316.

Prerequisite: ANP 120 or any Biology course

DEC: *E*
SBC: *STEM+*

3 credits

EBH 325: Evolution of Sex

Focuses on the ultimate (evolutionary) and proximate (mechanistic) explanations for sex, both as it relates to reproduction, and as it relates to the origin of male and female phenotypes. Unit 1 (Ultimate Aspects of Sex) will review hypotheses related to recombination and anisogamy (different sized gametes), continuing on to sexual selection theory, which is the theoretical backbone for understanding sex differences in morphology and behavior. In Unit 2 (Proximate Aspects of Sex), we take a step back and discuss the genetic and hormonal mechanisms governing sex-typical development. Here we will also address alternative pathways of sexual differentiation, the physiological underpinnings of sexual motivation and sexual response, and puberty. Finally, in Unit 3 (Human Sexuality), we will take these two approaches and apply them to questions of human sexuality, addressing controversial topics such as mate choice, sexuality, sexual coercion, as well as more curious topics such as the evolution of the female orgasm and external testes.

Prerequisite: ANP 120 or EBH 200 (previously ANP 200)

SBC: *SPK, STEM+*

3 credits

EBH 331: Hormones and Behavior

Examines the relationship between hormones and behavior, both in terms of how hormones affect behavior, and how behavioral interactions can alter hormones. Because hormonal structure and function is remarkably conserved across vertebrates, we will take a comparative approach, exploring data from a variety of vertebrate model systems, while maintaining a keen eye on how such models inform of us about hormones and behavior in humans and non-human primates. Topics to be explored include sex determination, reproductive behavior, personality, dominance and aggression, biological rhythms, the stress response, and the role of endocrine disrupting chemicals in behavior. Formerly offered as ANP 331. Not for credit in addition to ANP 331.

Prerequisite: one of the following courses: ANP 120, BIO 201, BIO 202, BIO 203, PSY 250

SBC: *STEM+*

3 credits

EBH 359: Behavioral Ecology

A consideration of the patterns of animal behavior in relation to ecological circumstances and evolutionary history. Vertebrate examples are emphasized. Formerly offered as ANP 359 and BIO 359. Not for credit in addition to ANP 359 or BIO 359.

Prerequisite: BIO 201

DEC: *E*
SBC: *STEM+*

3 credits

EBH 362: Evolution of Social Complexity

An in-depth examination of how and why social animals establish and maintain relationships with one another, especially in large and fragmented societies. Applying the principles of evolutionary biology and behavioral ecology, this course explores: group structure and stability; conflicts and coalitions; theory of mind and social learning; and culture and communication. Current research on group-living mammals, particularly non-human primates, and human populations is emphasized. Formerly offered as ANP 362. Not for credit in addition to ANP 362.

Prerequisite: ANP 120 or BIO 201

DEC: *E*
SBC: *STEM+*

3 credits

EBH 370: Advanced Human Genetics

An advanced course in human genetics. Topics include genotype/phenotype associations, the genetic architecture of disease/phenotypes, human population genetics, methylation, and ancient DNA. This class is meant to build on major concepts in human genetic research introduced in other courses. The course will emphasize hands-on engagement with genetic data and critical reading of scientific papers. Computer laboratory analysis/assignments will make up a major component of this class. Students will be evaluated based on computer assignments and a final group research project. EBH majors will have priority to register. Formerly offered also as BIO 303. Not for credit in addition to BIO 303.

Prerequisite: C or better in either EBH 302 (formerly BIO 302) or BIO 320 or EBH 380 (formerly BIO 304)

SBC: *TECH*

3 credits

EBH 380: Genomics

An introduction to the rapidly developing field of genomics. Initial lectures provide a foundation in genomic structure across the tree of life (prokaryote and eukaryote). This is followed by examination of specific forces that cause variation in genomic content both within and between species. We then discuss how to sequence, assemble and analyze genomes. Finally we focus on the architecture and evolution of the human genome and compare it to non-human primate and ancient hominin genomes, and examine how the study of non-human primates can aid human health.

Formerly offered also as BIO 304. Not for credit in addition to BIO 304.

Prerequisite: C or higher in both BIO 201 and BIO 202
Advisory Prerequisite: BIO 211 or EBH 230; EBH 302 (formerly BIO 302) or BIO 312

3 credits

EBH 381: Genomics Laboratory

Provides a computer lab-based introduction to comparative genomics, molecular evolutionary analysis, and next generation sequencing (NGS) data and analysis. Activities will include familiarization with both web-based and command-line tools for analyzing genomic data and summarizing/visualizing results. Lectures and background reading will provide an introduction to basic principles of genomics to inform computer-based hands-on activities. Students will be evaluated based on computer lab assignments, as well as a final group project that applies learned concepts and approaches to a novel research question. Formerly offered as BIO 305. Not for credit in addition to BIO 305.

Prerequisite: C or higher in either EBH 302 (or formerly BIO 302) or EBH 380 (or formerly BIO 304)

SBC: *TECH*

3 credits

EBH 391: Topics in Human Evolutionary Biology

Discussion of a topic of current interest in Human Evolutionary Biology. May be repeated as the topic changes.

Prerequisite: ANP 200 or ANP 201 or EBH 302 (or formerly BIO 302)
Advisory prerequisite: One other EBH or ANP course

3 credits

EBH 401: Seminar in Evolutionary Biology of Humans

Research and discussion of selected topics in evolutionary biology of humans. May be repeated as the topic changes.

Prerequisite: permission of the instructor

3 credits

EBH 404: Evolution of Parenting

An in-depth examination of previous and current research and theories on the evolution of parental care. Main topics include the evolutionary causes of parental care, the variation of parental care between species, the reasons for exclusive maternal care, conditions for male and alloparental care, conflicts over care, as well as the division of care across sons and daughters. Examples will draw primarily from nonhuman primates and humans but other animals will be considered as well.

Prerequisite: ANP 120 or BIO 201; permission of instructor

3 credits

EBH 405: Life History and Development

Uses life history theory as a framework for exploring the biological processes of the primate and human life cycle (development, reproduction, senescence). We will first construct a solid foundation of life history theory and the principle of energetic tradeoffs. We will then use this foundation to address why species and individuals vary in the pattern and tempo of development, reproduction, and senescence. In the process, we will address questions such as: Why do humans invest so much in offspring and what factors influence individual differences in parental investment? What is the function of menopause? What is the purpose of a prolonged juvenile period (i.e., childhood)? And when and why should the pace of development accelerate or slow down? We will examine these questions from a comparative perspective, drawing not just on studies focusing on humans, but also on those focusing on nonhuman primates and other mammals.

Prerequisite: ANP 120 or EBH 200 (previously ANP 200)

SBC: *STEM+*

3 credits

EBH 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

EBH 447: Readings in Human Evolutionary Biology

Individual advanced readings on selected topics in Human Evolutionary Biology. May be repeated up to a limit of 6 credits, but not more than two credits may be used toward Human Evolutionary Biology major requirements.

Prerequisite: Permission of instructor and department

1-2 credits, S/U grading

EBH 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any EBH course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

EBH 459: Write Effectively in Human Evolutionary Biology

A zero credit course that may be taken in conjunction with any 300- or 400-level EBH course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

EBH 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 Human Evolutionary Biology Major credit

Prerequisite: permission of instructor; program approval of EXP+ contract

SBC: *EXP+*

3 credits, S/U grading

EBH 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 Human Evolutionary Biology Major credit.

Prerequisite: permission of instructor; program approval of EXP+ contract

SBC: *EXP+*

3 credits, S/U grading

EBH 487: Independent Research in Human Evolutionary Biology

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, but no more than three credits of research may be used for Human Evolutionary Biology Major requirements.

Prerequisite: permission of instructor; program approval of EXP+ contract

SBC: *EXP+*

0-6 credits, S/U grading

EBH 488: Internship in Human Evolutionary Biology

Students work under the supervision of a faculty member or approved local, state, and national public and private agencies and organizations to obtain a career-related experience in human evolutionary biology. Before registering the student must complete an EXP+ contract specifying a format that allows for reporting and reflection on learning outcomes. May be repeated to a limit of 12 credits. Not for Human Evolutionary Biology Major credit.

Prerequisite: permission of instructor; program approval of EXP+ contract

SBC: *EXP+*

0-12 credits, S/U grading

EBH 495: Senior Honors Project in Human Evolutionary Biology

First course of a two-semester project for EBH majors who are candidates for the degree with honors. Arranged in consultation with 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 EBH 495 are obliged to complete EBH 496 the following semester. Students receive only one grade upon completion of the sequence EBH 495-496.

Prerequisite: program approval of EXP + contract; admission to the Human Evolutionary Biology honors program

3 credits

EBH 496: Senior Honors Project in Human Evolutionary Biology

Second course of a two-semester project for EBH majors who are candidates for the degree with honors. Arranged in consultation with 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 EBH 495-496.

Prerequisite: EBH 495 and admission to the EBH honors program

SBC: *EXP+*

3 credits

ECO

Economics

ECO 108: 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

DEC: *F*
SBC: *SBS*

4 credits

ECO 110: Introduction to Microeconomics

This course is an introduction to how economists think about the world with an emphasis on the behaviors of agents. It is recommended for students that wish to take a single course of economics and it is required for students that will major in economics, and it is part of the introductory sequence along with ECO 111. Any other course you take in economics will build upon the knowledge and skills you develop in ECO110 and the companion ECO 111. Hence, some fundamental concepts will be covered with some degree of complexity, even though this is an introductory course. Not to be taken for additional credit if previously completed ECO 108.

Prerequisite: C or higher in MAT 122 or MAT 123 or AMS 151 or level 4 on the mathematics placement examination.
Anti-requisite: Students may not enroll for ECO 110 or ECO 111 if currently or previously taken ECO 108.

SBC: *SBS*

3 credits

ECO 111: Introduction to Macroeconomics

This course is an introduction to how economists, in particular macroeconomists, think about the world. It is required for students that will major in economics and recommended along with ECO 110 to those who want an overview of economics. Any other course you take in economics will build in part upon the knowledge and skills you develop in ECO111, along with ECO 110. Hence, some fundamental concepts will be covered with some degree of complexity, even though this is an introductory course. Not to be taken for additional credit if previously completed ECO 108.

Prerequisite: C or higher in MAT 122 or MAT 123 or AMS 151 or level 4 on the mathematics placement examination.
Anti-requisite: Students may not enroll for ECO 110 or ECO 111 if currently or previously taken ECO 108.

SBC: *SBS*

3 credits

ECO 303: 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 125 or AMS 151 or placement level 6 on the mathematics placement examination

DEC: *F*
SBC: *SBS+*

4 credits

ECO 305: Intermediate Macroeconomic Theory

The theory of national income determination, employment, distribution, price levels, inflation, and growth. Keynesian and classical models of the different implications of monetary and fiscal policy. 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 125 or AMS 151 or placement level 6 on the mathematics placement examination

DEC: *F*
SBC: *SBS+*

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 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. 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 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 322: Data Science and Machine Learning in Economics

A rigorous introduction to the data-science techniques, including machine learning and GIS mapping, that are being applied in economics.

Prerequisite: C or higher in ECO 320 or AMS 310
Advisory pre- or co-requisite: C or higher in ECO 321

3 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 324: Empirical Industrial Organization

This course provides students with a rigorous introduction to the topics and methods of Empirical Industrial Organization (IO). It covers topics related to the empirical analysis of how markets work, how firms compete or collude with each other, and how these interactions determine profits and consumer welfare. This course emphasizes the importance of combining good data, reasonable economic models, and appropriate econometric techniques to answer empirical questions in Industrial Organization and in Economics in general.

Prerequisite: C or higher in ECO 303 and ECO 320
Advisory prerequisite or co-requisite: ECO 326 and ECO 321

4 credits

ECO 325: International Trade

International trade of goods and services, the global integration of production, multinational enterprises, specialization and increasing returns, market power and pricing-to-market, trade policy, and the welfare consequences of policy reforms. Formerly offered as ECO 325 International Economics. Not for credit in addition to ECO 325 International Economics.

Prerequisite: C or higher in ECO 303 and ECO 305

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: 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 and ECO 305

DEC: *F*
SBC: *SBS+*

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 and ECO 305
Advisory Prerequsite: MAT 131

3 credits

ECO 334: 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

DEC: *J*
SBC: *SBS+*

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 and ECO 305; 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 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

May be repeated as the topic changes.

Prerequisite: C or higher in ECO 303

3 credits

ECO 352: Special Topics in Economics

May be repeated as the topic changes.

Prerequisite: C or higher in ECO 303 and ECO 305

3 credits

ECO 354: Special Topics in Economics

May be repeated as the topic changes.

Prerequisite: C or higher in ECO 303 and ECO 305

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 AMS 151; C or higher in ECO 303

SBC: *SBS+*

3 credits

ECO 356: Special Topics in Economics

May be repeated as the topic changes.

Prerequisite: C or higher in ECO 303 and ECO 305

3 credits

ECO 357: Special Topics in Economics

May be repeated as the topic changes.

Prerequisite: C or higher in ECO 303 and ECO 305

3 credits

ECO 359: Reading and Writing in Economics

Provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: C or higher in ECO 303 and ECO 305; WRT 102; U4 standing; ECO major

SBC: *WRTD*

3 credits, S/U grading

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 305

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 364: Thinking Strategically

A focus on the strategic interaction between several decision makers. Topics include: optimal decisions of firms interacting in markets with imperfect competition, the value of information under strategic conflict, optimal bidding strategies for various auction mechanisms (including online auctions), optimal networking design, Blackjack and others.

Prerequisite: C or higher in ECO 303

3 credits

ECO 373: 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 and ECO 305

DEC: *H*
SBC: *STAS*

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 385: U.S. Economic History

The application of economic theory and statistical methods to analyze historical topics and themes. Topics may include the economic causes of the Revolutionary War; the economics of slavery; share cropping

and debt peonage in the South after the Civil War; the economics of the resumption of the gold standard; the "cross of gold", the causes of the Great Depression, post World War II economic growth, and the causes and consequences of the Great Recession. Themes include an analysis of the American economic growth from the 1820's through today; the government's role in economic development; and the contributions of natural increase and migration to U.S. labor force and population increase.

Prerequisite: ECO 303 and ECO 305
Advisory Prerequisite: ECO 320

3 credits

ECO 386: International Finance

International capital flows, prices, and quantities, including the determination of the Current Account, exchange rates, interest rates, arbitrage, open macroeconomics, and the international monetary system.

Prerequisite: C or higher in ECO 303 and ECO 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 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

ECO 459: Write Effectively in Economics

A zero credit course that may be taken in conjunction with any 300- or 400-level ECO course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

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 of at least 15 pages. May be repeated.

Prerequisites: C or higher in ECO 303 and ECO 305; 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

SBC: *EXP+*

0-6 credits, S/U grading

EDP

Environmental Design, Policy, and Planning

EDP 301: Urban Systems

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: SUS 200 (formerly SBC 200)

SBC: *SBS+*

3 credits

EDP 302: Sustainable Planning and Development

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 practices as they affect residential, commercial, educational, cultural and industrial sites.

Prerequisite: SUS 111 (formerly SBC 111) or ENS 101; SUS 200 (formerly SBC 200)

SBC: *SBS+*

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: SUS 206 (formerly 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: SUS 111 (formerly SBC 111) and SUS 200 (formerly SBC 200)

SBC: *SBS+*

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: SUS 200 (formerly SBC 200)

SBC: *SBS+*

3 credits

EDP 404: Environmental Design Project

The Environmental Design Project is the culmination of the EDP Major. Each student should produce an individual work, that is a thoughtful analysis of a real-world problem addressing one of four central themes of the major's core: 1) historic and theoretical perspectives; 2) the physical and built environment; 3) policy, politics and regulation; or 4) societal and cultural change. Allowing that there may be some overlap among these four themes, each project must focus on a specific place, process or object. Students are expected to produce a final project portfolio--which may include audio-visual materials, drawings, models, posters, artifacts, etc.-- and a written report. Each student is expected to make a presentation to faculty and students before the close of the semester.

Prerequisites: EDP 301 and EDP 302 and EDP 307

SBC: *EXP+*

3 credits

EDP 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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.

Prerequisite: Permission of instructor

SBC: *EXP+*

0-6 credits

EDP 488: Internship in Environmental Design, Policy, & Planning

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 SoMAS Undergraduate Program Director

SBC: *EXP+*

0-12 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.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

EEL 112: 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

DEC: *S3*
SBC: *LANG*

3 credits

EEO

Electrical Engineering Online

EEO 124: C Programming for Electrical Engineers

An introductory computer programming course using the ANSI C language with emphasis on topics of interest to electrical engineers. Subjects include data types, operations, program control structures, 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. May not be taken for credit in addition to ESE 124.

Prerequisites: C or higher in AMS 151 or MAT 131 or 141, or level 7 on the mathematics placement examination; EEO Major

3 credits

EEO 218: Digital Logic Design

Develops methods of analysis and design of both combinational and sequential systems regarding digital circuits as functional blocks. 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. May not be taken for credit in addition to ESE 118.

Prerequisite: PHY 132

SBC: *TECH*

3 credits

EEO 219: Digital Logic Design Laboratory

The digital circuits are designed and simulated with CAD tools, assembled on a breadboard and verified with a logic analyzer. May not be taken for credit in addition to ESE 118.

Pre- or corequisite: EEO 218

1 credit

EEO 224: Object Oriented Programming for Electrical and Computer Engineers

An introduction to object oriented programming using the C++ language. Key aspects of object oriented programming including polymorphism, encapsulation, data hiding, and inheritance will be discussed, as will the difference between procedural and object oriented programming. Good practices to enable effective collaboration and code reuse will be considered. The use of C++ as a hardware description language will be briefly described. Students gain experience in applying the C++ language to the solution of a variety of electrical and computer engineering problems. May not be taken for credit in addition to ESE 224.

Prerequisite: EEO 124 or equivalent

3 credits

EEO 271: Electrical Circuit Analysis

The course covers the following topics: passive circuit elements: resistors, capacitors, inductors. Elements of circuit topology. Kirchhoff's and Ohm's law. Nodal and mesh analysis. Equivalent circuits. Steady-state AC circuits. Phasors. Transient analysis. Laplace transforms. Fundamentals of AC power, coupled inductors (transformers). Not for credit in addition to ESE 271.

Prerequisites: C or higher in AMS 151 or MAT 131 or 141, or level 7 on the mathematics placement examination; EEO Major Corequisite: PHY 132

3 credits

EEO 300: Technical Communication for Electrical Engineers

Topics include how technical writing differs from other forms of writing, the components of technical writing, technical style, report writing, technical definitions, proposal writing, writing by group or team, instructions and manuals, 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. May not be taken for credit in addition to ESE 300.

Prerequisites: WRT 102 or equivalent and EEO 353

3 credits

EEO 301: 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. Not for credit in addition to ESE 305.

Prerequisites: EEO 271 and MAT 303 or AMS 361

3 credits

EEO 302: 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. Introduction to patents and patent infringement using case studies. May not be taken for credit in addition to ESE 301.

Prerequisite: one D.E.C. E or SNW course

SBC: *STAS*

3 credits

EEO 303: Digital Signal Processing

Covers the general area of discrete-time signals and the analysis and design of discrete time systems. Topics include time domain analysis, solutions of difference equations, Z-transform analysis, sampling of continuous-time signals, discrete Fourier transforms, Fast Fourier Transforms, and spectral analysis. Processing of discrete-time signals using the DFT and FFT. Design and implementation of discrete-time filters. Extensive use of software simulations in Matlab. Final Matlab-based project required. May not be taken for credit in addition to ESE 337.

Prerequisite: EEO 301

3 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. May not be taken for credit in addition to ESE 306.

Prerequisite: EEO 301

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-dran) single BJT (FET) stages. Frequency response of differential-pair, cascode, and multistage circuits. Selection of coupling and by bypass capacitors. Analog integrated circuits. Metal-Oxide-Semiconductor (MOS) digital circuits with

emphasis on CMOS. May not be taken for credit in addition to ESE 411.

Prerequisite: EEO 315

3 credits

EEO 314: Mos Transistor Modeling

An overview of the metal-oxide semiconductor field effect transistor (MOSFET) and its models for circuit analysis. First, short review of the necessary semiconductor physics is given. Second, CMOS fabrication, device structure and operation are introduced. Analytical models of increasing complexity and their SPICE implementations are presented. Peculiarities of the contemporary nanoscale devices are discussed. The course involves a project.

Prerequisite: EEO 331 and EEO Major

3 credits

EEO 315: Electronics Circuits I

This is the first integrated circuits class that introduces the students to the fundamentals of the non-linear devices and design of IC amplifiers. The course starts with the introduction to the device physics, operation and modeling of a diode. Operation of MOS transistor, derivation of the large-signal transistor current as a function of the terminal voltages in different regions of operation is then presented, along with the small-signal model. Single-stage amplifier structures are explored, along with the introduction of the implementation of current source and current mirror. Frequency-response of common-source amplifier is presented. The concepts of multi-stage amplification and differential pair are introduced. Operation modeling of bipolar transistors are presented, along with the common-emitter amplifier. Comparison of MOS and BJT transistor and performance of common-source and common-emitter is presented. Not for credit in addition to ESE 273.

Prerequisites: EEO 271; AMS 361 or MAT 303

3 credits

EEO 316: Integrated Electronic Devices and Circuits

This is an advanced circuit design course that will discuss the principles, concepts, and techniques required to produce successful designs of analog and digital integrated circuits. Fundamentals of devices, circuits and basic topologies will be reviewed. Topics considered will include design of high-performance operational amplifiers, comparators, continuous-time filters and switched-capacitor circuits.

Prerequisite: EEO 315

3 credits

EEO 319: Electromagnetic Waves and Transmission Lines

Properties of generic uniform plane waves including phase and group velocities. Uniform plane electromagnetic waves (UPEMWs) consisting of an electric field wave and a magnetic field wave, both moving synchronously in space and time; mutual right-handed orthogonality between the electric and magnetic field vectors and the direction of propagation; Poynting vector. Transmission lines (TLs): voltage and current behaving as waves on TLs, voltage reflection coefficient, impedance transformation law, VSWR, Smith Chart, impedance matching. Maxwell equations, EM wave equation, boundary conditions. Scattering of UPEMWs incident normally or obliquely at the interface plane between two dielectric media. Waveguides: TE and TM modes of a rectangular waveguide, cut-off frequencies, dominant mode, power flow. Not for credit in addition to ESE 319.

Prerequisites: EEO 271; AMS 261 or MAT 203 or MAT 307; AMS 361 or MAT 303 or MAT 308

3 credits

EEO 331: Semiconductor Devices

The course covers physical principles of operation of semiconductor devices. Energy bands and energy band diagram, carrier densities, transport properties, generation recombination phenomena in bulk semiconductors, and the continuity equation are covered first. Equipped with an understanding of the character of physical phenomena in semiconductors, students learn the principles of operation, current-voltage characteristics, and nonidealities of p-n junction diodes, metal-semiconductor contacts, bipolar junction transistors, and field effect transistors. Not for credit in addition to ESE 331.

Prerequisites: AMS 361 or MAT 303; PHY 127/134 or PHY 132/134 or PHY 142

3 credits

EEO 346: Computer Communications

Basic theory and technology of computer communications. Introduction to performance evaluation, error codes and routing algorithms. Introduction to queueing theory, machine learning for networking and network planning. Other topics include Ethernet, wireless networks including LTE, 5G and 6G, fiber optic networking, software defined networking, networking on chips, space networks, data centers, grids and clouds. Not for credit in addition to CSE 310 or ISE 316 or ISE 317 or ESE 346.

Pre- or Corequisite: EEO 306

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: EEO 271

3 credits

EEO 353: Electronics Laboratory II

Electronics Laboratory II builds upon Electronics Laboratory I and covers optoelectronic devices such as, IR LED and photo-transistor. Advanced circuit concepts such as, negative feedback and differential amplifier and oscillator circuits. There are three design projects: the multi-stage amplifier project, the radio frequency project, and the mincro controller project. Students also practice how to communicate effectively through writing reports.

Prerequisite: EEO 352

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. May not be taken for credit in addition to ESE 366.

Prerequisites: ESE 380 and ESE 372; ESE 224 or CSE 230

4 credits

EEO 388: Foundations of Machine Learning

This course provides an introduction to the fundamental concepts of machine learning. Statistical learning framework is utilized for clustering, classification, and prediction tasks. Concepts are reinforced through theoretical and programming assignments, with applications in computer vision, natural

language processing and bioinformatics. May not be taken for credit in addition to ESE 388.

Prerequisites: EEO 224 and EEO 306

3 credits

EEO 414: Fundamentals of Low Noise Electronics for Sensors

Introduction to sensor model, electronic noise, signal-to-noise analysis in frequency and time domains, low-noise charge amplification, low-noise amplifier design, filter design, analog and digital signal processing for sensors. May not be taken for credit in addition to ESE 414.

Prerequisite: EEO 311

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. May not be taken for credit in addition to ESE 352.

Prerequisite: EEO 319

3 credits

EEO 440: Engineering Design I

This is a two-semester, year-long capstone design project in which students acquire a culminating design experience by working under the supervision of a faculty member on a design project that involves realistic constraints including economic, environmental, sustainability, manufacturability, ethical, health, and safety, social, and political factors. Implementation and testing are carried out. Projects are solicited from industries and faculty members, and to the extent possible, mentored by professional engineers. Two comprehensive technical reports (one for EEO 440 and one for EEO 441) and an oral presentation are required. May not be taken for credit in addition to ESE 440.

Prerequisite: EEO Major

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

EEO 441: Engineering Design II

This is a two-semester, year-long capstone design project in which students acquire a culminating design experience by working under the supervision of a faculty member on a design project that involves realistic constraints including economic, environmental, sustainability, manufacturability, ethical, health, and safety, social, and political factors. In most cases, in the fall (EEO 440), students investigate and finalize the design aspect whereas in the spring (EEO 441), implementation and testing are carried out. Projects are solicited from industries and faculty members, and to the extent possible, mentored by professional engineers. Two comprehensive technical reports (one for EEO 440 and one for EEO 441) and an oral presentation are required. May not be taken for credit in addition to ESE 441.

Prerequisites: EEO 440

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

EEO 470: Renewable Distributed Generation and Storage

This course introduces a specific type of electric power system, the microgrid. With ongoing deregulation of the electrical utility industry and emergence of more renewable smaller generation sources advancement into the electrical power industry will be met by microgrids. Topics will include a historical global perspective of electrical systems, individual enabling technologies that comprise a microgrid will be presented. The class involves a design of a microgrid that incorporates and considers economic, environmental, sustainable, manufacturable, ethical, health and safety, social and political constraints.

Prerequisite: EEO 271

3 credits

EEO 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 repeated once but only three credits may be counted as an open elective.

Prerequisites: EEO major; a grade of B or better in the course in which the student is to assist; permission of department.

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: EEO 319 and EEO Major

3 credits

EEO 488: Internship in Electrical Engineering

An independent off-campus engineering project with faculty supervision. Students are required to submit an interim progress report and a final report before the last day of classes. May be repeated but only three credits may be counted toward the open elective requirement.

Prerequisite: EEO Major

SBC: *EXP+*

3 credits

EEO 499: Research in Electrical Engineering

An independent research project with faculty supervision. Permission to register requires the agreement of a faculty member to supervise the research and permission of ECE department. May be repeated but only three credits may be counted as an open elective.

Prerequisites: EEO major; permission of department.

0-3 credits

EGL

English

EGL 111: World Literature: Ancient

Offers an introduction to world literature from the earliest recorded literary history through the medieval period. Students will study divergent global literary traditions, including a focus on their relationship to English literature; they will also discuss the histories of cross-cultural contact, influence, and exchange through which such traditions encountered and shaped each other.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

DEC: *B*
SBC: *GLO, HUM*

3 credits

EGL 112: World Literature: Modern and Contemporary

Offers an introduction to world literature of the modern and contemporary periods, focusing especially on the nineteenth, twentieth, and/or twenty-first centuries. Students will study divergent global literary traditions, including a focus on their relationship to English literature; they will also discuss the histories of cross-cultural contact, colonization, and exchange through which such traditions encountered and shaped each other.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

DEC: *B*
SBC: *GLO, HUM*

3 credits

EGL 121: Global Film Traditions

An introductory film course with a focus on the cross-cultural study of film from multiple traditions. Students will learn the basics of film analysis and terminology. They will also develop a familiarity with film traditions outside the US, including (but not necessarily limited to) parts of Europe, Senegal and other parts of Africa, South Asia (India, Pakistan, and elsewhere), Iran, China, Korea, Japan, and elsewhere.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

DEC: *B*
SBC: *GLO, HUM*

3 credits

EGL 130: Literature, Science and Technology

An introduction to the status and role of literature as it engages with scientific and/or technological concepts. Students will consider the principles and concepts that form the basis of knowledge in the humanities and develop awareness of the contexts (historical, social, ethical and disciplinary) in which literature and scientific knowledge emerge. Students will also develop the verbal and written skills to articulate valid arguments on the relationship between literature, science and technology.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

DEC: *H*
SBC: *CER, STAS*

3 credits

EGL 135: Literature, Film, and the Environment

Introduces students to the interdisciplinary field of ecocriticism, or the study of literature and other media in relation to the scientific, social, cultural and ethical dimensions of the interactions between humans and the natural world. Students will study the engagement between the humanities and a defining issue of our time, and develop the verbal and written skills to articulate valid arguments about the representation of environmental crises and their consequences for humanity.

Prerequisite: WRT 101 or equivalent OR Pre- or corequisite: WRT 102

SBC: *CER, STAS*

3 credits

EGL 140: Shakespeare in Performance

An introduction to Shakespeare in performance. This course will focus on key scenes and soliloquies so students can take time with the language and theatrical tools of Shakespeare's work. We will watch these scenes performed in many different ways to think about how the language is brought to life in different times and contexts by and for different people. Students will create a performance as a way to think about the plays. We will discuss the plays as engaged works of art, not historical artifacts, and tools with which we learn to see more, see differently, see better.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

SBC: *ARTS*

3 credits

EGL 191: Poetry: The Art of Verse

Intensive analysis of poems in English of various periods and types and varying complexity. Descriptions available from the English Department.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

DEC: *B*
SBC: *ARTS, HUM*

3 credits

EGL 192: Fiction: The Art of the Story

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.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

DEC: *B*
SBC: *HUM*

3 credits

EGL 193: Drama: Character on Stage and Page

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.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

DEC: *B*
SBC: *HUM*

3 credits

EGL 194: Film: Mastering the Movies

Offers an introduction to film, including a basic familiarity with the terminology of film production and with techniques of film analysis. The course emphasizes critical viewing and writing, with attention to cinematography, editing, sound, narrative, authorship, genre and ideology. The course also offers an introduction to multiple cinematic traditions from across the globe.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

DEC: *B*
SBC: *GLO, HUM*

3 credits

EGL 204: Literary Analysis and Argumentation

An introduction to the techniques and terminology of close literary analysis and argumentation as applied to at least three of the following modes: poetry, fiction, drama, and film. The course includes frequent writing assignments and is designed for students beginning their major study in English. Transfer credit is not accepted for this course. Open to English majors and minors only.

Prerequisite: WRT 102; EGL major or minor

3 credits

EGL 205: Survey of British Literature I

The study of British literature from the Old English period to about 1750.

Prerequisite: WRT 102 or equivalent

DEC: *I*
SBC: *HFA+*

3 credits

EGL 206: Survey of British Literature II

The study of British literature from the Restoration of the Monarchy (1660) after the Civil Wars to the end of the 19th century.

Prerequisite: WRT 102 or equivalent

DEC: *I*
SBC: *HFA+*

3 credits

EGL 207: History of the English Language

A survey 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

3 credits

EGL 210: Literature, Medicine, and Ethics

Utilizes literature to highlight the humility, wisdom, perspective-taking, and professionalism inherent in good care-taking, reflecting a fusion of the humanities and medicine, with an eye toward confronting the ethical issues which arise upon encountering the suffering human being in need. The course brings you into the room of the one ailing, addressing the threat of dehumanization in the increasingly technological and bureaucratized world of health care. We will use a narrative approach to problem-solving and look closely at un- or only partially solvable moral dilemmas in which difficult medical outcomes seem imminent.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

SBC: *CER*

3 credits

EGL 217: American Literature I

The study of American literature from 1607 to 1865.

Prerequisite: WRT 102

DEC: *K*
SBC: *DIV, HUM, USA*

3 credits

EGL 218: American Literature II

The study of the literatures of the United States from the American Civil War through the Second World War.

Prerequisite: WRT 102

DEC: *K*
SBC: *HUM, USA*

3 credits

EGL 220: Critical Approaches to the Cinema

Analysis of film content and style through screenings and substantial readings in film history and theory. Considers social issues, cultural artifacts, and forms of artistic expression. Students learn how to recognize, read, and analyze visual media. Formerly offered as CCS 101; not for credit in addition to CCS 101.

DEC: *B*
SBC: *ARTS, HUM*

3 credits

EGL 224: 20th-Century Literatures in English

The comparative study of 20th-century literature written in English from Great Britain, Africa, the Caribbean, Canada, Australia, Ireland, New Zealand or other countries and areas that produce literature in English in the context of colonial or post-colonial experience. Discussions include but are not limited to causes and global consequences of cultural, ethnic, gendered and national identity that suffuse both their content and their form.

Prerequisite: WRT 102 or equivalent

DEC: *G*
SBC: *GLO, HUM*

3 credits

EGL 226: 20th-Century American Literature

A survey of major works reflecting the regional, ethnic, and traditional interests of American writers.

Prerequisite: WRT 102 or equivalent

DEC: *K*
SBC: *HUM, USA*

3 credits

EGL 231: 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: one D.E.C. B or HUM course

DEC: *I*
SBC: *CER, HFA+*

3 credits

EGL 232: 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: one D.E.C. B or HUM course

DEC: *I*
SBC: *CER, HFA+*

3 credits

EGL 243: 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: WRT 102 or equivalent

DEC: *I*
SBC: *HFA+*

3 credits

EGL 249: 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 Henrix 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 or one HUM or ARTS course

DEC: *K*
SBC: *HFA+*

3 credits

EGL 250: Introduction to English Studies for STEM Majors

An introduction to the techniques and terminology of close literary analysis and argumentation as applied to poetry, fiction, drama, film, and/or literary non-fiction in ways that engage with topics in Science. Technology, Engineering, and Math. Transfer credit is not accepted for this course.

Prerequisite: WRT 102

SBC: *STAS*

3 credits

EGL 260: World Mythology

This course introduces students to mythologies from a wide variety of cultures across the globe, helping students to identify both the diversity and interconnectedness of the world's societies and cultures.

Prerequisite: WRT 102 or equivalent

DEC: *G*
SBC: *GLO, HUM*

3 credits

EGL 261: 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: WRT 102 or equivalent

DEC: *B*
SBC: *HUM*

3 credits

EGL 266: 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: WRT 102 or equivalent

DEC: *G*
SBC: *HUM*

3 credits

EGL 272: American Narratives of Race and Justice

An investigation into the deep and tangled relationship between race and justice in the United States through examination of creative works (including literature, film, and memoir) alongside legal and political discourse (both historical and contemporary) in order to deepen understanding of how the past continues to shape the present and how new narratives surrounding race and justice might be created.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

SBC: *DIV, HUM, USA*

3 credits

EGL 274: African-American Literature

A survey of 19th- and 20th-century African American literature with attention to the cultural, aesthetic, and ethical dimensions of African-American experience in historical context.

Prerequisite: WRT 102

DEC: *K*
SBC: *HUM, USA*

3 credits

EGL 276: 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: WRT 102 or equivalent

DEC: *B*
SBC: *DIV, HUM*

3 credits

EGL 284: Public Humanities Workshop

A project-based workshop in which students apply humanities knowledge, methods and perspectives to address real-world challenges, engage with community partners and/or reach diverse audiences beyond the classroom. Students may repeat the course once, for a maximum of 6 credits.

Prerequisite: WRT 102

SBC: *EXP+, HUM*

3 credits

EGL 285: Writing Workshop: Fiction

A workshop in the development of skills in writing fiction through practice supplemented by readings.

Prerequisite: Permission of instructor; WRT 102

SBC: *ARTS*

3 credits

EGL 286: Writing Workshop: Poetry

A workshop in the development of skills in writing poetry. Poetry writing is supplemented by readings.

Prerequisite: Permission of instructor; WRT 102

SBC: *ARTS*

3 credits

EGL 290: What is Public Health? A Humanities Approach

The idea of 'public health' could be described as an endeavor of figuring out how to promote health protective measures across populations of disparate individuals who nevertheless depend on one another in important ways. At the same time, we are a society which prizes personal responsibility and seeks out individual attention and expression. How do we keep a population safe and healthy while respecting our highly individualized national character? This course examines this tension through reference to novels, narrative accounts, drama, and essays where you will have an opportunity to think through these seminal 'threshold' questions on your own. This course is offered as both EGL 290 and HPH 201.

Prerequisite: WRT 101 or equivalent OR Pre- or corequisite: WRT 102

SBC: *CER, HUM*

3 credits

EGL 300: 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

DEC: *G*
SBC: *HFA+*

3 credits

EGL 301: Authors, Periods, Topics, or Genres, with Intensive Writing

Course in English literary or cultural studies, with an emphasis on developing the skills necessary to research a topic, create and deliver effective oral presentations, and write a substantial analytic essay incorporating multiple secondary sources. This course is designed for English majors only.

Prerequisite: EGL 204; EGL major or minor

SBC: *ESI, SPK, WRTD*

3 credits

EGL 303: Genre or Media

The study of the development of one literary genre or media form such as fiction, poetry, film, drama, nonfiction prose, or hypertext. Readings include theories and criticism of the form as well as examples of the genre. May be repeated as the topic changes.

Prerequisite: WRT 102 and EGL 204

SBC: *HFA+*

3 credits

EGL 304: Renaissance Literature in English

The study of English literature of the 16th century.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205

DEC: *G*
SBC: *HFA+*

3 credits

EGL 305: The Pacific, Travel & Empire

This cultural studies course examines the cultures of travel (i.e. fiction, memoirs, photography, and filmmaking) in narratives by and about the Pacific, South and Southeast Asia. We will study "empire" by analyzing narratives about the former colonies of Spain, France, Britain and the United States. As we discuss the metaphors or tropes of empire, we will also examine the concept of empire as a historical and contemporary formation, or what an empire meant in the 19th century and what it means today in the early 21st century. The course begins with the premise that travel narratives and modern visual culture illuminate the relationship between the

violence and romance of travel. The course includes modern travel narratives (i.e. novels by Asian Americans) that focus on the lives of those who are forced to travel or migrate due to civil war, poverty and/or economic instability. Covers the Interdisciplinary topic for the English major. This course is offered as AAS 305 and EGL 305.

Prerequisite: Any 200 and/or 300 level course offered by the Department of Asian and Asian American Studies or the English Department

DEC: *J*
SBC: *HFA+*

3 credits

EGL 308: Single Author

The study of one (or two closely related) author(s) or director(s). Students will read a range of works by this figure as well as learn about his or her biography, social context, and impact. Covers the Single Author topic for the English major. May be repeated as the topic changes.

Prerequisite: WRT 102 and EGL 204

SBC: *HFA+*

3 credits

EGL 309: Interdisciplinary Study of Literature

The study of literature in English as it affects and is affected by other disciplines such as anthropology, science, sociology, sustainability, the history of ideas, theology, and psychology. Covers the Interdisciplinary topic for the English major. May be repeated as the topic changes.

Prerequisite: WRT 102 and EGL 204

SBC: *HFA+*

3 credits

EGL 311: Literary or Critical History

The study of a topic or school of literary criticism as it evolves over the course of centuries. Examples include an author's influence over generations; the development of a specific type of literature (the sonnet, the epistolary novel); or the development of rhetorical theory. Covers the Literary / Critical History topic for the English major. May be repeated as the topic changes.

Prerequisite: WRT 102 and EGL 204

SBC: *HFA+*

3 credits

EGL 317: Energy Humanities and Literature

How has the English-speaking world's technological reliance on energies like wind, water, coal, and petroleum shaped literature, and how has literature in turn shaped arguments and assumptions about their effects? Versions of this course may vary in genre and scope, from a focus on a particular period or region to an expansive global view on artistic and technological inventions through the past, present, and future. Covers the Interdisciplinary topic for the English major.

Prerequisite: WRT 102

SBC: *HFA+, SPK, TECH*

3 credits

EGL 319: 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. Covers the Interdisciplinary topic for the English major. This course is offered as both EGL 319 and SUS 321. Formerly offered as SBC 321; not for credit in addition to SBC 321.

Prerequisite: WRT 102
Advisory Prerequisite: SUS 203 (formerly SBC 203)

DEC: *G*
SBC: *HFA+, WRTD*

3 credits

EGL 320: 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. Covers the Literary / Critical History topic for the English major. May be repeated as the topic changes.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 218, 224, or 226

DEC: *G*
SBC: *HFA+*

3 credits

EGL 325: Screenwriting

A course covering the fundamentals of screenwriting--structure, character creation, visual storytelling, format, the writing of narrative and dialogue--via focused, creative exercises and the writing of several short screenplays. Covers the Genre / Media topic for the English major. Formerly offered as THR 325 Scriptwriting for Film and Television; not for credit in addition to THR 325 Scriptwriting for Film and Television. This course is offered as both EGL 325 and THR 325.

Prerequisite: WRT 102; one D.E.C. B or HUM course; or permission of the instructor

SBC: *ARTS*

3 credits

EGL 328: Documentary Theatre Creation

In this project-based workshop we'll learn about and then explore documentary theatre techniques to create and tell stories about actual events and real people. We'll select a topic, conduct interviews, and then use those interviews to collaboratively create a script for archival purposes and for performance. Covers the Genre or Media topic for the English major.

Prerequisite: WRT 102; one D.E.C. B or HUM course

SBC: *ARTS, EXP+*

3 credits

EGL 333: 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. Covers the Interdisciplinary topic for the English major. This course is offered as both EGL 333 and HUI 333.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *K*
SBC: *HFA+*

3 credits

EGL 345: Shakespeare I

A study of the comedies and the history plays. Designed to complement EGL 346. Covers the Single Author topic for the English major.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205 and 243

DEC: *G*
SBC: *HFA+*

3 credits

EGL 346: Shakespeare II

A study of the tragedies and the romances. Designed to complement EGL 345. Covers the Single Author topic for the English major.

Pre- or Corequisite: EGL 204
Advisory Prerequisite: EGL 205 and 243

DEC: *G*
SBC: *HFA+*

3 credits

EGL 351: Documentary Cinema: History, Theory, Practice

Inquiry into the history, theory, and contemporary practice of documentary cinema. Focus on the historical development of the genre of documentary film, its major theoreticians, and the various modes in which documentaries engage in capturing "reality," across national and cultural boundaries. A selection of recent global documentary work on subjects of political, social, and cultural importance introduced during weekly screenings. Covers the Genre or Media topic for the English major.

Prerequisite: WRT 102; one D.E.C. B or HUM course

3 credits

EGL 353: Law and Literature

This course explores the deep and historical interrelationship between law and literature. Questions to be addressed include: How do legal and literary texts tell stories about ethical problems that shape our sense of justice and injustice? What different (or similar) rhetorical and interpretative rules do lawyers and literary critics employ to construe evidence and arrive at "truth"? Using techniques of close reading - attending to tone, imagery, and subtleties of language - students will be invited to think about how law and literature share common ground in addressing some of the urgent questions of the past and present. Students will also develop the verbal and written skills to articulate valid arguments on literature, law, and the relationship between them.

Prerequisite: WRT 101 or equivalent or Corequisite: WRT 102

SBC: *HUM*

3 credits

EGL 360: Young Adult Literature

The study and critical analysis of young adult novels and other YA literature, including works from diverse authors, in order to stimulate engagement with important societal, cultural, and ethical issues. Literary theories covered in the course (reader response, new historicist, New Critical, gender based, disability studies, etc.) will help students distinguish among the major interpretive and critical traditions that have shaped the role YA literature plays in contemporary ethical and societal debates. Covers the Genre / Media topic for the English major.

Prerequisite: EGL 204; EGL major

DEC: *G*
SBC: *HFA+*

3 credits

EGL 361: Poetry in English

The study of the development of form, theme, and language of poetry in English. May be repeated as the topic changes. Covers the Genre / Media topic for the English major.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *G*
SBC: *HFA+*

3 credits

EGL 362: Drama in English

The study of the development of plot, structure, character, theme, and language of drama in English. May be repeated as the topic changes. Covers the Genre / Media topic for the English major.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *G*
SBC: *HFA+*

3 credits

EGL 364: Prose in English

The study of the various forms of prose such as the essay, utopia, memoir, autobiography, biography, and nonfictional narrative. May be repeated as the topic changes. Covers the Genre / Media topic for the English major.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *G*
SBC: *HFA+*

3 credits

EGL 367: Contemporary African-American Literature

The study of contemporary African American literature with attention to the cultural, aesthetic and ethical dimensions of African-American experience and cultural expressions in historical context. Covers the Literary / Critical History topic for the English major.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: EGL 274 or AFH 206

DEC: *G*
SBC: *DIV, HFA+, USA*

3 credits

EGL 368: 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. Covers the Interdisciplinary topic for the English major. 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

DEC: *G*
SBC: *HFA+*

3 credits

EGL 369: Topics in Race and Ethnicity in American Literatures and Cultures

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. Covers the Interdisciplinary topic for the English major.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *G*
SBC: *DIV, HFA+, USA*

3 credits

EGL 370: Literature and Ethics

Introduces students to the study of literature as a way of critically engaging ethical questions and practicing an ethics of empathy by imagining oneself in the situation of the other. Students will explore a range of ethical perspectives, power dynamics, cultural assumptions and values that shape human experience and meaning. They will differentiate among ethical, legal, social conceptions of justice as they apply to personal and political issues. In the process, students will develop critical competence to understand and resolve ethical conflicts and expand their own sense of what defines 'the good life.' Topics might include: 'The Problem of Evil'; 'The Good Life'; 'Literature, Law and Justice'; 'Environmental Humanities'; 'Medical Humanities'; 'Utopia/Dystopia.' Covers the Interdisciplinary topic for the English major.

Prerequisite: EGL 204

DEC: *G*
SBC: *CER, HFA+*

3 credits

EGL 371: Topics in Gender Studies in Literature

May be repeated as the topic changes. Covers the Interdisciplinary topic for the English major.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *G*
SBC: *HFA+*

3 credits

EGL 372: Topics in Women and Literature

The study of texts written by and about women and of issues they raise relating to gender and literature. May be repeated as the topic changes. Covers the Interdisciplinary topic for the English major. 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

DEC: *G*
SBC: *HFA+*

3 credits

EGL 373: 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. Covers the Literary / Critical History topic for the English major. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *J*
SBC: *GLO, HFA+*

3 credits

EGL 374: 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

DEC: *G*
SBC: *HFA+*

3 credits

EGL 376: 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. Covers the Interdisciplinary topic for the English major. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *G*
SBC: *CER, GLO, HFA+*

3 credits

EGL 378: Contemporary Native American Fiction

The study of novels by contemporary Native American writers with particular attention to the ways these novels reflect upon history and develop imaginative perspectives on contemporary Native American culture and values. Covers the Literary / Critical History for the English major.

Prerequisite: One literature course at the 200 level or higher

DEC: *J*
SBC: *HFA+, USA*

3 credits

EGL 379: Native American Texts and Contexts

The study of Native American literature in historical context, ranging from pre-contact to the contemporary period. Examination of a variety of genres, including autobiography, short stories, novels, poetry, the oral tradition, and history, will introduce students to the cultural traditions, aesthetic principles, creative practices and historical struggles of Native Americans. Covers the Interdisciplinary topic for the English major.

Prerequisite: One literature course at the 200 level or higher

DEC: *J*
SBC: *DIV, HFA+, USA*

3 credits

EGL 380: Senior Seminar

In depth study of a topic in a small classroom setting. Students will learn to create and deliver effective oral presentations and write a research essay incorporating secondary sources. Open to English majors only. May not be repeated for credit.

Prerequisite: EGL 301; EGL major

SBC: *SPK, WRTD*

3 credits

EGL 381: Advanced Analytic and Argumentative Writing

Argumentative writing involves making a claim and supporting it with specific, related points and appropriate evidence--in other words, it is thesis-driven writing. Whenever we don't quite like someone else's idea and we want him or her to come closer to ours, argumentative writing is the most efficient method for such persuasion, in whatever profession you're considering. This class, therefore, will focus on learning how to effectively utilize argumentative and counter-argumentative writing strategies. Students will explore an area of disciplinary interest to them through several stages--proposal, preliminary draft, multiple versions, literature review--culminating in a 20-30 page piece of writing in which they make a claim about a particular subject in that area of interest and support it with scholarly research and extensive elaboration. This course will fulfill the second half of the Writing Pre-Med/Pre-Health prerequisite. Covers the Interdisciplinary topic for the English major. This course is offered as both EGL 381 and WRT 381.

Prerequisite: WRT 102 or equivalent; U3 or U4 standing

SBC: *ESI*

3 credits

EGL 382: 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. Covers the Interdisciplinary topic for the English major. This course is offered as AFH 382, EGL 382, and WST 382.

DEC: *G*
SBC: *DIV, HFA+*

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. Covers the Genre / Media topic for the English major.

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. Covers the Genre / Media topic for the English major.

Prerequisites: EGL 286; permission of instructor

SBC: *ARTS*

3 credits

EGL 387: Playwriting

A workshop devoted to planning and writing finished scripts for the stage. Covers the Genre / Media topic for the English major. This course offered as both EGL 387 and THR 326.

Prerequisite: WRT 102; one D.E.C. B or HUM course; one D.E.C. D or ARTS course

SBC: *ARTS*

3 credits

EGL 389: 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. Covers the Genre / Media topic for the English major. This course is offered as both AST 389 and EGL 389.

Prerequisite: WRT 102; one D.E.C. B or HUM course; one D.E.C. E or SNW course

DEC: *H*
SBC: *CER, STAS*

3 credits

EGL 390: Topics in American or Anglophone Literary History

The study of a period in American or Anglophone literary history. Covers the Literary / Critical History topic for the English major. 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

DEC: *G*
SBC: *HFA+*

3 credits

EGL 391: Topics in British Literary History Pre-1800

The study of a period in British literary history prior to the 19th century, such as Old English, Medieval, Renaissance, or Neoclassical literature. Covers the Literary / Critical History topic for the English major. 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

DEC: *G*
SBC: *HFA+*

3 credits

EGL 392: Topics in British Literary History After 1750

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. Covers the Literary / Critical History topic for the English major. 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

DEC: *G*
SBC: *HFA+*

3 credits

EGL 394: Topics in Literary and Cultural Studies of Science and Technology

Designed for upper-division students, this course provides an in-depth study of a specific topic that illuminates the interconnections of literature, science and technology. Students will deepen their awareness of the contexts (historical, social, ethical and disciplinary) in which literature and scientific knowledge emerge. The course will also explore the ethical implications of how humans develop and use 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

DEC: *H*
SBC: *CER, STAS*

3 credits

EGL 395: Topics in Literary and Cultural Studies of Europe

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

DEC: *I*
SBC: *HFA+*

3 credits

EGL 397: Topics in Literary and Cultural Studies in Asia, Africa, and Latin America

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

DEC: *J*
SBC: *HFA+*

3 credits

EGL 399: 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

DEC: *K*
SBC: *HFA+, USA*

3 credits

EGL 400: Experiential Learning, Speak Effectively, Practice Critical and Ethical Reasoning

A zero credit course that may be taken in conjunction with any EGL education course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's CER, EXP+, and SPK learning objectives.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *CER, EXP+, SPK*

0 credit, S/U grading

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

SBC: *CER, EXP+, SPK*

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 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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

SBC: *EXP+*

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.

SBC: *CER, EXP+, SPK*

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

SBC: *CER, EXP+, SPK*

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

SBC: *CER, EXP+, SPK*

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

SBC: *CER, EXP+, SPK*

3 credits

EGL 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any EGL course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

0-6 credits

EGL 491: Honors Seminar: British Literature

Honors seminar on a topic in pre-1800 British literature and culture.

Prerequisite: Admission to English Honors Program; EGL 204
Pre- or corequisite: EGL 301

3 credits

EGL 492: Honors Seminar: American or Anglophone Literature

Honors seminar on a topic in American literature and culture.

Prerequisite: Admission to English Honors Program; EGL 204
Pre- or corequisite: EGL 301

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; EGL 301; EGL 491 or EGL 492

3 credits

EGL 496: Senior Honors Project

A one-semester capstone course in which students write a 30-40 page thesis under the guidance of a faculty advisor on a subject of the student's choice. Students concurrently enrolled in WRT/EGL 381 and EGL 496 may not earn additional credits for EGL 496.

Prerequisite: Admission to English Honors Program; EGL 494

0-3 credits

ENS

Environmental Studies

ENS 101: 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.

DEC: *E*
SBC: *SNW*

3 credits

ENS 119: 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: MAT 123; CHE 131

DEC: *E*
SBC: *SNW*

4 credits

ENS 301: 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: U3 or U4 status; ENS major or minor or permission of instructor

DEC: *H*
SBC: *STAS*

3 credits

ENS 311: 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 routinely offers an opportunity to satisfy the Stony Brook Curriculum WRTD and Upper Division Writing Requirements for the Biology and Biochemistry majors. Students who intend to use the writing assignment in this course to satisfy these requirements must register for BIO 459 when they register for BIO 386. This course is offered as both BIO 386 and ENS 311.

Prerequisites: C or higher in BIO 201; and CHE 129 or CHE 131 or CHE 141 or CHE 152
Advisory Prerequisite: MAR 104

DEC: *H*
SBC: *STAS*

3 credits

ENS 312: 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.

Prerequisite: one semester of BIO

DEC: *H*
SBC: *STAS*

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; U2 or higher standing

3 credits

ENS 339: Economics of Coastal and Marine Ecosystems

This course will view human interactions with coastal and marine ecosystems through the lens of economics. Consideration of the socioeconomic implications of policy decisions involving environmental and natural resources has become increasingly important for ecosystem management. Topics will include the basics of welfare analysis, the concept of ecosystem services, the challenges associated with public goods, methods for economic valuation of non-market goods and services, strategies for sustainable use of coastal and marine resources, and case studies of the application of fundamental principles of environmental economics to national and international policy. This course is offered as both ENS 339 and ENV 339.

Prerequisite: U3/U4 status; ENS 101 or SUS 111 (formerly SBC 111) or MAR 104

DEC: *H*
SBC: *STAS*

3 credits

ENS 395: Topics in Environmental Sciences

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

3 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

SBC: *EXP+*

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

SBC: *EXP+*

0-6 credits, S/U grading

ENV

Environmental Science

ENV 115: 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. May not be taken by students with credit for CHE 129, CHE 131, or CHE 152. This course is offered as both CHE 115 and ENV 115.

DEC: *E*
SBC: *SNW*

3 credits

ENV 301: 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.

Prerequisites: U3 or U4 status and one of the following: BIO 201, CHE 131, ECO 108, ESG 100, ESG 198, GEO 101, GEO 102, MAR 104, SUS 113 (formerly SBC 113)

DEC: *H*
SBC: *SPK, STAS*

3 credits

ENV 304: 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.

Prerequisite: one of the following courses: SUS 111 (formerly SBC 111), SUS 113 (formerly SBC 113), ENS 101, GEO 101, GEO 102, GEO 122, ENV 115, CHE 131

DEC: *H*
SBC: *STAS*

3 credits

ENV 310: Sustainability and Renewable Energy - Costa Rica

Hands on experience in Costa Rica to learn and see the countries efforts for environmental sustainability and renewable energy. Students will spend 12 days in Costa Rica to participate in site visits to five renewable energy facilities and four environmental sustainability efforts. This in-depth experience is supported with topic-specific lectures, online readings and assignments, and work on an interdisciplinary capstone project. Students will also collaborate with local engineers on a community service project to provide the local communities with accessible water or other sustainability initiatives.

Prerequisite: Permission of the instructor

DEC: *H*
SBC: *STAS*

4 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.

Prerequisites: MAT 126 or MAT 131 or AMS 151; ENS 119 or GEO 102 or SUS 313 (formerly SBC 113)

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 or SUS 111 (formerly SBC 111) or SUS 113 (formerly SBC 113) or GEO 102 or POL 102 or MAR 104; U3 or U4 status

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 132 or CHE 152

DEC: *H*
SBC: *STAS*

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.

Prerequisite: CHE 133 or CHE 154
Pre- or corequisite: ENV 320 or CHE 310

1 credit

ENV 339: Economics of Coastal and Marine Ecosystems

This course will view human interactions with coastal and marine ecosystems through the lens of economics. Consideration of the socioeconomic implications of policy decisions involving environmental and natural resources has become increasingly important for ecosystem management. Topics will include the basics of welfare analysis, the concept of ecosystem services, the challenges associated with public goods, methods for economic valuation of non-market goods and services, strategies for sustainable use of coastal and marine resources, and case studies of the application of fundamental principles of environmental economics to national and international policy. This course is offered as both ENS 339 and ENV 339.

Prerequisite: U3/U4 status; ENS 101 or SUS 111 (formerly SBC 111) or MAR 104

DEC: *H*
SBC: *STAS*

3 credits

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

SBC: *ESI, STEM+*

3 credits

ENV 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, 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.

Prerequisite: Permission of instructor

SBC: *EXP+*

0-6 credits

ENV 488: Internship in Coastal Environmental Studies

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 SoMAS Undergraduate Program Director

SBC: *EXP+*

0-12 credits, S/U grading

ESE

Electrical Engineering

ESE 111: Making with Arduino: Hardware and Programming

Create a working electronic project using low-cost and easy-to-program Arduino development boards. Example projects may include wearable electronics, robots, and electronic displays. An introduction to the C programming language will be provided along with the basics of embedded electronics and the Internet of Things.

SBC: *TECH*

3 credits

ESE 118: Digital Logic 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. May not be taken for credit in addition to EEO 218/219.

Prerequisite: ESE 123

SBC: *TECH*

4 credits

ESE 121: Introduction to Audio Systems

Analog and digital audio systems, musical instrument amplifiers and effects, audio instrumentation, samplers, synthesizers, and audio transducers will be studied. Signal and system concepts will be demonstrated using audible examples to develop intuitive and non-mathematical insights. Audio system specifications will be explained and their effects demonstrated.

SBC: *TECH*

3 credits

ESE 122: Discrete Mathematics for Engineers

Introduction to topics in computational mathematics, such as number systems, Boolean algebra, mathematical induction, combinatorics and probability, recursion and graph theory. Algorithm aspects of the topics discussed will be emphasized.

Corequisite: ESE 123

3 credits

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Pre- or Corequisites: AMS 151 or MAT 125 or 131

SBC: *TECH*

4 credits

ESE 124: Programming Fundamentals

The course presents fundamental and more advanced C programming concepts. Lectures discuss the C language constructs and exemplify their using in relevant programming applications. The course also introduces fundamental concepts in electrical and computer engineering, such as bitwise operations, text file scanning, stack-based computation, table-based finite state machine implementation, hash tables, and linked lists. Scheduled lab activities focus on devising, implementing, debugging, and validating C programs for the concepts discussed in class. A course project focuses on developing a more extensive C program that comprehensively utilizes the programming concepts discussed during the semester. May not be taken for credit in addition to EEO 124.

Prerequisite: Declared Area of Interest or Major in Electrical or Computer Engineering.

4 credits

ESE 188: Understanding Machine Learning

This is a course on the basics of machine learning. Students develop an intuitive understanding of the core concepts of machine learning including supervised and unsupervised learning, classification and prediction. The course provides a number of practical examples from a wide range of disciplines including biomedicine, social sciences, and engineering. The course does not require any prerequisites in engineering or computer science.

SBC: *TECH*

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 202: Humanistic Engineering

The course discusses the nature of the co-dependencies of various human endeavors, like art, science and engineering, and the degree to which traditionally non-engineering elements, like meaning, fairness, or artistic creativity, should be considered by present processing / computational systems and methods in engineering. The course starts with presenting the main theories in philosophy, art, psychology, and engineering design on the nature and characteristics of evolution and progress. The main elements of engineering design for innovation are being discussed and how it relates to humanistic values. Computational methods towards mimicking and generating creative outcomes are presented and then compared to human creativity. The covered topics include the evolution process in art and engineering, its defining stages and elements, existing computational approaches towards co-achieving human and engineering goals with computational art as an example, the importance of expertise. The course offers exposure to existing software tools related to computational creativity.

Prerequisite: U2 standing or higher

SBC: *STAS*

3 credits

ESE 224: Advanced Programming and Data Structures

The course presents fundamental data structures and algorithms frequently used in engineering applications. Object oriented programming in C++ is used to teach the concepts. Discussed topics include: programming and applications of data structures; stacks, queues, lists, heaps, priority queues, and introduction to binary trees. Recursive programming is heavily utilized. Fundamental sorting algorithms are examined along with informal efficiency analysis. May not be taken for credit in addition to EEO 224.

Prerequisite: ESE 124

4 credits

ESE 271: Electrical Circuit Analysis

The course covers the following topics: passive circuit elements: resistors, capacitors, inductors. Elements of circuit topology. Kirchhoff's and Ohm's law. Nodal and mesh analysis. Equivalent circuits. Steady-state AC circuits. Phasors. Transient analysis. Laplace transforms. Fundamentals of AC power, coupled inductors (transformers). Not for credit in addition to EEO 271.

Prerequisite: MAT 127 or 132 or AMS 161
Pre/co-requisite: PHY 127/134 or 132/134 or 142

3 credits

ESE 272: Electronics

This is the first non-linear electronics class that introduces the students to the fundamentals of the circuit design through the architecture of a modern electronics system at the interface with sensors and actuators. Modeling of the non-linear devices, diode and MOS transistors, is presented, along with basic properties of MOS transistors for analog (amplification) and digital (switching) IC circuit design. Operational amplifier ideal and non-ideal models are explored along with the concepts of the feedback and stability. Signal conditioning circuits (fixed-gain, difference and instrumentation amplifiers, active filters), signal shaping circuits (rectifier, clipper, peak detector) and oscillators are presented. Basics of sample and hold circuit, data converters, digital signal processing platforms and radios are presented.

Prerequisite: ESE 271

4 credits

ESE 273: Microelectronic Circuits

This is the first integrated circuits class that introduces the students to the fundamentals of the non-linear devices and design of IC amplifiers. The course starts with the introduction to the device physics, operation and modeling of a diode. Operation of MOS transistor, derivation of the large-signal transistor current as a function of the terminal voltages in different regions of operation is then presented, along with the small-signal model. Single-stage amplifier structures are explored, along with the introduction of the implementation of current source and current mirror. Frequency-response of common-source amplifier is presented. The concepts of multi-stage amplification and differential pair are introduced. Operation modeling of bipolar transistors are presented, along with the common-emitter amplifier. Comparison of MOS and BJT transistor and performance of common-source and common-emitter is presented. Not for credit in addition to EEO 315.

Prerequisite: ESE 271

3 credits

ESE 280: Embedded Microcontroller Systems Design I

Fundamental design of microcontroller-based electronic systems. Topics include system level architecture, microcontrollers, memory, configurable ports, peripheral ICs, interrupts, sensors, and actuators, serial data protocols, assembly language programming, debugging, and table driven FSMs. Hardware/software trade-offs in implementing system functions. Hardware and software design are equally emphasized. Laboratory work involves design, implementation, and verification of microcontroller systems. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ESE or ECE major; ESE 118 or permission of instructor.

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 differs from other forms of writing, the components of technical writing, technical style, report writing, technical definitions, proposal writing, writing by group or team, instructions and manuals, 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. May not be taken for credit in addition to EEO 300.

Prerequisite: WRT 102; ESE or ECE major, U3 standing; ESE 280

2 credits

ESE 301: 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. Introduction to patents, copyright, trademarks and infringement using case studies. May not be taken for credit in addition to EEO 302.

Prerequisite: U3 or U4 standing; one D.E.C. E or SNW course

DEC: *H*
SBC: *STAS*

2 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 273

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. Not for credit in addition to EEO 301.

Pre- or Corequisite: ESE 271

3 credits

ESE 306: Random Signals and Systems

Random experiments and events; random variables and random vectors, probability distribution functions, random processes; Binomial, Bernoulli, Poisson, and Gaussian processes; Markov chains; significance testing, detection of signals, estimation of signal parameters; properties and application of auto-correlation and cross-correlation functions; power spectral density; response of linear systems to random inputs. May not be taken for credit in addition to EEO 306.

Prerequisite: ESE 305

3 credits

ESE 315: Control System Design

The course aims to introduce students to basic concepts of classical control theory, such as closed-loop systems, root-locus analysis, Bode diagrams and Nyquist Criterion, and their applications in electrical, mechanical, and electromechanical systems. The students are expected to master the methods for control systems design including basic feedback control and PID control, which have a major application in the design of process control systems for industry.

Prerequisite: ESE 305

3 credits

ESE 319: Electromagnetic Waves and Transmission Lines

Properties of generic uniform plane waves including phase and group velocities. Uniform plane electromagnetic waves (UPEMWs) consisting of an electric field wave and a magnetic field wave, both moving synchronously in space and time; mutual right-handed orthogonality between the electric and magnetic field vectors and the direction of propagation; Poynting vector. Transmission lines (TLs): voltage and current behaving as waves on TLs, voltage reflection coefficient, impedance transformation law, VSWR, Smith Chart, impedance matching. Maxwell equations, EM wave equation, boundary conditions. Scattering of UPEMWs incident normally or obliquely at the interface plane between two dielectric media. Waveguides: TE and TM modes of a rectangular waveguide,

cut-off frequencies, dominant mode, power flow. Not for credit in addition to EEO 319.

Prerequisites: ESE 271; AMS 261 or MAT 203 or MAT 307; AMS 361 or MAT 303 or MAT 308

3 credits

ESE 323: Modern Circuit Board Design and Prototyping

Design, fabricate, and test a prototype device using a custom made circuit board, surface mount components, and a 3D printed enclosure. Topics include printed circuit design, active and passive component selection, design for testability, solid modeling, and 3D printing.

Prerequisite: ESE 272 and ESE 280

3 credits

ESE 324: Advanced Electronics Laboratory

The objective of this advanced electronics lab course is to provide hands-on design experience for students. The students will have the opportunity to leverage theoretical knowledge acquired during ESE 272 and ESE 273 to design and test more complex and highly popular electronic circuits such as multi-stage amplifier, voltage regulator, and DC-DC boost and buck converters, data converters, and phase-locked loop. The initial several experiments will be based on the fundamental single stage amplifiers. The rest of the experiments will be more design centric where students will have the responsibility to determine either topology or the values of the circuit elements in each experiment in order to satisfy specific design objectives. The lectures will cover the theoretical principles as well as related design tradeoffs. Different topologies and analysis techniques will be presented for each circuit, guiding students during the design process. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: ESE 272 or ESE 211; ESE 273

3 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 273

3 credits

ESE 326: Fundamental Algorithms for Automated Electronic Design

Upon completion of the course, students will know to design and implement the fundamental algorithms for automated electronic design, such as system and circuit design. The discussed core algorithms include greedy algorithms, divide-and-conquer, quicksort, dynamic programming, graph algorithms, and string matching. Analysis of algorithms is also discussed. These algorithms are exemplified for basic electronic design tasks, like circuit partitioning, floorplanning, module placement, signal routing, task scheduling, resource allocation, and technology mapping. The course work involves programming exercises and one course project.

Prerequisites: ESE 224

3 credits

ESE 327: Fundamental Algorithms for Machine Learning Systems

The course presents the fundamental methods used in Machine Learning for engineering applications. The course discusses representation models for learning, extraction of frequent patterns, classification, clustering, and application of these techniques for different engineering applications. Supervised and unsupervised learning methods are discussed. The course includes two projects that involve devising and implementing the studied techniques and their evaluation using standard benchmark data.

Prerequisites: ESE 224

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 273

3 credits

ESE 331: Semiconductor Devices

The course covers physical principles of operation of semiconductor devices. Energy bands and energy band diagram, carrier densities, transport properties, generation recombination phenomena in bulk semiconductors, and the continuity equation are covered first. Equipped with an understanding of the character of physical phenomena in semiconductors, students learn the principles of operation, current-voltage characteristics, and nonidealities of p-n junction diodes, metal-semiconductor contacts, bipolar junction transistors, and field effect transistors. Not for credit in addition to EEO 331.

Prerequisites: AMS 361 or MAT 303; PHY 127/134 or PHY 132/134 or PHY 142

3 credits

ESE 332: Quantum Mechanics for Engineers

Introductory undergraduate level first course in quantum mechanics geared towards engineers and applied physicists. Comprehensive introduction to quantum mechanics and its application to real-world problems.

Prerequisites: PHY 122/124 or PHY 126 and 127 and 134 or PHY 132/134 or PHY 142/134; MAT 127 or 132 or AMS 161
Advisory Corequisite: AMS 261 or MAT 203 or 307

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 224 or CSE 214; ESE 280

3 credits

ESE 334: Introduction to Nanoelectronic Devices

The major goals and objectives are to provide undergraduate students with initial knowledge and understanding of nanoelectronic devices. The course will cover physical properties of low-dimensional structures (quantum wells, quantum wires, quantum dots, and superlattices) that create a basis for operation of nanoelectronic devices as well as nanostructure fabrication, characterization and applications in nanoelectronics. Additionally, the course will cover applications of nanotechnology in biology and medicine.

Prerequisite: ESE 331

3 credits

ESE 337: Digital Signal Processing: Theory

Introduces digital signal processing theory, discrete time sequences and systems, linear time-invariant (LTI) systems, convolution sum, Discrete Time Fourier Transform (DTFT), Z-transform, Discrete Fourier Series

(DFS), sampling DTFT, Discrete Fourier Transform (DFT), Fast Fourier Transform (FFT), sampling and reconstruction of continuous and discrete time signals, design of FIR and IIR filters, difference equations. May not be taken for credit in addition to EEO 303.

Prerequisite: ESE 305

3 credits

ESE 342: Communication Systems

Basic concepts in both analog and digital data communications; signals, spectra, and linear networks; Sampling and pulse modulation; Pulse modulation schemes; Principles of digital transmission; Behavior of analog and digital systems in noise; Channel capacity and channel coding schemes.

Prerequisite: ESE 306

3 credits

ESE 343: Mobile Cloud Computing

Introduction to the basic concepts of mobile cloud computing, including: 1. The mobile computing technology used in modern smart phones; 2. The cloud computing technology used in existing data centers; 3. The synergy of mobile and cloud computing and its applications; 4. Programming on smart phone utilizing data center services. Students will gain knowledge of: the fundamental principles of mobile cloud computing, the major technologies that support mobile cloud computing, the current challenges and primary areas of research within the field of mobile cloud computing, and a basic understanding of the role of mobile cloud computing in the context of everyday living.

Prerequisite: ESE 224 or CSE 214 or CSE 230 or ISE 208

3 credits

ESE 344: Software Techniques for Engineers

This course covers software techniques for solving electrical and computer engineering problems in the C++ programming language. Design, implementation, and application to engineering problems of non-linear data structures and related advanced algorithms are covered. This includes binary trees, trees, graphs, and networks. OOP features such as Polymorphism, templates, Exception handling, File I/O operations, as well as Standard Template Library are used in the programming projects.

Prerequisites: ESE 224

3 credits

ESE 345: Computer Architecture

This course focuses on the fundamental techniques of designing and evaluating modern computer architectures and tradeoffs present at the hardware/software boundary. The emphasis is on instruction set design, processor design, memory and parallel processing. Students will get an understanding of the design process in the context of a complex computer system. Students will undertake a VHDL/Verilog design project using modern CAD tools.

Prerequisites: ESE 280 and ESE 382

3 credits

ESE 346: Computer Communications

Basic theory and technology of computer communications. Introduction to performance evaluation, error codes and routing algorithms. Introduction to queueing theory, machine learning for networking and network planning. Other topics include Ethernet, wireless networks including LTE, 5G and 6G, fiber optic networking, software defined networking, networking on chips, space networks, data centers, grids and clouds. Not for credit in addition to CSE 310 or ISE 316 or ISE 317 or EEO 346.

Pre-or corequisite: ESE 306

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 280

4 credits

ESE 350: Electric Power Systems

Fundamental engineering theory for the design and operation of a modern electric power system. Modern aspects of generation, transmission, and distribution are considered with appropriate inspection trips to operating electric power facilities (when available). Topics included are: Three Phase AC systems, phasor and function of time analysis, per unit representation, transmission line parameters, delta-wye transformers, power flow, transient stability, renewable energy integration, and basics of power system protection.

Prerequisite: ESE 271

3 credits

ESE 352: Electromechanical Energy Converters

An introduction to the conversion of mechanical power to electric power (generators) and the conversion of electric power to mechanical power (motors). Analysis of the interaction of magnetic fields with electric current and moving conductors to produce electromagnetic force and induced voltage. Energy converters studied include three phase AC synchronous generators and motors, AC induction motors, DC linear and rotating machines, and single phase AC motors. An introduction to inverter-based renewable energy generations in power systems. May not be taken for credit in addition to EEO 425.

Prerequisite: ESE 273

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 118

4 credits

ESE 356: Digital System Specification and Modeling

A comprehensive introduction to the field of system level design. This course introduces basic concepts of complex hybrid (software/hardware) system modeling and simulation methodologies. Topics include top-down and bottom-up design methodology, system complexity refinement, SystemC specification language syntax and semantics, behavioral and system-level modeling, channel and interface modeling and implementation, and IP core development. Included are three projects on modeling and simulation.

Prerequisites: ESE 224 and ESE 280

3 credits

ESE 358: Computer Vision

Introduces fundamental concepts, algorithms, computational techniques, and applications in visual information processing. Covers image formation models and image filtering, binary image analysis, feature detection, contours, image segmentation, 3D image capture and analysis through stereo, motion, structured-light, and LIDAR, medical images, pattern classification, machine learning, and 3D object recognition.

Prerequisites: ESE 305; ESE 224 or CSE 230

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.

Pre- or corequisite: ESE 346 or CSE/ISE 310

3 credits

ESE 366: Design using Programmable Mixed-Signal Systems-on-Chip

This course focuses on development of mixed-signal embedded applications that utilize systems on chip (SoC) technology. The course discusses design issues such as: implementation of functionality; realizing new interfacing capabilities; and improving performance through programming the embedded microcontroller and customizing the reconfigurable analog and digital hardware of SoC. May not be taken for credit in addition to EEO 366.

Prerequisites: ESE 380 and ESE 372; ESE 224 or CSE 230

4 credits

ESE 375: Architectures for Digital Signal Processing

This course covers various aspects of architectures in digital signal processing and multimedia data processing. The topics include iteration bound analysis, retiming the circuits, unfolding and folding the architectures, algorithmic and numerical strength reduction for low power and low complexity design, introduction to array processor architectures and CORDIC implementation.

Prerequisites: ESE 280 and ESE 305

3 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 280

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 or ECE major; ESE 118 or permission of instructor

4 credits

ESE 388: Foundations of Machine Learning

This course provides an introduction to the fundamental concepts of machine learning. Statistical learning framework is utilized for clustering, classification, and prediction tasks. Concepts are reinforced through theoretical and programming assignments, with applications in computer vision, natural language processing and bioinformatics. May not be taken for credit in addition to EEO 388.

Prerequisites: ESE 224 and ESE 306

3 credits

ESE 411: Analog Integrated Circuits

Single-stage amplifiers biased and loaded with current mirrors. Frequency response. Two-stage operational amplifiers designed by conventional and computer-aided techniques. Negative feedback, stability and compensation. May not be taken for credit in addition to EEO 311.

Prerequisite: ESE 273

3 credits

ESE 412: Lightwave Devices

Introduction to optical semiconductor devices and their applications in telecommunications, optoelectronics, and consumer electronics-areas where signal processing or the transmission of signals across free space or fiber optic cables is involved. It discusses design and operation of optical modulators, quantum well lasers, light emitting diodes, and photodetectors.

Prerequisite: ESE 331

3 credits

ESE 413: Introduction to Photovoltaics

Introduction to the basic concepts of photovoltaic solar energy conversion, including: 1. The solar resource in the context of global energy demand; 2. The operating principles and theoretical limits of photovoltaic devices; 3. Device fabrication, architecture, and primary challenges and practical limitations for the major technologies and materials used for photovoltaic devices. Students will gain knowledge of: the device physics of solar cells, the operating principles of the major commercial photovoltaic technologies, the current challenges and primary areas of research within the field of photovoltaics, and a basic understanding of the role of photovoltaics in the context of the global energy system.

Prerequisite: ESE 331

3 credits

ESE 414: Fundamentals of Low Noise Electronics for Sensors

Introduction to sensor model, electronic noise, signal-to-noise analysis in frequency and time domains, low-noise charge amplification, low-noise amplifier design, filter design, analog and digital signal processing for sensors. May not be taken for credit in addition to EEO 414.

Prerequisite: ESE 411

3 credits

ESE 435: Power System Analysis

The course focuses on fundamental analytics of power systems. The course will help students understand major problems in power system static, dynamic, and stability analysis, as well as fundamental optimization issues in power system operation. The course covers power system steady-state modeling with emphasis on admittance and impedance matrix, power system dynamics modeling with emphasis on the functional state-space model, and power system analytics with emphasis on power flow analysis, eigenvalue analysis, and time-domain transient simulation. Advanced topics such as power system optimization exemplified by optimal power flow and unit commitment, as well as power system control will also be introduced. Emphasis is on using applied mathematics to analyze power system problems.

Prerequisite: AMS 210 or equivalent; ESE 271; U3 or U4 standing

3 credits

ESE 440: Senior Design I

The senior design sequence (ESE 440 and ESE 441) is a two-semester, team based and independent capstone project with deliverables. The primary objective of the senior design course sequence is to provide

a vehicle for students to transition from an academic environment to that of a commercial/ professional engineering environment. Students learn to work in teams to complete a project from concept, practical design based on multiple constraints, to creating a deliverable product meeting the design specifications. Students present written, oral and poster presentations of the project. While most of the project work is done outside the classroom, guest speakers provide insight into other related topics from resume preparation, to program management, to team dynamics and to design methodologies used in industry. The project incorporates appropriate engineering standards and multiple realistic constraints. The final grade will be assigned at the end of the two course sequence ESE 440-441. Not counted as a technical elective. May not be taken for credit in addition to EEO 440. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: ESE or ECE major, U4 standing; ESE 300; For ESE majors: two ESE electives or for ECE majors: two ECE electives.

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

ESE 441: Senior Design II

The senior design sequence (ESE 440 and ESE 441) is a two-semester, team based and independent capstone project with deliverables. The primary objective of the senior design course sequence is to provide a vehicle for students to transition from an academic environment to that of a commercial/ professional engineering environment. Students learn to work in teams to complete a project from concept, practical design based on multiple constraints, to creating a deliverable product meeting the design specifications. Students present written, oral and poster presentations of the project. While most of the project work is done outside the classroom, guest speakers provide insight into other related topics from resume preparation, to program management, to team dynamics and to design methodologies used in industry. The project incorporates appropriate engineering standards and multiple realistic constraints. Not counted as a technical elective. May not be taken for credit in addition to EEO 441. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: ESE 440

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

ESE 442: Recent Advances in Communications and Wireless Networks

This course covers major wireless network protocols and recent advances on selected topics of communications and networks. Students are expected to survey the current literature on the subject area of the course and complete a project.

Prerequisite: ESE 342 or ESE 346 or CSE 310

3 credits

ESE 451: Power Electronics

An introduction to the design and characterization of high-efficiency switch-mode power converters. Fundamental dc-dc converter topologies will be introduced and analyzed in the steady state and dynamically. The application of semiconductor devices in power applications including MOSFET, BJT, IGBT, and thyristors will be studied. Non-idealities in circuit components and the design of magnetic components will be discussed. Students will build and characterize circuits of their own design.

Prerequisite: ESE 273

3 credits

ESE 452: Advanced Power Electronics

A continued study of switching power converters after ESE 451. Topics include power factor and AC power line current harmonics, analysis of discontinuous circuit operation, resonant converters, and soft-switching. The advantages of wide band gap semiconductors in high power applications will be discussed. Students will build and characterize their designs.

Prerequisite: ESE 451

3 credits

ESE 457: Fundamentals of Digital Image Processing

This course covers fundamentals of digital image processing. Basic principles, computational algorithms, and applications are covered. Topics include image formation and sensing, sampling and quantization, image enhancement and histogram analysis, geometric transformations, filtering in the spatial and Fourier domains, edge and feature detection, color image processing, image deblurring, and medical images and computed tomography.

Prerequisites: ESE 305; ESE 224

3 credits

ESE 462: AI Driven Smart Grids

The course focuses on Artificial Intelligence (AI) applications to power system modeling, analysis, and operation. Topics include basics of AI and smart grid, AI-driven modeling such as load/renewable energy prediction and dynamic model discovery, AI-driven power system analysis such as dynamic simulation, and stability and security assessment, and AI-based operation such as optimal dispatch and emergency control. Emerging topics, including generative AI, quantum machine learning, and trustworthy AI, will also be discussed. Students enrolled in the course are expected to possess a foundational capability in using Matlab or Python for developing basic programs.

Prerequisites: ESE 350 or ESE 435; AMS 210 or MAT 211

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 repeated once but only three credits may be counted as an ESE elective.

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.

SBC: *EXP+*

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

SBC: *EXP+*

3 credits

ESE 481: Design of Secure IoT Embedded Systems

This course focuses on the design, development, and implementation of secure IoT systems using microcontrollers, radio modules, sensors, and actuators. Topics include security and access management. Installation of security credentials on a microcontroller. Microcontrollers with radio modules. Pre-provisioned radio modules. AWS serverless IoT. ExpressLink and AT commands. Permissions, policies and rules. IoT payloads and JSON. Message brokers. Publish and subscribe principle. MQTT broker and verification tools. IoT centric cloud services and their use. Operating a microcontroller in low power modes. The laboratory portion of the course will provide hands-on experience in designing and implementing IoT embedded systems.

Prerequisite: ESE 381

4 credits

ESE 488: Internship in Electrical/ Computer Engineering

An independent off-campus engineering project with faculty supervision. May be repeated but only three credits may be counted as an ESE elective.

Prerequisites: ECE or ESE major; U3 or U4 standing; 3.00 g.p.a. minimum in all engineering courses; permission of department

SBC: *EXP+*

3 credits

ESE 494: Honors Seminar on Research

An introduction to the world wide research enterprise with special emphasis on research in the United States. Topics include research funding, publications, patents, career options, theory versus experiment, entrepreneurship and presentation skills.

Prerequisite: Acceptance into the ECE or ESE Honors programs or permission of instructor.

1 credit

ESE 495: Honors Research Project

A research project, for students in the honors program, conducted under the supervision of an electrical and computer engineering faculty member.

Prerequisites: ESE 494, permission of department and acceptance into the ECE or ESE Honors programs

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 may be counted as an ESE elective.

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. Engineering methods and theory through case studies and real-world applications. Introduction to modern engineering design and problem solving through discussion of design theory and tools with an emphasis on design for manufacturing and reliability, engineering ethics including value sensitive design, and participation in a design project.

Pre- or co-requisites: MAT 125 or AMS 151 or MAT 131 and PHY 125 or PHY 131 or PHY 141

SBC: *TECH*

3 credits

ESG 111: Programming for Engineers

Introduces computer programming techniques for engineering students who have not completed any programming courses prior. Students learn the basics of programming in general and programming MATLAB in particular. This is designed for students to become comfortable enough to continue learning MATLAB and other programming languages on their own.

Pre- or Corequisites: AMS 151 or MAT 125 or 131; PHY 125/133 or 131/133 or 141

3 credits

ESG 198: Fundamentals of Engineering Chemistry

ESG 198 is a course designed for engineering majors which will incorporate the major concepts and principles of CHE 130 and CHE 131. Applications of these principles will be emphasized. The major areas which will be covered are: Matter and energy relationships; structure of matter; chemical bonding; gases, liquids and solids; solutions; acids and bases; oxidation-reduction; electrochemistry; thermodynamics; kinetics and equilibrium. May not be taken for credit in addition to CHE 131, or 152.

Pre- or Corequisites: PHY 132 or PHY 142 or PHY 126 and PHY 127; MAT 127 or MAT 132 or AMS 161

3 credits

ESG 199: Introduction to Undergraduate Research

An introduction to independent research and basic research skills. Students perform an independent research project in engineering science under the supervision of a faculty member. May be repeated.

Prerequisite: Permission of instructor

0-3 credits

ESG 201: Learning from Engineering Disaster

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 stock market crashes to climate-driven catastrophes, 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. The impact of engineers' values and ethics, as well as the crucial role of diversity and inclusiveness on successful engineering design, will be discussed in detail.

Prerequisite: one D.E.C. E or SNW course

DEC: *H*
SBC: *DIV, STAS*

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 126/127/134

3 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

0 credit, S/U grading

ESG 302: Thermodynamics of Materials

The basic laws and concepts of thermodynamics are elucidated, and the important thermodynamic relationships are systematically developed with reference to the behavior of materials. The thermodynamics of solids is discussed, including the thermodynamics of solutions and the calculation of reaction-free energies and equilibria in condensed phase reactions such as phase transformations, oxidation, and diffusion.

Prerequisite: ESG 198 or CHE 131/133 or CHE 152 and AMS 261
Advisory Corequisite: AMS 361 and CHE 132/134 or CHE 154

3 credits

ESG 312: Engineering Laboratory

Laboratory exercises and lectures covering the theory, practice, and design of engineering experimentation. The course has three components: error analysis and data message; electrical circuits and experiment control; and mechanical and optical measurement. Laboratory fee required.

Prerequisites: PHY 126 and 127 or PHY 132/134; U2 standing
Corequisite: ESG 300

4 credits

ESG 316: Engineering Science Design 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 100; AMS 161 or MAT 127 or MAT 132

4 credits

ESG 332: Materials Science I: Structure and Properties of Materials

A study of the relationship between the structure and properties of engineering materials and the principles by which materials' properties are controlled. The structure and structural imperfections in simple crystalline materials and the role that these factors play in defining electrical conductivity, chemical reactivity, strength, and ductility are considered. The molecular structure of polymers is discussed and related to the behavior of plastics, rubbers, and synthetic fibers. The principles of phase equilibria and phase transformation in multicomponent systems are developed. These principles are applied to the control of the properties of semiconductors, commercial plastics, and engineering alloys by thermochemical treatment. Corrosion, oxidation, and other deterioration processes are interpreted through the interaction of materials with their environment.

Prerequisites: CHE 131 and CHE 133 or equivalent (or Mechanical Engineering majors may use MEC 301 as a corequisite)

3 credits

ESG 333: Materials Science II: Electronic Properties

After a review of quantum mechanics and atomic physics, the binding energy and electronic energy levels in molecules and solids are discussed. The free-electron theory of metals is introduced and applied to the quantitative treatment of a number of electron emission effects. The band theory of solids is developed quantitatively via the Kronig-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 251/252; ESG 302 or CME 304

3 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: Junior or Senior Standing

1 credit

ESG 420: Fluid Flow, Heat & Mass Transport

This course introduces the description of phenomena associated with fluid statics and fluid flow and the unifying principles and analytical description of phenomena of momentum transport (viscous flow), energy transport (heat conduction and convection) and mass transport (diffusion) in continuous media; similarities and differences in these phenomena. Not for credit in addition to MEC 364.

Prerequisites: PHY 127/134 or PHY 132/134 or PHY 142; AMS 361 or MAT 303 or MAT 305

3 credits

ESG 440: Capstone Engineering Design I

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 312; ESG 316; ESG 332; ESG major; U4 standing; permission of the department

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

ESG 441: Capstone Engineering Design II

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

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

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

ESM

Materials Science

ESM 121: Better Planet By Design

The course explores new ways of steering technological progress for a better planet. The lectures will blend introductory concepts of environmental science, engineering, social sciences, economics and health in relation to environmental protection and pollution prevention. They will be suitable for engineering, science, humanities and social science majors. This course will illustrate concepts of novel and sustainable technologies for improving water systems, air quality and waste. It will allow learners to understand the limitations of technological approaches as political, social and economic barriers are often more significant than the engineering challenges.

SBC: *STAS*

3 credits

ESM 150: Materials of the Modern World

Many of the technologies we rely on in our everyday lives - e.g. bridges, buildings, and other infrastructure, computers and modern electronics, energy efficient means of transportation, among many others - have only been made possible through the development and implementation of cutting-edge materials. Materials science principles will be introduced in the context of modern-day engineering applications. An overview of materials structure and its implications for engineering properties will be discussed and connected to real-world technologies through case studies. Design, selection, and problem solving techniques in material science will be demonstrated through problem sets and an interactive materials design project. Note: This course may not be used by ESG majors as a substitute for ESG 332.

Prerequisite: Level 2+ or higher on the mathematics placement examination

SBC: *TECH*

3 credits

ESM 212: Introduction to Environmental 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 119 or 121 or 125 or 131 or 141.

3 credits

ESM 213: Introduction to Nanotechnology Studies

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 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 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 or CME 304

3 credits

ESM 336: Electronic Materials

The properties of intrinsic and extrinsic semiconductors are discussed with particular attention first to the equilibrium distribution of electrons in the bands and then to the nonequilibrium transport of charge carriers. The properties and applications of photoconductors and of luminescent materials are then described. The concept of stimulated emission is introduced, laser operation explained, and laser materials discussed in relation to their applications in science and technology. Other topics considered are the properties of magnetic materials, of dielectric materials, and of superconductors.

Prerequisite: ESG 333

3 credits

ESM 339: Microfabrication and Thin Film Processing of Advanced Materials

Fundamental aspects of thin film materials design, fabrication, and characterization. Overviews of semiconductor fabication, 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 231 for ESE majors

4 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

SBC: *TECH*

3 credits

ESM 453: Biomaterials

This course focuses on the clinical performance of metals, ceramics and polymers and discusses the chemical, physical, mechanical and biological questions raised by the unique use of these materials within the human body. The material's response to the various components of its biological environment are addressed, followed by the response of the host to the presence of the implanted material. Applications to tissue engineering and the relevance of nanoscale phenomena are also discussed. This course is offered as both ESM 453 and CME 371. Not for credit in addition to BME 353.

Prerequisites: U3 or U4 standing; BME, CME or ESG major

3 credits

ESM 455: 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 460: 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 469: 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. May not be taken for credit in addition to CME 369.

Prerequisite: ESG 332

3 credits

ESM 475: Undergraduate Teaching Practicum

May be used as an open elective only and repeated once.

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

SBC: *EXP+*

3 credits

ESM 486: Innovation and Entrepreneurship in Engineering

Designed for upper division students, this course will explore the key elements and challenges involved in implementing innovation in complex engineering systems. This course will tackle this issue through historical analysis of engineering innovation through detailed case studies and examples. Framework for entrepreneurial developments will also be analyzed.

Prerequisites: U4 standing; B+ or higher in ESG 316 or ESE 380 or ESM 450 or MEC 310 or permission of instructor.

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

SBC: *EXP+*

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: The Digital Generation: Mastering Multimedia Tools That Shape Our World

This course equips students with the essential skills to excel in the digital era through practical experience leveraging accessible computer applications and multimedia tools. Participants will explore digital media creation and adapt their projects for various digital platforms. The curriculum is designed to enhance information presentation skills using a range of web and app-based tools. Focusing on digital and multimedia literacy, the course develops competencies in design and

presentation, culminating in the creation and showcase of a detailed portfolio of multimedia projects. This course aims to empower students to actively navigate and influence the digital world.

SBC: *TECH*

3 credits

EST 102: 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.

DEC: *E*
SBC: *SNW*

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. May be repeated for up to a limit of 6 credits but only 3 credits of EST 104 may be used for major credit.

Prerequisite: CSTEP student

1-3 credits

EST 105: The Digital Generation: Leveraging Technology to Build 21st Century Skills

Students today face many challenges keeping up with technology trends and the skills necessary to be successful in the digital world. In this course students will develop the 21st century skills necessary to become effective lifelong learners leading to a successful career. We will explore a number of topics including information literacy, digital citizenship, understanding social media, collaborative environments and cloud based applications as we as organizing your digital world. The culminating activity for this course is the creation of a personal technology learning and management plan showcasing the tools and skills learned throughout the course.

SBC: *TECH*

3 credits

EST 106: The Digital Generation: Creating a Professional Web Presence

Creating a positive digital profile can be a challenging task for the 21st century student. In this course, learn how to utilize the power of the Internet and social media to enhance your web presence and digital profile. We will explore a number of topics including building a strong web presence, leveraging social media, creating and uploading video content, blended and distance learning as well as mobile devices as a learning tool. The culminating activity for this course is the creation of a positive and sustainable web presence and digital profile.

SBC: *TECH*

3 credits

EST 110: The Digital Generation: Investigating AI Ethics, Social Impact and Real-World Applications

This course offers a comprehensive exploration of Artificial Intelligence (AI), covering its ethical implications, societal influence, technical foundations, and real-world applications. Through engaging discussions, case studies, and hands-on projects, you will develop a deeper understanding of AI's transformative power, honing critical thinking and practical skills essential for navigating this evolving field. Whether considering a career in technology or simply seeking to be informed about this rapidly advancing field, this course provides a solid foundation for understanding AI's potential and challenges.

SBC: *TECH*

3 credits

EST 192: Introduction to Modern Engineering

Familiarizes students with systems and decision-making concepts of modern engineering and technology. The conceptual areas to be studied include an engineering approach to problem solving and design, modeling of dynamic systems, and technology assessment. The artificial heart program, solar energy technology, and building access for the handicapped are some of the socio-technological case studies that are used.

Prerequisites: Course is for students without prior engineering experience, permission of the department required

3 credits

EST 194: Decision-making

Reviews common justifications for decisions through quantitative, algorithmic processes and reducing multiple criteria to one variable. Covers basic concepts in cost-benefit analysis, risk assessment, decision trees, expected monetary value, and the analytical hierarchy process. Discussions include uncertainties associated with translating qualitative criteria into quantified variables and assigning values to probabilistic events.

Prerequisite: TSM major

DEC: *C*
SBC: *QPS*

3 credits

EST 200: Cultural Technologies and Society

This course will explore how cultural technologies influence and change many aspects of society including religious views, politics, war, economic development, science, art, music and other dimensions of the world's civilization. We will examine human history punctuated by major breakthroughs in cultural technologies including ideographic/syllabic writing, alphabetic writing, printing, photography, telegraph, telephone, sound recording, motion pictures, radio, television, computers, the internet, smart phones, robotics and beyond. The culminating activity for this course is a project designed to showcase how current and future technology is likely changing our global civilization in one of the thematic societal areas discussed.

Prerequisites: One DEC E or SNW course; WRT 102

DEC: *H*
SBC: *STAS*

3 credits

EST 201: 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. E or SNW course

DEC: *H*
SBC: *STAS*

3 credits

EST 202: Introduction to Science, Technology, and Society Studies

The dynamics of the relations among modern science, the development and use of technology through engineering, and social concerns. Introduces basic concepts for science-technology studies. Ethical and policy issues that affect the management of science

and engineering as expressed in technology are covered.

Prerequisite: TSM major

SBC: *TECH*

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 204: Modern Digital Technology and Innovation

This course helps students develop an understanding of innovation, digital technology and design through the use of social networks, innovation, software, and new technology. Visualization tools such as Virtual Reality and Augmented Reality as well as other techniques will be discussed to understand how they are used to evaluate the goals. Students will learn to assess the value of these systems and improve organizations productivity related to innovation and customer engagement, all focused on a cross discipline approach to a team. Students will analyze and build a technological project from idea to creation to ensure they understand all aspects.

SBC: *TECH*

3 credits

EST 205: Introduction to Technological Design: Innovation and Design Thinking

Using a design thinking approach to solve real world problems with technology, broadly defined. Design is treated as a universal human activity comprised of learnable principles, processes and skills. Students will identify a need (through empathy), define a problem, and work in a team on a technological solution, using prototyping and testing to refine their design. Over the semester, students will create and work on a collaborative website for their project. They will also learn two online technologies (one for 3D modeling, the other for app development) which they may use to prototype their design.

SBC: *TECH*

3 credits

EST 207: Interaction Design

The design of interactive user experiences. Human perception, motivations, and how people interact with devices. User-centered design. Rapid prototyping and iterative design/development with digital toolsets.

SBC: *TECH*

3 credits

EST 208: Virtual Distance Foundations: Collaborating Across Boundaries in the Digital Age

Today's digital, "smart" technologies have changed the very fundamentals around which human beings interact, understand each other and collaborate; creating many opportunities but also posing major challenges especially when it comes to effective collaboration across boundaries. In this course students will learn how to overcome these barriers and become exceptional collaborators (and leaders) under any circumstance enhancing their competitiveness in the job market as well as other life situations. Leveraging the strong foundations of Virtual Distance - a multi-dimensional model that's been used by thousands worldwide to enhance collaboration across industry, government, non-profits, and more- students will get hands-on experience in mastering and honing collaboration skills across different organizational and cultural settings.

SBC: *TECH*

3 credits

EST 209: Introduction to Italian Design: Theory and Practice

Italian material and aesthetic culture as a source for design and technology. Lectures and design in CAD practice especially for engineering students. The work of the American, global and Italian design practitioners, in a study abroad class in Rome. This is a series of practices in traditional, modern, and transmedia Italian design with the focus on automobile design as a capstone. The student will apply the aesthetic and engineering concepts from the Italian national culture and use written essay, hand drawing, and CAD drawing in open source software, in order to understand the links between the application of any design technology and the general aesthetics of the Italian culture. The student will synthesize quantitative and/or technical information in the design of products, and auto design and make informed judgments about the origin and reciprocal relationship between the technology of commodities, design in general, and the Italian humanities.

SBC: *STAS*

3 credits

EST 210: Emerging Technologies in Atypical Operations

This course will cover topics surrounding the current operations, and future outlooks of technological impact in modern society and unconventional uses of such. A unique part of this course is the practical applications of leading-edge operational technologies will be introduced such as IoT Devices, AI, as well as functional uses of drone technology in society today. Students will gain an understanding of the foundations of "thinking outside the box", emergency preparedness, and the surrounding core values of ethics, planning, and decision making.

Prerequisite: WRT 102 or equivalent

SBC: *TECH*

3 credits

EST 221: Multimedia for Online Content Platforms

So you want to be an online content creator? Looking to dive into the world of YouTube, Instagram, TikTok, Reddit, etc? EST 221 builds on the multimedia asset building skills introduced in EST 100. Combine your photographic editing, graphic/logo design, and animation skills into a complete piece of online content for posting to online web content sites like YouTube, Instagram, and Reddit. Students will continue their exploration of the Adobe Creative Suite by developing their own videos (Adobe Premiere), audio samples/tracks (Adobe Audition), and graphics (Adobe Photoshop/Illustrator) to assemble content to post online. Learn to use the tools that some of the most popular YouTubers and online influencers use today and be limited only by your creativity and unique ideas.

SBC: *TECH*

3 credits

EST 230: Information and Communications Technology for Sustainable Development

The Internet is the largest engineered construction project in human history and it is generating sweeping social, political and economic change. Coinciding with this digital network revolution is a growing awareness of the challenge of environmental sustainability. Although the digital transformation is still in its early stages, the shape of certain technological tools and skills required for the hyper connected digital era are already apparent. The overarching theme of this course is to introduce the relationship of the emerging digital communication ecosystem, on the one hand, and possibilities for global environmental sustainability on the other.

In the process, it introduces students to key digital literacies and technological skills.

SBC: *TECH*

3 credits

EST 240: Visual Rhetoric and Information Technology

Seeing comes before words. The focus of this survey course is on the visual communication code, and on implementation of effective presentation design. Students will explore the theories of information visualization as well as the underlying scientific phenomena. We will examine and discuss the impact of such technologies as photography, cinema, Internet, mobile, and virtual reality on democratization of visual culture. Students will learn and apply the skills, techniques, and resources of the course in order to create a state-of-the-art term project presentation.

SBC: *TECH*

3 credits

EST 280: Fundamentals of Industrial Engineering

This course will cover Fundamental Industrial Engineering concepts and practices.

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

SBC: *TECH*

3 credits

EST 291: 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.

Prerequisite: one D.E.C. E or SNW course (except those designated ANP); any AMS or MAT course

DEC: *H*
SBC: *STAS*

3 credits

EST 304: Communication for Engineers and Scientists

In today's society, it is essential for educated people to be able to present technical information to a range of audiences using various communication methods and styles. In EST 304, students learn how to communicate technical concepts that make sense not only to other scientists and engineers, but also to audiences ranging from students to technical consumers in the world marketplace. Course content emphasizes: writing clearly, concisely, and persuasively; creating effective visuals; presenting research verbally during oral presentations; providing and receiving feedback on assignments; and working collaboratively in groups. Written, verbal and visual communication styles are examined.

Prerequisite: WRT 102; TSM major

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 306: Cloud Computing Applications

This course will examine the applications of cloud computing. It covers the introduction of cloud computing and its applications, cloud computing security, assessment of cloud computing, BPM, Scrum methodology, Big Data and business transformation, and IBM Smartcloud. It also includes a survey of applications or business models in cloud applications such as Facebook and Amazon.

Prerequisite: EST 305

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.

Prerequisite: TSM or ISE major

SBC: *TECH*

3 credits

EST 320: 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.

Prerequisite: MAT 123; one D.E.C. E or SNW course

DEC: *H*
SBC: *STAS*

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. Course is cross-listed as CSE 323, EST 323 and ISE 323.

Prerequisites: CSE 214 or CSE 230 or CSE 260 or ISE 208

3 credits

EST 325: 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.

Prerequisite: one D.E.C. category E or SNW course

DEC: *H*
SBC: *STAS*

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.

Prerequisite: WRT 102; U3 or U4 standing

3 credits

EST 327: Systems Engineering Management, Elements of Product Design and Development

This course serves as an introduction to the process of product design and development as it relates to a Systems Engineering approach. This course will familiarize students with technical product design and development systems, as well as engineering research methods. This Systems Engineering course also includes the advantages and limitations of creative product design, effective and efficient paths to successful implementations, technical reviews, and technical risks associated with cost, scheduling and performance goals. This course introduces the Agile system development process, emphasizing a design process that uses continuous input by customers/end users to define user needs of the initial design specifications.

Prerequisite: AMS 161 or MAT 127 or 132; WRT 102; CEAS major or permission of the department.

3 credits

EST 330: 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, information/communications technology, and regional planning to increase resilience; and the institutional mechanisms, both domestic and international, for providing international technology support and post-disaster assistance. Case studies of disasters in a number of countries are included.

Prerequisite: U3 or U4 standing; one D.E.C. E or SNW course

DEC: *H*
SBC: *STAS*

3 credits

EST 331: Engineering Ethics

Individuals and organizations must make ethical decisions in the course of scientific and engineering endeavors. Various concepts have been developed related to moral conduct, character, ideals and relationships between people, organizations and societies, and these concepts relate to how we resolve our ethical issues. Formal framework for ethical decision making will be presented, and tested through careful examination of case studies drawn from engineering and industry.

Prerequisite: WRT 102; U3 or U4 standing; TSM major

SBC: *STAS*

3 credits

EST 339: Benevolent Computing

This course explores the recent phenomenon of software applications that leverage social networks and mobile and cloud computing to solve local and global problems. The course uses case studies to document the process of developing civically-oriented applications. Students work in teams to identify campus causes (or off-campus non-profit organizations); and to design and develop applications (mobile or web-based) that will help those organizations achieve their goals. The course material synthesizes some of the department's offerings in software engineering, human computer interaction, and ethics, but provides a practical focus and test bed for those concepts. Emphasis is on System Design, not on specific programming languages or development environments. This course is offered as ISE 339 and EST 339.

Prerequisite: U3 or U4 standing; ISE or TSM major

3 credits

EST 341: Waste Treatment Technologies

Anthropogenic impacts can be mitigated by treating wastes prior to their discharge to the environment. Human health should also be protected from the impacts of waste disposal. This course will examine technologies such as wastewater management, solid waste practices, and drinking water treatments that minimize the effects of human wastes through a close examination of a public health controversy in Baltimore using "active learner" principles. Field trips (4) and group work are essential elements of the course.

Prerequisite: EST 202 or MAT 123 and one D.E.C. E or SNW course

SBC: *TECH*

3 credits

EST 342: Industrial Engineering, Intro to Operations Research I

This course is intended to be an introduction to operations research models and applications within industrial engineering. This course will introduce models in operations research. The student will learn to formulate, analyze, and solve mathematical models that represent real-world problems. The course will cover linear programming and the simplex algorithm, and related analytical topics. It will also cover transportation problems, networks, integer, and non-linear models and models that handle randomness inherent in most real systems. Topics such as queuing models are included. Upon completion of this course the student will be capable of identifying problems in which operations research models can be utilized, as well as the ability to solve such problems using these models. Not for credit in addition to AMS 341.

Prerequisite: C or higher in MAT 127 or 132 or AMS 161 or level 9 on the mathematics placement examination

3 credits

EST 344: Technical Writing

This course introduces students to some of the specialized forms of writing used in technical environments. Topics include data descriptions, laboratory procedures, manuals, specifications, proposal preparation and responses.

Prerequisite: EST 304

3 credits

EST 364: How to Build a Startup

Interactive hands-on course immerses students in real-world experience of business startup. Collaborating in interdisciplinary teams, formed before or in class, they learn structured methodology for testing assumptions underlying business ideas to determine viability of profit/not-for-profit business opportunities. Instructors and mentors guide teams to contact prospective customers and others, presenting conclusions each week. Mastery of methodology is key measure; teams forming companies receive post-class support, may compete for cash awards.

Prerequisite: completion of WRT 102; DEC Category C or QPS; U3 or U4 standing

SBC: *EXP+*

3 credits

EST 371: Data Science Management

The concepts of big data, data science, cloud computing, and data visualization for technology management are introduced. They are explored in the context of the digital network revolution, characterized by social media, Internet of Things (IoT), and mobile devices as sources of big data. Services that use large amounts of data and the statistical and software tools that enable them are emphasized. The underlying networking infrastructure is explained as a function of cloud computing. The case studies focus on information and communications technologies for sustainable development (ICT4D).

Prerequisites: AMS 161 or MAT 132 or MAT 127; CSE 114; U3 or U4 standing

3 credits

EST 372: The Mobile Revolution in Development

This course will explore three themes: [1] current and future trends of digital formation

technology toward mobility, [2] combined with many other technologies increasingly repurposed and adapted toward mobility and sustainability (wearable, IOT), [3] along with skills required for employing such arrangements effectively toward advancing social and economic development.

Prerequisites: AMS 161 or MAT 132 or MAT 127; EST 320; U3 or U4 standing
Corequisite: CSE 114

3 credits

EST 388: Special Topics in Technological Systems Management

A lecture or seminar course on a current topic in technology and society. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as topic changes.

Prerequisite: TSM major or permission of instructor or department.

1 credit

EST 389: Special Topics in Technological Systems Management

A lecture or seminar course on a current topic in technology and society. Semester supplements to this Bulletin contain specific description when course is offered. May be repeated as topic changes.

Prerequisite: TSM major or permission of instructor or department.

3 credits

EST 391: Technology Assessment

This class focuses on technologies and the systems in which they evolve to highlight different forms of evaluating technology. An overview of various methods, approaches, and tools for evaluation will be provided, including SWOT, STIP, forecasting, lifecycle assessments, and impact and risk assessments. The class will provide a context and framework for understanding policy applications of various technologies, as well as broader societal implications. Challenges and opportunities of technological change will be examined in the context of societal implications, including environmental change, ethics, economics, science and engineering, and infrastructure. Students evaluate real-world technologies throughout the semester.

Prerequisites: MAT 127 or 132 or AMS 161; U3 or U4; TSM major

DEC: *H*
SBC: *STAS*

3 credits

EST 392: Engineering Economics

This course has a systems analysis approach to problems of planning and design in manufacturing and technical sectors of industry, using principles of cash flow equivalencies. It covers aspects of engineering alternatives through financial concepts including time value of money, annual cost, present worth, incremental rate of return and cost-benefit analysis, analysis of various types of cash flows, development of rate of return, benefit-to-cost ratios, depreciation and the effects of investment tax assessment. Capital allocation theory is used to evaluate competing investment programs.

Prerequisites: MAT 127 or 132 or AMS 161; TSM, CIV, or MEC major
Advisory Prerequisites: EST 391; EST 393

DEC: *F*
SBC: *SBS*

3 credits

EST 393: Project Management

This course addresses fundamental project management concepts and skills needed to successfully initiate, lead, monitor, control and realize projects execution. In this course, students explore project management with a practical approach through case studies and group projects.

Prerequisites: MAT 127 or 132 or AMS 161; U3 or U4; TSM major

3 credits

EST 440: Interdisciplinary Research Methods

This course uses scientific research and 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 will work in teams to conduct a technology assessment. Examples of various types of technology assessments will be studied, and students will discuss analysis techniques and team structuring in order to plan and execute a successful project.

Prerequisites: EST 391; TSM major; U4 standing

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

EST 441: Interdisciplinary Senior Project

Students will select a technology-oriented topic, one that could be related to a selected class theme or be of their choosing. Students will work individually on the topic and present on their research. A paper will also be produced. A book on describing what "technology" is, and how new technologies develop, will be closely read.

Prerequisite: EST 440

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

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

SBC: *EXP+*

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.

Prerequisite: TSM Major; Permission of the department

SBC: *EXP+*

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

SBC: *EXP+*

0-3 credits

EUR

European Studies

EUR 101: 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.

DEC: *G*
SBC: *GLO*

3 credits

EUR 201: Development of European Culture

An introduction to the imporant 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: one D.E.C. B or HUM course

DEC: *I*
SBC: *HUM*

3 credits

EUR 390: 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

DEC: *I*
SBC: *ARTS, HFA+*

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

SBC: *ESI, WRTD*

3 credits

EUR 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any EUR course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

EUR 459: Write Effectively in European Studies

A zero credit course that may be taken in conjunction with any 300- or 400-level EUR course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

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: Externship: Applied Learning for Career Readiness

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.

Prerequisite: Only matriculated SBU students may enroll in EXT. Minimum overall GPA of 2.5 with at least one prior semester of attendance at Stony Brook; WRT 102; acceptance by a faculty sponsor and permission of the Career Center

SBC: *EXP+*

0-3 credits, S/U grading

EXT 488: Externship: Applied Learning for Career Readiness II

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.

Prerequisite: Only matriculated SBU students may enroll in EXT. Minimum overall GPA of 2.5 with at least U3 standing; acceptance by a faculty sponsor and permission of the Career Center

SBC: *EXP+*

0-6 credits, S/U grading

FLA

Foreign Language Teacher Preparation

FLA 307: Critical Pedagogy

An introduction to the theories and practices of critical pedagogy. Critical pedagogy assembles numerous forms of academic approaches to teaching and curriculum that are informed by critical social theory. As the educational arm of critical social theory, critical pedagogy engages educators in understanding the relationships among knowledge, ideology, and power. We will read works from several critical pedagogy theorists to explore and analyze some of the key themes within critical pedagogy (education & power; difference & pluralism; transformative education; the social construction of knowledge; dialogic relations in the classroom; teaching for social justice). Learning through collaborative inquiry, we will translate the theories in these readings into practice and will test concepts of teaching and learning "critical (second/foreign) language and literacy" in a school setting.

Prerequisite: Admission to the Foreign Language Teacher Preparation Program

3 credits

FLA 320: Pedagogy in Practice

An exploration into the application and implementation of numerous pedagogical techniques for the World Language classroom. Supported by educational theory, this course will serve as a guide for students in their training of classroom management strategies, curation of authentic resources for various proficiency levels, use of Comprehensible Input (CI), creation of integrated performance assessments (IPAs) and other formative assessments across grade levels (K-12). This course will highlight World Language Literacy Skills and Literacy for Heritage Language Learners. The course will culminate with the creation of a unit plan to be added into their final portfolio.

Pre- or Corequisites: FLA 339 or FLA 340 or Permission of the Instructor

SBC: *ESI*

3 credits

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 (grades 7-12). 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 (grades 7-12). 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

SBC: *CER, EXP+, SPK*

3 credits

FLA 400: Experiential Learning, Speak Effectively, Practice Critical and Ethical Reasoning

A zero credit course that may be taken in conjunction with any FLA education course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's CER, EXP+, and SPK learning objectives.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *CER, EXP+, SPK*

0 credit, S/U grading

FLA 439: Technology Literacy for Foreign Language Teachers

Technology as a transformative drive of new literacies is no longer an option but a requirement in every aspect of education today. FLA 439 is designed as a course to help teacher candidates explore in a very hands-on, practical and applied manner all of the technologies used by teachers of languages. The emphasis will be on learning

about the technologies, creating with the technologies, and making informed decisions using them. The class will also discuss how the technologies relate to current language pedagogies, both for individualized and classroom learning.

Prerequisite: FLA 339

SBC: *TECH*

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.

SBC: *CER, EXP+, SPK*

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

SBC: *CER, EXP+, SPK*

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

SBC: *CER, EXP+, SPK*

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: permission of the instructor; C or higher in FLA 340
Corequisites: FLA 451 and 452

SBC: *CER, EXP+, SPK*

3 credits

FLM

Film

FLM 101: Introduction to Filmmaking and Television: Visual Storytelling

A hands-on introduction to the art of film and television. Students will become familiar with the ideas, materials and technical skills needed for creative expression in these mediums. Participants will learn how to use images in conjunction with sound, text and narrative structure as a basis for communicating ideas on film and TV. Participants will craft ideas into short pieces using Smartphones or comparable devices.

DEC: *D*
SBC: *ARTS*

3 credits

FLM 102: Introduction to Film and Television Composition: How Films and TV Shows Say What They Mean

Introduction to the nuts and bolts of filmmaking and television as viewed through the lens of the working practitioner. By examining the creative aspects of films and television shows, the tools, the language and the choices of professionals, participants learn to interpret the creative elements of film and TV from a practitioner's perspective.

SBC: *HUM*

3 credits

FLM 201: Visual Storytelling Across the DIsciplines

This course introduces visual storytelling as a basic competency, on par with expository writing, as an essential tool for conveying and understanding information across disciplines.We will investigate how the act of telling a story or communicating information with visual content serves as a powerful tool for helping make sense of the world. It will offer the opportunity to develop proficiency in the visual storytelling (visual analysis, narrative structure) and foundational technical skills (writing, camera use, lighting, editing, sound) beneficial to communicative and expressive work across, and as a means of fostering links between, the disciplines.

SBC: *STAS*

3 credits

FLM 203: Podcasting: Audio Storytelling Skills for Filmmakers

Podcasting is the next step in the technological liberation of storytelling via digital means. It is a companion and complement to video and filmmaking. In this introductory course, you will learn how to craft your own podcast--visualizing your stories with audio only--and present it to the world. You'll gain experience in writing for sound, interviewing styles and techniques, recording and editing basics, pitching ideas, marketing, branding, distribution, monetization and more. The focus is on learning and developing new storytelling and entrepreneurial skills, and strengthening oral communication and presenting skills by researching, writing and presenting proposals and pitches and participating in the evaluation of peer oral presentations of researched proposals and pitches.

SBC: *SPK*

3 credits

FLM 215: Scriptwriting for Film and Television

Study and practice of scriptwriting for film and television through readings, screenings, discussions and regular submission of original work. Repeatable to a maximum of 6 credits as the topic changes.

Prerequisite: FLM 101

SBC: *HFA+*

3 credits

FLM 220: Documentary Filmmaking

Study and practice of documentary filmmaking from concept to production and post-production, through readings, screenings, discussion and regular submissions of original documentary filmmaking projects. Topics include Creating the Documentary Short, Ethics and Documentary Film, Social Documentary, The Film Essay. Repeatable to a maximum of 6 credits as the topic changes.

Prerequisite: FLM 101

SBC: *HFA+*

3 credits

FLM 221: Fiction Filmmaking

Study and practice of fiction filmmaking from story to production and post-production, through readings, screenings, discussion and regular submission of original fiction filmmaking projects. Topics include: Short Fiction, Film Animation, American Hollywood Film, Genre Filmmaking, Indie Filmmaking. Repeatable to a maximum of 6 credits as the topic changes.

Prerequisite: FLM 101

SBC: *HFA+*

3 credits

FLM 301: The Filmmaker's Toolbox: Cinematography, Sound and Editing

Explores the connections between technology and storytelling, examining the tools and resources available to create compelling images and stories. Course explores the principals, tools and techniques of digital technologies: cinematography, art direction, sound design and editing in shaping a film, and how these choices interact with the art of visual storytelling.

Prerequisite: FLM 102

SBC: *TECH*

3 credits

FLM 302: Producing Practices for Film and Television: Producing and Directing

A hands-on course exploring the connections between production and storytelling, and exploring the real-world aspects of creating and directing projects for film and television. Topics include The Business of Television, Directing for Film, Pitching and Selling Ideas, Script Breakdown and Budgeting, Working in Television: Navigating the TV Workforce, Directing Actors for Film and TV. Repeatable to a maximum of 6 credits as the topic changes.

Prerequisite: FLM 101

SBC: *SPK*

3 credits

FLM 310: Story Analysis for Filmmakers and Television Writers

A critical survey of the screenplay through the lens of the filmmaker and TV writer. Emphasis will be on exploring the construction of the story from a practitioner's perspective. Repeatable to a maximum of 6 credits as the topic changes.

Prerequisite: FLM 102; one 200-level or higher FLM course

SBC: *HFA+*

3 credits

FLM 320: Topics in Film for Filmmakers and Television Writers

A critical survey of a particular period, genre or ideology in filmmaking and television. Emphasis will be on exploring the evolution of that period, genre or ideology from a practitioner's perspective. Repeatable to a maximum of 6 credits as the topic changes.

Prerequisite: FLM 102; one 200-level or higher FLM course

SBC: *HFA+*

3 credits

FLM 402: Capstone Project

A weekly seminar in planning and executing an independent, interdisciplinary project, the culmination of the minor, to be taken while completing a short film or full-length project. The nature and genre of the film project is up to the individual, though the concept must be approved by the program director before the student can enroll in this course. Weekly class meetings give structure to the independent filmmaking process, helping minors to plan, research and locate the resources they need.

Prerequisite: permission of the Director

SBC: *EXP+*

3 credits

FLM 488: Internship

Offers students a personalized experiential learning opportunity designed to build on classroom knowledge and skills by exploring filmmaking in real world settings. The work must involve skills related to the educational goals of the department.

Prerequisite: permission of the Director

SBC: *EXP+*

3 credits, S/U grading

FLM 499: Independent Project

An independent project with faculty supervision. Permission to register requires a B average in all filmmaking and/or TV Writing courses and the agreement of a faculty member to supervise the project. May be repeated, but only three credits of FLM 499 may be counted toward the minor (will satisfy the 300 level film survey course requirement).

Prerequisite: permission of the Director

SBC: *EXP+*

0-4 credits

FRN

French

FRN 101: Intensive Elementary French

An intensive course covering the elementary French program (FRN 111, 112) in one semester. This course is designed for students who have no prior knowledge of the language. A student who has had two or more years of French in high school (or who has otherwise acquired an equivalent proficiency) may not take FRN 101 without written permission from the supervisor of the course. May not be taken for credit after any other course in French.

DEC: *S3*
SBC: *LANG*

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

FRN 112: 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: C or better in FRN 111 or placement into 112. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information

DEC: *S3*
SBC: *LANG*

4 credits

FRN 201: 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 or placement into 201. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

6 credits

FRN 211: Intermediate French 1

Development of functional competence in speaking, listening, reading and writing in interpersonal, interpretive and presentational modes of communication. Connection of French to other disciplines. Expansion of insight into the nature of languages and cultures. Study and discussion of history and culture of the Francophone world through film, literature, music, newspapers. May not be taken for credit in addition to FRN 201.

Prerequisite: FRN 101 or 112 or placement into 201. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, LANG*

3 credits

FRN 212: Intermediate French 2

Development of functional competence in speaking, listening, reading, writing, and culture in interpersonal, interpretive and presentational modes of communication. Emphasis on comparison of languages and cultures and on the use of the French language in communities both within and beyond the university setting. Study and discussion of cultures in the French speaking world through film, literature, music, newspapers. May not be taken for credit in addition to FRN 201.

Prerequisite: FRN 211 or placement into 212. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

FRN 311: 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

DEC: *S3*
SBC: *HFA+, LANG, SPK*

3 credits

FRN 312: Composition

A course emphasizing writing proficiency in French. Class work, supplements, use of technologically-based materials.

Prerequisite: FRN 212 or FRN 201

DEC: *S3*
SBC: *ESI, HFA+, LANG, WRTD*

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

SBC: *HFA+*

3 credits

FRN 395: 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

DEC: *G & 3*
SBC: *HFA+*

3 credits

FRN 396: 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

DEC: *G & 3*
SBC: *HFA+*

3 credits

FRN 410: Business French

A course designed for students who wish to become more proficient in reading, writing, and translating French. Students also are trained in the use of French in business, in administration, and in everyday professional life. Emphasis is placed on the idiomatic peculiarities of the French language and the relation of French to the structure of English.

Prerequisite: FRN 312

DEC: *S3*
SBC: *SBS+*

3 credits

FRN 411: Phonetics and Diction

A course designed to develop mastery of the spoken language. Students learn to express themselves in the current idiom with fluency and accuracy. At least one hour of laboratory is required weekly.

Prerequisite: FRN 312

DEC: *S3*
SBC: *HFA+*

3 credits

FRN 412: Stylistics

A course designed to acquaint students with the subtleties of French grammar and style. Extensive practice in composition and in translation from English to French.

Prerequisite: FRN 312

DEC: *S3*
SBC: *HFA+, WRTD*

3 credits

FRN 413: Advanced French Conversation

A course designed to develop and maintain complete fluency in the language.

Prerequisite: FRN 312

DEC: *S3*
SBC: *HFA+*

3 credits

FRN 423: 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.

DEC: *J*
SBC: *HFA+*

3 credits

FRN 433: Studies in 17th-Century Literature

May be repeated as topic changes.

Prerequisite: FRN 395 or 396

DEC: *S3*
SBC: *HFA+*

3 credits

FRN 434: Studies in 18th-Century Literature

May be repeated as the topic changes.

Prerequisite: FRN 395 or 396

DEC: *S3*
SBC: *HFA+*

3 credits

FRN 435: 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

DEC: *S3*
SBC: *HFA+*

3 credits

FRN 436: Studies in 20th-Century Literature

May be repeated as the topic changes.

Prerequisite: FRN 395 or 396

DEC: *S3*
SBC: *HFA+*

3 credits

FRN 438: Francophone cultures

An examination of different cultural topics from the French speaking world with special emphasis on the literature of the Maghreb and the Mashreq (the Middle East).Taught in French, this course explores the dialogue between the various Francophone cultures with the mainstream French culture.

Prerequisite: FRN 395 or 396

DEC: *J & 3*
SBC: *HFA+*

3 credits

FRN 441: 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

DEC: *I & 3*
SBC: *HFA+*

3 credits

FRN 442: Free Seminar

A seminar built around themes like "Women in French Literature," "Self-Deception in the 17th- Century Moralistes 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

DEC: *S3*
SBC: *HFA+*

3 credits

FRN 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

FRN 447: Directed Readings in French

Individually supervised readings in selected topics in French language and literature or, alternatively, for the purpose of developing French vocabulary in a secondary field, in selected topics in the humanities, social sciences, or natural sciences. May be repeated.

Prerequisite: Permission of department

DEC: *S3*
SBC: *EXP+*

1-6 credits

FRN 459: Write Effectively in French

A zero credit course that may be taken in conjunction with any 300- or 400-level FRN course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

FRN 475: 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

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

FRN 476: 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

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

FRN 488: Internship

Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce language skills and knowledge of social and cultural institutions.

Prerequisite: FRN 311 or FRN 312; permission of language advisor; specific placement examinations where applicable

DEC: *S3*
SBC: *EXP+*

0-6 credits, S/U grading

FRN 495: Senior Honors Project in French

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

Prerequisite: Permission of department

DEC: *S3*
SBC: *EXP+*

3 credits

GEO

Geosciences

GEO 101: 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.

DEC: *E*
SBC: *SNW*

3 credits

GEO 102: 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. Not for credit in addition to GEO 122.

DEC: *E*
SBC: *SNW*

3 credits

GEO 103: 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.

DEC: *E*
SBC: *SNW*

3 credits

GEO 104: Ripples Across the World: Global Effects of Natural Disasters

Earthquakes and tsunamis create widespread devastation. Volcanic eruptions bury cities under ash and cause closures of distant airports. Heavy rains cause landslides and flooding. How do these disasters happen? What are the secondary global effects on societal infrastructure, on public health, on international trade? How do societal differences cause varied local responses and affect the global impact? This course focuses on evaluating the global effects of several recent geological disasters. Scientific and popular news sources are used to explore the underlying natural phenomena and the nature and global distribution of the effects from geologic, economic, and public health perspectives.

Prerequisite: High school chemistry and biology

SBC: *GLO*

3 credits

GEO 105: Energy Resources in Transition

The increasing impacts of the climate change crisis present us with the urgent challenge of reducing greenhouse gas emissions, requiring an energy transition on a scale humanity has never attempted. This course examines current energy sources to assess their impacts on the global environment and evaluate their fitness for long term sustainability. Existing and potential energy sources, from fossil fuels to more sustainable energy sources, including nuclear, geothermal, solar, wind, hydro, and tidal, will be examined from the geologic processes that create them, technological advances in production and utilization, to their limitations and societal impacts. The evolving status of sustainable energy sources will be evaluated, projecting forward to anticipate energy needs and future availability of resources on decade to century time scales.

DEC: *E*
SBC: *SNW*

3 credits

GEO 106: 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

DEC: *E*
SBC: *SNW*

3 credits

GEO 107: 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.

DEC: *E*
SBC: *SNW*

3 credits

GEO 112: Physical Geology Laboratory

Rock and mineral identification, introduction to topographic and geologic maps. Not for credit in addition to GEO 122.

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 115: Making the Invisible Visible: Polarized light microscopy

Light interacts with crystals and through this interaction reveals information on the composition of the crystals and their internal atomic arrangement. This course provides a hands-on exploration of the construction of the polarized light microscope, its use in investigating the behavior of polarized visible light passing through crystals, and how the observed behavior can be used to identify natural and synthetic crystalline materials. The scientific material covered is of particular relevance to students interested in chemistry, physics, materials science, and planetary and geological science. Two 80-min lectures and

one three-hour laboratory per week for a 4-week period.

Prerequisite: AP Chemistry with a score of 4 or 5 or CHE 131 or equivalent

SBC: *TECH*

1 credit

GEO 121: Principles of Geology

Course offered in conjunction with Sayville High School. Equivalent to GEO 122; GEO 122 may not be completed for credit after successful completion of GEO 121.

4 credits

GEO 122: 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. Not for credit in addition to GEO 102.

Advisory Prerequisite: high school chemistry and high school physics

DEC: *E*
SBC: *SNW*

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

SBC: *ESI*

0-3 credits, S/U grading

GEO 303: Sedimentary Geology and Geochronology (with emphasis on 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

DEC: *E*
SBC: *SNW*

3 credits

GEO 304: 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 D.E.C. E or SNW course

DEC: *H*
SBC: *STAS*

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 122 OR GEO 102 and GEO 112

SBC: *EXP+*

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. Three hours of lecture per week. The laboratory component, GEO 366, must be taken concurrently; a common grade for both courses will be assigned.

Prerequisites: GEO 122 OR GEO 102 and GEO 112; CHE 131 or CHE 129
Corequisite: GEO 366

3 credits

GEO 307: 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.

Prerequisite: one of the following courses: SUS 111 (formerly SBC 111), SUS 113 (formerly SBC 113), ENS 101, GEO 101, GEO 102, GEO 122, ENV 115, CHE 131

DEC: *H*
SBC: *STAS*

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. Three hours of lecture per week. A two-day weekend field trip visits "classic" structural localities in the East. The laboratory component, GEO 369, must be taken concurrently; a common grade for both courses will be assigned.

Prerequisites: GEO 122, or GEO 102 and 112; one semester of calculus; PHY 131/133 or 141 and 133 or PHY 125 and 126 and 133
Corequisite: GEO 369

3 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.

Prerequisite: GEO 122, or GEO 102 and 112
Pre- or corequisites: MAT 127 or MAT 132 or MAT 142 or MAT 171 or AMS 161; PHY 133; PHY 132 or PHY 127 or PHY 142

3 credits

GEO 311: 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: Any 3 or 4 credit 100-level GEO course

DEC: *H*
SBC: *STAS*

3 credits

GEO 313: Understanding Water Resources for the 21st Century

A survey of the world's water resources and the fundamental processes and concepts that govern their distribution and resupply. Topics to be covered include processes in the hydrologic cycle, water resource supply and demand, water quality, and societal aspects relating to drinking water, and industrial and agricultural water usage. Consideration is given to global water shortages, projected impacts of climate change, water-based conflict, water resource management, and conservation practices. Detail will be devoted to pollution sources, water quality standards, drinking water treatment, and government regulation. Local water issues will also be addressed.

Prerequisite: one D.E.C. E or SNW course

DEC: *H*
SBC: *ESI, STAS*

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

SBC: *STEM+*

3 credits

GEO 320: 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

DEC: *E*
SBC: *STEM+*

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

SBC: *ESI*

3 credits

GEO 347: 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. Participants gain practical experience in geologic and environmental analysis using satellite imagery.

Prerequisite: GEO 102 or GEO 106 or GEO 122 or permission of the instructor

3 credits

GEO 366: Mineralogy Laboratory

Three hours of laboratory per week that corresponds to the content of GEO 306. Laboratory exercises involve work with crystallographic models, mineral samples, refraction oils and the polarizing light microscope. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Corequisite: GEO 306

SBC: *TECH*

1 credit

GEO 369: Structural Geology Laboratory

Three hours of laboratory per week that corresponds to the content of GEO 309. Laboratory exercises cover map interpretation and algebraic and graphical solutions of structural problems. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Corequisite: GEO 309

1 credit

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. The laboratory component, GEO 463, must be taken concurrently; a common grade for both courses will be assigned.

Prerequisite: GEO 103; GEO 113; C or better in GEO 306 and GEO 366
Corequisite: GEO 463

3 credits

GEO 404: Geomorphology

An introduction to the study of landforms and the processes that produce and modify them. This active learning class consists of in-class recitations, discussions, and exercises. A significant portion of the exercises will relate to Long Island geomorphology. Computers will be used extensively in class.

Prerequisite: GEO 102/112 or GEO 122; and any 300 or 400 level GEO or MAR course

SBC: *STEM+*

3 credits

GEO 405: Field Camp

A field course that may be taken at any one of several approved university field stations.

Prerequisite: student must receive permission from both field-site personnel and the Undergraduate Program Director

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 per week. The laboratory component, GEO 467, must be taken concurrently; a common grade for both courses will be assigned.

Prerequisites: MAT 125 or MAT 131 or AMS 151; C or better in GEO 306 and GEO 366
Corequisite: GEO 467

SBC: *STEM+*

3 credits

GEO 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 463: Sedimentation and Stratigraphy Laboratory

Three hours of laboratory per week that corresponds to the content of GEO 403. The course emphasizes practical techniques in stratigraphy. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Corequisite: GEO 403

1 credit

GEO 467: Igneous and Metamorphic Petrology Laboratory

Three hours of laboratory per week that corresponds to the content of GEO 407. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Corequisite: GEO 407

SBC: *STEM+*

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

SBC: *EXP+*

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 mya not serve as teaching assistants in the same course twice.

Prerequisite: GEO 475; previous preparation in subject field; interview; permission of instructor and department

SBC: *EXP+*

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

SBC: *ESI, EXP+*

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

SBC: *EXP+*

0-6 credits, S/U grading

GEO 496: Research and Synthesize Scientific Literature in Geoscience

An introduction to writing a scientific literature review in the field of geosciences. Students will gain experience using scientific journal article databases, selecting relevant research articles from the peer-reviewed literature, and summarizing information effectively in written form. This course is to be taken in conjunction with any 300- or 400-level GEO course. Successful completion of this course satisfies the SBC categories WRTD and ESI.

Prerequisite: permission of instructor and GEO 102 or GEO 122
Corequisite: one 300- or 400-level GEO course

SBC: *ESI, WRTD*

1 credit, S/U grading

GEO 497: Research Communication in Geoscience

An introduction to ethics in scientific research and research communication in Geoscience. Topics from the NIH Ethics training course will be discussed with a focus on the student's current and future research and the ethical aspects of scientific communication. Discussions of clarity in scientific communication as a means of effecting ethical dissemination of scientific

results will involve exposure to best practices in oral and written presentation. Students will give oral presentations of their written work (based on the co-requisite course GEO 496) and be involved in peer assessment of presentations. Successful completion of this course satisfies the SBC categories CER and SPK.

Prerequisite: GEO 102 and GEO 112; or GEO 122; and declared major in GEO or ESS

SBC: *CER, SPK*

1 credit, S/U grading

GER

Germanic Languages and Literature

GER 101: Intensive Elementary German

An intensive course covering the elementary German program (GER 111, 112) in one semester. GER 101 is designed for students who have no prior knowledge of the language. A student who has had two or more years of German in high school (or who has otherwise acquired an equivalent proficiency) may not take this course without written permission from the supervisor of the course. May not be taken for credit after GER 111 or any other course in German.

DEC: *S3*
SBC: *LANG*

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

GER 112: 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: C or better in GER 111 or placement into 112. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *LANG*

4 credits

GER 211: Intermediate German I

The reading and interpretation of a wide variety of German texts, with a review of German grammar, composition, and conversation. Emphasis on comparison of languages and cultures within the German-speaking world and beyond. Work in the language laboratory further develops audiolingual skills.

Prerequisite: GER 101 or 112 or placement into 211. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, LANG*

3 credits

GER 212: Intermediate German II

The reading and interpretation of a wide variety of German texts, with a review of German grammar, composition, and conversation. Emphasis on comparison of languages and cultures within the German-speaking world and beyond. Work in the language laboratory further develops audiolingual skills.

Prerequisite: GER 211 or placement into 212. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

GER 311: German Conversation and Composition

The active use of spoken and written German.

Prerequisite: GER 212

DEC: *S3*
SBC: *HFA+, SPK*

3 credits

GER 312: German Conversation and Composition

The active use of spoken and written German.

Prerequisite: GER 212

DEC: *S3*
SBC: *ESI, HFA+, WRTD*

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

SBC: *HFA+*

3 credits

GER 343: 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

DEC: *G & 3*
SBC: *HFA+*

3 credits

GER 438: Structure of German

Study of the phonological, graphemic, morphological, syntactic, and semantic structures of Modern German.

Prerequisite: GER 212

DEC: *S3*
SBC: *HFA+*

3 credits

GER 439: History of German

The development of the German language from Indo-European to Modern High German. A representative selection of texts from different periods is examined. Conducted as a seminar.

Prerequisite: GER 212

DEC: *S3*
SBC: *HFA+*

3 credits

GER 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis.

Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

GER 447: Directed Readings in German

Independently supervised readings in selected topics in German language and literature, which may focus on a specific German language author or the literature of a specific period or genre. May be repeated.

Prerequisites: Permission of instructor and department

DEC: *S3*
SBC: *EXP+*

1-6 credits

GER 459: Write Effectively in German

A zero credit course that may be taken in conjunction with any 300- or 400-level GER course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

GER 475: 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

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

GER 476: 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

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

GER 488: Internship

Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce language and related skills and knowledge of social and cultural institutions.

Prerequisites: GER 311 and 312; permission of instructor and department; specific placement examinations where applicable

DEC: *S3*
SBC: *EXP+*

0-6 credits, S/U grading

GER 495: 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

DEC: *S3*
SBC: *EXP+*

3 credits

GLI

Globalization Studies and International Relations

GLI 102: Academy of Civic Life

Explores foundational texts related to civics and democracy. Students will read modern and classical texts exploring Citizenship, Labor, Representation, Justice, and Activism. Through classroom debates and writing assignments, students will examine how these historical texts and foundational ideas impact current events and their personal communities. To supplement the readings, students will also be exposed to a range of relevant media including art, film, journalism, and new media.

Prerequisite: permission of instructor

SBC: *USA*

3 credits

GLI 211: Perspectives in Globalization Studies and International Relations

Introduces students to the major in Globalization Studies and International Relations through a wide ranging study of the ways in which globalization processes affect a wide variety of the different human groups and the planet they populate. It is structured according to the distinctive thematic guidelines that inform this Major and pays special attention to global flows, global inequalities, and the role of active citizenship in globalization. The aim is to study the local consequences of global events, cultural process, and socio-economic structures and vice-versa.

DEC: *F*
SBC: *SBS, SPK*

3 credits

GLI 212: Issues in Globalization Studies and International Relations

Issues on Globalization Studies such as: Global Cities and Urbanization Processes; Global Diasporas and Ethnicities; Global Development and Sustainability; Cultural and Political Representation in a Global Context; Gender, Race, and Class in a Global Context; Global Corporations, Institutions, and Policies. May be repeated as the topic changes.

SBC: *GLO, HUM*

3 credits

GLI 320: Global, Cultural, and Environmental Issues

Provides a critical understanding of how environmental problems and conflicts have roots in global social processes (such as culture, community, and political and economic inequality), and how these social forces in turn bear on the ways individuals and groups understand environmental problems and politically mobilize to change them. Specific emphases of the course deal with the links, at a global scale, between environmental degradation and various social problems like violence, spreading of disease, and international migration.

Prerequisite: GLI 211

DEC: *H*
SBC: *STAS*

3 credits

GLI 330: Global, Political, and Economic Issues

Explores global social, economic, and political structures and processes. Issues to be discussed include: the changing role of

state sovereignty in a globalized system; the social and political implications of a global economy; the emergence of cultural figurations in which local and global trends are fused; the formation of transnational social movements, the emergence of a global civil society, the continuous flows of migration, nascent forms of transnationalism, the prospects for a democratic future; and the formation of a global human rights regime. The course explores these processes from a perspective that underscores the impact global interdependencies carry for people in the daily lives.

Prerequisite: GLI 211

SBC: *SBS+*

3 credits

GLI 340: Conflict Resolution, Coalition Building, and Peacemaking

Provides an interdisciplinary understanding and analysis of conflict and the development and practice of coalition building and peacemaking that may assist in bringing forth resolutions. We will explore each of these issues at the inter-personal, local, and global levels. Students in this course will gain theoretical, historical, and practical knowledge about conflict and conflict resolution processes to start the work of de-escalating and solving conflicts.

Prerequisite: GLI 211

SBC: *CER*

3 credits

GLI 391: Humanities and Fine Arts Topics in Globalization Studies

Topics in the Humanities and Fine Arts that are connected with Global Issues such as: Global Cities and Urbanization Processes; Global Diasporas and Ethnicities; Global Development and Sustainability; Cultural and Political Representation in a Global Context; Gender, Race, and Class in a Global Context; Global Corporations, Institutions, and Policies. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; one D.E.C. G or HUM course

SBC: *GLO, HFA+*

3 credits

GLI 392: Social and Behavioral Sciences Topics in Globalization Studies

Topics in the Social and Behavioral Sciences that are connected with Global Issues such as: Global Cities and Urbanization Processes; Global Diasporas and Ethnicities; Global Development and Sustainability; Cultural and Political Representation in a Global Context; Gender, Race, and Class in a Global Context; Global Corporations, Institutions, and Policies. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *GLO, SBS+*

3 credits

GLI 402: Democracy and Justice for All

Explores foundational texts related to civics and democracy. Students will read modern and classical texts exploring Citizenship, Labor, Representation, Justice, and Activism. Through classroom debates and writing assignments, students will examine how these historical texts and foundational ideas impact current events and their personal communities. To supplement the readings, students will also be exposed to a range of relevant media including art, film, journalism, and new media. Students will learn about civic engagement by creating and presenting civic engagement project proposals.

Prerequisite: permission of instructor

SBC: *EXP+, USA*

3 credits

GLI 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

GLI 450: Capstone Seminar in Globalization Studies and International Relations

Designed to put into practice the student's accumulated training in the major by completing a single original research project. The project should combine the student's area and global issue specializations as well as his or her foreign language expertise, and international study or internship experience. Students will choose a faculty mentor who specializes in either the area or the issue they are researching. The faculty mentor will provide additional and under supervision as the project progresses.

Prerequisite: GLI 211; GLI major; U4 status Pre- or corequisites: GLO 320, GLI 330, GLI 340

SBC: *ESI, SPK, WRTD*

3 credits

GLI 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any GLI course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

GLI 459: Write Effectively in Globalization Studies and International Relations

A zero credit course that may be taken in conjunction with any 300- or 400-level GLI course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective. Students will submit a copy of their paper for approval by the Undergraduate Program Director in Globalization Studies and International Relations.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

GLI 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 Undergraduate Program Director

SBC: *EXP+*

3 credits, S/U grading

GLI 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: GLI 475; permission of instructor and Undergraduate Program Director

SBC: *EXP+*

3 credits, S/U grading

GLI 487: Independent Research in Globalization Studies and International Relations

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

Prerequisite: Permission of instructor and department

SBC: *EXP+*

0-6 credits

GLI 488: Internship

Internship in an institution, business, or government agency that engages directly with the student's Global Interaction Area and Specialized Global Issues. May be repeated.

Prerequisite: permission of the department

SBC: *EXP+*

0-6 credits, S/U grading

GLI 495: Senior Honors Project in Globalization Studies and International Relations

A one-semester project for Globalization Studies and International Relations 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.

Prerequisite: Permission of the instructor

3 credits

GRK

Greek

GRK 101: 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.

DEC: *S3*
SBC: *LANG*

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

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

GRK 112: Elementary Ancient Greek II

A continuation of GRK 111: the grammar and syntax of ancient Greek, with emphasis on reading comprehension.

Prerequisite: C or better in GRK 111

DEC: *S3*
SBC: *LANG*

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

GRK 122: 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

DEC: *S3*
SBC: *LANG*

3 credits

GRK 211: Intermediate Modern Greek I

Build proficiency in speaking, listening, reading, writing and grammar of the Greek language. Develop interpersonal, interpretive and presentational modes of communication. Explore how Greek culture influenced other Mediterranean cultures past and present. Emphasis on comparison of languages and cultures.

Prerequisite: GRK 101 or GRK 122

DEC: *S3*
SBC: *GLO, LANG*

3 credits

GRK 212: Intermediate Modern Greek II

Develop a functional competence in speaking, listening, reading and writing in interpersonal, interpretive and presentational modes of communication. Explore the Greek language and culture and how it integrates and compares with other languages and cultures. Focus on the use of the Greek language in both the university and global setting through different modes of media, including film, literature, music and print.

Prerequisite: GRK 211

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

GRK 221: Conversation in Modern Greek Part I

A course emphasizing active oral language use in Greek. Modern Greek Conversation expands on listening comprehension and speaking skills in Greek through cultural and linguistic activities. Students will strengthen their Greek oral skills in different communicative situations while acquiring a more profound understanding of Greek culture. Students will familiarize themselves with the vocabulary and sayings that Greeks use to express themselves on social media and television, in cafés, universities, offices, and on the streets. They will learn how to express themselves in Greek in formal and informal settings through role-play. They will learn what to say to structure an oral presentation, and how to expand or self-correct themselves during a conversation. Use of Modern Greek podcasts (istorima.gr)

Prerequisite: GRK 212 or permission of instructor

SBC: *GLO, LANG, SPK*

3 credits

GRK 222: Conversation in Modern Greek Part II

This course is designed to give students experience in conversation in Greek. Modern Greek Conversation, emphasizes the expansion of listening comprehension and speaking skills in Greek through cultural and linguistic activities. Students will familiarize themselves with the vocabulary and expressions that

Greeks use to express themselves on radio and television, in newspapers, cafés, universities, offices, and on the streets. They will discuss cinema and music, politics and sports. The course offers refinement in the areas of critical thinking by exposing students to cultural comparisons. Will help students with reviewing and expanding their vocabulary and grammatical competencies.

Prerequisite: GRK 212 or 221 or permission of instructor

SBC: *GLO, LANG, SPK*

3 credits

GRK 321: Advanced Modern Greek I

Students learn to read, understand and interpret advanced Modern Greek texts relating to a wide variety of themes and situations. Accelerated emphasis on grammar and interpersonal and presentational conversation and composition. Advanced knowledge of the characteristics of the Modern Greek culture in regard to interpersonal relations, social and folklore life, and related topics

Prerequisite: GRK 212 or permission of instructor

SBC: *HFA+, LANG*

3 credits

GRK 322: Advanced Modern Greek II

Second course in a two-semester advanced course sequence in the reading and interpretation of a wide variety of selected Modern Greek texts. Conversation, grammar and composition writing. Reading, analyzing and translating of representative literary and other texts. Completion of grammatical and syntactic points not covered in Advanced Modern Greek I. Extensive practice in interpersonal and presentational conversation.

Prerequisite: GRK 321 or permission of instructor

SBC: *HFA+, LANG*

3 credits

GSS

Geospatial Science

GSS 105: Introduction to Maps and Mapping

An introduction to the study and design of map formats, symbology, coordinate systems, and how maps record the historical patterns of human behavior. The course will also examine maps as a tool to analyze human activity and societal development, and include important aspects of map data collection, processing, the Global Positioning System (GPS), quantitative mapping, and GIS-based mapmaking techniques.

DEC: *F*
SBC: *SBS*

3 credits

GSS 309: GIS and Cartography

Cartography is the knowledge associated with the art, science, and technology of maps. Digital computer cartography still follows the same fundamental principles and still requires a broad understanding of graphicacy as a language (as well as numeracy and literacy). This course will provide an introduction to cartographic principles, concepts, software and hardware necessary to produce good maps, especially in the context (and limitations) of geographic information systems (GIS).

Prerequisite: GEO 102 or GSS 105 or MAR 104 or SBC 113 or instructor consent

3 credits

GSS 313: GIS Design and Application I

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 is three credit hours of lecture. This lecture course must be taken in the same semester as the associated laboratory, GSS 314. Not for credit in addition to GSS 317.

Prerequisite: MAT 125 or MAT 131 or AMS 151 or instructor consent
Corequisite: GSS 314

SBC: *TECH*

3 credits

GSS 314: GIS Laboratory

Practice using the GIS techniques and tools learned in the lecture (GSS 313), work on exercises, and process and analyze the spatial data for the course project. This laboratory course must be taken in the same semester as GSS 313.

Corequisite: GSS 313

1 credit

GSS 317: Geospatial Narratives: Deep Mapping for Humanities and Social Sciences

Building on formal methods in qualitative reasoning, spatial and temporal representation and geospatial science, this course will explore state-of-the-art methods for humanities and social sciences students to visualize and drill down data. Hands-on exercises of deep mapping will cover how to collect, analyze and visualize quantitative and qualitative data, spatial data, images, video, audio, and other representations of places and artifacts in humanities and social sciences. This course will also discuss models of reasoning about events, actions and changes that are spatially contextualized. Not for credit in addition to GSS 313.

Prerequisite: WRT 102
Advisory Prerequisite: some working knowledge of spreadsheets

SBC: *TECH*

3 credits

GSS 323: GIS Database and Design

Concepts of geodatabase design and management in geographic information systems (GIS), SQL statements, geographic data types and functions, data entry, techniques of geographic information structure applications. This is a Windows based computer class with the majority of students work involving GIS computer software.

Prerequisite: GSS 313 or GSS 317 or equivalent

3 credits

GSS 325: GIS Design & Applications II

The course builds upon the topics covered in GIS Design and Application I. It emphasizes the applications of GIS in solving real-world problems. Students are expected to gain an understanding of GIS theory, methodology and most importantly application. Students are also expected to demonstrate abilities of spatial thinking, spatial analysis, and be able to solve practical spatial problems utilizing a GIS. Because GIS is both a tool for analysis and the visual communication of these data, students will be required to develop a GIS presentation, much as would be expected in a professional setting. This independent project will constitute a substantial portion of the final grade. This is a Windows based computer class with the majority of students work involving GIS computer software.

Prerequisite: GSS 313 or GSS 317 or equivalent

3 credits

GSS 326: GIS Project Management

The course addresses issues unique to a GIS operation such as implementation issues, decision making procedures, strategies for success, legal issues, involvement of management, marking within an organization, strategic planning, and industry outlook.

Prerequisite: GSS 313 or GSS 317 or equivalent

3 credits

GSS 350: Applied Spatial Data Analysis

An introduction to geospatial statistical analysis that aims to provide students with the background necessary to investigate geographically represented data. The specific focus is on spatial data analysis, such as the analysis of autocorrelation, principles of geostatistics and analysis methods that are relevant in the fields of public health, environmental/earth science and social science. An important aspect of the course is to gain hands-on experience in applying these techniques with GIS and spatial analytical software, and essential methodological and practical issues that are involved in sophisticated spatial analyses.

Prerequisite: AMS 102 or equivalent and GSS 313 or GSS 317 or equivalent

SBC: *STEM+*

3 credits

GSS 354: Geospatial Science for the Coastal Zone

The use of spatial data is becoming increasingly critical in the decision management process and planning of the coastal zone. This course will use GIS and Remote sensing tools to collect and analyze data for integrating into the management, planning, and monitoring of the coastal geomorphology and ecosystems.

Prerequisite: GSS 313 or GSS 317 or equivalent

3 credits

GSS 355: Remote Sensing GIS Data

Provides a basic overview of the technology by which aircraft and satellite images of the Earth are produced as well as hands on experience manipulating and interpreting. Students gain practical experience in environmental analysis using satellite imagery and commonly used sensors and analytical methods for the Earth sciences.

Prerequisite: GSS 105 or MAR 104 or GEO 102

SBC: *STEM+*

3 credits

GSS 360: LiDAR Remote Sensing

Introduces principles of LiDAR (Light Detection and Ranging) remote sensing, LiDAR sensors and platforms, LiDAR data, processing, analysis, and applications. Students will master basic skills of LiDAR needed to leverage the commercial LiDAR sources and information products in a broad range of applications, including topographic mapping, vegetation characterization, and 3-D modeling of urban infrastructure. Students will learn several software packages for LiDAR data displaying, processing, and analyzing. Students will link social and geospatial sciences through mapping projects and analysis.

Prerequisite: GSS 313, GSS 314, and GSS 355

3 credits

GSS 390: Topics in Geospatial Science

Course will present special interest topics or recent software enhancements in the rapidly developing field of Geospatial Science. The course will include a mixture of core geospatial techniques and recently released methodology. Course content will include a diversity of Geospatial topics and include discipline specific topics relevant to majors in physical sciences, social sciences, business and engineering. Repeatable as the topic changes to a maximum of 6 credits.

Prerequisite: U3 or U4 status or permission of the instructor

3 credits

GSS 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

SBC: *EXP+*

0-3 credits, S/U grading

GSS 487: Geospatial Science Research

Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member.

Prerequisite: Permission of instructor

SBC: *EXP+*

0-6 credits

GSS 488: Geospatial Science Internship

The GSS Internship is designed to provide students experience in the real workplace. Interns are expected to function as a GIS/Remote Sensing professional and work within the existing host facility structure or on a free standing project. Interns will complete assigned tasks by hosting facility such as GIS data entry, data retrieval, remote sensing analysis, GPS field work, documentation, or general GIS facility duties. These activities will be monitored by both a representative of the host facility and the instructor. May be repeated to a limit of 12 credits.

Prerequisite: U3/U4 status and permission of the Undergraduate Program Director

SBC: *EXP+*

0-12 credits, S/U grading

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. This course is not eligible for the G/P/NC option. Open to west campus students.

1 credit

HAL

Athletic Training

HAL 375: Supplement Use for Sport Performance

Course introduces the use of supplements in sport from a sports medicine and athletic training perspective. Discusses the advantages and disadvantages of using dietary supplements. Presents scientific research on recommended dosage and potential side effects. Both competitive and recreational athletes' needs and concerns are addressed. Upon completion of course, students should be able to evaluate and make recommendations about dietary supplements. Open to west campus students. G/P/NC grading option is not available. Prerequisite: Completion of Any Undergraduate Biology Course or Equivalent

Prerequisite: Completion of Any Undergraduate Biology Course or Equivalent

2 credits

HAL 376: Introduction to Nutrition

Introduces students to fundamentals of nutritional science and food systems. Reviews dietary sources and functions of macro and micronutrients and the basic of their metabolism and impact on energy balance and common health problems. Explores types of food systems, including production, transformation, distribution, access and

consumption and Explores the impact on the environment and human health. Discusses contemporary issues and controversies such as eating disorders, diet trends and sports nutrition. Open to west campus students. G/P/NC grading option is not available.

3 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 cell, tissue, and organ system levels of organization, with emphasis on understanding disease processes associated with systems. Laboratory sessions include virtual on-line exercises designed to illustrate principles learned and computer simulations in physiology and anatomy dissection. G/P/NC grade option is not available. Open to non HSC students. Prerequisite: one natural science course; U2 Standing. SBC: SNW

Prerequisite: one natural science course; Sophomore Standing

DEC: *E*
SBC: *SNW*

4 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, acid-base balance and heredity. Laboratory sessions entail virtual online exercises designed to illustrate principles learned and computer simulations in physiology and anatomy dissection. G/P/NC grade option is not available. Open to non-HSC students. Prerequisite: HAN 200. SBC: STEM+

Prerequisite: HAN 200

DEC: *E*
SBC: *STEM+*

4 credits

HAN 251: Research Methods in Health Science

Provides a foundation in quantitative, qualitative and mixed methods research design and methods. Emphasizes the relationship between literature review and the research process and the elements of a research proposal. Applies research designs and methods to case study research projects. Requires on-line CITI training in the protection of human subjects. G/P/NC grade option is not available. Open to non HSC students.

3 credits

HAN 312: Human Anatomy, Health and Medical Language

Develops a deeper knowledge of human anatomy and a working medical vocabulary that applies to clinical scenarios. Builds on a foundation of anatomy and physiology. Emphasizes the interrelationships among human anatomy, body systems, pathophysiology and clinical medicine. Introduces the medical professionals and the technology utilized to diagnose and treat patients. G/P/NC grade option is not available. Open to non-HSC students. Prerequisite: HAN 200 or ANP 300.

Prerequisite: HAN 200 or ANP 300

3 credits

HAT

Respiratory Care

HAT 210: Introduction to Respiratory Care

Provides an introduction to the science of respiratory care, sleep technology, and cardiac care. Examines current trends in professional practice.Offers each student the opportunity to research and present a topic concerning the contemporary practice of a respiratory therapist, polysomnographic technologist, or cardiovascular technologist. Designed for lower-division four year respiratory care and polysomnographic technology majors. This course is not eligible for the G/P/NC option. Open to west campus students.

1 credit

HBA

Anatomical Sciences

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. HBA 398 (Fall offering), HBA 399 (Spring offering); 2-4 credits; S/U grading

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

2-4 credits, S/U grading

HBH

Pharmacology

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: Junior or Senior 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. Not for credit in addition to BIO 315. 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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 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 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.

Prerequisites: U3 or U4 standing; laboratory experience; permission of supervising instructor

0-4 credits

HBW

Hebrew

HBW 101: Intensive Elementary Hebrew

An intensive course covering the elementary Hebrew program in one semester, satisfying the language requirement. This course is designed for students who have no prior knowledge of the language.

DEC: *S3*
SBC: *LANG*

6 credits

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

HBW 112: 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

DEC: *S3*
SBC: *LANG*

3 credits

HBW 211: Intermediate Hebrew I

Intermediate courses in conversation, composition, and the reading of texts in modern Hebrew.

Prerequisite: HBW 112

DEC: *S3*
SBC: *GLO, LANG*

3 credits

HBW 212: Intermediate Hebrew II

Intermediate courses in conversation, composition, and the reading of texts in modern Hebrew.

Prerequisite: HBW 211

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

HBW 311: Advanced Hebrew I

A course in the active use of spoken and written Hebrew. Readings of classics in the Hebrew language. Discussion is conducted mainly in Hebrew.

Prerequisite: HBW 212

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

HBW 312: Advanced Hebrew II

Readings in modern Hebrew authors. Oral and written reports. Discussion is conducted mainly in Hebrew.

Prerequisite: HBW 311

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

HBW 405: Studies in Hebrew Literature

May be repeated as the topic changes.

Prerequisite: HBW 311 or 312

DEC: *S3*
SBC: *HFA+*

3 credits

HBW 415: The History of the Hebrew Language

Readings and discussion (in Hebrew) of selections from Biblical, post-Biblical, and modern literature; lectures and discussion (in English) on the changes of sentence structure, meaning, sound, and style from one period to another. Particular attention is given to classicism, innovation, and restructuring in the rise of modern Hebrew.

Prerequisite: HBW 311

DEC: *S3*
SBC: *HFA+*

3 credits

HBW 447: Directed Readings in Hebrew

Intensive study of a particular author, period, or genre of Hebrew literature in the original under close faculty supervision. May be repeated.

Prerequisite: Permission of director

DEC: *S3*
SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits, S/U grading

HBY

Physiology and Biophysics

HBY 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

HBY 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

0-6 credits

HDG

General Dentistry

HDG 299: Introduction to Research in General Dentistry

This course provides an introduction to research in general dentistry with initial training in study design, and clinical and/or laboratory procedures, under the guidance of a faculty member in the Department of General Dentistry. May be repeated up to a maximum of 12 credits.

Prerequisite: permission of the instructor

0-3 credits, S/U grading

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 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

HIN

Hindi

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

HIN 112: Elementary Hindi II

An introduction to spoken and written Hindi, stressing pronunciation, speaking, comprehension, reading, and writing.

Prerequisite: C or better in HIN 111

DEC: *S3*
SBC: *LANG*

3 credits

HIN 211: 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

DEC: *S3*
SBC: *GLO, LANG*

3 credits

HIN 212: 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

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

HIN 311: 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

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

HIN 312: 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

DEC: *S3*
SBC: *HFA+, LANG, SPK*

3 credits

HIS

History

HIS 100: 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. Formerly offered as HIS 105. Not for credit in addition to HIS 105.

DEC: *F*
SBC: *GLO, SBS*

3 credits

HIS 101: Ancient Mesopotamia to Early Modern Europe

An introduction to the ideas and institutions of "the West" from the beginnings of civilization to the early modern period. Topics include ancient cultures; the rise of Judaism, Christianity, and Islam; medieval politics and society; Renaissance art and thought; the Reformation and Counter-Reformation; the new science; and absolutism and the emergence of the modern state.

DEC: *F*
SBC: *GLO, SBS*

3 credits

HIS 102: Modern European History, 18th c. to the Present

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 wars and revolutions of the 18th c., including the French Revolution, characterized by high hopes for the rational mastery of nature and society. It concludes with the Second World War, a period of mass destruction and total war, and the construction of the institutions of post-national Europe.

DEC: *F*
SBC: *GLO, SBS*

3 credits

HIS 103: 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.

DEC: *F & 4*
SBC: *DIV, SBS, USA*

3 credits

HIS 104: 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.

DEC: *F & 4*
SBC: *DIV, SBS, USA*

3 credits

HIS 113: America in the Atlantic World

Students will learn about the transformations of the regions surrounding the Atlantic Ocean--especially Africa, Europe, the Americas--as they first came into prolonged contact during the early modern period. We will examine the cultural, economic, and environmental impacts of their diverse people's engagements with each other during periods of initial encounter, conquest, and colonization. Then we will examine how those interpersonal and geopolitical relationships were transformed during the age of revolution, emancipation, and nation-building.

DEC: *F & 4*
SBC: *GLO, SBS, USA*

3 credits

HIS 116: Women as a Force in US History

Surveys the history of women and gender in the United States from 1900 to the present. The course focuses on three kinds of changes: in women's work and the gendered division of labor; in relationships between gender, politics, and the state; and the rise of consumer and mass cultures. Students will read what historians and other scholars have written about women and analyze historians' sources in the form of documents and images. We will pay particular attention to differences among women in such areas as race and ethnicity, class, religion, and sexuality. Students should acquire a deeper understanding of the forces influencing women's lives and gender norms and a better appreciation of how women and gender have shaped the history of the United States.

DEC: *K & 4*
SBC: *SBS, USA*

3 credits

HIS 201: 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.

DEC: *J*
SBC: *GLO*

3 credits

HIS 202: 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.

DEC: *I*
SBC: *GLO*

3 credits

HIS 203: 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.

DEC: *I*
SBC: *GLO*

3 credits

HIS 206: Europe in the Age of Discovery, 1348-1789

This course examines the period in European history from the Black Death until the French Revolution (roughly 1348 to 1789). During this period of Renaissance, Reformation, and Enlightenment, early modern Europe experienced a series of crises in authority that ushered in the modern world. The course will explore how new discoveries (both geographical and intellectual) challenged existing worldviews; movements of religious reform challenged the authority of the Church and the unity of Europe; and new political doctrines, accompanied by a series of striking rebellions, challenged the foundations of traditional rule.

DEC: *I*
SBC: *GLO, SBS*

3 credits

HIS 212: 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, Teotihuacano, Zapotec, Maya, Toltec, and Aztec peoples. Class will conclude with a discussion of the role of ancient history in the region's modern identity.

DEC: *J*
SBC: *GLO*

3 credits

HIS 213: Colonial Latin America

An introduction to the colonial history of Spanish America and the Caribbean. It approaches the colonial era of Latin America and the Carib-bean as a unique historical turning point in human history. For the first time in world history, the destinies of three continents (Europe, Africa, and America) became inextricably linked. At the same time, the expansion of Europe into the New World in the 16th century also signaled the end of a millennial history of native civilizations, as the Aztec, Mayan, and Inca civilizations seemed almost to collapse under the weight of Spanish militarism, colonial bureaucracy, and the Christian crusades.

DEC: *J*
SBC: *GLO, SBS*

3 credits

HIS 214: Modern Latin America

An introduction to the major themes in the history of modern Latin America, from the early nineteenth century to the present. Students will gain a deeper understanding of some of the central historical themes that have shaped Latin American society and politics since achieving independence, thus providing the basis for making sound observations and judgments about the political, economic, social, and cultural realities affecting Latin America today. The class advances chronologically as well as thematically, covering topics such as nationalism, political economy, U.S.-Latin American relations, revolutionary & counterrevolutionary struggle, and cultural practices. Lectures approach the hemisphere comparatively, drawing similarities and differences between different nation-states and regions. This course is offered as both HIS 214 and POL 214.

DEC: *J*
SBC: *GLO, SBS*

3 credits

HIS 215: 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.

DEC: *K & 4*
SBC: *SBS, USA*

3 credits

HIS 216: 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.

DEC: *J*
SBC: *GLO, SBS*

3 credits

HIS 218: Ancient, Medieval, & Early Modern South Asia

Surveys the history of South Asia (contemporary India, Pakistan, and Bangladesh, with some consideration of Afghanistan, Myanmar, Tibet, and Sri Lanka) in ancient, medieval, and early modern eras. Central themes include the emergence of social orders, religions, and regions; global and regional mobility and connections; relations between social and religious communities (Buddhists, Hindus, Muslims; peasants, elites, genders); changing state structures; and early European presence. This course is offered as both AAS 218 and HIS 218. Formerly offered as AAS/HIS 347; not for credit in addition to AAS/HIS 347.

DEC: *J*
SBC: *GLO, HUM*

3 credits

HIS 220: Japan in the Age of Courtier and Samurai

Surveys the history of Japan from ancient times to the late nineteenth century. Examines the complex processes of political, economic, social, and cultural change in Japan's transformation from aristocratic rule under the emperor to warrior rule under the samurai. This course is offered as both AAS 219 and HIS 220.

DEC: *J*
SBC: *GLO, SBS*

3 credits

HIS 221: 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.

DEC: *J*
SBC: *GLO, SBS*

3 credits

HIS 223: Regional History of Africa

Given the immensity of the African continent, it is often divided into regions (such as east, west, north, or southern, equatorial, the Horn, the Sahel, Atlantic or Indian Ocean) to explore connections and boundaries. This course gives students the opportunity to focus more deeply on a region of Africa. The particular region examined will change each semester. Factors that integrate a region may be environment and land use strategies, long-distance trade networks, religious communities, imperialism, and political regimes. The course will examine the challenges to regional integration, such as conflicts, language diversity, and separatist movements. This course is offered as both AFS 223 and HIS 223. Students may repeat the course when the region changes.

DEC: *J*
SBC: *GLO, SBS*

3 credits

HIS 225: Jewish History from Antiquity to the Middle Ages

Jewish history and the development of Judaism from Ancient Israel until the close of the Middle Ages (ca. 1000 B.C.E.- ca. 1492 C.E.). The course begins with the epic tales of the Hebrew Bible, examines the varieties of Judaism which arose under Greece and Rome, explores the "parting of the ways" between Judaism and Christianity, and ends with the rise and fall of Jewish settlements in the Muslim Middle East and across Christian Europe. This course is offered as both HIS 225 and JDS 225.

DEC: *J*
SBC: *CER, GLO*

3 credits

HIS 226: Modern Jewish History: Dilemmas of Difference

An examination of the emergence of modern forms of Judaism from 1492 until the present day, covering Jewish life through the Reformation, French Revolution, the emergence of democracy, two World Wars, Holocaust, and the establishment of the State of Israel, tracing the shift both in centers of life and in the ideas that furnished those centers. This course is offered as both HIS 226 and JDS 226.

DEC: *F*
SBC: *GLO, SBS*

3 credits

HIS 227: Islamic Civilization & Muslim Societies

Surveys the history of the Muslim world from the rise of Islam to the present. Covers the early history of Islamic civilization in the Arabian Peninsula and surrounding regions. Explores the diversity of global Muslim societies and examines examples from across Asia, Africa, Europe, and beyond. Central topics include the life of Muhammad, conversion, European colonialism, Western media representations, and the rise of radical militant and progressive movements.

DEC: *J*
SBC: *GLO, SBS*

3 credits

HIS 229: 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. Formerly offered as HIS 305. Not for credit in addition to HIS 305.

DEC: *I*
SBC: *GLO, SBS*

3 credits

HIS 230: Britain since 1688: Four Nations in the World

Covers the history of England, Ireland, Scotland and Wales, as well as the overseas British empire, from the Glorious Revolution

of 1688 to the premiership of neoliberal Conservative Prime Minister Margaret Thatcher (1979-1982). Themes include the impact of ethnic conflicts in the British Isles and overseas empire on the emergence of one of the first unambiguous 'nation-states' in Europe and the only one to avoid revolutionary upheaval in the 18th and 19th centuries; the Industrial Revolution and its aftermath; the rise of democracy and parliamentary parties, including the Labour Party; women's rights and suffrage; the impact of two World Wars; and the creation of a welfare state with cradle-to-grave social security that is destroyed by decolonialism and racism. The politics and experience of class, gender, race and nation are the lenses through which this history is developed, bringing the history of the British Isles and empire into a single frame.

DEC: *I*
SBC: *GLO, SBS*

3 credits

HIS 235: The Heirs of Rome: The Early Medieval World, 300-1000

A survey of the history of Europe and the Mediterranean in the early Middle Ages (300-1000). Tracing the legacy of Rome through its three successors (the Greek East, the Latin West, and Islam), this course examines the birth and spread of Christianity and Islam; prominent religious and aristocratic women; the disintegration of imperial power; changing military organization and warrior society; the development of monasteries and manuscript culture; Viking invasions; and the courtly cultures of the Carolingian, Abbasid, and Byzantine empires. Emphasis is placed on the reading of primary sources - literary and religious texts and material culture.

DEC: *I*
SBC: *GLO*

3 credits

HIS 236: The World of the Later Middle Ages, 1000-1500

A survey of Europe in the Later Middle Ages (1000-1500) from the Crusades and rise of towns and national monarchies through the birth of universities; changing roles and opportunities for women; religious dissent and inquisitions; and years of warfare, plague, and schism. The course covers social, political, cultural, and religious developments. Emphasis is placed on the reading of primary sources - literary and religious texts and material culture.

DEC: *I*
SBC: *GLO*

3 credits

HIS 237: 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.

DEC: *H*
SBC: *STAS*

3 credits

HIS 238: 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.

DEC: *H*
SBC: *STAS*

3 credits

HIS 239: From Columbus to Darwin: Investigating Nature, Medicine, and Science in the Americas

From the 16th to the 19th century, Europeans, Africans, and Native Americans all contributed to new knowledge production in the Americas in the realms of natural history, medicine, and early science. Within various colonial contexts, the drive to find, collect, and, where possible, commodify native plants, animals, and peoples played critical roles in larger contests to control people and places. As competing imperial powers sought to exploit natural resources and reshape entire regions in the service of empire, Indians and enslaved Africans variously resisted or contributed to those efforts. This course explores how changing concepts of the natural world impacted the development of science, medicine, and technology and influenced concepts of race, gender, class, and human adaptability. Readings will include current works by historians and other scholars as well as primary documents ranging from fantastical early travel narratives, to revealing accounts of Indian and African American medical/spiritual practitioners, to increasingly empirical studies by surveyors, engineers, and scientists in the 19th century.

SBC: *ESI, STAS*

3 credits

HIS 241: Nazi Genocide and the Holocaust

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.

DEC: *I*
SBC: *GLO*

3 credits

HIS 247: Modern Korea through Visual Culture

Examines Korea's historical experiences and social transformation from mid-nineteenth century to present through visual materials such as photographs, films, postcards, print materials and paintings as well as historical texts and secondary analysis. Students will acquire in-depth knowledge of Korea's modern experiences as well as its contemporary society and culture. The course aims to cultivate students' visual literacy on modern Korea through interpreting and analyzing historical visual documents and creating their own visual essays. This course is offered as both AAS 247 and HIS 247.

DEC: *F*
SBC: *GLO, SBS*

3 credits

HIS 248: Modern 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.

DEC: *I*
SBC: *GLO*

3 credits

HIS 249: 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.

DEC: *I*
SBC: *GLO*

3 credits

HIS 250: 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.

DEC: *F*
SBC: *GLO, SBS*

3 credits

HIS 251: 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.

DEC: *I*
SBC: *GLO*

3 credits

HIS 256: Tacos to Telenovelas: Latin American Popular Culture

This course uses popular culture as an entryway into the study of modern Latin American history, politics and society. Through an integration of theoretical approaches and selected case studies, we will analyze how and why popular culture is not "neutral" in Latin America, but rather is linked to the larger problem of national identity. In doing so, the course will traverse the territory of nationalism, cultural imperialism, and cultural hybridity. The class focuses on the following sites of popular culture in particular: music, comics, telenovelas, cinema, sports, and food.

DEC: *J*
SBC: *DIV, GLO, SBS*

3 credits

HIS 261: 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.

DEC: *K & 4*
SBC: *DIV, SBS, USA*

3 credits

HIS 262: 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.

DEC: *K & 4*
SBC: *DIV, SBS, USA*

3 credits

HIS 263: 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.

DEC: *K & 4*
SBC: *SBS, USA*

3 credits

HIS 264: 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.

DEC: *K & 4*
SBC: *DIV, USA*

3 credits

HIS 265: 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.

DEC: *K & 4*
SBC: *DIV, USA*

3 credits

HIS 266: 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.

DEC: *K & 4*
SBC: *USA*

3 credits

HIS 273: U.S. History, 1900-1945

The twentieth century has been referred to by some as the "American century." This course will examine how and why the United States started the twentieth century as an isolationist nation and ended the half-century mark as a global "super power." Even as the U.S. moved from the periphery of world influence to its center, the nation also experienced social and economic unrest. We will therefore consider changing roles for women, minorities, and immigrants as their history shaped the nation.

DEC: *K & 4*
SBC: *SBS, USA*

3 credits

HIS 274: U.S. History, 1945-2000

Examines how and why the United States started the mid-twentieth century as an isolationist nation and ended the century mark as the world's sole 'super power.' The course considers such topics as: the use of atomic weapons; Cold War politics and culture; consumerism and the American economy; national security; liberalism and conservatism; the struggle for civil rights and Black Freedom; cultural struggles between the Left and the Right; women, gender, and the 'sexual revolution'; and the post-Cold War world.

DEC: *K & 4*
SBC: *SBS, USA*

3 credits

HIS 277: 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.

DEC: *K & 4*
SBC: *USA*

3 credits

HIS 280: The History of the U.S. Working Class

A broad overview of the historical trends and transformations that have shaped the lives of working class men and women in the United States from the 19th century to the present. Class topics will include the racialization and feminization of labor, capitalism and Marxism, working-class pop culture, unionization struggles, workplace tragedies, controversial corporations, and the effects of globalization.

DEC: *K & 4*
SBC: *SBS, USA*

3 credits

HIS 281: 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: one D.E.C. F or SBS course Advisory Prerequisite: one D.E.C. E or SNW course

DEC: *H*
SBC: *STAS*

3 credits

HIS 282: African American History Since 1877

The study of African American history allows students to understand the American experience in terms of both its problems and its possibilities; and its power to include or exclude. This course is a survey of African American history from Reconstruction to the present. The goal of this course is to have students consider the cultural, economic, and political experiences of African Americans. The course emphasizes the "long civil rights" movement and the African American freedom struggle from the end of Reconstruction through the late twentieth century.

DEC: *K & 4*
SBC: *SBS, USA*

3 credits

HIS 283: The History of Latinos in the United States

An introduction to the social, political, and cultural history of Latinos, the fastest-growing population in the United States, using a variety of readings and films to illuminate selected topics and themes in this population's history from 1848 to the present. Key course topics include legacies of conquest; past and present immigration; inclusion and exclusion; labor movements and activism; articulations of race, gender, and citizenship in urban and rural settings; transnationalism; Latino politics; and contemporary border control and immigration debates.

DEC: *K & 4*
SBC: *DIV, SBS, USA*

3 credits

HIS 285: Games, Burlesques, and Spectacles: Popular Culture in 19th-Century America

In the 19th century, the word culture, which referred to the nurture of something, came to mean "a thing in itself." Culture is something people make or do. It is moral, intellectual, creative activity. It is also a response to personal and social relationships and to political and economic developments. It is a mode of interpreting our common experience, and even changing it. This course analyzes the way 19th-century popular entertainment culture--from dancing, boxing, and gambling to novels, newspapers, and circus acts--reflected and shaped American society. Previously offered as HIS 326; not for credit in addition to HIS 326.

DEC: *F & 4*
SBC: *SBS, USA*

3 credits

HIS 286: The Global History of Human Health

Surveys how the health of the globe's diverse human populations has varied from prehistory to the present. Focuses on the ways in which changes in diet, residency patterns, global interconnections, and environment have led to health transitions. These transitions and events include, but are not limited to, the transition to agriculture, urbanization, imperial expansion, colonialism, industrialization, world wars, factory farming, and the transportation revolution. The development of medicine, public policies, and global health organizations will be a central theme as will be the development of global health disparities.

DEC: *F*
SBC: *STAS*

3 credits

HIS 287: 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? Previously offered as HIS 373. Not for credit in addition to HIS 373.

DEC: *F & 4*
SBC: *SBS, USA*

3 credits

HIS 288: Wealth and Inequality in Early America

Focuses on Americans as producers, sellers and consumers from the earliest years of European colonization through the mid 1800s. Working thematically and chronologically, we will examine such topics as: the American colonies in the context of global trade; the Atlantic slave trade; early American colonies, the roles they played for imperial powers, and the connections among the backgrounds, goals, values, and local conditions; trade between native Americans and European Americans and the ways in which trade affected both societies; Americans as consumers; the financial system and the counterfeit financial system; the emergence of a middle-class in the late-18th and 19th centuries; early industrialization; slave economies; Americans as workers; and risk, success, and failure in an increasingly industrial nation and the ramifications of failure for American identity and democracy.

DEC: *K & 4*
SBC: *DIV, SBS, USA*

3 credits

HIS 289: Wealth and Inequality in America's Corporate Age

Delves into the historical dynamics of shifts in the ways wealth has been created in an American economy dominated by large corporations, and the forces that have shaped changing patterns of its distribution. It concentrates especially on the many explanations that have been offered for why, over long historic periods that have characterized the age of the modern corporation, wealth in the United States has become both more and less skewed toward the top with a special focus on the history of the financial sector.

DEC: *K & 4*
SBC: *SBS, USA*

3 credits

HIS 293: 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 to the great epidemics of the 19th c. and the role of public health measures in containing them, and the emergence of chronic diseases such as cardiovascular disease, cancer, and diabetes as the leading causes of death in the 20th c.

DEC: *H*
SBC: *STAS*

3 credits

HIS 295: History of North American Cities and Suburbs

Surveys the history of cities and suburbs throughout North American history. We begin with the indigenous cities of pre-contact period and the walking city of preindustrial times. The bulk of the course will then cover tumultuous urban growth associated with the rise and migration of modern industry from the nineteenth through the twentieth century, and over the succeeding decades, in and around places such as New York, Los Angeles, and Mexico City. Requirements will include in-class quizzes and other exercises, a short and medium length paper and a take-home final.

DEC: *K & 4*
SBC: *SBS, USA*

3 credits

HIS 299: College Regional Studies Program

A topics course designed to allow explorations in American history at the lower-division level. The exact topic of the course may vary. Possible topics include: the history of Long Island, American politics and society in the twentieth century, or American maritime history, among others. Submissions may be considered under the university's ACE program. Stony Brook students interested in any of these courses may inquire directly with the History Department's Director of Undergraduate Studies for enrollment details.

SBC: *SBS, USA*

3 credits

HIS 300: Topics in 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.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *F*
SBC: *GLO, SBS+*

3 credits

HIS 301: Reading and Writing History

Workshop in the craft of history, with an emphasis on source analysis, writing & argumentation, and historical research methods. As the gateway course for the History major senior seminar, HIS 301 teaches students how to interpret and critique primary and secondary sources, become proficient in the standards of writing in History, and develop competency in library research. These skills are taught through a close analysis of a particular field or theme in history.

Prerequisite: History major or minor; U3 or U4 status; or permission of instructor

SBC: *ESI*

3 credits

HIS 302: 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 D.E.C. F or SBS course

DEC: *H*
SBC: *STAS*

3 credits

HIS 303: The Crusades and Medieval Society

This course examines the various medieval military conflicts known collectively as The Crusades. We will investigate specific episodes such as the Latin conquest of Jerusalem, the Children's Crusade, the Shepards' Crusade, and the Albigensian Crusade. We will also explore such issues as the origins of the idea of crusade, the 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 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 304: 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: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 307: Silk Roads and Spice Routes: Travel, Exploration and Discovery in the Premodern World

How globalized was the world before the modern period? What connected famous explorers like Marco Polo, Ibn Battuta, and Christopher Columbus to people who traveled the globe as part of their daily lives as merchants, diplomats, and sailors? Travel was a central feature of the medieval world and one of the primary factors that contributed to cultural contact, communication, exchange, and the diffusion of ideas between Europe, Africa and Asia in the pre-modern era. This course will explore the interconnected histories of the medieval world, focusing primarily on the Mediterranean world, Latin Christendom, Byzantium and the Islamic world between roughly 500 and 1700. It will also devote attention to travel and travelers in the Atlantic world (including West Africa), the Indian Ocean, Central Asia, and China during the same period. Whether the motivation was exploration, piety, knowledge, survival, or profit, the act of travel involved the travelers in larger processes of interaction and exchange between cultures. We will examine the lives and accounts of pilgrims, merchants, scholars, slaves, and soldiers to investigate what motivated people to travel to, from, or within regions throughout the medieval world, and how they portrayed their experiences. With an emphasis on primary sources and class discussion, we will explore the writings of a diverse group of travelers and situate them within their larger social, cultural, and political contexts, while at the same time coming to terms with their reasons for travel and their particular world view.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *DIV, GLO, SBS+*

3 credits

HIS 308: 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.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 309: Victorian Britain and Monsters: A Peculiar History of Empire

Focuses on the impact of empire and urbanization on Victorian society, culture and politics, and especially upon Victorian conceptions of gender, race, and racial difference as the basis of national greatness, superiority and global social hierarchy. At war with indigenous peoples in its empire for almost the entire century, and faced with restive and even revolutionary laborers, Irish Home Rulers and suffragettes on the domestic front, Victorians formulated imaginary solutions to the real social and political problems faced at home and in the colonies, and these formulations of monsters, social or supernatural impacted nothing less than western conceptions of modernity itself. National and imperial developments across hemispheric and transoceanic space provide the larger contexts for the two assigned novels (about monsters) and historical narratives and primary sources (about Victorian society). Finally, the course also teaches historians how to use literary fiction as historical sources (a methodology distinct from but linked to that of literature departments), in conjunction with primary and secondary historical works.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *DIV, SBS+*

3 credits

HIS 310: Britain Since 1945: Postcolonial Disruptions

Examines 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. Britain entered the 20th century as the world's premier imperial power, the barometer of global technological, cultural, political and intellectual developments. As the empire disintegrated, wracked by world wars and nationalist revolts, the British state took up a different kind of revolution -- a 'socialist' revolution--that sought to give its citizens economic and social security 'from the cradle to the grave.' At the same time, British society was significantly enlivened, and further transformed, by the influx of immigrants from former colonies and the Commonwealth. The second half of the twentieth century thus 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 our course, and will be explored through imaginative and historical literature and film.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *DIV, SBS+*

3 credits

HIS 312: 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: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 314: Indigenous-Settler Relations in the United States

Surveys the relations between the first peoples to inhabit the territory that becomes the United States--Indigenous Peoples--and European and Euro-American colonizers and investigates instances of violence, removal, and assimilation through the concepts of genocide, ethnic cleansing, and crimes against humanity. Students will critically explore the ethical decisions that settlers made, the political choices that settlers and their governments made to foster the expansion of the United States, legal actions that Indigenous Peoples initiated to preserve their sovereignty, and the movement for social justice that Indigenous Peoples are currently undertaking.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *CER, DIV, SBS+*

3 credits

HIS 315: Nazi Empire

The purpose of this course is to understand state-organized violence and racist terrorism during the Third Reich. In this course students are also expected to understand the role of war in the Nazi plans for realizing their racial utopia and to develop a more complex understanding of mass violence in this process.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *GLO, SBS+*

3 credits

HIS 318: Modern European Intellectual History

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; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 320: Latino New York

Movements of people and waves of immigration have made New York City into a microcosm of the Americas and a meeting point for various cultures. Latinos (or people of Latin American descent or origin living in the United States) have been a vital part of New York since its founding and still continue to change New York. The course examines the 'Latinoization' of New York from the 1600s to the present day, and addresses the lives and experiences of Spanish, Cuban, Puerto Rican, Dominican, Central and South American, and Mexican communities. Key course topics include immigration; identity formation; labor and political activism; race relations and civil rights movements; and cultural production such as fashion, music, theatre, and art.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *DIV, SBS+, SPK*

3 credits

HIS 323: Women of Color in the U.S.

In what ways is the history of race in America a gendered history? This course will focus

on the creation of the modern color line in American history by analyzing the 20th century cultural productions of African American, Asian American, Native American, and Latina/Chicana women. Our central concern will be the ways in which race has been historically constructed as a gendered category. This course is offered as both HIS 323 and WST 323. This course is offered as both HIS 323 and WST 323.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K*
SBC: *DIV, SBS+*

3 credits

HIS 325: Civil Rights and Black Power

The course considers how the 'long civil rights movement' and century-long struggles for Black Power were interwined movements, rather than conventional narratives that conceive them as being opposed to one another. The course will therefore span the whole of the twentieth century, beginning with the founding of the United Negro Improvement Association and the National Association for the Advancement of Colored People (NAACP), and it will conclude with the turn from civil rights to economic justice, Black political empowerment, and campaigns against police brutality. Offered as both AFS 325 and HIS 325.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *SBS+*

3 credits

HIS 327: The Arts as History

Examines 19th-century America through the visual, literary, and performance arts. The significance of every work of art lies in the immediate conditions of its production and reception, in who created or practiced it, how people learned to do it, the skills it encompassed, how it became an employment, where it was exhibited or performed, and who marketed, bought, or enjoyed it. In this class, 19th-century drawings, paintings, sculptures; essays, novels, poems; music, dance, and theater are studied as primary documents, physical embodiments of their historical moment.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *F*
SBC: *HFA+, SBS+*

3 credits

HIS 328: History of New York City

A survey of the evolution of New York City from native American communities, Dutch outpost, British town, American nineteenth through twenty-first century metropolis in the context of cultural diversity, conflict, and the quest for the almighty dollar. The course will develop how the city has both mirrored and shaped national political, economic, social and cultural trends.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *SBS+*

3 credits

HIS 329: Environmental Disasters

An examination of the evolution of environmental danger and disaster, this course surveys the history of environmental devastation and risk throughout the modern era, from the early twentieth century into the first decades of the twenty-first. Among the disasters singled out for study are those from nuclear radiation, petrochemicals, and hurricanes and rising sea levels.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *H*
SBC: *STAS*

3 credits

HIS 331: Immigration in American History

An examination of the ways in which the immigration of various people from around the world, and how immigration has shaped American history and U.S. national identity. Beginning with the American colonial period and going up to the present day, the course traces the development of policies toward immigrants from Europe, Africa, Asia, and Latin America. Other key topics include twenty-first century debates over immigration policy in the post 9/11 era, inequalities within the U.S. immigration system, pro-immigrant rights movements, and the impact of economics and foreign policy upon border and citizenship legislation.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *DIV, SBS+*

3 credits

HIS 332: Postcolonial South Asia

Surveys the history of South Asia (contemporary India, Pakistan, and Bangladesh, with some consideration of Nepal, Afghanistan, and Myanmar/Burma) from the mid-twentieth century to the present. Central themes include decolonization, legacies of British colonial rule and anti-colonial nationalism, state-building, regionalism, citizenship and rights, changing urban and rural spaces, new political movements, securitization, and economic transitions.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *ESI, SBS+*

3 credits

HIS 334: Women and Gender in Pre-Modern European History

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 334 and WST 360. Formerly offered as HIS 360.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 336: Women and Gender in Modern European History

This course will examine modern European history from a gender perspective. In other words, we will examine the ways in which the constantly challenged and changing social division of humans into the categories of women and men structured the political, economic, and cultural history of Europe during its period of global dominance. The period covered is roughly from the 18th century through the Second World War, with background provided at one end and a brief review of post-national Europe at the other. This course is offered as both HIS 336 and WST 334.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 337: History of Korea

Examines Korean history from ancient to modern times. Korea is one of the many ancient, non-European civilizations claiming a cultural influence on the region and one of the main players in the history of East Asia. Reflecting its unique historical experiences, Korean history has raised diverse debatable

issues. The primary goal of this course is to provide an overview of Korean history and, at the same time, through introducing multiple debatable issues of historical significance, the course attempts to enhance students' analytical capability in approaching complicated historical issues. This course is offered as both AAS 337 and and HIS 337.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

HIS 338: 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. This course is offered as both AAS 336 and HIS 338.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *SBS+*

3 credits

HIS 339: 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: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K*
SBC: *SBS+, USA*

3 credits

HIS 340: Topics in Asian History

Designed for upper-division students, this course provides an in-depth study of a specific topic in Asian history. May be repeated as the topic changes. This course is offered as both AAS 340 and HIS 340.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *GLO, SBS+*

3 credits

HIS 344: 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. This course is offered as both AAS 343 and HIS 344.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *GLO, SBS+*

3 credits

HIS 348: Colonial South Asia

Surveys the history of South Asia (contemporary India, Pakistan, and Bangladesh, with some consideration of Nepal, Afghanistan, and Myanmar) in the era of British colonial domination, c. 1750-1950. Central topics include the late pre-colonial context, the rise of formal colonial rule, economic and social transformations, anti-colonial nationalism, decolonization, and debates over the ethics of both colonialism and different schemes for bringing about its end.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *CER, SBS+*

3 credits

HIS 350: Topics in African History

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

HIS 351: 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: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

HIS 352: 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.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *H*
SBC: *STAS*

3 credits

HIS 353: 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. This course is offered as both AAS 353 and HIS 353.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *GLO, SBS+*

3 credits

HIS 356: Zionism, Israel, and the Middle East

This course explores one of the more divisive events of the twentieth century: the establishment of the State of Israel. Beginning with the origins of the Zionist movement and its activities in nineteenth-century Europe and the Middle East, the course then moves to explore the establishment of the state in 1948 and subsequent Israeli politics and society, with an eye to its relationship with neighboring Arab states, the Palestinians, and Jews around the world. This course is offered as both HIS 356 and JDS 356.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *CER, SBS+*

3 credits

HIS 360: Changing Families: US History to 1860

Explores the American past from the perspective of ordinary people through lectures and readings that emphasize the experiences and ideas of individuals and groups of men and women of different classes, races, ages, beliefs, ethnic origins, and regions as they pursued competing notions of liberty and democracy. Previously offered as HIS 291; not for credit in addition to HIS 291.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *DIV, SBS+*

3 credits

HIS 361: Slavery and Freedom in the Making of the Atlantic

From Caribbean plantations to North American seaports, enslaved Africans played vital roles in building the Atlantic world. In this course, we will examine the historical roots of slavery, the transatlantic slave trade, and changing labor systems from the colonial period to the early 19th century. We will consider how individuals endured the traumatic Middle Passage, survived life in bondage, resisted brutal exploitation, asserted their humanity, and struggled for freedom. The course takes a comparative approach incorporating different regions, time periods, and environments.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *CER, DIV, SBS+*

3 credits

HIS 362: Unsettled Decade: 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.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K*
SBC: *SBS+*

3 credits

HIS 363: Topics in American History

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.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *F*
SBC: *SBS+*

3 credits

HIS 364: Oceans Past: World History from a Maritime Perspective

Although approximately 70% of Earth's surface is covered by water, this vast submerged expanse is often regarded as an unfathomable space with no history. Yet for thousands of years, humans have negotiated the oceans' heaving waves, plumbed their silent depths for marine resources, and at times been humbled by Poseidon's awesome force. In this course, we will explore the historical significance of oceans and coastal zones from social, economic, and environmental perspectives. We will also learn about the diversity of people's maritime experiences from the pre-modern period to today.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *STAS*

3 credits

HIS 365: 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. Trans-formations 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.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *H*
SBC: *ESI, STAS*

3 credits

HIS 366: Carceral Studies: Histories of Policing, Prisons, and Surveillance

With 2.2 million people in prison and nearly 6.5 million people under the auspices of the criminal justice system (via probation or parole), the United States, which has only 5 percent of the world's general population, now imprisons twenty five percent of the world's prison population. How did the United States come to have the world's highest rate of incarceration and one so sharply racially disproportionate? This course traces the development of what some have termed the 'New Jim Crow' and a 'prison empire' by viewing American history through the lens of race, crime, punishment policing, and prisons.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *DIV, SBS+*

3 credits

HIS 368: Health and Disease in Africa

Health and disease lie at the intersection of social, political, economic, biological, and cultural processes. In other words, they have changed throughout human history, and they are not just defined by scientists and doctors but by many more actors. This course has two goals: to introduce students to the study of disease and health as historical phenomena and to examine Africa's importance within global and regional histories of these subjects. We will explore how the experiences of sickness and well-being have changed over time. This course is offered as both AFS 368 and HIS 368.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

HIS 369: Religion and Politics in Africa

Sub-Saharan Africa is home to many religions' indigenous belief systems, Judaism, Christianity, and Islam It is also arguably a region with a history of peaceful coexistence until recent decades. This course examines African religious transformations, encounters, exchanges, and conflicts. Topics to be covered include medieval and modern theocracies, reformism and jihad, literacy, gender hierarchies, education, European colonialism and Christian proselytization, Islamic evangelism, and religion and resistance to foreign domination. We will also explore theories about charismatic leadership, modernization, secularization, and radicalism. This course is offered as both AFS 369 and HIS 369.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *CER, SBS+*

3 credits

HIS 370: US Social History from 1860 to 1940

Development of American society and culture from the late 19th c. to the start of World War Two. Examination of the impact of the second industrial revolution, urbanization, and immigration on class, gender, and race relations. Special emphasis on the evolution of modern consumer culture, mass media, and advertising. Formerly offered as HIS 292; not for credit in addition to HIS 292.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *DIV, SBS+*

3 credits

HIS 371: 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 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *DIV, SBS+*

3 credits

HIS 373: Global 1960s

For those who lived through it, the 1960s were a tumultuous decade marked both by utopianism and the harsh realities of political repression. Cultural revolutions, student protests, Cold War battles fought in the Third World and Eastern Europe, and the radicalization of civil rights struggles all converged. How do we make sense of the 1960s as a transnational, global set of experiences whose revolutionary heroes from Che Guevara to The Beatles and imagery were deeply intertwined? This course will examine various foundational texts from the period, including films, music and poster art, while exploring the multiple contexts of the 'Global Sixties,' from Cuba to Prague, Paris to Berkeley, Beijing to Mexico City.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *GLO, SBS+*

3 credits

HIS 374: Surveillance State: A History of U.S. Domestic Spying

Recent discoveries prompted by Edward Snowden's public revelations concerning the domestic spying activities of the National Security Agency have revived an international debate over whether the United States has constructed a post-911 'surveillance state.' Despite the contemporary nature of this debate over privacy versus security, there is a long and contested history of U.S. domestic spying. This course considers that history. The class will place the development of a surveillance state in the historical context of wars as well as on racial and ethnic demographic and political changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *F*
SBC: *SBS+*

3 credits

HIS 379: Rebels & Revolutionaries: 1960s Latin America

With his long hair and irreverence toward authority, Ernesto 'Che' Guevara became a symbol of both countercultural rebellion and social revolution during the 1960s globally. This course explores the intertwined relationship between 'rebels and revolutionaries' embodied in the figure of Guevara in Latin America during this period. Using a diverse range of secondary and primary sources, including memoir, film, music, and diplomatic correspondence, this course examines the themes of guerrilla insurgency, military repression, student protest, youth counterculture, and U.S. interventionism during this transformative decade.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *GLO, SBS+*

3 credits

HIS 380: Topics in Latin-American History

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

HIS 381: Chocolate, Coffee & Cocaine: Global Commodities

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. Not for credit in addition to HIS 258.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *DIV, GLO, SBS+*

3 credits

HIS 383: The World of Jane Austen; Jane Austen in the World

An examination of the social, political and cultural milieux and legacies of Jane Austen's famous novels, including the contours of English provincial and gentry society in the Revolutionary, Napoleonic and Regency periods (1792-1820). Topics will include class and sociability; the functions of the country house; gender and family relations; the pleasures and dangers of urban culture; fashion and leisure pursuits, including tourism; women, theatre and print culture; the impact of empire, war and radical politics on social and political relations of the day, and the details of Jane Austen's own life, along the ways in which Austen novels were appropriated and used by subsequent generations and in different cultural contexts, from the Victorian critics to twentieth-century Bollywood film adaptations to twenty-first century blogs.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *HFA+, SBS+*

3 credits

HIS 385: Aztec Civilization

An introduction to the historical development of the Aztec Civilization in the ancient Mesoamerican World. Combining historical, anthropological, art historical, and literary sources, we will trace the rise and decline of

the Aztec empire, as well as its social and cultural achievements and imperial problems on the eve of the European arrival. We will explore the conquest of Mexico from the Aztec point of view, and we will conclude with an examination of the ways in which Aztec culture have survived to this day.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *ESI, SBS+*

3 credits

HIS 386: The Maya

For many, the word 'Maya' evokes images of a long dead culture and ruined pyramids. This course uses that familiarity as a starting point and follows the history of the Maya from ancient times to the present. We begin with an overview of what scholars know about the ancient Maya before tracing their experiences since the Spanish conquest, placing emphasis on Spanish colonization in the lowland areas of Mesoamerica, Mexico's War of the Castas, and the diverse experiences of the modern Maya including the Guatemalan Civil War and the Chiapas uprising, the impact of foreign tourism, and the experience of transnational migration. Special attention will be paid to the ways in which environmental and agrarian issues have impacted this diverse group of peoples. Offered as both HIS 386 and SUS 386. Formerly offered as EHM 386; not for credit in addition to EHM 386.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

HIS 387: Cuba: Island of Consequence

This is an historical simulations class that replays the impact of the Cuban Revolution on a global scale during the 1960s. The first part of the course is dedicated to researching individual roles and reading about the geopolitics of the 1960s from a Latin American perspective. The second part of the course divides students into country teams and places individuals directly into the historical period as actors in an unfolding drama with multiple possible outcomes. Students are expected to demonstrate full commitment to the role-playing element of the course.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

SBC: *ESI, GLO, SBS+*

3 credits

HIS 389: Mexico: From Revolutions to Cartels, 1810-2020

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: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *DIV, SBS+*

3 credits

HIS 390: Topics in Ancient History

Designed for upper-division students, this course provides an in-depth study of a specific topic relating to ancient history. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 391: Topics in Ancient and Medieval Europe

Designed for upper-division students, this course provides an in-depth study of a specific topic relating to ancient and Medieval Europe. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 392: Topics in Early Modern Europe

Designed for upper-division students, this course provides an in-depth study of a specific topic relating to early modern Europe. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 393: Topics in Modern European History

Designed for upper-division students, this course provides an in-depth study of a specific topic relating to modern European history. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

HIS 396: 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.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *SBS+*

3 credits

HIS 397: 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. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*

3 credits

HIS 398: Topics in the History of Science, Medicine and Technology

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *H*
SBC: *STAS*

3 credits

HIS 399: 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. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K & 4*
SBC: *SBS+*

3 credits

HIS 401: Senior Colloquium

Advanced research, writing, and oral presentation seminar. May be repeated as the topic changes.

Corequisite: permission of the department

SBC: *EXP+, SPK, WRTD*

3 credits

HIS 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any HIS course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

HIS 459: Write Effectively in History

A zero credit course that may be taken in conjunction with any upper-division History course (with approval of the course instructor). The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective. Students will submit one ten-page paper or two five-page papers for approval by the Undergraduate Program Director (UPD) in History.

Corequisite: permission of the department

SBC: *WRTD*

0 credit, 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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits

HNI

Nursing One and Two Year Baccalaureate Courses

HNI 290: Introduction to Nursing

This course is designed as an introduction to nursing for students who plan a career in nursing but are not yet enrolled in a school of nursing. The student will be oriented to the nature and scope of the profession of nursing and settings where nursing is practiced.

2 credits

HNI 389: Cultural Immersion: Undergraduate

This seminar course will provide the student with an interprofessional perspective of global health. A specific world area will be studied in detail with emphasis on contemporary problems that affect health considering the ecology, history, language, cultural systems and social arrangements. Cross-cultural learning opportunities, both domestic and abroad, will engage students in reflection on the interconnections, interdependence and inequalities they encounter during this experience. School of Nursing permission is required.

3 credits

HNI 489: Global Immersion: Undergraduate

The focus of this course is to expand, deepen, or enrich nursing practice relevant to global aggregates, families and communities. Learning opportunities will promote integration of competencies, leadership, and practice inquiry within the context of a global experience. Cross-cultural learning experiences will provide opportunities for student reflection on the interconnections, interdependence and inequalities they encounter during these experiences. Emphasis will be placed on interprofessional collaboration within an international environment. School of Nursing permission is required.

Prerequisite: Admission to Undergraduate School of Nursing Program

0-6 credits

HNI 492: Complementary and Alternative Therapies

This course is an introduction to complementary and alternative health practices. The student will examine uses of complementary and alternative therapies in health promotion and disease prevention as well as in acute and chronic health management through evidence based practice and research. Implications of complementary and alternative therapies on culture, health disparities, society, economics, safety, legal, ethical and health policy issues will be explored.

Prerequisite: Admission to Undergraduate School of Nursing Program

2 credits

HON

Honors College

HON 101: Introduction to Honors College and Stony Brook

A seminar intended to integrate students into the Honors College and the University community by providing information about Stony Brook and a forum for discussion of values, intellectual and social development, and personal and institutional expectations. Students will have opportunities to reflect on the meaning and purpose of honors education. This course is a graduation requirement for all first-year students in the Honors College Program (students in their first year of study). Not for credit in addition to ADV 101, GLS 101, ACH 101, LDS 101, HDV 101, ITS 101, SSO 101, SBU 101, SCH 101, LSE 101, or WSE 101.

Prerequisite: first-year Honors College student

1 credit, S/U grading

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: Member of Honors College

SBCP: *This course provides partial credit for the following: CER_PART, HUM_PART, SBS_PART*

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: Member of Honors College

SBCP: *This course provides partial credit for the following: CER_PART, HUM_PART, SBS_PART*

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: Member of 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: Member of 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: Member of 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: Member of 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: Member of 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: Member of 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: Member of 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: Member of 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: Member of 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: Member of 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: Member of 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.

Prerequisite: Member of Honors College

SBC: *ARTS*

3 credits

HON 275: University Honors Fellows Seminar

University Honors Fellows enroll in HON 275 in the spring semester of their freshman year and HON 276 in the fall semester of their sophomore year. This seminar prepares students for supervised learning and teaching experiences that will occur primarily in the fall 276 course. Main content areas include student development theory; mentorship; leadership development; best practices in teaching and learning; and honors education. This course is offered as HON 275, SCH 275, and WSE 275.

Prerequisite: A grade of "S" in HON/SCHWSE 101; member of a University Honors Program; permission of the instructor

1 credit, S/U grading

HON 276: University Honors Fellows Practicum

The second-semester course in the sequence following HON 275. Fellows assume higher responsibility and are given opportunities to apply teaching theories and concepts as learned in 275. Fellows serve as teaching assistants for HON 101. This course is offered as HON 276, SCH276, and WSE 276.

Prerequisite: A grade of "S" in HON/SCH/ WSE 275; member of a University Honors Program (HON/SCH/WSE); permission of the instructor

SBC: *EXP+*

1 credit, S/U grading

HON 301: Science, Engineering, Medicine, and Society

An examination of the mutual relations among science, technology, medicine, and society: how the sciences and various technologies affect society and, at the same time, are affected by it. This examination is conducted through the perspectives of disciplines outside the sciences -- such as history, philosophy, sociology, and economics--in combination with the natural sciences, applied sciences, clinical medicine, and engineering.

Prerequisite: Member of Honors College; U3 or higher standing

SBC: *CER, STAS*

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: Member of Honors College; U3 or higher standing

SBC: *DIV, GLO*

3 credits

HON 475: Honors 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 HON 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: Member of Honors College; permission of the instructor and department

SBC: *EXP+*

1 credit, S/U grading

HON 495: Honors College Senior Project/Thesis I

First course of a two-semester, six-credit, research or creative project to be arranged with and approved by the Honors College and a faculty supervisor. Both the Honors College and the selected faculty member provide ongoing project supervision. With the approval 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 University Honors Program Senior 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

SBCP: *This course provides partial credit for the following: ESI_PART, EXP+_PART, SPK_PART, WRTD_PART*

3 credits

HON 496: Honors College Senior Project/Thesis II

Second course of a two-semester, six-credit, research or creative project to be arranged with and approved by the Honors College and a faculty supervisor. Both the Honors College and the selected faculty member provide ongoing project supervision. With the approval 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 University Honors Program Senior 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

SBCP: *This course provides partial credit for the following: ESI_PART, EXP+_PART, SPK_PART, WRTD_PART*

3 credits

HUE

European Literature and Culture Courses in English

HUE 220: Modern Ukraine

An examination of major cultural, social and political developments in modern Ukraine viewed in their historic social and political context. An in-depth discussion of the current events that play a major global role. A survey of Ukrainian national identity and its place in Europe and the world explored through literature, the arts, and media.

SBC: *GLO, HUM*

3 credits

HUE 269: 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.

DEC: *I*
SBC: *GLO, HUM*

3 credits

HUE 392: Topics in Slavic Studies

Recent topics have included consideration of cultural representations of women and war in film and in literary and biographical writings. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *I*
SBC: *HFA+*

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: 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.

DEC: *D*
SBC: *ARTS*

3 credits

HUF 216: 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: one D.E.C. B or HUM course

DEC: *I*
SBC: *GLO, HUM*

3 credits

HUF 219: 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.

DEC: *I*
SBC: *GLO*

3 credits

HUF 311: French Literature

A course given in English on a major French author or literary movement in relation to European or American literature. May be repeated as topic changes. May be used to satisfy 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

DEC: *G*
SBC: *GLO, HFA+*

3 credits

HUF 318: 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

DEC: *J*
SBC: *GLO, HFA+*

3 credits

HUF 319: Women of the Middle East

Focuses on women's texts from the Middle East and addresses different issues related to women's rights. The course examines the deep relations between the history of the region, its religions and cultures, and the heavy marks left by the former colonizers. Taught in English.

Prerequisite: U3 or U4 standing

DEC: *J*
SBC: *GLO, HFA+*

3 credits

HUF 385: 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: Junior or Senior Standing

DEC: *J*
SBC: *HFA+*

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

SBC: *EXP+*

3 credits, S/U grading

HUG

German Literature and Culture Courses in English

HUG 221: 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 Schlondorff, 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.

DEC: *D*
SBC: *ARTS*

3 credits

HUG 229: 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.

DEC: *I*
SBC: *GLO*

3 credits

HUG 321: 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

DEC: *G*
SBC: *HFA+*

3 credits

HUI

Italian Literature and Culture Courses in English

HUI 216: 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: one D.E.C. B or HUM course

DEC: *I*
SBC: *GLO*

3 credits

HUI 231: 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.

DEC: *D*
SBC: *ARTS, CER*

3 credits

HUI 234: Introduction to 20th-Century Drama

A study of avant-garde drama through the analysis of texts by Marinetti, Bontempelli, Pirandello, Betti, Beckett, Ionesco, and Tenessee 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: one D.E.C. B or HUM course or THR 101

DEC: *G*
SBC: *GLO, HUM*

3 credits

HUI 235: 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.

Advisory Prerequisite: one D.E.C. B or HUM course

DEC: *G*

SBC: *GLO, HUM*

3 credits

HUI 236: The Italian-American Scene

Exploration of the phenomenon of Italian-American experiences, with emphasis on issues of immigration and ethnicity. Studies in anthropology, history, sociology, literature, and culture provide historical and theoretical backgrounds of the experience of Italians in North and South America and their contributions to American culture.

Advisory Prerequisite: one D.E.C. B or HUM course

DEC: *K*
SBC: *HUM, USA*

3 credits

HUI 237: 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: one D.E.C. B or HUM course

DEC: *K*
SBC: *DIV, HUM, USA*

3 credits

HUI 239: Transnational Italies

The course explores notions of 'Italy' and 'Italian culture' through selected representations - including film, literature, visual arts, and material culture - produced both within and outside the country.

DEC: *I*
SBC: *GLO, HUM*

3 credits

HUI 306: Italian Renaissance Art

An introduction to art in Italy from the late 13th through the late 16th centuries, with special emphasis on major centers, such as Florence, Rome, and Venice, and major figures such as Masaccio, Donatello, Leonardo da Vinci, Michelangelo, Raphael, and Titian. This course offered as both ARH 306 and HUI 306.

Prerequisite: U3 or U4 status
Advisory Prerequisite: ARH 204

DEC: *I*
SBC: *HFA+*

3 credits

HUI 331: Italian Literature

A topics course given in English on a major Italian author or literary movement in relation to European or American literature. May be repeated as the topic changes. May be used to satisfy 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

DEC: *G*
SBC: *HFA+*

3 credits

HUI 333: 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. Covers the Interdisciplinary topic for the English major. This course is offered as both EGL 333 and HUI 333.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *K*
SBC: *HFA+*

3 credits

HUI 336: Italian Americans and Ethnic Relations

Using resources and materials ranging from literature to cinema, visual representations and archival documents, the course follows the history of Italian Americans and analyzes their positioning in relation to other ethnic groups. The Italian American experience will be discussed both within the context of the USA's complex history of immigration and social transformation and in the light of Italy's changing relationship with its global diasporas.

Prerequisite: U3 or U4 standing

DEC: *K*
SBC: *USA*

3 credits

HUI 338: 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

DEC: *K*
SBC: *HFA+*

3 credits

HUI 390: Italian-American Studies in the Humanities

May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *G*
SBC: *HFA+*

3 credits

HUI 392: Italian-American Studies in the Social and Behavioral Sciences

May be repeated as the topic changes.

Prerequisite: Junior or Senior Standing

DEC: *F*
SBC: *SBS+*

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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits, S/U grading

HUL

Romance Languages

HUL 324: Romance Linguistics

The history and contemporary structures of the Romance languages. We will examine the many similarities in their grammatical structures, as well as the differences in their phonology, morphology, syntax, and lexicon. In addition to the standard European varieties of Romance languages (French, Italian, Portuguese, Rumanian, Spanish), we will study the "minor" Romance languages (Latin American varieties of Spanish, Catalan, French Creoles, Italian "dialects", etc.). This course is offered as both HUL 324 and LIN 324.

Pre- or corequisite: One of the following: FRN 312, ITL 312, LAT 112, SPN 312
Advisory Prerequisites: LIN 101, LIN 201, LIN 211

DEC: *I*
SBC: *HFA+*

3 credits

HUR

Russian Literature and Culture Courses in English

HUR 141: 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.

DEC: *B*
SBC: *HUM*

3 credits

HUR 142: 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.

DEC: *B*
SBC: *HUM*

3 credits

HUR 231: 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: one D.E.C. B or HUM course

DEC: *I*
SBC: *CER, HFA+*

3 credits

HUR 232: 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: one D.E.C. B or HUM course

DEC: *I*
SBC: *CER, HFA+*

3 credits

HUR 235: 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.

Advisory Prerequisite: one D.E.C. B or HUM course

DEC: *G*
SBC: *CER, GLO, HUM*

3 credits

HUR 241: Russian Cinema

A survey of contemporary Russian cinema in a historical, cultural, and political context. Students learn methods of reading and analyzing film content and style. Topics include: cinematic techniques, major events in the Soviet and Russian history, and discussions of various cultural and social issues. All films have English subtitles.

DEC: *D*
SBC: *ARTS, GLO*

3 credits

HUR 249: 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.

DEC: *I*
SBC: *GLO, HUM*

3 credits

HUR 341: 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 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

DEC: *G*
SBC: *HFA+*

3 credits

HUR 393: 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

DEC: *G*
SBC: *HFA+*

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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits, S/U grading

HUS

Spanish Literature and Culture Courses in English

HUS 150: Indigenous Cultures of Latin America

An introduction to the Indigenous Peoples of Latin America in the past and present times, focusing on culture, arts, social movements and politics.

SBC: *DIV, GLO, HUM*

3 credits

HUS 201: The Hispanic World through Visual Cultures

This class will study visual cultural artifacts in close connection to their historical contexts and to the literary traditions of Latin America, Spain and Hispanic/Latino USA. The class will survey 500 years of cultural traditions through the analysis of maps, textiles, pottery, city designs, monumental sculpture, painting, muralism, graffiti, comic books, visual poetry and other Hispanic visual cultural products.

SBC: *ARTS, DIV*

3 credits

HUS 221: Disabled Bodies, National Politics

A study of the disabled body in nineteenth century Iberian cultural production. An inquiry into who was considered disabled and what were the consequences of being discriminated as such. We will focus on physical, social and economic differences in order to understand them. We will study human and cultural differences and will discuss issues of gender, race, varying abilities and disabilities, socioeconomic level, sexual orientation. We will also focus on medicine and science, as medicine discourse and treatises have established what a disability is and turned disability into a social construct.

SBC: *DIV, STAS*

3 credits

HUS 250: Caribbean Cultures

An examination of modern Caribbean literature and culture focusing on Cuba, Puerto Rico and the Dominican Republic in dialogue with Anglophone and Francophone Caribbean texts.

SBC: *DIV, GLO, HUM*

3 credits

HUS 254: Latin America Today

An introduction to a global perspective on contemporary Latin American culture. Latin America's political, historical, and cultural developments of this century are studied.

DEC: *J*
SBC: *DIV, GLO, HUM*

3 credits

HUS 255: Modern Spain

An examination of major cultural and social developments in contemporary Spain in global context.

DEC: *I*
SBC: *DIV, GLO, HUM*

3 credits

HUS 261: Latin American Literature in a Global Context

A topics course given in English on a major Latin American author or literary movement in relation to European or American literature. May be repeated as the topic changes. May be used to satisfy comparative literature major requirements with permission of major department.

DEC: *G*
SBC: *DIV, GLO, HUM*

3 credits

HUS 271: United States Latino Literature and Culture

A topics course in English on the literature, cultures and histories of Latinos in the United States. May be repeated as the topic changes. May be used to satisfy comparative literature major requirements with permission of major department.

DEC: *G*
SBC: *DIV, HUM, USA*

3 credits

HUS 272: Science, Technology, and the Environment in Latin America

Studies the dialogues between scientific and literary discourses in Latin America, discussing the ethics and responsibility of dealing with our current environmental emergency. Special focus will be on cultural and literary interventions in the debates about sustainability, infrastructure, climate change, and global warming, and on the place that the discourses of science and technology have played in them.

SBC: *CER, STAS*

3 credits

HUS 290: Latin American Cinema

A contextual introductory approach to the national cinemas of Latin America and their local politics in a global context. Students develop skills in film analysis and examine performance techniques and visual languages, while studying cinema in relation to national identity, the self, and the function of culture in society. Formerly offered as HUS 390; not for credit in addition to HUS 390.

DEC: *J*
SBC: *ARTS, DIV, GLO*

3 credits

HUS 475: Undergraduate Teaching Practicum in Hispanic Cultures

Students will work with a faculty as an assistant in one of the regularly scheduled undergraduate HUS classes (taught in English). The student is required to attend all classes and meet with the faculty member

at regularly scheduled times to coordinate and discuss the intellectual and pedagogical matters relating to the class. Students will be facilitating discussions with students and analyzing the structure of the course and the mechanics of testing and participation during the whole semester. Students may not serve as assistants in the same course twice. Not for major or minor credit.

Prerequisite: U3 or U4 status and permission of the instructor

SBC: *EXP+*

3 credits, S/U grading

HWC

Social Work

HWC 210: Overview of the Social Work Profession

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 317: Issues in Death and Dying; Loss and Separation

This course provides an overview of the knowledge, values, policy and skills underlying effective entry-level practice with dying and grieving clients. The interrelationship of psychological, interpersonal, family, institutional, community and cultural dynamics of dying and grieving are covered. Permission required for students not enrolled in the School of Social Welfare.

Prerequisite: Admission to Undergraduate School of Social Welfare Program or Department Consent

3 credits

HWC 344: Overview of Substance Abuse

This course is an examination of the history and development of alcohol and substance abuse problems in the United States. It focuses on the etiology, psychopharmacology and legal ramifications of the use of licit and illicit substances in our culture. The course provides information on a variety of services available to drug abusers, addicted individuals and their families in the fields of prevention, education and treatment. Permission required for students not enrolled in the School of Social Welfare.

Prerequisite: Admission to Undergraduate School of Social Welfare Program

3 credits

HWC 351: Law and Social Change

This course 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. 3 credits, semester varies

Prerequisite: Admission to Undergraduate School of Social Welfare Program

3 credits

HWC 369: Youth and Violence

This course examines the etiology of youth at risk for violence, using ecological and interpersonal perspectives. Family, school and community risk factors are outlined as well as assessment, intervention and treatment issues. Successful prevention programs are highlighted. Permission required for students not enrolled in the School of Social Welfare.

Prerequisite: Admission to Undergraduate School of Social Welfare Program

3 credits

HWC 379: Special Topics in Social Welfare

These courses examine significant timely issues confronting the profession. Topics include violence as a public health problem, issues of aging, racism, gender, AIDS, the media, and others. Topics vary each term as faculty develops specific modules that address one or more of these issues. Permission required for students not enrolled in the School of Social Welfare.

Prerequisite: Admission to Undergraduate School of Social Welfare Program

3 credits

IAE

Digital Intelligence Arts & Engineering

IAE 101: Digital Intelligence

An introduction to methods and theories in computer science, media studies, and the computational humanities. Students will learn to understand works of art and works of artifice from poetry to Python to prototyping. They will also learn computational tools and how to apply them to practical and creative problems. They will learn to understand the world of technology as a world shaped by human norms, beliefs, and agendas, and how to intervene in that world as critics and makers. They will explore the connections between human intelligence and digital intelligence.

SBC: *ARTS, TECH*

3 credits

IAP

International Academic Programs

IAP 249: Placeholder Course

Placeholder course for students completing courses through other SUNY campuses.

0-15 credits

IAP 302: Placeholder course

Placeholder course for students completing courses through other SUNY campuses.

0-15 credits, S/U grading

IAP 390: Rethinking America: Traditions and Trends

Overview of contemporary American society and events important to American history. Readings and discussions consider how society and culture shape contemporary life in America. Present-day issues and perspectives will be examined through readings, multimedia, and communicative activities. 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 the as 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 444: Global Service Learning

Offers the opportunity to review, analyze and discuss current issues facing a specific region/ geographical area, while developing personal leadership identity and exploring the process of social change. The course is constructed

around three major themes: explore local government response and strategies to solve crisis or social need, review external organizations' influence in managing crisis response, and examine the inter-institutional cooperation between non-profit institutions in country in handling current crisis.

SBC: *EXP+*

0-6 credits

IAP 488: Internship

May be repeated to a limit of 6 credits.

Prerequisites: Permission of instructor and department

SBC: *EXP+*

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 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

SBC: *EXP+*

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

SBC: *TECH*

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.

SBC: *TECH*

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 218: Fundamentals of Information Technology

This course introduces the fundamentals of Information Technology (IT) to students interested in the relationship between computer hardware, software, networks, and information systems. The course examines components found in high use computing devices such as desktop computers, smart phones, and navigation systems. The focus of the examination is understanding the underlying technology of each component, along with price/performance curves and competing technologies. Upon completion of the course, students should be proficient in reading device specifications, particularly functional and performance implications. Students should also be able to use that knowledge to compare competing devices.

Prerequisite: Level 4 or higher on the mathematics placement examination or a grade of C or better in MAT 123 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 or DAS major; U3 or U4 standing

SBC: *SPK, WRTD*

3 credits

ISE 301: 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

DEC: *H*
SBC: *STAS*

3 credits

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 114 or CSE 230

SBC: *EXP+, TECH*

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. This course is offered as both CSE 311 and ISE 311.

Prerequisites: CSE 214 or CSE 230 or CSE 260 or ISE 208; ISE or CSE major

3 credits

ISE 312: Social, Legal, and Ethical Issues in Computing

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 ways we work, play, and interact with other people. These changes have created a flood of new social, legal and ethical issues that demand critical examination. This course is offered as both CSE 312 and ISE 312.

Prerequisites: CSE, ISE or DAS major; U3 or U4 standing; one D.E.C. E or SNW course

SBC: *CER, ESI, STAS*

3 credits

ISE 316: Introduction to Networking

This course introduces the principles of computer networks, including network architectures, algorithms, and performance, with the TCP/IP based Internet as an example. It examines various networking protocols at different layers of the Internet protocol stack, including those at the application, transport, network, and the data link layers, respectively.

Prerequisites: CSE 114 or ISE 208; Level 4 or higher on the mathematics placement exam or MAT 123
Anti-requisite: May not be taken by students with credit for CSE 310.

3 credits

ISE 317: Computer Networking II

Today's computer networks have become an infrastructure as essential as utility networks such as the transportation network and the national grid of electricity. A wide variety of networking technologies are deployed to support nearly every sector of the society. Among these technologies, those that are related to wireless and mobile networking, multimedia networking, as well as network security are among the most popular and important. After learning fundamental concepts and protocols in computer networks from the first networks course, this second computer networks course examines more practical and advanced topics in computer networking. In addition to those mentioned above, we will also study advanced routing algorithms in computer networks and network management. Both are critical tasks for corporations such as network service providers and for individual professionals such as network administrators.

Prerequisites: ISE 316 or CSE 310; ISE or CSE major

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 321: Introduction to Network Administration

The course introduces students to the fundamentals of network management, primarily for TCP/IP networks. Students are introduced to networking protocols, hardware, architecture, media, and software and experience hands-on management of typical network components. Various network protocols are examined, including Internet routing protocols. Network security is introduced in the overall context of network management.

Prerequisite: ISE 316 or CSE 310; ISE or CSE major

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. Course is cross-listed as CSE 323, EST 323 and ISE 323.

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.

Prerequisite: CSE 110 or CSE 101 or CSE 114

3 credits

ISE 331: Fundamentals of Computer Security

The course will introduce the concepts and terminology of computer security in addition to describing attacks against computer infrastructure and typical defenses against such attacks. The course will outline security policies and procedures used by enterprises and will introduce tools and techniques used by both attackers and defenders.

Prerequisite: ISE 218 or CSE 220
Corequisite: ISE 316 or CSE 310

3 credits

ISE 332: Introduction to Visualization

This course is an introduction to both the foundations and applications of visualization and visual analytics, for the purpose of understanding complex data in science,

medicine, business, finance, and many others. It will begin with the basics - visual perception, cognition, human-computer interaction, the sense-making process, data mining, computer graphics, and information visualization. It will then move to discuss how these elementary techniques are coupled into an effective visual analytics pipeline that allows humans to interactively think with data and gain insight. Students will get hands-on experience via several programming projects, using popular public-domain statistics and visualization libraries and APIs. This course is offered as both CSE 332 and ISE 332.

Prerequisites: CSE 214 or CSE 260; MAT 211 or AMS 210; AMS 110 or AMS 310; CSE or ISE or DAS major

3 credits

ISE 333: User Interface Development

Survey of user interface systems, with emphasis on responsive and adaptive strategies to accommodate cross-platform deployment across multiple devices such as desktops and mobile devices. Demonstration of the use of tool kits for designing user interfaces. Additional topics include human factors, design standards, and visual languages. Students participate in a project involving the design and implementation of user interface systems. This course is offered as both CSE 333 and ISE 333.

Prerequisite: CSE 214 or CSE 260; CSE or ISE major

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; CSE or ISE major

3 credits

ISE 337: Scripting Languages

Scripting languages are widely used in the IT industry. Programming with scripting languages, also known as scripting, has several advantages compared to programming with other types of languages in that scripts facilitate rapid program development; can automate high-level jobs or tasks very effectively; and can be used to compose various software components, even binaries, into more complex and powerful applications. This course introduces the principles of scripting, covers one or two selected scripting languages in depth, and illustrates the advanced use of scripting by extensive case studies in application areas such as system administration, web application development, graphical user interface development, and text processing.

Prerequisites: CSE 214 or CSE 260; CSE or ISE or DAS major; U3 or U4 standing

3 credits

ISE 339: Benevolent Computing

This course explores the recent phenomenon of software applications that leverage social networks and mobile and cloud computing to solve local and global problems. The course uses case studies to document the process of developing civically-oriented applications. Students work in teams to identify campus causes (or off-campus non-profit organizations); and to design and develop applications (mobile or web-based) that will help those organizations achieve their goals. The course material synthesizes some of the department's offerings in software engineering, human computer interaction, and ethics, but provides a practical focus and test bed for those concepts. Emphasis is on System Design, not on specific programming languages or development environments. This course is offered as ISE 339 and EST 339.

Prerequisite: U3 or U4 standing; ISE or TSM major

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.

Prerequisite: TSM or ISE major

SBC: *TECH*

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 mutlimedia 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

3 credits

ISE 369: Introduction to Political Informatics

Recent advances in the availability of large data sets, analytic methods, and technology tools have impacted the foundations of democratic society, specifically the ability of elections to provide representation for the underlying population. This course presents the information aspects of these advances. Topics covered include election data capture, election result data sets, gerrymandering, redistricting, micro-targeting, voter surveys, election security, election district geometry, impact of social media, measures of political quality, and the prediction of election results. This course is offered as both ISE 369 and POL 369.

Prerequisite: AMS 102, AMS 110, AMS 310, or POL 201 or any other course satisfying the POL Major Methodology requirement
Advisory Prerequisite: POL 102; CSE 101, CSE 114, or IAE 101

SBC: *SBS+, TECH*

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; 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; 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.

Prerequisite: CSE 214; ISE major or ISE minor

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.

Prerequisite: CSE 214; ISE major or ISE minor

3 credits

ISE 392: 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.

Prerequisite: ISE major or ISE minor

3 credits

ISE 393: 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.

Prerequisite: CSE 214; ISE major or ISE minor

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 repeated once, but only one completion of the course will count towards the ISE upper division elective requirement.

Prerequisites: U3 or 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 and permission of department.

SBC: *EXP+*

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 enterprise, public agencies, or nonprofit institutions. To obtain permission to register for the course, students are required to submit proof that the work is related to their studies and the work will include at a minimum of 180 hours during the semester. During the semester, the student will submit 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 can only be used once as a technical elective to satisfy ISE major requirements.

Prerequisites: ISE major; U3 or U4 standing; permission of faculty sponsor and department

SBC: *EXP+*

3 credits, S/U grading

ITL

Italian

ITL 101: Intensive Elementary Italian

An intensive course covering the elementary Italian program (ITL 111, 112) in one semester. ITL 101 is designed for students who have no prior knowledge of the language. A student who has had two or more years of Italian in high school (or who has otherwise acquired an equivalent proficiency) may not take this course without written permission from the supervisor of the course. May not be taken for credit after any other course in Italian.

DEC: *S3*
SBC: *LANG*

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

ITL 112: 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: C or better in ITL 111 or placement into 112. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *LANG*

4 credits

ITL 201: Intensive Intermediate Italian

An intensive course covering the intermediate Italian program (ITL 211, 212) in one semester. May not be taken for credit in addition to ITL 211, 212.

Prerequisite: ITL 101 or 112 or placement into 201 or 211. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

6 credits

ITL 211: Intermediate Italian 1

Development of functional competence in speaking, listening, reading, writing, and culture in interpersonal, interpretive and presentational modes of communication. Expansion of insight into the nature of languages and the integration of languages and cultures, with connections to other disciplines. Cultural and linguistic comparisons. May not be taken for credit in addition to ITL 201.

Prerequisite: ITL 101 or 112 or placement into 201 or 211. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, LANG*

3 credits

ITL 212: Intermediate Italian 2

Development of functional competence in speaking, listening, reading, writing, and culture in interpersonal, interpretive and presentational modes of communication. Emphasis on comparison of languages and cultures and on the use of the Italian language in communities both within and beyond the university setting. Study and discussion of cultures in the Italian speaking world through film, literature, music, newspapers. May not be taken for credit in addition to ITL 201.

Prerequisite: ITL 211 or placement into 212. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

ITL 311: Italian Conversation and Composition 1

A course in spoken and written Italian, with emphasis on precision and fluency in the spoken form.

Prerequisite: ITL 201 or 212

DEC: *S3*
SBC: *HFA+, LANG, SPK*

3 credits

ITL 312: Italian Conversation and Composition 2

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

DEC: *S3*
SBC: *ESI, HFA+, LANG, WRTD*

3 credits

ITL 313: Italian Vocabulary

A course designed to increase the vocabulary and oral comprehension of students of Italian through media such as television commercials, popular music, folk songs, etc. The particular theme changes each semester. May be repeated twice for credit as the topic changes.

Prerequisite: ITL 201 or 212

DEC: *S3*
SBC: *HFA+*

3 credits

ITL 395: Italian Literature and Culture

Through selected readings, textual analysis, and class discussion, the course illuminates the history of Italian literature and cultures and their enduring relevance in today's world.

Prerequisite: ITL 201 or ITL 212 or Permission of Instructor

DEC: *G & 3*
SBC: *HFA+*

3 credits

ITL 396: Literature and Visual Cultures in Italy

An interdisciplinary exploration of the dynamic relationship between literature and visual cultures in Italy.

Prerequisite: ITL 201 or ITL 212 or Permission of Instructor

DEC: *G & 3*
SBC: *HFA+*

3 credits

ITL 410: Business Italian

A course designed for students who wish to become more proficient in reading, writing, and translating Italian. Students are also trained in the use of Italian in business, in administration, and in everyday professional life. Emphasis is placed on the idiomatic peculiarities of the Italian language and the relation of Italian to the structure of English.

Prerequisites: ITL 311 and 312

DEC: *S3*
SBC: *HFA+*

3 credits

ITL 411: Advanced Conversation and Composition

A course designed to develop fluency and accuracy in the use of the spoken language through intensive practice, exposition, class discussion, and the use of the language laboratory.

Prerequisites: ITL 311 and 312

DEC: *S3*
SBC: *WRTD*

3 credits

ITL 412: Advanced Conversation and Syntax

A course designed to acquaint students with the subtleties of Italian grammar and style. Extensive practice in composition and in translation from English to Italian.

Prerequisites: ITL 311 and 312

DEC: *S3*
SBC: *WRTD*

3 credits

ITL 424: 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

DEC: *S3*
SBC: *HFA+*

3 credits

ITL 425: Italian and Its Dialects

An examination of the Italian dialects within the larger framework of Romance language development, particularly through primary texts (medieval to modern) in various Italian dialects.

Prerequisite: ITl 311; ITL 312; HUL 324; or permission of instructor

DEC: *S3*
SBC: *HFA+*

3 credits

ITL 426: Italian Linguistics

An examination of the linguistic evolution and the synchronic structures (phonology, morphology, and syntax) of standard Italian and some Italo-Romance dialects.

Prerequisite: ITl 311; ITL 312; HUL 324; or permission of instructor

DEC: *S3*
SBC: *HFA+*

3 credits

ITL 431: Studies in 13th- and 14th-Century Literature

May be repeated as the topic changes.

Prerequisites: ITL 311, 312, 395, and 396

DEC: *S3*
SBC: *HFA+*

3 credits

ITL 432: Studies in 15th- and 16th-Century Literature

May be repeated as the topic changes.

Prerequisites: ITL 311, 312, 395, and 396

DEC: *S3*
SBC: *HFA+*

3 credits

ITL 434: Studies in 19th-Century Literature

May be repeated as the topic changes.

Prerequisites: ITL 311, 312, 395, and 396

DEC: *S3*
SBC: *HFA+*

3 credits

ITL 435: Studies in Contemporary Literature

May be repeated as the topic changes.

Prerequisites: ITL 311, 312, 395, and 396

DEC: *S3*
SBC: *HFA+*

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. May be repeated as the topic changes.

Pre- or Corequisites: ITL 311 and 312
Advisory Prerequisite: HUI 231

3 credits

ITL 440: 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

DEC: *I & 3*
SBC: *HFA+*

3 credits

ITL 441: 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

DEC: *S3*
SBC: *HFA+*

3 credits

ITL 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

ITL 447: Directed Readings in Italian

Individually supervised readings in selected topics in Italian language and literature or, alternatively, for the purpose of developing Italian vocabulary in a secondary field, in selected topics in the humanities, social sciences, or natural sciences. May be repeated.

Prerequisite: Permission of instructor

DEC: *S3*
SBC: *EXP+*

1-6 credits

ITL 459: Write Effectively in Italian

A zero credit course that may be taken in conjunction with any 300- or 400-level ITL course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

ITL 475: 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

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

ITL 476: 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

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

ITL 488: Internship

Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce language skills and knowledge of social and cultural institutions.

Prerequisites: ITL 410; permission of instructor and department

DEC: *S3*
SBC: *EXP+*

0-6 credits, S/U grading

ITL 495: Senior Honors Project in Italian

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

Prerequisite: Permission of department

DEC: *S3*
SBC: *EXP+*

3 credits

JDH

Judaic Studies:Humanities

JDH 261: 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: WRT 102 or equivalent

DEC: *B*
SBC: *HUM*

3 credits

JDH 390: Humanities Topics in Judaic Studies

An examination of a selected topic in Judaic studies within the humanities area. May be repeated as the topic changes.

Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230

DEC: *G*
SBC: *HFA+*

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: Jewish History from Antiquity to the Middle Ages

Jewish history and the development of Judaism from Ancient Israel until the close of the Middle Ages (ca. 1000 B.C.E.- ca. 1492 C.E.). The course begins with the epic tales of the Hebrew Bible, examines the varieties of Judaism which arose under Greece and Rome, explores the "parting of the ways" between Judaism and Christianity, and ends with the rise and fall of Jewish settlements in the Muslim Middle East and across Christian Europe. This course is offered as both HIS 225 and JDS 225.

DEC: *J*
SBC: *CER, GLO*

3 credits

JDS 226: Modern Jewish History: Dilemmas of Difference

An examination of the emergence of modern forms of Judaism from 1492 until the present day, covering Jewish life through the Reformation, French Revolution, the emergence of democracy, two World Wars, Holocaust, and the establishment of the State of Israel, tracing the shift both in centers of life and in the ideas that furnished those centers. This course is offered as both HIS 226 and JDS 226.

DEC: *F*
SBC: *GLO, SBS*

3 credits

JDS 241: Nazi Genocide and the Holocaust

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.

DEC: *I*
SBC: *GLO*

3 credits

JDS 356: Zionism, Israel, and the Middle East

This course explores one of the more divisive events of the twentieth century: the establishment of the State of Israel. Beginning with the origins of the Zionist movement and its activities in nineteenth-century Europe and the Middle East, the course then moves to explore the establishment of the state in 1948 and subsequent Israeli politics and society, with an eye to its relationship with neighboring Arab states, the Palestinians, and Jews around the world. This course is offered as both HIS 356 and JDS 356.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *CER, SBS+*

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 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.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

JPN 112: 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: C or better in JPN 111 or placement into 112. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *LANG*

4 credits

JPN 211: 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: C or better in JPN 112 or placement into 201 or 211. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, LANG*

4 credits

JPN 212: 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: C or better in JPN 211 or placement into 212. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

JPN 311: 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: C or better in JPN 212 or placement into 212. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

JPN 312: 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: C or better in JPN 311 or placement into 312. Contact Language Learning Research Center for more information on placement exams.

DEC: *S3*
SBC: *HFA+, LANG, SPK*

3 credits

JPN 331: Social Sciences Topics in Japanese Studies

An investigation of a specific area of Japanese studies in the social and behavioral sciences. May be repeated as the topic changes.

Prerequisite: U3 or U4 standing
Advisory Prerequisites: Two courses in Asian studies

DEC: *F*
SBC: *SBS+*

3 credits

JPN 332: 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

DEC: *G*
SBC: *HFA+*

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.

Advisory Prerequisite: JPN 312

DEC: *S3*
SBC: *SBS+, SPK*

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.

Advisory Prerequisite: JPN 312

DEC: *S3*
SBC: *SPK, WRTD*

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.

Advisory Prerequisite: JPN 312

DEC: *S3*
SBC: *SPK, WRTD*

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.

Advisory Prerequisite: JPN 312

DEC: *S3*
SBC: *ESI, SBS+*

3 credits

JPN 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 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: Fluency in Japanese; U4 standing; permission of instructor

SBC: *EXP+*

3 credits, S/U grading

JPN 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: JPN 475; permission of instructor

SBC: *EXP+*

3 credits, S/U grading

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

JPN 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

SBC: *EXP+*

0-6 credits, S/U grading

JRN

Journalism

JRN 101: 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 websites. Visiting journalists will be questioned about the journalistic process and decision making.

Pre- or corequisite: WRT 101 or WRT 102 or equivalent

DEC: *B*
SBC: *CER, SBS*

3 credits

JRN 106: Introduction to Mass Media

A survey of the historical evolution, content, and structural elements of mass media. This introduction to social science research approaches to the study of mass communication enables participants to understand mass media's political, economic, social, psychological influences on individuals and broader U.S. society. Students examine the effect and impacts of mass communication on contemporary society and consider how global media influence and are influenced by U.S. media. This course was previously known as JRN 106.

SBC: *SBS, USA*

3 credits

JRN 116: Introduction to Digital Journalism

An introduction to the fundamentals of journalistic reporting and storytelling in an interactive and immersive environment. Students will learn how to collect data and information using every tool in the journalistic arsenal, from notebooks and pens to online data collection. Students will begin the process of learning how to turn that core information into modern stories involving various elements such as text, audio, video, data visualization, and mapping - skills that will be built upon during other courses in the curriculum. Students will also explore how to use social tools both for information gathering and story amplification, and learn the philosophy that guides modern journalism: impartiality, ethical values and respect for accuracy. Students will build on their understanding of civic life and practice keeping pace with current events.

Prerequisite: Journalism Major or Minor

3 credits

JRN 205: News Reporting & Writing II

Telling an effective story often means going beyond the basics and adding additional layers of reporting, including "color" and compelling anecdotal material, additional sources, independent verification of competing accounts, background and context, as well as providing a narrative organizational structure and the deployment of a variety of story approaches. In this course, students report and write more complex news stories, news feature stories, profiles and news trend stories, several of which are based on their own story ideas. In addition, students add multimedia elements to at least one story, employing the tools they have learned in Introduction to Digital Journalism.

Prerequisite: C or higher in JRN 116

3 credits

JRN 216: Intermediate Digital Journalism

Teaches journalism students the tools necessary to tell stories in the digital age. Building on the core reporting concepts learned in JRN 116, students will use audio, still photography and video to communicate news stories to the public utilizing the standards and best practices of American broadcast journalism. Students will also work in teams to produce short newscasts (Newsbreak). This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Journalism Major or Minor; C or higher in JRN 116

3 credits

JRN 217: Journalistic Reporting and Writing

A hands-on approach to reporting techniques and written journalism. Careful examination of professional news reporting and writing enables students to understand how journalists seek, verify and assemble information. Students then apply those insights to original reporting projects in a variety of traditional and innovative story forms, with close attention to grammar, usage, and style.

Prerequisite: Journalism Major or Minor; C or higher in JRN 116

3 credits

JRN 301: The Changing News Business

An inquiry into how the evolving media landscape in the digital age has changed journalism, and the ramifications for journalists and audiences. This course examines the advent of digital technology and the shifting patterns of media consumption, investment, ownership, and employment; regulatory changes; and the rise of nontraditional competition. Through readings and classroom discussion, students explore the effects of this revolution on content, standards, business models, news delivery, readership, viewership, and jobs. Guest speakers will discuss how today's changes are affecting their news organizations and their own careers.

Prerequisite: Journalism Major or Minor; U3 or U4 Standing

3 credits

JRN 303: Global Issues in Journalism

A study of global journalism of the 20th and 21st centuries, as it has been defined by the central topics of these times: mass migration, global warming, and the destruction of natural ecosystems; reparations, indigenous issues, and the advancement of global corporate media. This course studies the role of global journalism as opposed to mainstream American journalism and media, in the configuration of a media agenda and an image of the global society.

Prerequisite: Journalism Major or Minor; U3 or U4 Standing

SBC: *DIV, GLO*

3 credits

JRN 310: Multimedia Newsroom I

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: C or higher in JRN 216

SBC: *SPK*

3 credits

JRN 311: Advanced Digital Journalism - Text

An in-depth writing course that guides students through deeply reported and sophisticated stories that incorporate accompanying visuals, and are of publication quality. Building on the core reporting concepts learned in earlier skills courses, students will also write professional story pitches. All work will represent the highest standards in journalistic ethics and accuracy.

Prerequisite: C or higher in JRN 216 and JRN 217; U3 or U4 Standing

3 credits

JRN 312: Advanced Digital Journalism - Audio

An in-depth course in which students report, write, and produce a series of feature length pieces and podcasts that are of NPR style and broadcast quality. Building on the core reporting concepts learned in JRN 116, students will also write professional story pitches. All work will represent the highest standards in journalistic ethics and accuracy. Some assignments will require students to go off campus.

Prerequisite: C or higher in JRN 216 and JRN 217; U3 or U4 Standing

3 credits

JRN 313: Advanced Digital Journalism - Audio-Visual

Students will build on the fundamentals of visual storytelling taught in JRN 116 and JRN 216 by producing multimedia news stories to be published as part of the School of Journalism's digital platform. In addition to producing news stories, students gain experience in Studio and Control Room roles.

Prerequisite: C or higher in JRN 216 and JRN 217; U3 or U4 Standing

3 credits

JRN 319: The Image of the Journalist in Popular Culture

Students will analyze the impact of conflicting images of journalists in movies and television on the American public's perception of journalists in the 20th and 21st centuries. The public adopts perceptions of journalists based on portrayals in the media, often without considering the accuracy and/or dramatization of these representations. Few people will ever witness a journalist in action. Yet many have very specific ideas of what journalists do because they have read about journalists in novels, short stories and comic books, and they have seen them in movies, television, plays, and cartoons. This class explores how these representations in the media contribute to public perceptions about journalists, and explores the trajectory of these perceptions from the days of silent films through the 21st century.

Prerequisites: Journalism or Mass Communication Majors and Minors; U3 or U4 Standing

3 credits

JRN 320: Multimedia Newsroom II

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 websites, 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.

Prerequisite: C or higher in JRN 216

3 credits

JRN 322: Working Newsroom

Students work under real deadlines for local news outlets producing print and digital news and feature stories. Students will work with local Long Island editors and the instructor to brainstorm story ideas and create assignments to be covered primarily off campus for publication. Students will switch editing and reporting roles during the semester.

Prerequisite: C or higher in JRN 216

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 healthcare professional.

Prerequisites: C or higher in JRN 216 or JRN 217; Completion of SNW or SBS

3 credits

JRN 335: Reporting in New York City

This course, which is offered mainly in winter and summer sessions, provides students with an overview of how reporters cover major institutions in New York City. The semester focus varies, ranging from city hall, United Nations, police, courts, Wall Street, arts and culture, television, music, movies, theater, fashion and other city-centric themes. 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. May be repeated as the focus changes.

Prerequisite: C or higher in JRN 216 and JRN 217; Permission of Department

SBC: *EXP+*

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.

Prerequisites: C or higher in JRN 216 or COM 207; U3 or U4 Standing

3 credits

JRN 337: Introduction to Narrative Journalism

Building on students' experiences in newswriting, this courses 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.

Prerequisite: C or higher in JRN 216 and JRN 217; U3 or U4 Standing

3 credits

JRN 339: Foreign Reporting

An introduction to interpreting complicated events outside North America for domestic audiences at home through studying foreign correspondents, their practices, practicalities, tradecraft, ethics, scoops, successes, and failures. The course is situated in the context of understanding the geopolitics of information, cross-cultural studies, ethics, and identifying the impact of propaganda, and disinformation. This seminar format course focuses on key reporting techniques including identifying reliable sources, quickly analyzing complex situations, and writing and speaking about them under time pressure.

Prerequisite: U3 or U4 Standing

3 credits

JRN 340: Beat Reporting

A hands-on course that gives students greater exposure to the skills and knowledge required to regularly cover various branches and functions of government or a topic area. Students develop a beat and write stories from that beat. Beats include local governments: village, town or county government, police, courts or a board of education or a topic such as the environment, transportation, immigration, education or health care issues on Long Island or a specific aspect of Stony Brook University. The course emphasizes identifying, developing, and maintaining sources. A special feature of this class is the opportunity to meet and learn from experienced journalists as well as government officials and public relations experts who offer a perspective on the media from their points of view. The basic reporting skills developed here are applicable to print, broadcast and the Internet. All stories handed in must be ready for publication.

Prerequisite: U3 or U4 Standing

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.

Prerequisite: C or higher in JRN 216 or JRN 217 or COM 207; U3 or U4 Standing

3 credits

JRN 364: Advanced Reporting

Designed to help student journalists explore complex stories through probing reporting that unearths rich detail and context. Students will work under supervision of their "editor" (the instructor) to produce publication-quality works. The focus will be on "solutions journalism," with reporting in-depth on a single story spanning the semester. Classes will serve as a learning lab and newsroom, during which students will present their work to their editor and fellow reporters. They will pitch their ideas, explain in detail their reporting progress, brainstorm with fellow student journalists on story development and reporting strategies, share experiences, review each other's stories in progress, and, in general, help one another. Students will be graded on their success as a colleague, a reporter, and a writer.

Prerequisite: C or higher in JRN 216 and JRN 217; U3 or U4 Standing

3 credits

JRN 366: Press & the Presidency

Students examine the complex, difficult, co-dependent relationship between the news media and the president including the role of the press in a presidential campaign. The course includes a study of the historical relationship between the press and the president, the reasons for the fundamental deterioration of the press-White House relationship over the last 50 years, the impact of the digital revolution on the relationship, and whether voters can make an informed decision based on the information provided by the news media. This course is offered as both JRN 366 and POL 366.

Prerequisite: U2 or higher standing

3 credits

JRN 367: Opinion Journalism

A writing-intensive experience on the various aspects of opinion journalism, from columns to commentary, editorials, op-ed, blogs, reviews, and letters to the editor. What makes effective opinions? How does opinion journalism differ from news reporting? When do opinions and commentary qualify as journalism? When do they not qualify? What has been the historical role of opinion in journalism? How did it change and why? What impact has the internet and cable television had on opinion journalism and commentary? This course covers print, broadcast, and all forms of news media emphasizing the importance of reporting, critical thinking and clear writing.

Prerequisite: U3 or U4 Standing

3 credits

JRN 370: Advanced Visual Reporting and Storytelling

This course 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: C or higher in JRN 216

3 credits

JRN 371: Weekly Broadcast

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 Journalism websites.

Prerequisite: C or higher in JRN 216

3 credits

JRN 390: Special Topics in 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 to how the press covers presidential campaigns. May be repeated as the topic changes.

Prerequisite: U3 or U4 Standing

3 credits

JRN 391: Journalism Workshops

These workshops are 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. May be repeated as the topic changes.

Prerequisites: Varies by topic; Permission of Department

1-2 credits

JRN 392: Journalism Without Walls Prep

This 1-credit workshop is designed to help students prepare if they are interested in taking JRN 435 Journalism Without Walls, a course in which students travel with journalism faculty to a location and spend several weeks reporting, writing and broadcasting from and about it. Each Journalism Without Walls Prep is tailored to the specific locale and coverage issues. May be repeated as the topic changes.

Prerequisite: To be taken before JRN 435

1 credit

JRN 413: Journalisms of the Global South

A historical and socio-communicational exploration of the genres and styles of journalism emerging and shaping the different regions of the Global South since the early mercantile expansion of the 17th century and into the 21st century. In parallel with the colonial push into the Americas, Asia and the Pacific, journalistic narratives start to shape the Western view of the new worlds. But the process has a dual nature: these styles and genres are appropriated, re-signified and repurposed locally, giving birth to an array of journalisms that do not conform with their Western counterparts. Crónicas, corridos, roman feuilleton, and a vast number of other forms of journalisms born in the Global South are discussed during this course. The class aims at expanding the Western idea of journalism as the watchdog of democracy, and to understanding journalism in the Global South in its historical context, within its political, pedagogical and literary roles.

Prerequisite: U3 or U4 Standing

3 credits

JRN 433: Journalistic Book and Serial Narrative Production

A contemporary approach to factual long-form and serial storytelling based on the study of narrative theory. We explore western and non-western contemporary literary journalism in written and audio-based formats. Participants conduct research as a basis for producing an individual or group project. Individuals may produce a pitch, prospectus, or a book proposal and then complete the first chapter of a long-form narrative. Groups may develop a collaborative proposal and produce a first episode of a serial podcast. Formative research will include interviews, documentary research, and a summary of the core ideas proposed in the book or podcast. The work is based on class analysis and the ideas explored during the semester.

Prerequisite: U3 or U4 Standing

3 credits

JRN 434: Photojournalism

An introduction to operating as a reporter empowered by effective news and feature photography skills. Students will develop judgment in how to tell stories visually through experiential mastery of digital camera picture taking and editing skills. They will develop a critical eye to determine what makes a great photograph, understand effective forms of visual communication, and master techniques in making photographic images. Students will take a hands-on approach to craft photographs that convey emotions and have impact in delivering the news. Picture selection, cropping, captions as well as the ethics of photographic presentations in an era of easy image manipulation are emphasized. Students add to their visual toolbox of reporting skills through lessons that are focused on making stronger photographs under time pressure.

Prerequisites: Journalism Major and U3 or U4 Standing; or Permission of Instructor

3 credits

JRN 435: Journalism Without Walls

Offered only during winter or summer sessions, this course 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 will be published via a special website. Students will have one week to research a topic or location before leaving for their destination. (Teams of students, for example, have gone to China, Russia, Cuba and the U.S. Gulf Coast.) While on assignment, students file blogs, gather multimedia and video, write and edit stories, produce a website and establish a "mobile newsroom." One or several instructors accompany the students. This course combines students' journalistic skills, judgment and enterprise with knowledge of emerging technology. May be repeated as the topic changes.

Prerequisites: Permission of Department; Additional prerequisites announced by topic. Passport may be required.

SBC: *EXP+*

3 credits

JRN 438: Weathercasting & Environmental Reporting

A practicum for upper division meteorology majors and advanced journalism students preparing for post college careers as local television/radio weathercasters, resident environmental reporters, and off-screen producers. The course centers on performance and production of a bi-weekly TV studio-based broadcast.

Prerequisite: U3 or U4 Standing

3 credits

JRN 439: WCast_Enviro Rprting: Feat Story & Mini-Doc BCast

A practicum for upper division meteorology majors and advanced journalism students preparing for post college careers as local television/radio weathercasters, resident environmental reporters, and off-screen producers. The course centers on making feature stories, pre-recorded segments for inclusion in a weekly TV studio-based broadcast. Late in the course students gain experience in live remotes.

Prerequisites: JRN 438; U3 or U4 Standing

3 credits

JRN 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that

support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; Permission of Instructor; Approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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

SBC: *EXP+*

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: Grade of satisfactory in JRN 475; Permission of Instructor and Undergraduate Program Director

SBC: *EXP+*

3 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. Students are required to submit written progress reports and a final written report on their experiences.

Prerequisite: Permission of Department Recommended GPA: 3.0 in Journalism and 2.5 Cumulative

SBC: *EXP+*

0-6 credits, S/U grading

JRN 489: Specialized Internship

Students work in campus departments or at local, state and national organizations. The work must involve a professional experience using journalistic skills in alignment with the educational goals of the department. Students are required to submit written progress reports and a final written report on their experiences.

Prerequisite: Permission of Department Recommended GPA: 3.0 in Journalism and 2.5 Cumulative

SBC: *EXP+*

0-6 credits, S/U grading

JRN 490: Senior Project

This is a capstone course and a requirement for all journalism majors. Students produce an in-depth story of professional quality in written form, visually and with interactive elements. Students attend a weekly seminar and work independently. A secondary goal of the course is to prepare students for career opportunities upon graduation. Students leave with a multiplatform portfolio.

Prerequisite: C or higher in JRN 311 or JRN 312 or JRN 313

SBC: *EXP+, WRTD*

3 credits

KOR

Korean

KOR 101: 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.

DEC: *S3*
SBC: *LANG*

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

KOR 112: 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: C or better in KOR 111

DEC: *S3*
SBC: *LANG*

4 credits

KOR 120: Elementary Korean for Heritage Speakers

An elementary level Korean language course for heritage speakers who have a background in Korean culture and who can conduct basic communication in Korean orally on topics of daily activities. The course focuses on reading and writing skills and other linguistic accuracy (e.g, spelling, grammar, pronunciation, vocabulary, etc.) at the elementary level, and expands the depth and scope of exposure to the Korean culture.

DEC: *S3*
SBC: *LANG*

4 credits

KOR 211: 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: C or better in KOR 112 or KOR 120 or placement into 211

DEC: *S3*
SBC: *GLO, LANG*

3 credits

KOR 212: Intermediate Korean II

Intermediate courses in Korean language to develop audiolingual skills and reading and writing ability. Through the introduction of complex grammatical structures and idioms, speaking, reading, and writing ability in Korean language is further developed.

Prerequisite: C or better in KOR 211 or placement into 212

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

KOR 220: Intermediate Korean for Korean Speakers

An intermediate level Korean language course for Korean heritage speakers who have a background in Korean culture and who can conduct basic communication in Korean orally on topics of daily activities. The course continues to focus on reading and writing skills and other linguistic accuracy (e.g, spelling, grammar, pronunciation, vocabulary, etc.) beyond the elementary level, and expands the depth and scope of exposure to the Korean culture.

Prerequisite: KOR 120 or equivalent

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

KOR 238: Korean American Literature

This course will explore contemporary Korean American literature. We will study works of various genres (three novels, one short story collection, two memoirs, selected works of poetry) and students will collectively assemble an interdisciplinary conversation with fields like Asian American studies and Korean studies.

SBC: *DIV, USA*

3 credits

KOR 311: Advanced Korean I

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: C or better in KOR 212 or placement into 311

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

KOR 312: Advanced Korean II

Advanced Korean II is designed for students who have completed at least two years of Korean instruction at the undergraduate level or who already possess a 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: C or better in KOR 311 or placement into 312

DEC: *S3*
SBC: *HFA+, LANG, SPK*

3 credits

KOR 331: Social Science Topics in Korean Studies

An investigation of a specific area of Korean studies in the social and behavioral sciences. May be repeated as the topic changes.

DEC: *F*
SBC: *SBS+*

3 credits

KOR 332: Humanities Topics in Korean Studies

An investigation of a specific area of Korean studies in the humanities. May be repeated as the topic changes.

DEC: *G*
SBC: *HFA+*

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.

Advisory Prerequisite: KOR 312

DEC: *S3*
SBC: *HFA+, SPK*

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.

Advisory Prerequisite: KOR 312

DEC: *S3*
SBC: *SBS+, WRTD*

3 credits

KOR 426: Structure of Korean

This course is an introduction to phonology, morphology, syntax, semantics, lexicon, and writing systems of the Korean language as well as the use and functions of the language in relation to the social structures of Korea at large. The goal of this course is to analyze Korean in ways that might be of most use to a KFL (Korean as a foreign language) teacher and KFL student.

Advisory Prerequisite: KOR 312

SBC: *ESI, SBS+*

3 credits

KOR 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include:

service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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

KOR 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

SBC: *EXP+*

3 credits, S/U grading

KOR 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: KOR 475; permission of instructor and director of Korean Studies minor

SBC: *EXP+*

3 credits, S/U grading

KOR 487: Supervised Research in Korean 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

KOR 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

KSW

Swahili

KSW 111: Beginning Kiswahili I

This course is a foundational part of Africana studies humanities. Language is the principal carrier of cultures and therefore of humanities. It is an introduction into one of the most important African languages - Kiswahili - an introduction into the basics of the language, but also of the culture it carries. As a language spoken in Tanzania, Uganda, Kenya, Rwanda, RDC, and in many other African countries, it is a means of communication that can easily be used across boundaries. Its study is a window into major aspects of African cultures.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

KSW 112: Beginning Kiswahili II

This course is the second introductory part to the Africana studies humanities. Language is the principal carrier of cultures and therefore of humanities. As the second part of Beginning Kiswahili, it is an introduction into one of the most important African languages - Kiswahili -, an introduction into the basics of the language, but also of the culture it carries. Swahili is a language spoken in Tanzania, Uganda, Kenya, Rwanda, RDC, and in many other African countries. It is therefore a language of communication that can easily be used across boundaries. Its study is a window into major aspects of African cultures.

Prerequisite: C or better in KSW 111 or placement into KSW 112

SBC: *LANG*

3 credits

LAC

Latin American and Caribbean Studies

LAC 200: 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.

DEC: *J*
SBC: *GLO*

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 consultaton 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

SBC: *EXP+*

0-6 credits, S/U grading

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

LAN 112: 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: C or better in LAN 111

DEC: *S3*
SBC: *LANG*

3 credits

LAN 211: 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

DEC: *S3*
SBC: *GLO*

3 credits

LAN 212: 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

DEC: *S3*
SBC: *GLO, HUM*

3 credits

LAN 447: Directed Readings in Uncommonly Taught Languages

Intensive study of an uncommonly taught language arranged in consultation with a faculty member.

Prerequisite: Permission of instructor

DEC: *S3*
SBC: *EXP+, LANG*

1-6 credits

LAN 475: 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.

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

LAN 476: 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.

DEC: *S3*
SBC: *EXP+*

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

LAT 112: 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: C or better in LAT 111

DEC: *S3*
SBC: *LANG*

3 credits

LAT 251: 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

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

LAT 252: 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

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

LAT 353: 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

DEC: *S3*
SBC: *HFA+*

3 credits

LAT 354: 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

DEC: *S3*
SBC: *HFA+*

3 credits

LAT 355: Early Medieval Latin

Translation and discussion of Christian and secular Latin literature from the 4th to the 12th century. The course includes an intense review of Latin grammar and an outline of the changes in the language that took place during early medieval times. Selections from the Vulgate and the writings of Jerome, Augustine, Bede, and others are translated and discussed.

Prerequisite: LAT 252

DEC: *S3*
SBC: *HFA+*

3 credits

LAT 356: Late Medieval Latin

Translation and discussion of Latin literature from the 12th to the 16th century. Authors include the Archpoet, Thomas Aquinas, Petrarch, Erasmus, and Thomas More.

Prerequisite: LAT 252

DEC: *S3*
SBC: *HFA+*

3 credits

LAT 447: Directed Readings in Latin

Intensive study of a particular author, period, or genre of Latin literature in the original under close faculty supervision. May be repeated.

Prerequisite: Permission of director of the classics minor

DEC: *S3*

1-6 credits

LAT 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. 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

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

LBR

Library

LBR 210: Critical Information Literacy

What makes information biased or credible? Can you determine what information is fake or not? This course will introduce students to information literacy concepts while acknowledging the inherent bias of information. This course will ask students to challenge the preconceived notions of authoritativeness and trustworthiness of sources and learn how to critically evaluate them. Students will learn about the harms and biases perpetuated through the scholarly communication channels. Key concepts covered will include: information privilege, epistemic injustice, and citation justice. This is an interdisciplinary course that will draw from the fields of information science, archival studies, philosophy, and media studies.

SBC: *DIV, ESI, TECH*

3 credits

LCR

Living/Learning Center: Community Service Learning

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

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

SBC: *SPK*

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

SBC: *EXP+*

3 credits

LDR 488: Internship in Leadership Development

This faculty-mentored internship offers students a personalized experiential learning opportunity designed to build on classroom knowledge and skills by exploring applications of leadership in real-world settings. Through participation in an internship at an on-campus or off-campus organization, students learn about and practice key concepts in the field of leadership, such as branding, ethics, motivation, team development, group dynamics, cultural competence, communication, social justice, and social change. Throughout the semester, students are required to submit written reflections on their internship experiences and meet regularly with their faculty mentor to assess progress. May be repeated up to a limit of 6 credits.

Prerequisite: permission of the director of the minor

SBC: *EXP+*

1-6 credits, S/U grading

LHD

Living/Learning:Human Sexual & Gender Development

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 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

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.

Prerequisite: U3 or U4 status

SBC: *ESI, SPK*

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

SBC: *EXP+*

0-6 credits, S/U grading

LIA

Living/Learning Center:Interdisciplinary Arts

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

SBC: *EXP+*

0-6 credits, S/U grading

LIN

Linguistics

LIN 101: 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).

DEC: *F*
SBC: *SBS, SNW*

3 credits

LIN 110: The Anatomy of English Words

An introduction to the analysis of complex words in English, especially those based on Latin and Greek models that comprise the majority of the vocabulary in the written language. Students will be introduced to Latin and Greek roots and the processes by which complex words are built by affixing material to these roots and modifying their structure. Students will acquire general analytical tools that will allow them to understand complex words that they may not have previously encountered. The course will introduce students to principles of linguistic morphology that extend beyond English to all human languages.

DEC: *F*
SBC: *SBS*

3 credits

LIN 120: Language and Technology

An introduction to how computers process language and solve language-related

tasks. This course discusses the language technologies of our daily life --- spam filtering, machine translation, and many more --- and shows how they work under the hood. The course explores a variety of issues: Why do computers do well in some areas (spell checking) yet fail miserably in others (essay grading)? Will we ever have perfectly fluent AIs as depicted in science fiction? And how will these technological advances impact the role of language in our society? Students will also acquire basic programming skills and write scripts for simple language tasks. No previous training in mathematics or computer science required.

SBC: *TECH*

3 credits

LIN 200: 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 is 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.

DEC: *K*
SBC: *DIV, SBS, USA*

3 credits

LIN 201: 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: C or better in LIN 101

DEC: *F*
SBC: *SBS+*

4 credits

LIN 202: Introduction to Phonetics and Phonology

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, phonemic analysis, phonological alternations and morphophonological processes.

Prerequisite: C or better in LIN 101

SBC: *SBS*

3 credits

LIN 230: Languages of the World

An introduction to the diversity and common properties of the more than six thousand languages spoken in the world today. This course will discuss how the languages of each family are related to each other, and what these relationships say about human origins and the peopling of the globe. The course will also analyze the world's languages in terms of the structures of their sentences, sounds, and words, and will discuss a number of global questions: Does your language affect your thought? What is the relation between politics and languages? What is writing? How do completely new languages emerge?

Advisory Prerequisite: LIN 101

DEC: *J*
SBC: *DIV, GLO*

3 credits

LIN 235: Signed Languages & Deaf Communities

This course will allow students to explore American Sign Language and signed languages through an interdisciplinary lens. The course examines: signed languages' histories and linguistic structure; how Deaf Communities emerge (and the socio-cultural-educational dynamics of their formation--or not); what a "Deaf Identity" means in the context of disability and cultural identity; and discusses issues of linguistic and clinical relevance such as language deprivation and exposure diversity, language innovation, language intervention, and sign language disorders.

SBC: *DIV, SBS, USA*

3 credits

LIN 240: Spanish in the U.S.

Provides a descriptive and critical overview of the linguistic aspects of the different Spanish-speaking communities in the United States. It presents and discusses issues related to the linguistic, sociolinguistic and historical aspects of the use of Spanish in the United States and their impact on the individual, and the American society. In the discussion of Spanish in the U.S., the course introduces concepts revolving around language contact, language use, grammar, language attitudes, heritage speakers, bilingualism, code-switching, and language shift and maintenance. The course will focus on the Mexican, Puerto Rican, and Cuban communities in the U.S. from the point of view of dialectal and sociolectal distribution, but also discusses European settlement and migration patterns. Finally the course will examine the role of Spanish in Education and the future of the Spanish language in the US. This course is taught in English.

DEC: *K*
SBC: *SBS, USA*

3 credits

LIN 250: 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: WRT 102 or equivalent

DEC: *K*
SBC: *SBS, USA*

3 credits

LIN 260: Language and Mind

An introduction to the study of the human mind, starting with modern scientific investigations of language, and then its relationship with other systems such as music perception, visual narrative, numerical cognition as well as comparison to animal cognition. What is innate and what does "innateness" mean? Do the brain mechanisms subserving language also support musical and numerical cognition? How is language related to thought and to action? Students will be exposed to research across several disciplines (linguistics, psychology, and cognitive neuroscience) and will acquire a basic understanding of modern experimental tools for investigating the human mind.

SBC: *SBS, SNW*

3 credits

LIN 270: Language and Politics

Examines the pervasive interaction of language and politics, which falls at the intersection of Linguistics, Cultural Studies, Political Science, and Cultural Anthropology. Issues

of language ideologies, politicization of language, linguistic markers of national, ethnic and sexual identity, language policy, bilingual education policy, and manipulation of linguistic metaphor in modern politics, both domestic and international, will be examined in detail. Students will explore the consequences for secessionist movement, language policy and linguistic human rights across a range of case studies.

SBC: *GLO, SBS*

3 credits

LIN 280: Language in Social Media

Social media came into being along with the internet in the 1990s, and have rapidly become an ubiquitous form of communication and information. This course provides an exploration of how language is used in social media, and how language in social media can be analyzed. We start out by understanding how humans form social networks and what the properties of these networks are. We then compare how the emergence of social media has changed the manner in which we humans communicate, and investigate possible positive and negative effects of this change. One of the major effects is that many more people are 'publishing' today, and we will discover how this has affected public language use. We also discuss the technology behind social media, and learn about the dangers in social media. We also discuss the technologies used in social media, and learn about the potential and the dangers that lie in these technologies.

SBC: *STAS*

3 credits

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: C or better in LIN 201

4 credits

LIN 307: 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 Hawiian Pidgin English and Chinook Trade Jargon, within the context of historical developments in the U.S. from colonial times to the present.

Prerequisite: C or better in LIN 101

DEC: *K*
SBC: *ESI, SBS+*

3 credits

LIN 308: Language Variation and Change

An introduction to the quantitative study of language variation and language change.

Prerequisite: LIN 101 and LIN 201

3 credits

LIN 311: Syntax

An introduction to generative grammar: the formal theory of sentence structure.

Prerequisite: C or better in LIN 101

DEC: *F*

4 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: C or better in LIN 101

3 credits

LIN 321: 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. Previously offered as LIN 464. Not for credit in addition to LIN 464.

Prerequisite: C or better in LIN 101

3 credits

LIN 324: Romance Linguistics

The history and contemporary structures of the Romance languages. We will examine the many similarities in their grammatical structures, as well as the differences in their phonology, morphology, syntax, and lexicon. In addition to the standard European varieties of Romance languages (French, Italian, Portuguese, Rumanian, Spanish), we will study the "minor" Romance languages (Latin American varieties of Spanish, Catalan, French Creoles, Italian "dialects", etc.). This course is offered as both HUL 324 and LIN 324.

Pre- or corequisite: One of the following: FRN 312, ITL 312, LAT 112, SPN 312

Advisory Prerequisites: LIN 101, LIN 201, LIN 211

DEC: *I*
SBC: *HFA+*

3 credits

LIN 330: Language Acquisition

Introduction to the field of language acquisition. Topics 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: C or better in LIN 101; and C or better in LIN 201 or LIN 311

SBC: *ESI, SBS+, STEM+*

3 credits

LIN 335: Computational Linguistics

An introduction to computational linguistics for students with previous programming experience. This course explores the models, algorithms, and techniques that dominate modern-day language technology, and it evaluates them from a linguistically informed perspective. Topics include corpus-based methods, finite-state approaches, machine learning, and model evaluation techniques. Great emphasis is put on discussing the limitations of existing techniques and how they might benefit from linguistic insights. Students will also hone their programming skills and develop familiarity with state-of-the-art software packages for computational linguistics. Formerly offered as LIN 220; not for credit in addition to LIN 220.

Prerequisite: C or better in LIN 120 or CSE 110 or CSE 114 or ISE 108 or MAT 331; or permission of instructor

SBC: *STEM+*

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.

Prerequisite: C or better in LIN 201
Pre- or co-requisite: LIN 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: 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: C or better in LIN 101

DEC: *J*
SBC: *GLO, SBS+*

3 credits

LIN 346: 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: C or better in LIN 101

DEC: *F*
SBC: *SBS+*

4 credits

LIN 347: Pragmatics

A study of those aspects of natural language meaning that arise from, or are dependent upon, use. Core topics include implicatures, presupposition, speech acts, deixis, their interaction with semantics and syntax, and their implications for certain discourse phenomena, including politeness, turn taking, and verbal abuse.

Prerequisite: LIN 101
Advisory pre- or co-requisites: LIN 311 and LIN 346

3 credits

LIN 350: Experimental Phonetics

Introduction to common experimental methods for studying the sounds used in human language. Topics include basic speech acoustics, acoustic analysis, oral and nasal airflow, static palatography, linguography and electroglottography, as well as design of perception experiments. Students will learn the physical processes affecting each experimental variable and common methods of analyzing each kind of data. Students will get hands-on experience with each analysis method and will use two or more types of data to explore a hypothesis about sound structure in English or some other language of interest. Students will learn how to use software for making measurements and analyzing data. Students will learn to assess the validity of claims about language based on their understanding of the scientific method as applied to speech. The course will give students a solid foundation for further courses in laboratory skills relevant to assessment of normal and disordered speech and for pursuing research, either as undergraduate researchers, or in the early stages of graduate work.

Prerequisite: C or better in LIN 201

SBC: *SBS+, SNW*

3 credits

LIN 355: Language and Life in a Selected Area of the World

Study of the languages of a selected country or region outside of Europe in relation to its society, culture, history, and politics. Topics include language family, social varieties, status and attitudes, language policies, and cultural patterns reflected in language use. May be repeated as the topic changes. LIN 355 and/or LIN 356 may be taken a total of two times for the major.

Advisory Prerequisite: LIN 101

DEC: *J*
SBC: *DIV, GLO, SBS+*

3 credits

LIN 356: 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. 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. May be repeated as the topic changes. LIN 355 and/or LIN 356 may be taken a total of two times for the major.

Prerequisite: one LIN course or satisfaction of Skill 3 or LANG

DEC: *I*
SBC: *GLO, SBS+*

3 credits

LIN 361: Mathematical Methods in Linguistics

An overview of the mathematical foundations of theoretical and computational linguistics. Topics covered include set theory, morphisms, logic and model theory, algebra, lattices, lambda calculus, probability theory, information theory, and basics of formal language theory. A strong emphasis is put on the linguistic application of the mathematical concepts in the study and analysis of natural language data.

Prerequisite: C or better in LIN 101, or LIN 335 (formerly LIN 220), or MAT 200, or MAT 250; or permission of instructor

SBC: *QPS*

3 credits

LIN 370: 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 SBS+ or one previous course in Linguistics

DEC: *J*
SBC: *SBS+*

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.

Prerequisite: Declared major in Linguistics; C or higher in LIN 101; C or higher in LIN 201; C or higher in LIN 311; G.P.A. of 3.0 or

higher; for non-native speakers of English, a 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

SBC: *CER, EXP+, SPK*

3 credits

LIN 380: Anatomy and Physiology of Speech and Hearing

A study of the anatomy and physiology of the speech, swallowing, and hearing mechanisms, including the phonatory, articulatory, respiratory, and resonatory subsystems and the neural control.

Prerequisite: C or better in LIN 101

SBC: *STEM+*

3 credits

LIN 381: Language and Speech Disorders

Overview of developmental and acquired communication disorders across the lifespan, including language delay, developmental apraxia of speech, phonological disorders, stuttering, acquired aphasia, craniofacial anomalies, and voice disorders.

Prerequisite: C or better in LIN 101 and LIN 201

SBC: *STEM+*

3 credits

LIN 382: Audiology

Survey of the field of audiology, including the physics of sound, the physiology of hearing, the nature and causes of hearing impairment.

Prerequisite: C or better in LIN 101 and LIN 201

SBC: *STEM+*

3 credits

LIN 405: Writing in Linguistics

Majors in linguistics refine their skills in writing for the discipline by critiquing successive revisions of previously written work. Formerly offered as LIN 300. Not for credit in addition to LIN 300.

Prerequisites: permission of department; major in linguistics; U3 or U4 standing

SBC: *ESI, WRTD*

2 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: C or better in LIN 301 and LIN 311

SBC: *CER, SBS+, SPK*

4 credits

LIN 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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; C or higher in LIN 201 or LIN 311; G.P.A. of 3.0 or higher; for non-native speakers of English, a TOEFL-iBT Speaking Component Score of 28
Corequisite: LIN 375

SBC: *EXP+*

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

SBC: *CER, EXP+, SPK*

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; GPA of 3.0 or higher; permission of department

SBC: *CER, EXP+, SPK*

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; GPA of 3.0 or higher; permission of department

SBC: *CER, EXP+, SPK*

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.

Prerequisite: C or higher in LIN 378; permission of department

SBC: *CER, EXP+, SPK*

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 in required to attend all the classes, do all the regularly assigned work, and meet with 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.

SBC: *EXP+*

3 credits, S/U grading

LIN 476: Undergraduate Teaching Practicum II

Work with a faculty member as an asistant 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

SBC: *EXP+*

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. Responsible conduct in research and scholarship will be covered. May be repeated up to a limit of six credits.

Prerequisite: Permission of department

1-6 credits

LIN 488: Internship

Applying linguistics skills and principles in activities at university, local, state, and/ or national public and private agencies and organizations. May be repeated up to a total of 12 credits. Not for major credit.

Prerequisites: 6 credits in linguistics; permission of department

SBC: *EXP+*

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. Responsible conduct in research and scholarship will be covered. 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

0-3 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. Responsible conduct in research and scholarship will be covered. 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.

0-3 credits

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

SBC: *CER, EXP+, SPK*

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

SBC: *DIV, EXP+, SPK*

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

SBC: *TECH*

3 credits

MAE 400: Experiential Learning, Speak Effectively, Practice Critical and Ethical Reasoning

A zero credit course that may be taken in conjunction with any MAE course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's CER, EXP+, and SPK learning objectives.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *CER, EXP+, SPK*

0 credit, S/U grading

MAE 401: Respect Diversity and Foster Inclusiveness (DIV) for BS/MA in Teaching only

A zero credit course that may be taken in conjunction with MAE 540 for students in the combined BS/MA in Teaching Mathematics program, with permission of the instructor. The course satisfies the learning outcomes of the Stony Brook Curriculum's DIV learning objective.

Prerequisite: permission of instructor

SBC: *DIV*

0 credit, S/U grading

MAE 447: Directed Readings in Mathematics Education

In this course, a co-requisite to MAE 540/312, Clinical Experience, we will study current issues in mathematics education. Students should become familiar with the research literature, as well as with the New York State Code of Ethics for Teachers and INTASC dispositions. Students should reflect on the implications of mathematics education research on their own classroom practices and also on the limitations of research.

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

SBC: *CER, EXP+, SPK*

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

SBC: *CER, EXP+, SPK*

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

SBC: *CER, EXP+, SPK*

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 102: Proficiency Algebra Review

A noncredit, online, intensive review of topics from high school algebra as preparation for placement into statistics, precalculus, calculus and other mathematics. Numerical and algebraic operations, exponents, polynomials, rational expressions, graphing, analytic geometry of lines, solving linear and quadratic equations in one variable, solving linear systems in two variables, polynomials, factoring algebraic expressions, absolute value, inequalities, and the Binomial theorem. The final assessment in this course will be the Stony Brook mathematics placement exam; satisfactory completion of the course corresponds to placement level 3 or higher. A through C/Unsatisfactory grading only. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: permission of the department

0 credit

MAP 103: Proficiency Algebra

An intensive review of high school algebra as preparation for calculus and other mathematics. Facility with exponents, basic graphing, solving linear and quadratic equations in one variable, solving linear systems in two variables, polynomials, factorization of algebraic expressions, binomial theorem, and inequalities. Algebraic manipulations, analytic geometry of lines. Does not count toward graduation. A through C/Unsatisfactory grading only. The Pass/No Credit option may not be used. 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.

Advisory prerequisite: Level 2 on the mathematics placement examination or MAP 101

DEC: *S1*

3 credits

MAR

Marine Sciences

MAR 101: 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.

DEC: *E*
SBC: *SNW*

3 credits

MAR 102: Introduction to SCUBA Diving

Many marine scientists require the ability to collect, observe patterns or install equipment underwater. The primary mechanism for doing this is with self-contained underwater breathing apparatus (SCUBA). This course provides students with the academic background, practical skill applications, and SCUBA diving training to become competent and confident divers. Training is conducted under the Professional Association of Diving Instructors (PADI). Students must be in good health and must have basic swim skills. This course has an additional fee.

Prerequisite: Permission of instructor

2 credits, S/U grading

MAR 104: 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. This course has an associated fee when offered during the summer. Please see www.stonybrook.edu/coursefees for more information.

DEC: *E*
SBC: *SNW*

3 credits

MAR 105: Introduction to Oceanography Laboratory

Students will explore oceanographic concepts through lab experiments and field experiences. The lab covers important concepts in the four major divisions of marine science (biology, chemistry, physics, and geology). Students will be able to further develop their oceanographic interests with the knowledge and experience that this lab provides. This lab complements an Introduction to Oceanography (MAR 104). This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MAR major or minor; Pre- or coreq: MAR 104 or permission of instructor.

1 credit

MAR 106: Life in Our Ocean

This course dives into the basic concepts of marine biology, the study of the ocean and the diverse life forms that reside in the distinct habitats found there, with an emphasis on community- level relationships and interconnectedness. The course will also include an extensive discussion on ocean conservation, including threats facing marine life and policy solutions. This course is designed for an introductory level class for majors or non- science majors.

SBC: *SNW*

3 credits

MAR 110: Shark Biology & Conservation

Sharks have lived in New York waters for millions of years and play an important role in balancing our intricate marine ecosystems. MAR 110 provides an in-depth exploration of the diversity, biology, and conservation of sharks, focusing on current scientific research and practical skills development. This short-term intensive course is specifically designed for both undergrads & motivated high school students wishing to earn college credit.

SBC: *SNW*

3 credits

MAR 201: The Jaws Effect

In 2014, Christian Neff coined the term, "The Jaws Effect" - the trifecta of beliefs that sharks intentionally bite humans, that shark bites are always fatal, and that sharks should be killed in order to prevent future attacks. This course provides a review of why sharks are important to our marine ecosystems, the influence of the media on public perceptions, and the challenges behind shark conservation.

SBC: *STAS*

3 credits

MAR 301: Environmental Microbiology

Microbiological mediation of natural processes in marine, freshwater, soil, and groundwater habitats, as well as public health issues and microbial potential for remediation of pollutants. Lectures include 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. Labs introduce students to fundamental microbiological methods currently used in environmental, public health, and clinical settings. Not for credit in addition to MAR 302. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: BIO 202; CHE 131 or 141

4 credits

MAR 302: Marine Microbiology and Microbial Ecology

Introduction to the evolution, diversity, and importance of micro-organisms in the sea. Lectures highlight the phylogenies, physiologies and ecological functions of each major microbial group (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. Course explores the microbial ecology of most major marine habitats. Not for credit in addition to MAR 301.

Prerequisites: BIO 201 and BIO 202; CHE 132 or CHE 142

3 credits

MAR 303: Long Island Marine Habitats

The study of representative marine environments around Long Island. Students visit the field sites, 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: U3 or U4 standing; BIO 201
Advisory Prerequisites: AMS 110 or other statistics course; MAR 101 or 104 or 333

SBC: *STEM+*

4 credits

MAR 304: 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.

Prerequisites: U3/U4 status or MAR 101 or MAR 104
Advisory prerequisites: MAR 101, MAR 104, or MAR 333

DEC: *E*
SBC: *STEM+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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

SBC: *STEM+*

3 credits

MAR 306: Introduction to Scientific Diving

This course is designed to introduce SCUBA certified students to underwater research methods used in the study of biology, ecology and physiology of subtidal organisms. A variety of current underwater research methods are taught and implemented in both the classroom and with regular underwater exercises in the pool and the field. This course is designed to also provide

the students with training in dive safety, diving emergency procedures, oxygen administration, neurological assessment, first aid for hazardous marine injuries, technical diving methodology, dive planning, and the application of science diving techniques to meet the American Academy of Underwater Sciences (AAUS) Scientific Diver Certification. All students will complete the requirements for PADI Advanced Open Water Diver, PADI Rescue Diver, PADI Emergency First Responder, DAN O2 provider and AAUS Scientific Diver. Students must be in good health and must have basic swim skills. This course has an additional fee.

Prerequisite: Permission of instructor

2 credits, S/U grading

MAR 308: Environmental 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: CHE 132/134 or 142/144

SBC: *STEM+, TECH*

3 credits

MAR 315: 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: BlO 201

DEC: *H*
SBC: *ESI, STAS*

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

SBC: *STEM+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: BIO 201; CHE 131 or CHE 141 or CHE 152

SBC: *STEM+*

4 credits

MAR 333: 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

DEC: *H*
SBC: *STEM+*

3 credits

MAR 334: Remote Sensing of the Environment

A study of the theory and practice 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: ENS/PHY 119 or PHY 125 or PHY 131 or PHY 141

DEC: *E*
SBC: *STEM+, TECH*

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 CHE 141
Advisory Prerequisite: MAR 104 or MAR 333

3 credits

MAR 340: 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

DEC: *H*
SBC: *STAS*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: CHE 132 or CHE 152; 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 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

SBC: *STEM+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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

SBC: *STEM+, TECH*

3 credits

MAR 354: Introduction to Geological Oceanography

An introduction to the geology of our oceans. Students will explore coastal processes, sea level change, sediment transport, non-living resources, why Earth has oceans, processes that shape ocean evolution, and Earth's oceans and climate through time. Interconnections between ocean geology and other major marine science disciplines will be stressed.

Prerequisites: MAT 125 or 131 or 141 or AMS 151; and MAR 104 or GEO 102 or GEO 122 or CHE 131 or permission of instructor.

SBC: *STEM+*

3 credits

MAR 355: Coastal Cultural Experience

An experiential learning course designed to introduce students to the rich coastal marine culture of New York and the northeastern United States. Through targeted readings and participation in weekly faculty-led field trips in the greater Long Island area, students will develop an understanding of how the coastal environment and maritime traditions have shaped the region's culture. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Pre- or corequisite: MAR 356
Advisory Prerequisite: Enrollment in the Semester by the Sea Program

SBC: *ESI, EXP+*

2 credits

MAR 356: Maritime Traditions of New England

This class will survey the traditions and historical development of the sea, with an emphasis on the fishing, whaling, and seafaring history and rich contemporary coastal culture of the Northeastern United States. Students will examine how we have understood our roles in connection with the ocean by reading and discussing selections from numerous historical journals, books and primary sources as well as literature in which seafaring traditions are discussed and/or demonstrated. Excursions in the co-required Coastal Cultural Experience course allow students to explore the maritime setting of the works discussed in the course.

Pre- or corequisite: MAR 355

DEC: *K*
SBC: *SBS, USA*

3 credits

MAR 357: Unsinkable Technologies: History of Maritime Science and Technology

This course exposes students to advances in maritime science and technology. Students will learn to think critically about the processes in which contemporary societal needs and concerns both locally and globally influenced maritime technological as well as the ways in which advances in maritime science and technologies have shifted public attitudes through time. By understanding how societies and technology have impacted and shaped each other over time, students will have a broader understanding of regional and global communities. This course does permit completion of the WRTD requirement.

Prerequisite: U3/U4 status; WRT 101 or WRT 102

DEC: *H*
SBC: *ESI, STAS*

3 credits

MAR 362: Marine Vertebrate Biology

An introduction to the diversity, natural history, and evolution of marine chordates, emphasizing the living vertebrates. We will explore how animals adapt to their environment and how this leads to diversity. Three hours of lecture or discussion and one three-hour laboratory per week. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: BIO 201

4 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: BIO 201; BIO 203

3 credits

MAR 373: Marine Apex Predators: Ecology and Conservation

The removal of apex predators is one of the most pervasive impacts of humans on Earth's ecosystems. In the past few decades we have started to recognize how the loss of these species has caused substantial changes in terrestrial ecosystem diversity and function, mediated by changes in prey population dynamics and behavior. It is only recently that we have realized that changes in the abundance of apex predators in the ocean (e.g., sharks, marine mammals, tuna and other large predatory bony fish) may be causing similar changes in coastal and pelagic marine ecosystems. In this course we will (1) review the biology of key marine apex predators, (2) explore how 'top down' processes (predation and intimidation of prey) can influence marine ecosystems and (3) review the status of marine apex predators and how this relates to the current state of ocean ecosystems. We will

draw from the primary literature, from both the terrestrial and marine realms, and host outside speakers who study these animals in the field.

Prerequisite: BIO 201 and either BIO 202 or BIO 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 rehabilitation activities, 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: BIO 201 or permission of instructor

3 credits

MAR 376: Biology and Conservation of Sea Turtles

This course provides an overview of the biology of sea turtles, and highlights different solutions to challenges these organisms face while living in the marine environment. We begin by discussing biological adaptations and ecological processes, and will then examine these concepts in relation to conservation and management issues facing different sea turtle species. This course will be primarily lecture-based, although we will take advantage of additional learning opportunities, such as necropsies. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: BIO 201
Advisory prerequisite: BIO 203

3 credits

MAR 377: Biology and Conservation of Seabirds

This course provides an overview of the biology of seabirds, covering basic and applied aspects of seabird biology. We examine specific biological adaptations (e.g., morphological and physiological adaptations for diving and flying) in the first third of the course, and review population-level processes and behavioral patterns (e.g., population ecology and migration) in the second part of the course. The last third of the course applies this knowledge of seabird biology and ecology to current conservation issues and management efforts, both within the United States and internationally.

Prerequisite: BIO 201
Advisory prerequisite: BIO 203

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: U3 or U4 standing; BIO 201
Advisory Prerequisite: BIO 203

SBC: *ESI, WRTD*

3 credits

MAR 382: Introduction to Next Generation Sequencing and its applications across fields

An introduction to the Newest DNA sequencing technologies and how they are used to answer questions regarding organism's evolution, biology and ecology. The course will provide technical and analytical details on functional genomics approaches including comparative genomics, population genomics, epigenomics, transcriptomics, metagenomics and metatranscriptomics. Throughout the course, recent studies will be discussed to understand the role of the technology in advancing knowledge. These examples will span across fields of biology and will include, but not be limited to: cancer research, fisheries management, ecotoxicology, evolutionary biology, parasitology, phylogeny of animals, symbiosis, conservation biology, and adaptation to environmental stressors.

Prerequisite: C or higher in BIO 201, BIO 202, and BIO 204, or permission of the instructor

SBC: *STEM+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: BIO 202 and 203

SBC: *STEM+*

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. Field trips outside regularly scheduled class meetings are required. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: BIO 201; MAT 125 or 131 or 141 or AMS 151

3 credits

MAR 386: Ecosystem Science for Fisheries Management

Provides an overview of how we develop the best available information and science for fisheries management. The course will review the decision-making process in fisheries management and evaluate various tools and approaches that can be used in generating the best available information to inform ecosystem-based fisheries management. These tools and approaches will include single species fisheries models, multispecies models and full systems models. Advantages and disadvantages of each approach and needs to develop ecosystem-based fisheries management in changing environments will be discussed. The course requires familiarity with quantitative methods, but emphasizes current literature and case studies as main learning elements.

Prerequisite: MAR 385 or instructor approval

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

SBC: *ESI, EXP+, STEM+*

4 credits

MAR 389: Coral Biology and Conservation - Red Sea Program

Coral reefs of the world are at the brink of collapse, with only 10% expected to survive past mid-century. The aims of the course are to explore the causes of this global decimation and analyze potential approaches to conserve what remains of this critically important ecosystem, while studying at an advanced research facility in Eilat, Israel on the shores of the Gulf of Aqaba. This is a unique place to study coral as the Gulf's uniquely resilient reefs are expected to be among the last to survive the century. The course location allows for daily snorkeling to study reefs right off the beach of the research facility and offers opportunities for students to interact with international faculty and students providing a broader perspective on our topic.

Prerequisite: one semester of BIO

SBC: *EXP+, STEM+*

3 credits

MAR 390: Aquaculture

Covers the fundamentals of aquaculture including basic seawater system design and setup, culturing techniques for both phytoplankton and zooplankton, and both historic and contemporary topics within the industry. Students will also witness natural and induced spawning events of various ornamental species, and raise the larvae acquired through stage one metamorphosis.

Prerequisite: BIO 201; U3 or U4 standing Advisory Prerequisite: BIO 203

DEC: *E*
SBC: *ESI, STEM+*

3 credits

MAR 392: 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 or CHE 131 or ENS/ PHY 119

DEC: *H*
SBC: *STAS*

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: 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

DEC: *H*
SBC: *ESI, STAS*

3 credits

MAR 395: Topics in Marine Environmental Sciences

May be repeated as the topic changes. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any ATM, ENS, or MAR course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

MAR 459: Write Effectively in ATM, ENS, MAR and MVB

A zero-credit course that is taken in association with a 300- or 400-level course approved by the major. MAR 459 provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Corequisite: an approved upper-division course in the major (see list of approved courses at http://tinyurl.com/jy676vt)

SBC: *WRTD*

0 credit, 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

SBC: *EXP+*

0-3 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

SBC: *EXP+*

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

SBC: *EXP+*

0-6 credits, S/U grading

MAT

Mathematics

MAT 118: 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.)

DEC: *C*
SBC: *QPS*

3 credits

MAT 119: Foundations for Precalculus

This course is a companion to MAT 123: Precalculus, providing a structured environment where students can refresh the algebra skills which are necessary for success in precalculus. These topics include understanding of exponents (especially fractional and negative exponents), manipulating mathemematical expressions, solving equations, and modeling/word problems. Course may not be taken with CHE 129.

Prerequisite: 2+ on placement or permission of MAT 123 instructor
Corequisite: MAT 123

1 credit, S/U grading

MAT 122: 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 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.)

DEC: *C*
SBC: *QPS*

3 credits

MAT 123: Precalculus

Comprehensive preparation for the regular calculus sequences. Careful development of rational, exponential, logarithmic, and trigonometric functions, and their applications. Asymptotics and 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 or corequisite MAT 119 (Prerequisite must be met within one year prior to beginning the course.)

DEC: *C*
SBC: *QPS*

3 credits

MAT 125: Calculus A

Differential calculus, emphasizing conceptual understanding, computations and applications, for students who have the necessary background from 12th-year high school mathematics. Limits and continuous functions. Differentiation of elementary algebraic, trigonometric, exponential and logarithmic functions; graphing; modeling; and maximization. L'Hospital's rule. 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 corequisite MAT 130

DEC: *C*
SBC: *QPS*

3 credits

MAT 126: Calculus B

A continuation of MAT 125, covering integral calculus: Riemann sums, the fundamental theorem, symbolic and numeric methods of integration, area under a curve, volume, applications such as work and probability, improper integrals. 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

DEC: *C*
SBC: *QPS*

3 credits

MAT 127: Calculus C

A continuation of MAT 126, covering: 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

DEC: *C*
SBC: *QPS*

3 credits

MAT 130: Trigonometry and Logarithms

Inverse functions, exponential and logarithmic functions, radian measure of angles and trigonometric functions. Taught as a companion to MAT 125.

Prerequisite: MAT 122 with a grade of C or better, or level 3+ or higher on the placement exam, or permission of instructor
Co-requisite: MAT 125

1 credit, S/U grading

MAT 131: 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; L'Hospital's rule; the Riemann integral; and the Fundamental Theorem of Calculus. 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

DEC: *C*
SBC: *QPS*

4 credits

MAT 132: Calculus II

A continuation of MAT 131, covering symbolic and numeric methods of integration; area under a curve; volume; applications such as work and probability; sequences; series; Taylor series; differential equations; and modelling. May not be taken for credit in addition to MAT 127, 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 AMS 151 or MAT 131 or 141, or level 7 on the mathematics placement examination

DEC: *C*
SBC: *QPS*

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 logic and proofs, set theory, combinatorics, functions and relations. There is considerable focus on writing. May not be taken for credit in addition to MAT 250.

Prerequisite: Level 4 on the mathematics placement examination or equivalent course or permission of the instructor

SBC: *STEM+*

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.

Prerequisite: C or higher in MAT 127 or 132 or 142 or AMS 161 or level 9 on the mathematics placement examination

SBC: *STEM+*

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

SBC: *STEM+*

3 credits

MAT 250: Introduction to Advanced Mathematics

An introduction to the Advanced Track mathematics program. Provides the core of basic of propositional logic, quantifiers, proofs, sets, functions, cardinality, relations, equivalence relations and quotient sets, order relations, combinatorics. Number systems: natural numbers, integers, rational, real and complex numbers. MAT 250 is primarily intended for students in the Advanced Track program. It serves as an alternative to MAT 200 and may not be taken for credit in addition to MAT 200. Students wishing to enroll in MAT 250 should instead enroll in a corresponding section of MAT 200. In approximately the 3rd week, an assessment will be held and qualified students will be offered the option of moving to MAT 250. Formerly offered as MAT 150; not for credit in addition to MAT 150.

Prerequisite: MAT 131 or an equivalent course or level 7 or higher on mathematics placement examination

SBC: *QPS*

4 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 308.

Prerequisite: C or higher in MAT 127 or 132 or 142 or AMS 161 or level 9 on the mathematics placement examination

SBC: *STEM+*

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 203, MAT 211 and MAT 303. May not be taken for credit in addition to MAT 203 or AMS 261.

Prerequisite: MAT 127 or MAT 132

SBC: *STEM+*

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 or AMS 361.

Prerequisite: MAT 307; or MAT 203 and MAT 211; or MAT 132 and MAT 220; or permission of instructor

SBC: *STEM+*

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.

Prerequisite: C or higher in MAT 211 or 308 or AMS 210 or MAT 220; C or higher in MAT 200 or MAT 250 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; C or higher in MAT 200 or MAT 250 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 or MAT 220 or MAT 308
Advisory Prerequiste: MAT 200 or CSE 250 or equivalent

3 credits

MAT 313: Abstract Algebra

Groups and rings together with their homomorphisms and quotient structures. Unique factorization, polynomials, and fields.

Prerequisite: C or higher in MAT 310 or MAT 312 or MAT 315; C or higher in MAT 200 or MAT 250 or permission of instructor

3 credits

MAT 314: Abstract Algebra II

This course is a continuation of MAT 313, Abstract algebra. It covers modules over rings, including structure theorem for modules over PID, theory of fields and field extensions and introduction to Galois theory.

Prerequisite: MAT 313 or permission of the instructor

3 credits

MAT 315: Advanced Linear Algebra

Finite dimensional vector spaces over a field, linear maps, isomorphisms, dual spaces, quotient vector spaces, bilinear and quadratic functions, inner products, canonical forms of linear operators, multilinear algebra, tensors. This course serves as an alternative to MAT 310. It is an intensive course, primarily intended for math majors in Advanced Track program. Students wishing to enroll in MAT 315 should instead enroll in MAT 310. In approximately the 4th week, an assessment will be held and qualified students will be offered the option of moving to MAT 315.

Prerequisite: B or higher in MAT 200 or MAT 250; B or higher in MAT 211, AMS 219, MAT 308, or MAT 220; or permission of the instructor

4 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.

Prerequisite: C or higher in MAT 200 or MAT 250 or permission of instructor; C or higher in one of the following: MAT 203, 211, 220, 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. Metric spaces and compactness. This course is a more demanding alternative of MAT 319, suitable for students who are comfortable with rigorous proofs. Students wishing to enroll in MAT 320 should instead enroll in MAT 319. In approximately the 6th week, an assessment will be held and qualified students will be offered the option of moving to MAT 320.

Prerequisite: B or higher in MAT 200 or MAT 250 or permission of instructor; C or higher in one of the following: MAT 203, 211, 220, 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, MAT 220, MAT 307, or AMS 261; C or higher in MAT 310 or MAT 315; B or higher in MAT 320

3 credits

MAT 324: Real Analysis

Introduction to Lebesgue measure and integration. Aspects of Fourier series, function spaces, Hilbert spaces, Banach spaces.

Prerequisites: 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

SBC: *TECH*

3 credits

MAT 336: 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 geometries and the modern concept of number.

Prerequisite: MAT 200 or MAT 203 or or MAT 250 or MAT 307 or AMS 261

DEC: *H*
SBC: *SPK, STAS, WRTD*

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 220 or 307 or AMS 261; MAT 303 or 305 or 308 or AMS 361
Advisory Prerequisite: MAT 200 or MAT 250

3 credits

MAT 342: Applied Complex Analysis

Complex numbers, analytic functions, the Cauchy-Riemann and Laplace equations, the Cauchy integral formula and applications. Fundamental Theorem of Algebra and the Maximum Principle. The Cauchy residue theorem and applications to evaluating real integrals. Conformal mappings.

Prerequisite: C or higher in the following: MAT 203 or MAT 220 or MAT 307 or AMS 261
Advisory Prerequisite: MAT 200 or MAT 250

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 MAT 220 or MAT 307 or AMS

261; MAT 303 or MAT 308 or AMS 361; MAT 200 or MAT 250 or permission of instructor

3 credits

MAT 360: Geometric Structures

Formal geometries and models. Topics selected from projective, affine, Euclidean, and non-Euclidean geometries.

Pre- or Corequisites: MAT 203 or 220 or 307 or AMS 261; MAT 200 or MAT 250 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 MAT 320 or MAT 364; MAT 203 or MAT 307 or MAT 322

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 220 or 307 or AMS 261; MAT 200 or 250
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 113 or CSE 150 or CSE 215 or MAT 200 or MAT 250

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. Not for credit in addition to CSE 385.

Prerequisites: C or higher in: CSE 113 or CSE 150 or CSE 215 or MAT 200 or MAT 250; MAT 211 or AMS 210; CSE 214 or CSE 260; CSE or MAT or DAS major

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.

Prerequisite: U3/U4; permission of department or instructor; additional prerequisites announced with topic

SBC: *SPK*

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.

Prerequisite: U3/U4; permission of department or instructor; additional prerequisites announced with topic

SBC: *SPK*

3 credits

MAT 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

MAT 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any MAT course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

MAT 459: Write Effectively in Mathematics

A zero credit course that may be taken in conjunction with any 300- or 400-level MAT course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+, WRTD*

3 credits

MDA

Media Arts

MDA 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. This course is offered as both MDA 117 and THR 117.

3 credits

MDA 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. This course is offered as both MDA 277 and THR 277.

3 credits

MDA 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. This course is offered as both MDA 480 and THR 480.

Prerequisite: Permission of department

0-3 credits

MDA 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. This course is offered as both MDA 488 and THR 488.

Prerequisites: Permission of instructor and department

SBC: *EXP+*

0-6 credits, S/U grading

MEC

Mechanical Engineering

MEC 100: Introduction to Mechanical Engineering

Introduction to the engineering experience in general and mechanical engineering in particular through lectures by faculty and invited speakers from industry, field trips, films and laboratory demonstrations. Lectures cover creative thinking and problem-solving, design team work, computer utilization, engineering ethics and legal issues, use of libraries and other sources of information, career opportunities in mechanical engineering and related fields, emerging technologies and the cross-disciplinary nature of engineering.

3 credits

MEC 101: Freshman Design Innovation

This course presents an overview of the mechanical engineering profession, engineering ethics, basics of computation via correct usage of dimensions, units, and significant digits, and engineering documentation. Furthermore, this course introduces the students to the process of engineering design and provides a project-based design experience wherein the students design, build, and program a microcontroller driven autonomous mechatronic device. In doing so, they are provided an early exposure to the systematic approach to engineering problem solving that brings together fundamental concepts of forces, motions, energy, materials, manufacturing processes, and machines and mechanisms from mechanical engineering and basic electronics, sensing, actuation, and computer programming. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Pre- or co-requisites: AMS 151 or MAT 125 or MAT 131 or MPE level 6 or greater and PHY 125 or PHY 131 or PHY 141

3 credits

MEC 102: Engineering Computing and Problem Solving

Introduction to programming with MATLAB. Control structures, arrays and matrix operations, functions, object-oriented programming, interfacing MATLAB with other languages. Projects include 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: Level 3 or higher on the mathematics placement examination; MEC, GME, CIV or GCV major or permission of the department.

2 credits

MEC 104: 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 and automobiles are developed by investigating how they work. The scientific method, engineering design methodology, safety, and environmental impacts are discussed in the context of these practical applications.

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

DEC: *E*
SBC: *SNW, TECH*

3 credits

MEC 105: Everyday Science and Engineering

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. The scientific method, engineering design methodology, safety, and environmental impacts are discussed in the context of these practical applications.

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

DEC: *E*
SBC: *SNW, TECH*

3 credits

MEC 203: Engineering Graphics and CAD

Introduces engineering graphics and its role in design process. Includes the principles of engineering drawing and sketching for mechanical design, the use of computer graphics and solid modeling in design representation of 3D objects, assembly and simulation as well as ASME standards on geometric dimensioning and tolerances. Includes hands-on experience in the use of CAD software packages for engineering design. Engineering ethics.

3 credits

MEC 220: Practical Electronics for Mechanical Engineers

An overview of basic electronics at the practical level. The course provides mechanical engineering students with the fundamentals to perform basic electronics work needed in laboratories, subsequent courses and their professional careers. Topics include both passive and active components, AC and DC circuits, and a focus on operational amplifier and transistor driven circuits needed for instrumentation and control. Hands-on work in each area complements theoretical analysis, and ensures that students can implement these circuits and devices practically; students will analyze and build circuits both from circuit diagrams, as well as from product datasheets.

Prerequisites: PHY127, PHY132, or PHY142

3 credits

MEC 225: Fundamentals of Machining Practices

Hands-on experience in the fundamentals of machining including metrology tools and devices, saw, sheet metal working, drilling, reaming, taping, turning, boring, milling, and welding. Not for credit in addition to MEC 226. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Pre- or Co-requisite: MEC 203
Prerequisite: MEC major or permission of instructor

1 credit

MEC 226: Modern Machining Practices

Hands-on experience in automated machining including additive and subtractive processes, such as fused deposition modeling (FDM) rapid prototyping, and computer numerical control (CNC) multi-axis machining. Not for credit in addition to MEC 225. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Pre- or Co-requisite: MEC 203
Prerequisite: MEC major or permission of instructor

1 credit

MEC 260: Engineering Statics

A review of vector algebra. Concept of force. Equilibrium of particles. Moments about points and lines, couples and equivalent force systems. Equilibrium of rigid bodies. Analysis of simple structures such as trusses, frames, and beams. Centroids, centers of gravity, and moments of inertia. Dry friction with applications to wedges, screws, and belts. Method of virtual work, potential energy, and stability.

Prerequisite: PHY 131 or 141 or 125
Corequisite: AMS 261 or MAT 203

3 credits

MEC 262: Engineering Dynamics

Vectorial kinematics of particles in space, orthogonal coordinate systems. Relative and constrained motions of particles. Dynamics of particles and the systems of particles, equations of motion, energy and momentum methods. Collisions. Two- and three-dimensional kinematics and dynamics of rigid bodies. Moving frames and relative motion. Free, forced, and damped vibrations of particles and rigid bodies.

Prerequisite: A grade of "C" or better in MEC 260

3 credits

MEC 280: 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. E or SNW course

DEC: *H*
SBC: *STAS*

3 credits

MEC 300: Professional Conduct for Engineers

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. The interaction of engineers, their technology, the society and the environment is examined using case studies. Includes topics in law such as negotiation, reverse engineering, ownership and enforcement of intellectual property, and export controls. Introduction to patents and patent infringement using case studies.

Prerequisites: WRT 102; MEC Major; U3 or U4

SBC: *STAS*

2 credits

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 or 141; CHE 131; 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 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 ESG 111, or ESE 124, or CSE 114 or 130 or BME 120

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 and their design, and analysis techniques.

Prerequisites: MEC 102 or CSE 114 or 130 or ESG 111 or BME 120 or ESE 124; C or better in MEC 262 (or BME 260 for BME majors)
Pre- or Corequisite: MEC 203 (ESG 316 for ESG majors)

3 credits

MEC 316: Instrumentation and Solid Mechanics Laboratory

Hands-on experience in solid mechanics and instrumentation with focus on the concept of static and dynamic response. Students learn to operate instruments for measuring displacement, angle, acceleration, and strain. Student groups perform a series of experiments to probe the spatial and temporal resolution of modern instrumentation and sensors in relation with fundamental material properties. Lectures at the beginning of the course provide background information and theories of experimentation. Not to be taken in the same semester as MEC 317. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: MEC major; C or better in MEC 363; PHY 134
Corequisites: MEC 220; AMS 361 or MAT 303

SBC: *TECH*

2 credits

MEC 317: Thermal Sciences and Fluid Mechanics Laboratory

Hands-on experience in fluid mechanics, heat transfer, and thermodynamics. Introduction to a variety of sensors and instruments commonly used in mechanical engineering with focus on temperature, pressure, and flow velocity measurements. Student groups perform a series of experiments with emphasis 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. Not to be taken in the same semester as MEC 316. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: MEC major; PHY 134; U3 or U4 standing
Corequisite: MEC 220; MEC 301; MEC 364; AMS 361 or MAT 303

SBC: *TECH*

2 credits

MEC 320: Numerical Methods in Engineering Design and Analysis

This course emphasizes the implementation of numerical methods for computer-aided solutions to the problems that arise in engineering design and analysis. Methods include interpolation, extrapolation, curve fitting, and integration and techniques solving non-linear equations, systems of linear equations, and differential equations. Optimization in engineering design is covered from the formulation of design specifications and criteria, to analyzable models, through to numerical implementation. May not be taken for credit in addition to AMS 326 or CIV 350.

Prerequisites: MEC 102 or CSE 114 or CSE 130 or ESG 111 or ESE 124 or BME 120; AMS 261 or MAT 203; AMS 361 or MAT 303

3 credits

MEC 325: Manufacturing Processes

Introduces traditional and modern manufacturing processes, their capabilities, and limitations. The properties of engineering materials are discussed in the context of manufacturing applications. Examples of topics to be discussed include additive processes (casting, 3D printing, etc.), subtractive processes (milling, turning, etc.), forming processes (forging, bending, extrusion, etc.), and joining processes (welding, mechanical fastening , etc.). Hands-on experience with manufacturing machines and processes is included.

Pre- or Corequisite: MEC 203
Prerequisite: MEC major or permission of the department

3 credits

MEC 363: Mechanics of Solids

Stress and deformation of engineering structures and the influence of the mechanical behavior of materials. Concepts of stress and strain, constitutive relations, analysis of statically indeterminate systems, study of simple bars and beams, and stability conditions. Emphasis on force equilibrium, elastic response of materials, geometric compatibility, Mohr's circle, stresses and deflections in beams, and torsion and buckling of rods. Design for bending, shear, and combined states of stress.

Prerequisite: A grade of "C" or better in MEC 260 or BME 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: PHY 126 or PHY 131; MEC 262; MEC Major

3 credits

MEC 393: Engineering Fluid Mechanics

The application of the principles of fluid mechanics to important areas of engineering practice such as turbomachinery, hydraulics, and wave propagation. Prepares students for advanced coursework in fluid dynamics. Extends the study of viscous effects, compressibility, and inertia begun in MEC 364.

Prerequisite: MEC 364

3 credits

MEC 398: Thermodynamics II

Psychrometrics and psychrometric charts. Thermodynamic considerations for the design and performance of cooling towers, humidifiers, and dehumidifiers. Reacting mixtures, combustion, and chemical equilibrium. Thermodynamics of fluid flow, simple compression, and expansion processes. Analysis and design of gas and vapor power cycles. Cycles with reheat, intercooling, and cogeneration plants. Refrigeration cycles.

Prerequisites: MEC 301 and 364

3 credits

MEC 402: Mechanical Vibrations

Modeling, analysis and design for mechanical vibrations. Fundamentals of free vibration, harmonically excited vibration and vibration under general forcing conditions are considered for one degree, two degree and multidegree of freedom systems; continuous systems; vibration design strategies including isolation and absorbers.

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 220; 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 423: Internal Combustion Engines

Introduction to internal combustion engines and their operation. Analytical approach to the engineering problem and performance analysis of internal combustion engines. Topics include thermodynamics fundamentals; fuel-air cycle analysis; engine combustion; emission formation and control strategies. Includes both the relevant fundamental concepts and the extensive practical knowledge base on which engine research, development, and design depend. Not for credit in addition to MEC 523.

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 with multiple realistic constraints, 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. The final grade will be assigned at the end of the two course sequence MEC 440-MEC 441. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: MEC 225 or 226; MEC 320 and 325; MEC 410; MEC major; U4 standing
Corequisites: MEC 300; MEC 316; MEC 317; MEC 411

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

3 credits

MEC 441: Mechanical Engineering Design II

Part II of the two-semester capstone design project sequence. Students complete the project design, incorporating engineering standards, 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MEC 440

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SBS+_PART, SPK_PART, STEM+_PART, WRTD_PART*

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, moire 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; 316
Corequisite: MEC 411

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 456: Introduction to Engineering Mechanics of Composites

Introduction to the engineering mechanics of fiber reinforced composites. Brief history of the development of fiber composites, their properties, advantages, limitations and applications. Overview of the different types of composites but with focus on long fiber reinforced composites; particularly, lamina and laminate concepts characteristics and configurations. Topics covered include: elastic properties of unidirectional lamina, strength of unidirectional lamina, elastic behavior of multidirectional laminates and stress and failure of multidirectional laminates. Design methodologies and considerations for structural composite materials.

Prerequisite: MEC 363

3 credits

MEC 457: Engineering Composites Fabrication and Characterization

Overview of fiber reinforced composites, applications and mechanical properties. Introduction to fiber composites fabrication methods as well as experimental characterization methods used in acquiring their relevant mechanical properties. Fabrication topics include: impregnation of fibers; prepregs; stacking; curing; vacuum bagging; autoclave technology; out-of-autoclave manufacturing processes; molding; processing; cutting and joining. Topics in mechanical characterization include: experimental methods; characterization of the elastic properties and failure strengths of unidirectional lamina; characterization of the elastic properties and failure strengths of multidirectional laminates. Course is divided into in-class lectures and laboratory sessions.

Prerequisite: MEC 363

3 credits

MEC 464: Fundamentals of Aerodynamics

Kinematics and dynamics of incompressible irrotational flow; stream function and the potential function; Euler and Bernoulli equations. Thin-foil theory; lift and moment for symmetric and cambered airfoils. Finite-

wing theory; induced drag. Compressible flow, small-disturbance theory; thin wings at subsonic and supersonic speeds.

Prerequisites: MEC 305; MEC 310; MEC 364

3 credits

MEC 465: Aerospace Propulsion

Fundamentals of propulsion; performance parameters, thermodynamic cycles. Introduction to combustion and combustors. Performance and cycle analysis of various flight propulsion systems: turbojets, turbofans, turboprops, ramjets, scramjets, rockets and propellors. Design of supersonic inlet nozzles, component matching and map.

Prerequisites: MEC 305; MEC 310; MEC 364

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

SBC: *EXP+*

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

SBC: *EXP+*

3-9 credits, S/U grading

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.

Prerequisites: U3 or U4 standing; permission of department

0-3 credits

MSL

Military Service Leadership

MSL 101: Introduction to the Army

Focuses on introduction to the Army and critical thinking and introduces Cadets to the Army and the Profession of Arms. Students will examine the Army Profession and what it means to be a professional in the U.S. Army. The overall focus is on developing basic knowledge and comprehension of the Army Leadership Requirements Model while gaining a complete understanding of the Reserve Officers' Training Corps (ROTC) program, its purpose in the Army, and its advantages for the student. Cadets also learn how resiliency and fitness supports their development as an Army leader. Includes a weekly lab facilitated by MSL III Cadets and supervised by Cadre.

Prerequisite: not open to juniors and seniors without instructor approval

1 credit

MSL 102: Foundations of Agile and Adaptive Leadership

Introduces Cadets to the personal challenges and competencies that are critical for effective leadership. Cadets learn the personal development of life skills such as critical thinking, time management, goal setting, and communication. Cadets learn the basics of the communications process and the importance for leaders to develop essential skills to effectively communicate in the Army. Cadets will begin learning the basics of squad level tactics that will be reinforced during a weekly lab facilitated by MSL III Cadets and supervised by Cadre.

Prerequisite: MSL 101 or permission of instructor

1 credit

MSL 201: Leadership and Decision Making

Focuses on leadership and decision making. The outcomes are demonstrated through Critical and Creative Thinking and the ability to apply Troop Leading Procedures (TLP) Innovative Solutions to Problems. The Army Profession is also stressed through leadership forums and a leadership self-assessment. Students are then required to apply their knowledge outside the classroom in a hands-on performance-oriented environment during a

weekly lab facilitated by MSL III Cadets and supervised by Cadre.

Prerequisite: MSL 102 or permission of instructor

2 credits

MSL 202: Army Doctrine and Team Development

Focuses on Army doctrine and team development and begins the journey to understand and demonstrate competencies as they relate to Army doctrine. Army Values, Teamwork, and Warrior Ethos and their relationship to the Law of Land Warfare and philosophy of military service are also stressed. The ability to lead and follow is also covered through Team Building exercises at squad level. Students are then required to apply their knowledge outside the classroom in a hands-on performance-oriented environment during a weekly lab facilitated by MS III Cadets and supervised by Cadre.

Prerequisite: MSL 201 or permission of instructor

2 credits

MSL 301: Training Management and Warfighting Functions

Focuses on training management and the warfighting functions. An academically challenging course in which students will study, practice, and apply the fundamentals of Training Management and how the Army operates through the Warfighting functions. At the conclusion of the course, students will be capable of planning, preparing, and executing training for a squad conducting small unit tactics. Includes a lab per week using peer facilitation overseen by MSL IVs, supervised by ROTC Cadre.

Prerequisite: MSL 202

4 credits

MSL 302: Applied Leadership in Small Unit Operations

Focuses on applied leadership in small unit operations. An academically challenging course where students study, practice, and apply the fundamentals of direct level leadership and small unit tactics at the platoon level. At the conclusion of the course, students will be capable of planning, coordinating, navigating, motivating and leading a platoon in the execution of a mission. Includes a lab per week using peer facilitation overseen by MSL IVs, supervised by ROTC Cadre. Successful completion of this course will help prepare students for the Cadet Summer Training Advance Camp, which students will attend during the summer at Fort Knox, KY.

Prerequisite: MSL 301

4 credits

MSL 401: The Army Officer

Focuses on development of the Army Officer. An academically challenging course in which students develop knowledge, skills, and abilities to plan, resource, and assess training at the small unit level. Students will also learn about Army programs that support counseling subordinates and evaluating performance, values and ethics, career planning, and legal responsibilities. At the conclusion of the course, students will be familiar with how to plan, prepare, execute, and continuously assess the conduct of training at the company or field grade officer level. Includes a lab per week overseeing MSL III lesson facilitation supervised by ROTC Cadre.

Prerequisite: MSL 302

4 credits

MSL 402: Company Grade Leadership

An academically challenging course in which students develop knowledge, skills, and abilities required of junior officers pertaining to the Army in Unified Land Operations and Company Grade Officer roles and responsibilities. Includes reading assignments, homework assignments, small group assignments, briefings, case studies, practical exercises, a mid-term exam, and an Oral Practicum as the final exam. The Oral Practicum explores the student's knowledge of how the student will be prepared for the 20 Army Warfighting Challenges (AWFC) covered throughout the ROTC Advanced Course. Successful completion of the course will assist in preparing students for the BOLC B course and is a mandatory requirement for commissioning. Includes a lab per week overseeing MSL III lesson facilitation supervised by ROTC Cadre.

Prerequisite: MSL 401

SBC: *EXP+*

4 credits

MUS

Music

MUS 101: Introduction to Western Classical Music

An introduction to music of the Western classical tradition. This course covers basic concepts and vocabulary such as melody, harmony, rhythm, counterpoint, and form, as well as particular pieces of Western classical music. Various compositions and genres are considered in relation to the cultural and ideological values they embody, and the historical contexts in which they emerge. No previous musical training is assumed. Not for credit after MUS 130.

DEC: *D*
SBC: *ARTS*

3 credits

MUS 103: Introduction to Music and the Cinema

This course studies the history of music in cinematic productions, the basic concepts and terminology used to describe music and sound in cinema, techniques of audio-visual design, and the roles that music and sound play in the overall aesthetic effects in the cinema. The course studies music and sound in cinema from the earliest instances in the beginning of the 20th century to the most recent instances in the 21st century. No previous musical training is assumed.

SBC: *ARTS*

3 credits

MUS 105: Music Cultures of the World

An introduction to music traditions from around the world with an emphasis on political, social, and cultural aspects of music. Geographic areas are studied with attention to issues such as migration, gender, nationalism, belief, philosophy, and cosmology, as well as relationships with dance, drama, and poetry in particular music genres.

DEC: *G*
SBC: *ARTS*

3 credits

MUS 109: Rock, Popular Music, and Society

A study of rock and related popular musical traditions in the United States. The music is investigated through consideration of its: 1) musical constituents (rhythm, form, pitch structure, instrumental texture, and vocal style), 2) historical development, beginning with its roots in earlier folk and popular styles through to the present, and 3) social meanings, uses, and ramifications.

DEC: *D*
SBC: *ARTS*

3 credits

MUS 119: 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.

DEC: *D*
SBC: *ARTS*

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: Audition required
Corequisite: MUS 391 or MUS 388 or MUS 267

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Placement by undergraduate keyboard examination
Corerequisites for Music majors: MUS 121 and MUS 321

1 credit

MUS 130: 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: MUS 119 or equivalent. Primarily intended for prospective music majors and others with sufficient musical background as demonstrated by the Theory Placement Exam or by permission of instructor

DEC: *D*
SBC: *ARTS*

3 credits

MUS 141: Keyboard Harmony A

Practical studies in music theory through basic keyboard exercises. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MUS 122
Corequisites: MUS 220 and 321

1 credit

MUS 142: Keyboard Harmony B

Practical studies in music theory through basic keyboard exercises. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 264 or MUS 267

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 391 or MUS 266

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: Audition required
Corequisite: MUS 262 or MUS 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: Audition required
Corequisite: MUS 262 or MUS 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: Audition required
Corequisite: MUS 262 or MUS 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

2 credits

MUS 178: Saxophone

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

2 credits

MUS 189: Introduction to Jazz Improvisation

For beginning Jazz students. Introduction to Jazz techniques and performance with an examination of Jazz melodies, chords, charts, and an introduction to Jazz history and listening. Experience playing Jazz is not a requirement. Basic instrumental technique and some experience listening to Jazz are required. One must audition for MUS 189; auditions are held in the first week of classes. Sign up sheets will be posted outside the music office (3304 Staller Music Office) the week before classes start. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required

1 credit

MUS 208: Introduction to Music Technology

Serves as an introduction to and exploration of production using computers to create sound and music. Lectures will cover concepts and presentations of musicians working in various capacities with computers, as well as tutorials on specific music software packages. Formerly offered as CDT 208 and ARS/THR 208. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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

SBC: *ARTS, TECH*

3 credits

MUS 210: Introduction to Music Histories and Cultures

This course offers a broad introduction to the study of music and sound in historical and cultural terms. Students will learn a wide range of approaches to the ways that music and sound have been made, used, and understood in different times and places. Students will gain an overview of long-standing and recent methods for thinking about music and sound as dynamic and meaningful phenomena.

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 235: Introduction to African Drumming

Students will learn to perform selections of dance-drumming repertoire from southern Ghana, Togo and Benin. Students will play on authentic instruments (bells, rattles and drums), sing, and dance. No musical experience or ability to read musical notation is required; students will learn pieces by ear through vugbe, 'drum language', which refers to the naming of specific sounds made on the drum in a kind of indigenous solfege. Song lyrics with translations will be made available. Readings, video screenings, and class visits by African artists will inform discussion of the sociocultural context of the music and its performance. The course will culminate in a mandatory performance, featuring African guest performers. Repeatable to a maximum of 4 credits.

1 credit

MUS 261: Stony Brook Chorale

Study and performance of a repertory from the Middle Ages to the present. Grading is based upon attendance. Ability to read music is required; advanced sight-reading is not. May be repeated.

1 credit

MUS 262: University Orchestra

Study and performance of works from the repertory of the concert orchestra. Grading is based upon attendance. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Repeatable to a maximum of 6 credits.

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required

1 credit

MUS 267: Small Jazz Ensemble Level 1

For students with some experience playing Jazz. A further examination into the Jazz technique and performance. Students must have the basic abilities to read music and charts, play scales and spell chords. Some experience listening to Jazz is required. Includes a performance requirement and regular rehearsals. One must audition for MUS 267; auditions are held in the first week of classes. Sign up sheets will be posted outside the music office (3304 Staller Music Office) the week before classes start. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Repeatable to a maximum of 6 credits.

Prerequisite: Audition required

1 credit

MUS 268: Spirit of Stony Brook Athletic Band

The study and playing/marching performance of music from the marching and pep band repertoire. The course requires attendance at a preseason marching band camp prior to the beginning of the Fall term (typically one week prior). Attendance at select athletic games and some away games is also required (including some Saturdays and some evenings, outside of course meeting times). Grading is based on attendance. Instrumentation consists of marching winds, marching percussion (snare, tenor, bass, cymbals), and color guard. May be repeated for credit. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: must be able to read music

1 credit

MUS 271: Camerata Singers

Camerata Singers performs accompanied and a cappella works from many eras and cultures. Music reading proficiency is required for this course. Course may be repeated to a maximum of 10 credits.

1 credit

MUS 289: Small Jazz Ensemble Level 2

For students with experience playing and listening to Jazz. A refined study in Jazz technique and performance. Students should be able to read written melodies and charts, play scales, and play over basic chord changes. They should be conversant with Jazz history, particularly pertaining to the principal players of their own instrument. Includes a performance requirement and regular rehearsals. One must audition for MUS 289; auditions are held in the first week of classes. Sign up sheets will be posted outside the music office (3304 Staller Music Office) the week before classes start. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Repeatable to a maximum of 6 credits.

Prerequisite: Audition required

1 credit

MUS 290: Vocal Repertory

Performance and analysis of works from the vocal repertory. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Corequisite: MUS 182 or 382

1 credit

MUS 300: 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.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *H*
SBC: *STAS*

3 credits

MUS 303: Music in the Age of Beethoven

Study of the historical period, up to and including the present, in which the music of Ludwig van Beethoven became the dominant model for European classical music. Consideration of Beethoven's music and its influence in relation to Enlightenment values, Romantic and idealist philosophies, nationalism, gender, and disability. Not for music major credit.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *I*
SBC: *GLO, HFA+*

3 credits

MUS 304: American Music

Study of the development of diverse 20th and 21st century musical traditions in the U.S. from the perspectives of the musical structures and social contexts that may be understood to define American music. The musical traditions of Jazz, Blues, Classical, Musical Theatre, Folk, 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 the development of new technologies have affected the production and reception of music in the United States. Not for music major credit.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *K*
SBC: *HFA+, USA*

3 credits

MUS 306: The Music and Culture of Hip-Hop

Offers an introductory exploration of the music, culture, and interventions of hip-hop. This course draws from multiple fields of study, including history, musicology, gender/sexuality/queer studies, anthropology, performance studies, multicultural and ethnic studies, and literary criticism. The purpose of this course is not simply to enjoy hip-hop, but rather to sharpen our listening skills, to critically engage performance, sound and visual symbols, and to thoughtfully interpret analyses of hip-hop.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

SBC: *DIV, HFA+, USA*

3 credits

MUS 307: 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.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *I*
SBC: *GLO, HFA+*

3 credits

MUS 308: History of Jazz

Historical study of the origins, evolution, and influence of jazz, a musical art form originating in and evolving with the experiences of black Americans. Examination of styles, figures, and places connected to jazz, from Louis Armstrong in New Orleans to Billie Holiday in New York to Kendrick Lamar in Los Angeles. Consideration of central issues including improvisation, commercialization, race, and gender. Not for music major credit.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *K*
SBC: *HFA+, USA*

3 credits

MUS 309: Music Since 1900

An introduction to the variegated and rapidly changing trends of contemporary classical music 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.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *G*
SBC: *GLO, HFA+*

3 credits

MUS 310: 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.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *K*
SBC: *HFA+, USA*

3 credits

MUS 311: Topics in Ethnomusicology

An ethnomusicological study of a particular area of the world, or a topic related to contemporary musical practice, with an emphasis on political, social, and cultural aspects of music and sound. May include a particular focus on issues such as migration, race, gender, belief, sound recording, live performance, or globalization. May be repeated for credit as the topic changes.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *J*
SBC: *GLO, SBS+*

3 credits

MUS 313: Hearing Politics

Examines the intersection of music, sound, and political life. 'Politics' is considered broadly, in domains ranging from electoral campaigns to the often fragile relationships between neighbors or lovers. The course considers how sound, hearing, and listening are implicated in the political dimensions of social life. We consider how our political lives are full of listening--to speeches, debates, music, and sound, and how (for example) issues of noise, headphone use, musical taste, and racialized sound have an intrinsic political dimension. The course will focus on musics from diverse global contexts, as well as non-musical sounds.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

SBC: *DIV, HUM, SBS+*

3 credits

MUS 314: Music, Gender, and Sexuality

A study of music from the perspectives of gender and sexuality in a global context. Topics may include women as composers, performers, and listeners; genres understood as gay or queer; music as an expression of identity within various gender or sexuality social groups, and depictions of gender and sexuality in musical drama. All types of music may be considered, including classical, rock, pop, hip-hop, electronic styles, folk, and jazz. This course is offered as both MUS 314 and WST 314.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

SBC: *SBS+*

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: Music in China

Explores the musical landscape of China, including silk and bamboo ensembles, kunqu opera, and the philosophy of the Chinese zither (qin). Considers music practices with regard to Taoism, Confucianism, and communist cultural policy. Explores China's border regions including Uyghur, Tibetan, and Mongolian music.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *J*
SBC: *GLO, SBS+*

3 credits

MUS 320: 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.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

DEC: *G*
SBC: *HFA+, USA*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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: MUS141, 220, and 322
Corequisites: MUS 142 and 221

3 credits

MUS 331: Musicianship IV

Sight-singing and dictation of complex tonal, modal, and atonal material. Special emphasis on melodic, harmonic, and rhythmic idioms characteristic of 20th-century music.

Prerequisite: MUS 221, 142, and 322

2 credits

MUS 335: Advanced African Drumming

Students will learn to perform selections of dance-drumming repertoire from southern Ghana, Togo and Benin. Students will play on authentic instruments (bells, rattles and drums), sing, and dance. No musical experience or ability to read musical notation is required; students will learn pieces by ear through vugbe, 'drum language,', which refers to the naming of specific sounds made on the drum in a kind of indigenous solfege. Song lyrics with translations will be made available. Readings, video screenings, and class visits by African artists will inform discussion of the sociocultural context of the music and its performance. The course will culminate in a mandatory performance, featuring African guest performers. Repeatable to a maximum of 4 credits.

Prerequisite: MUS 235

1 credit

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: Timbre and Technology

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MUS 208

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 do a presentation 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 has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MUS 208

SBC: *ARTS, TECH*

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: MUS 208

SBC: *TECH*

3 credits

MUS 350: Western Classical Music Before 1750

Musical practices and traditions in Europe from the earliest notation and the emergence of polyphony through the invention of opera and the rise of instrumental music in the age of Johann Sebastian Bach and Élisabeth Jacquet de la Guerre. Consideration of music written for the church and music written for entertainment. Emphasis is on learning to think historically, building familiarity with representative genres, connecting music to its social and cultural contexts, cultivating listening skills, and developing writing skills.

Prerequisite: MUS 130, 141, 220, and 321

DEC: *G*
SBC: *ESI, GLO, HFA+*

4 credits

MUS 351: Western Classical Music 1750 to 1900

Musical practices and traditions in Europe and North America from Christoph Willibald Gluck and Wolfgang Amadeus Mozart through Amy Beach and Giacomo Puccini. Consideration of genres such as opera, art song, the symphony, concerto, and the string quartet. Emphasis is on learning to think historically, building familiarity with representative genres, connecting music to its social and cultural contexts, cultivating listening skills, and developing writing skills.

Prerequisites: MUS 321 and 350

DEC: *I*
SBC: *ESI, GLO, HFA+*

4 credits

MUS 352: Western Classical Music from 1900 to the Present

Musical traditions in Western classical music from Gustav Mahler through Laurie Anderson, Kaija Saariaho,and Pamela Z. Consideration of the central genres of orchestral, vocal, and chamber music as well as performance art, and their transformations by various cultural and technological forces. Emphasis is on learning to think historically, building familiarity with representative genres, connecting music to its social and cultural contexts, cultivating listening skills, and developing writing skills.

Prerequisite: MUS 322 and 351

DEC: *G*
SBC: *ESI, GLO, HFA+*

4 credits

MUS 353: Contemporary Music Practices

Study of recent musical practices, considering: style and genre; the means and goals of musical creation; the politics of listening; the broad cultural contexts in which musics are produced and received; how race, gender, sexuality, and economics are entangled in musical practices; how audio technologies affect production and reception; and how the affective dimensions of music play a role in production and reception.

Prerequisite: U3 or permission of the instructor

4 credits

MUS 361: Piano

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required

4 credits

MUS 362: Piano Pedagogy

A study of pedagogical methods for teachers of elementary and intermediate level piano students. This course will provide students with the skills, tools, and resources necessary to develop into an effective private music teacher. Students of this course will explore the fundamentals of piano teaching and review common teaching materials, method books, repertoire, and techniques. Students will also explore the various elements involved in establishing and managing a private teaching studio. May be repeated once, for a total of 2 credits.

Prerequisite: MUS 161
Advisory Prerequisite: MUS 361

1 credit

MUS 363: Harpsichord

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated.

Prerequisite: Audition required
Corequisite: MUS 391

4 credits

MUS 365: Violin

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262

4 credits

MUS 366: Viola

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262

4 credits

MUS 367: Cello

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262

4 credits

MUS 368: String Bass

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 264 or MUS 267

4 credits

MUS 369: Classical Guitar

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 391 or MUS 266

4 credits

MUS 370: Flute

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

4 credits

MUS 371: Oboe

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: Audition required
Corequisite: MUS 262 or MUS 263

4 credits

MUS 372: Clarinet

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: Audition required
Corequisite: MUS 262 or MUS 263

4 credits

MUS 373: Bassoon

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: Audition required
Corequisite: MUS 262 or MUS 263

4 credits

MUS 375: Horn

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264

4 credits

MUS 376: Trumpet

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

4 credits

MUS 377: Trombone

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

4 credits

MUS 378: Saxophone

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264

4 credits

MUS 380: Percussion

A sixty minute individual lesson each week, with fifteen 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

qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

4 credits

MUS 382: Voice

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: Audition required
Corequisite: MUS 261

4 credits

MUS 387: Other Instruments

A sixty minute individual lesson each week, with fifteen 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 qualified students. May be repeated. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Audition required
Corequisite: MUS 262 or MUS 263 or MUS 264 or MUS 267

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MUS 161 or 361

2 credits

MUS 390: Advanced Accompanying

A study of advanced collaborative repertoire for the collaborative pianist. This course is designed for students who have a strong interest in furthering and deepen the study in collaborative piano and who have previously taken MUS 388 Fundamentals of Accompanying. May be repeated to a maximum of 4 credits.

Prerequisite: MUS 161 and MUS 388
Advisory Prerequisite: MUS 361

2 credits

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

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 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MUS 321; permission of instructor

SBC: *TECH*

3 credits

MUS 439: Composition

Open only to students demonstrating sufficient aptitude and capacity for original work. May be repeated.

Prerequisite: Permission of instructor and submission of portfolio to Director of Undergraduate Studies
Advisory Prerequisite: MUS 339

3 credits

MUS 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

MUS 450: Seminar in the History of Music

Advanced study of a topic in music history for music majors. Topics may include study of major composers, major genres, dramatic music, the relation of music and poetry in song, or an historically or geographically defined musical style. May be repeated as the topic changes.

Prerequisite: one of the following courses: MUS 322, 323, 350, 351, 352

SBC: *ESI, HFA+*

3 credits

MUS 451: Senior Seminar in Ethnography of Music

Ethnography has grown increasingly central to the scholarly study of music. The engagement of living subjects can illuminate music and musical practice from all times and places. And yet, ethnographic methods are not easily defined, no less learned. The challenges of writing human lives compels us to think ethically, legally, interpersonally, philosophically, often all at once. This course asks students to read extensively in the history of ethnography, reflecting on its key arguments and genealogies.

Prerequisite: MUS 105 or MUS 109; U3 or U4 status

DEC: *J*

SBC: *DIV, ESI, HFA+*

3 credits

MUS 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any MUS course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

MUS 459: Write Effectively in Music

The WRTD requirement for music majors will be fulfilled by submission of two approved papers: one from an advanced music history course, either MUS 351, MUS 352, or MUS 450, and one from an advanced music analysis course, either MUS 421 or MUS 422. Students will submit papers with an approval form, signed by the instructor of the course for which the paper was written, to the Director of Undergraduate Studies in Music, who will assign the grade.

Pre- or co-requisites: one of the following: MUS 351 or 352 or 450; one of the following: MUS 421 or 422

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits, S/U grading

MUS 487: Independent Project

Individual study (may be an honor's project) under the guidance of a faculty member leading to a significant essay, music composition, lecture-recital, recital with researched program notes, or participation in a graduate music ensemble. Independent Projects used to fulfill the upper division elective requirement should be approved by the Undergraduate Studies Committee in the semester prior to the semester in which MUS 487 is undertaken.

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

SBC: *EXP+*

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

MUS 495: Senior Honors Project in Music

A one-semester project for music who are candidates for the degree with departmental honors. Projects must have a public speaking component, for example a lecture-recital, a pre-concert talk about a composition, or a colloquium presentation of musicological research. Repeatable to a maximum of 6 credits.

Prerequisites: Permission of instructor and department

3 credits

MVL

Medieval Studies

MVL 141: 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.

DEC: *B*
SBC: *GLO, HUM*

3 credits

MVL 241: 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

DEC: *G*
SBC: *GLO, HUM*

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 mamber'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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits, S/U grading

NAI

Native American and Indigenous Studies

NAI 101: Intro to Native American and Indigenous Studies

An introduction to the conceptual frameworks of the interdisciplinary field of Native American and Indigenous Studies, and to the histories, social organizations, political issues and cultural expressions of Indigenous peoples, with an emphasis on Turtle Island (North America).

SBC: *DIV, USA*

3 credits

NAI 211: Intro to Native Amer. Literature, Cultures & Art

An overview of Native American and Indigenous Studies, with special focus on its intersections with arts and humanities disciplines including history; art history and criticism; literary and cultural studies; museum studies; performance studies; and digital humanities.

Advisory Pre- or Corequisite: NAI 101

SBC: *ARTS, HUM, SPK*

3 credits

NAI 221: Native American Peoples and Environmental Justice

An interdisciplinary overview of Native American and Indigenous Studies in relation to historical and contemporary issues of environmental justice.

Advisory Pre- or Corequisite: NAI 101

SBC: *DIV, STAS*

3 credits

NAI 488: Internship

Participation in local, tribal, state, and national public and private organizations related to indigenous peoples and/or Native American and Indigenous Studies. May be repeated up to a limit of 12 credits.

Prerequisite: Permission of Director of NAI Minor

SBC: *EXP+*

0-6 credits, S/U grading

OAE

Oral Academic English

OAE 190: Intermediate Oral Academic English

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

OAE 194: Advanced Oral Academic English

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. Undergraduate enrollment requires department consent.

Prerequisite: permission of the department

3 credits

PER

Persian

PER 101: Intensive Elementary Persian

An intensive course covering the elementary Persian program in one semester, satisfying the language requirement. This course is designed for students who have no prior knowledge of the language.

DEC: *S3*
SBC: *LANG*

6 credits

PER 111: Elementary Persian I

An introduction to spoken and written Persian, stressing pronunciation, speaking, comprehension, reading, writing, and culture. This course is designed for students who have no prior knowledge of this language. A student who has had two or more years of Persian in high school (or who has otherwise acquired an equivalent proficiency) may not take PER 111 without written permission from the supervisor of the course. May not be taken for credit in addition to PER 101.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

PER 112: Elementary Persian II

The second part of the introduction to spoken and written Persian. In this course, pronunciation, speaking, comprehension, reading, writing,and culture will be stressed. Students must have passed PER 111 or must demonstrate proficiency equivalent to PER 111 in order to enroll. May not be taken for credit in addition to PER 101.

Prerequisite: PER 111 or permission of instructor

DEC: *S3*
SBC: *LANG*

3 credits

PHI

Philosophy

PHI 100: Concepts of the Person (II)

An introduction to philosophy through readings and discussion on topics such as human identity, human understanding, and human values.

DEC: *B*
SBC: *CER, HUM*

3 credits

PHI 101: Historical Introduction to Western Philosophy (I)

An introduction to pivotal theories of the Western philosophic tradition. Readings are 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.

DEC: *G*
SBC: *HUM*

3 credits

PHI 102: Introduction to Philosophical Psychology

An introduction to topics in philosophical psychology, including the nature of perception, emotion, and cognition, theories of mind and

other minds, the unconscious and its role in human behavior, animal consciousness, and machine intelligence.

DEC: *G*
SBC: *HUM, SBS*

3 credits

PHI 103: 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.

DEC: *B*
SBC: *HUM, SBS*

3 credits

PHI 104: 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.

DEC: *B*
SBC: *CER, HUM*

3 credits

PHI 105: 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.

DEC: *G*
SBC: *CER, HUM*

3 credits

PHI 108: 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.

DEC: *B*
SBC: *ESI, HUM*

3 credits

PHI 109: 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 CLT 109 and PHI 109.

DEC: *B*
SBC: *CER, HUM*

3 credits

PHI 110: 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.

DEC: *B*
SBC: *HUM*

3 credits

PHI 111: 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.

DEC: *B*
SBC: *GLO, HUM*

3 credits

PHI 112: Technology and Modern Life

Investigates the history as well as the present and potential future impact of technology and artifacts not only on material human life but also on the human experience of the world. It addresses ethical questions concerning the uses and abuses of technology as well as asking such questions as whether technology is neutral and merely instrumental or should be seen as having a more profound impact on human life.

DEC: *H*
SBC: *STAS*

3 credits

PHI 113: Philosophical Engineering

We all apply specialized knowledge and tools to solve practical problems. Engineers do it in a special way, using a particular kind of technical knowledge, and particular kinds of tools, to solve society's problems. This course, accessible to the non-engineering major, is an introduction to what makes engineering similar to and different from other kinds of problem-solving. Students discuss the social and humanistic contexts of engineering, its implications for human identity and experience, and its political and ethical implications. For their final projects, students work individually or in teams in a simple engineering project.

DEC: *B*
SBC: *HUM, TECH*

3 credits

PHI 116: Philosophy of America's Founding

Study of philosophical ideas and authors that influenced and composed the Declaration of Independence, the Constitution and the Bill of Rights. Understanding how the concepts in these documents connect to such thinkers and philosophers as Locke, Montesquieu, Hume and appear again in the writings of Jefferson, Paine, Madison and the Federalist Papers.

DEC: *G*
SBC: *HUM, USA*

3 credits

PHI 200: Introduction to Ancient Philosophy (I)

Readings and discussion of the major Greek and Roman thinkers, e.g., the pre-Socratics, Plato, Aristotle, the Stoics, and Plotinus, who had a worldview very different from our own, but also laid part of the foundation for much of the philosophy, theology, science, law, and politics of our own age.

Advisory Prerequisite: U2 standing or one course in philosophy

DEC: *I*
SBC: *GLO, HUM*

3 credits

PHI 201: Demons to Think With

For hundreds of years, demons have proven useful thinking tools in the humanities as well as the sciences. The course requires reading about demons and learning to code them, but does not require advance knowledge of either demons or coding. Students will learn about demons in art, literature, and life - and to confront them in computing, where they

are subversive and destructive, or useful and constructive. Among other things, this course introduces humanists and scientists, and their work, to each other.

SBC: *HUM, TECH*

3 credits

PHI 204: Ethics in Artificial Intelligence and Data

As Artificial Intelligence (AI) becomes more pervasive in our world, we confront new questions about how we lead our lives. This course considers ethical problems that AI raises, for instance, surveillance, automated decision-making, bias, alignment with human values, AI and personhood, feminist approaches, race and racism, global approaches, the "black box" problem, transparency and explainability, and superintelligence. In addition to reading classic and contemporary texts, students will generate projects to understand AI technology and its multifaceted role in our lives.

SBC: *CER, TECH*

3 credits

PHI 206: Introduction to Modern Philosophy (17th and 18th century) (I)

Readings and discussion of the major thinkers of the 17th and 18th centuries, e.g., Descartes, Leibniz, Spinoza, Hobbes, Locke, Berkeley, Hume, and Kant, who all reflect the scientific, philosophical and political revolutions that would lay part of the foundation of our own age.

Advisory Prerequisite: U2 standing or one course in philosophy

DEC: *I*
SBC: *GLO, HUM*

3 credits

PHI 220: 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 or level 2+ on the mathematics placement examination
Advisory Prerequisite: U2 standing or one course in philosophy

DEC: *C*
SBC: *QPS*

3 credits

PHI 247: 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.

Advisory Prerequisite: one course in philosophy

DEC: *G*
SBC: *CER, HUM*

3 credits

PHI 264: 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

DEC: *D*
SBC: *ARTS, HUM*

3 credits

PHI 268: Science, Technology, and Society

Examines different topics involving current science and technology issues from different philosophical perspectives. Topics include questions such as what is the nature of inquiry?, what is the nature of discovery?, what is the role of instruments and perception?, what is the nature and role of laboratories?, what are the practical, conceptual, and cultural underpinnings of scientific activity?, what are the possibilities and dangers of research?, what is pseudoscience?, what philosophical, ethical and political issues are raised by current events in science?, and how do science and technology affect our society?

DEC: *H*
SBC: *STAS*

3 credits

PHI 277: 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: one course in philosophy or permission of the department
Advisory Prerequisite: PHI 105

DEC: *G*
SBC: *CER, HUM*

3 credits

PHI 284: Introduction to Feminist Theory (III)

The social construction of gender and how this construction affects philosophical thought and practice. The course provides an introductory survey of current feminist issues and analyses. It also examines the meaning of feminism for philosophy 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

DEC: *G*
SBC: *CER, HUM*

3 credits

PHI 300: Ancient Philosophy (I)

Advanced studies in selected Greek thinkers from the pre-Socratics to the classical Athenian philosophers and the Hellenistic schools.

Prerequisite: two PHI courses or permission of the department

DEC: *I*
SBC: *CER, HFA+*

3 credits

PHI 304: Medieval Philosophy (I)

Study of the writings of major thinkers from Augustine to William of Ockham.

Prerequisite: two PHI courses or permission of the department

DEC: *I*
SBC: *HFA+*

3 credits

PHI 306: Modern Philosophy (I)

Advanced studies in selected thinkers such as Descartes, Vico, Spinoza, Locke, Berkeley, Hume, and Kant.

Prerequisite: two PHI courses or permission of the department

DEC: *I*
SBC: *CER, HFA+*

3 credits

PHI 308: 19th-Century Philosophy (I)

Study of major figures in 19th-century thought, such as Hegel, Schopenhauer, Marx, Mill, Nietzsche, Kierkegaard, Spencer, and Comte.

Prerequisite: two PHI courses or permission of the department

DEC: *I*
SBC: *HFA+*

3 credits

PHI 309: 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.

Prerequisite: two PHI courses or permission of the department

DEC: *I*
SBC: *CER, HFA+*

3 credits

PHI 310: 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.

Prerequisite: two PHI courses or permission of the department

DEC: *K*
SBC: *HFA+, USA*

3 credits

PHI 312: Phenomenology

This course will explore phenomenology, the globally influential 20th century Continental European philosophical movement devoted to understanding the study of intentionality, its most basic invariant structures, and their relation to time and space, embodiment and embeddedness, and other people. The ways this tradition has been productively taken up by recent cognitive science may be considered. Readings will include such authors as Franz Brentano, Edmund Husserl, Jean Paul Sartre, Martin Heidegger, Maurice Merleau-Ponty, and Emanuel Levinas. Not for credit in addition to PHI 312 when offered as Topics in Contemporary European Thought.

Prerequisites: two courses in philosophy or permission of the department
Advisory Prerequisite: One of the following: PHI 200, 206, 247, 300, 304, 306, 309, or 310

DEC: *I*
SBC: *GLO, HFA+, SBS+*

3 credits

PHI 320: Metaphysics (II)

An inquiry into the first principles of science, art, and action as these are treated by representative classical and modern authors.

Prerequisite: two PHI courses or permission of the department

DEC: *G*
SBC: *HFA+*

3 credits

PHI 325: Contemporary Philosophies of Language (II)

A discussion of current topics in the philosophy of language, semiotics, and literary theory.

Prerequisite: two PHI courses or permission of the department

DEC: *G*
SBC: *HFA+*

3 credits

PHI 330: Topics in 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. With instructor approval, may be repeated as the topic changes.

Prerequisite: PHI 220 or instructor permission

SBC: *STEM+*

3 credits

PHI 332: 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.

Prerequisite: two PHI courses or permission of the department

DEC: *G*
SBC: *HFA+*

3 credits

PHI 335: Philosophy of Time (II)

An inquiry into the nature of time as it is treated by philosophers of classical and modern times.

Prerequisite: one course in philosophy and a second course in either philosophy or physics, or permission of the department

DEC: *G*
SBC: *HFA+*

3 credits

PHI 336: 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.

Prerequisite: one course in philosophy or one course in religious studies; or permission of the department

DEC: *G*
SBC: *CER, HFA+*

3 credits

PHI 340: 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.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: PHI 111 or RLS 240 or RLS 246 or RLS 260

DEC: *J*
SBC: *CER, GLO, HFA+*

3 credits

PHI 344: 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.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: PHI 111 or RLS 240 or RLS 246 or RLS 260

DEC: *J*
SBC: *CER, GLO, HFA+*

3 credits

PHI 347: Hermeneutics and Deconstruction (II)

An exploration of the major assumptions, commitments, methods, and strategies of hermeneutics and deconstruction. The course examines how these two recent schools of thought have developed out of the contemporary philosophical scene and how they have had such a significant impact on literary theory, art criticism, text theory,

social theory, and the history of philosophy. Readings include selections from the writing of Heidegger, Gadamer, Jauss, Ricoeur, Derrida, Kristeva, Lyotard, Kofman, Irigaray, and others.

Prerequisite: two PHI courses or permission of the department
Advisory Prerequisite: PHI 206, 247, 264, 306, 308, 309, or 312

DEC: *G*
SBC: *ESI, HFA+*

3 credits

PHI 353: 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.

Prerequisite: two courses in philosophy or one in philosophy and one in psychology; or permission of the department

DEC: *G*
SBC: *ESI, HFA+*

3 credits

PHI 362: Philosophy of Biology

This course will consider the historical origin of biology in philosophical questions about human nature and its relation to nonhuman nature. It will also examine a range of philosophical issues still under investigation in biology and contemporary philosophy. Topics will include such issues as evidence for the theory of evolution, the debate between evolutionary biology and creationism or intelligent design, adaptive fitness, adaptationism, units of selection, systematics, phylogenetic inference, the existence of laws in evolutionary biology, and whether biology is "reducible" to physics. Typically the class will also consider contemporary uses of evolutionary theory to explain features of human mind, behavior, culture, morality, and politics. The latter discussions may feature special attention to "race" and gender and their role in biological science.

Prerequisite: one D.E.C. E or SNW course

DEC: *H*
SBC: *STAS*

3 credits

PHI 363: 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.

Prerequisite: one course in philosophy and completion of one D.E.C. category F or SBS course; or permission of the department
Advisory Prerequisite: PHI 105, 206, 249, or 277

DEC: *G*
SBC: *HFA+, SBS+*

3 credits

PHI 364: 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.

Prerequisite: one course in philosophy; one D.E.C. E or SNW course; or permission of the department

DEC: *H*
SBC: *STAS*

3 credits

PHI 365: 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.

Prerequisite: one PHI or CSE course
Advisory Prerequisite: PHI 220

DEC: *H*
SBC: *TECH*

3 credits

PHI 366: Philosophy of 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. This course is offered as both PHI 366 and SUS 366.

Prerequisite: PHI 104 or PHI 105

DEC: *G*
SBC: *CER, HFA+*

3 credits

PHI 367: 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.

Prerequisite: one PHI course or permission of the department
Advisory Prerequisite: PHI 104 and 105

DEC: *G*
SBC: *CER, HFA+*

3 credits

PHI 368: 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.

Prerequisite: one PHI course and one D.E.C. E or SNW course; or permission of the department
Advisory Prerequisites: PHI 206

DEC: *H*
SBC: *STAS*

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.

Prerequisite: PHI 220 or permission of the instructor

SBC: *STEM+*

3 credits

PHI 370: 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.

Prerequisite: one PHI course and PSY course; or permission of the department
Advisory Prerequisite: PHI 100 or 104

DEC: *G*
SBC: *HFA+, SBS+*

3 credits

PHI 371: Literature and Justice (III)

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: one D.E.C. B or HUM course; U3 or U4 status

DEC: *G*
SBC: *CER, HFA+*

3 credits

PHI 372: 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.

Prerequisite: PHI 104 or two courses in Philosophy; or permission of the department
Advisory Prerequisites: PHI 108, 200, 206, 300, 304, 306, 308, 309, or 366

DEC: *G*
SBC: *CER, HFA+*

3 credits

PHI 373: 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. May be repeated as the topic changes.

Prerequisite: two PHI courses or permission of the department

DEC: *G*
SBC: *HFA+*

3 credits

PHI 374: Bioethics

Provides students with the opportunity to conduct research and pursue advanced readings in the field of bioethics. Readings may include foundational articles in bioethics, recent work in feminist bioethics, as well as narratives of illness. The class will analyze one or more contemporary issues in bioethics, such as experimentation with human subjects, migration of care workers, medical tourism or disability. The course will also include attention to the connection between health and social justice, considering problems such as hunger, obesity, and food justice or the just allocation of health care resources.

Prerequisite: two PHI courses or permission of the department

DEC: *G*
SBC: *CER, HFA+*

3 credits

PHI 375: 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.

Prerequisite: PHI 104 or PHI 105 or two courses in philosophy; or permission of the department

DEC: *G*
SBC: *CER, HFA+*

3 credits

PHI 376: Philosophy and Medicine (III)

Focuses on such topics as 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.

Prerequisite: two PHI courses or permission of the department

DEC: *G*
SBC: *CER, HFA+*

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 Arendt, Dworkin, Foucault, Habermas, Pateman and Rawls. Not for additional credit if POL 377 was completed previously.

Prerequisite: PHI 105 or PHI 277; or two courses in philosophy; or one course in philosophy and one in political science; or permission of the department

SBC: *CER, HFA+*

3 credits

PHI 378: 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

DEC: *K*
SBC: *HFA+*

3 credits

PHI 379: 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: one PHI course

DEC: *K*
SBC: *CER, HFA+, USA*

3 credits

PHI 380: 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.

Prerequisite: one PHI course

DEC: *G*

SBC: *HFA+*

3 credits

PHI 381: 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.

Prerequisite: one PHI course and one course in D.E.C. D or ARTS; or permission of the department
Advisory Prerequisite: PHI 109 or PHI 110; PHI 264

DEC: *G*
SBC: *HFA+*

3 credits

PHI 382: The Quantum Moment: Quantum Mechanics in Philosophy, Culture, and Life (III)

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: one Physics or Philosophy course and U3 or U4 standing

DEC: *H*
SBC: *STAS*

3 credits

PHI 384: 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.

Prerequisite: one PHI course or one WST course
Advisory Prerequisite: PHI/WST 284

DEC: *G*
SBC: *CER, HFA+*

3 credits

PHI 390: Topics in Philosophy (either I, II, or III)

May be repeated as the topic changes.

Prerequisites: Two courses in philosophy

1-3 credits

PHI 395: Junior Seminar

An intensive study of an issue, topic, figure, or historical period in philosophy intended to provide an induction into the method and techniques of scholarly philosophy for junior 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.

Prerequisite: U3 or U4 standing; declared PHI major

SBC: *ESI*

3 credits

PHI 400: Advanced Seminar on Ancient Western Philosophy

An in-depth reading of a few but fundamental texts of classical antiquity covering Greek, Roman, and Late Antiquity philosophers, such as the pre-Socratics, the classical Athenian philosophers, the Hellenistic schools, and Academic, Middle or Neo-Platonism.

Prerequisite: PHI 300 or PHI 395

3 credits

PHI 401: Individual Systems of the Great Philosophers (I)

A detailed study of the works of a single great philosopher. May be repeated as the topic changes.

Prerequisite: one of the following: PHI 300, 304, 306, 308, 309, 310, or 312

DEC: *G*
SBC: *HFA+*

3 credits

PHI 402: Analysis of Philosophic Texts (I)

Detailed analysis of a major philosophic text. May be repeated as the topic changes.

Prerequisite: one of the following: PHI 300, 304, 306, 308, 309, 310, or 312

DEC: *G*
SBC: *HFA+*

3 credits

PHI 406: Advanced Seminar on Modern Western Philosophy

Advanced Seminar on key texts in Modern Philosophy beginning in the 17th century through the 18th century from philosophers such as Descartes, Hobbes, Spinoza, Leibniz, Malebranche, Hume, Kant, and Thomas Reid.

Prerequisite: PHI 306 or PHI 395

3 credits

PHI 420: Advanced Topics in Philosophy (either I, II, or 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 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

PHI 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any PHI course that provides opportunity to achieve the learning outcomes

of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

PHI 459: Write Effectively in Philosophy

A zero credit course that may be taken in conjunction with any 300- or 400-level PHI course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

PHI 472: Topics in Asian Philosophy (I)

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 472 and PHI 472.

Advisory Prerequisite: two courses in PHI, in AAS or one in each

DEC: *J*
SBC: *ESI, HFA+*

3 credits

PHI 473: Orientalism

Investigation of the history and theory of Western engagement with Asian cultures. Following from Edward Said's influential book Orientalism, we examine the alleged imperialism inherent in the study of the Orient, also considering some opponents of Said's thesis. Special attention is paid to the history of interpretation of Asian philosophies in the West, and of Asian postcolonial responses to such portrayals. We conclude by exploring the possibilities for post-orientalist approaches to the study of Asia. This course is offered as both AAS 473 and PHI 473.

Advisory Prerequisite: two courses in PHI, in AAS or one in each

DEC: *J*
SBC: *HFA+*

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

SBC: *EXP+*

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

SBC: *EXP+*

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; need to have already taken a regular course prior with the faculty member; no more than one independent study/directed readings in philosophy course per semester; 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

PHI 495: Philosophy Honors Thesis

A one-semester project for philosophy 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 in conjunction with two other courses at the 300 level or higher, concentrated on related aspects of a central problem. The project must be approved before the start of the student's senior year. On completion, the thesis is reviewed by the advisor and one other member of the Philosophy faculty and by a faculty member from outside the Department. The honors thesis is then the focus of an oral examination. Honors are awarded upon passage of the examination.

Prerequisite: Permission of instructor

3 credits

PHY

Physics

PHY 112: 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. Not for credit in addition to PHY 122, PHY 126, PHY 132 or PHY 142. Students majoring or planning to major in PHY, AST, CHE, MAT, AMS or engineering may not take this course.

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

DEC: *E*
SBC: *SNW*

3 credits

PHY 113: 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. Not for credit in addition to PHY 121, PHY 125, PHY 131 or PHY 141. Students majoring or planning to major in PHY, AST, CHE, MAT, AMS or engineering may not take this course.

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

DEC: *E*
SBC: *SNW*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Pre or Corequisite: PHY 113

1 credit

PHY 119: 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: MAT 123; CHE 131

DEC: *E*
SBC: *SNW*

4 credits

PHY 121: 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 two laboratory hours per week. 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: MAT 125 or MAT 131 or MAT 141 or AMS 151

DEC: *E*
SBC: *SNW*

4 credits

PHY 122: 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 two laboratory hours per week. PHY 122 may not be taken for credit in addition to PHY 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in PHY 121
Pre- or Corequisite: CHE 132 or CHE 152

DEC: *E*
SBC: *SNW*

4 credits

PHY 125: 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, PHY 131, 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 123 or Level 4 on the mathematics placement examination
Pre- or Corequisite: MAT 125 or MAT 131 or MAT 141 or AMS 151

DEC: *E*
SBC: *SNW*

3 credits

PHY 126: 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 and one recitation hour per week. Associated Labs (PHY 133 or PHY 134) are offered separately. Not for credit in addition to PHY 132, 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: PHY 125 or 131 or 141
Pre- or Corequisite: MAT 126, 132, 142, 171 or AMS 161 or level 7 or higher on math placement exam

DEC: *E*
SBC: *SNW*

3 credits

PHY 127: 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 and one recitation hour per week. Associated Labs (PHY 133 or PHY 134) are offered separately. Not for credit in addition to PHY 122, PHY 132, 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: PHY 125 or 131 or 141
Pre- or Corequisite: MAT 126, 132, 142, 171 or AMS 161 or level 7 or higher on math placement exam

DEC: *E*
SBC: *SNW*

3 credits

PHY 131: 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, PHY 125, or PHY 141. Advanced Placement Physics or a very strong course in high school Physics is recommended. 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 123 or level 5 on the mathematics placement examination
Pre- or Corequisite: MAT 125 or MAT 131 or MAT 141 or AMS 151

DEC: *E*
SBC: *SNW*

3 credits

PHY 132: 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. Not for credit in addition to PHY 122, 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
Pre- or Corequisite: MAT 132 or MAT 142 or MAT 126 or MAT 171 or AMS 161

DEC: *E*
SBC: *SNW*

3 credits

PHY 133: Classical Physics Laboratory I

Two and one half 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Pre- or corequisite: PHY 125 and PHY 126; or PHY 131 or PHY 141

1 credit

PHY 134: Classical Physics Laboratory II

Two and one half 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in PHY 133
Pre- or Corequisite: PHY 126 and PHY 127; or PHY 132; or corequisite PHY 142

1 credit

PHY 141: 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 and one recitation hour per week. PHY 141 may not be taken for credit in addition to PHY 121, PHY 125, or PHY 131. Advanced Placement Physics or a very strong course in high school Physics is recommended. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prereq: Level 6 on Math Placement, or B or higher in MAT 131 or 141 or AMS 151, or B+ or higher in MAT 125, or instructor permission (priority given to students in Honors or WISE programs)
Pre- or Corequisite: MAT 131 or 141 or 126 or AMS 151; PHY 133

DEC: *E*
SBC: *SNW*

3 credits

PHY 142: 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 and one recitation hour per week. PHY 142 may not be taken for credit in addition to PHY 122, PHY 127, or PHY 132. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: C or higher in PHY 141 or permission of department
Pre- or Corequisite: MAT 132 or 142 or 127 or 171 or AMS 161; PHY 134

DEC: *E*
SBC: *SNW*

3 credits

PHY 153: Data Analysis for Physics and Astronomy with Python

An introduction to statistical data analysis with modern techniques, including the Python programming language on Windows computers for students with no prior experience in programming. Topics include concepts and methods to characterize experimental data such as averages, variances, standard deviations, propagation of uncertainties, probability distributions, confidence intervals, hypothesis testing, chi-squared minimization, and straight line fitting. Emphasis on practical data centric applications--preparation for experimental laboratory work and research. Extensive use of computers outside the classroom will be required.

Prerequisite: PHY 133 and a grade of C or better in MAT 125 or MAT 131 or MAT 141 or AMS 151 or MAT 171

SBC: *TECH*

3 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 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: one D.E.C. E or SNW course and one D.E.C. F or SBS course

SBC: *STAS*

3 credits

PHY 237: 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.

DEC: *H*
SBC: *STAS*

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, Schroedinger's wave equation, and other fundamentals of quantum theory as they apply to nuclei, atoms, molecules, and solids. It is recommended that students take the laboratory component, PHY 252, concurrently. Three hours lecture and one hour recitation per week.

Prerequisite: PHY 122/124, or PHY 126 and 127, or PHY 132 or PHY 142; and PHY 134; C or higher in MAT 126 or 132 or 142 or 171 or AMS 161
Pre- or Corequisite: MAT 203 or MAT 205 or AMS 261 or MAT 307

SBC: *STEM+*

3 credits

PHY 252: Modern Physics Laboratory

Students perform some of the pivotal experiments of the 20th century. It is recommended that students take the lecture component, PHY 251, concurrently.
Two hours of laboratory per week. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Pre- or 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 compiled programming language such as modern Fortran or C++ and require extensive use of SINC site computers outside the classroom.

Prerequisite: PHY 125, PHY 126, PHY 127 and PHY 133 &, PHY 134; or PHY 131/133, PHY 132/134; or PHY 141/133, PHY 142/134; 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

SBC: *TECH*

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

SBC: *EXP+*

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 two-hour laboratory per week. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: PHY 132/PHY 134 or PHY 142/ PHY 134 or PHY 126/PHY 127/PHY 134
Pre- or Corequisite: MAT 203 or MAT 205 or AMS 261 or MAT 307

SBC: *STEM+*

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; MAT 203 or MAT 205 or AMS 261 or MAT 307
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 or MAT 308

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 122/124, or PHY 126 and PHY 127 and PHY 134, or PHY 132 and PHY 134, or PHY 142 and PHY 134; MAT 132 or MAT 142 or MAT 127 or MAT 171 or AMS 161
Advisory Corequisite: MAT 203 or MAT 205 or AMS 261 or MAT 307

4 credits

PHY 308: Quantum Physics

The concepts, historical development, and mathematical methods of quantum mechanics. Topics include Schroedinger'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 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 PHY 126 and PHY 127 and PHY 134 or PHY 132/134 or PHY 142/134

1 credit

PHY 313: 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. Not intended for Physics majors with U3 or U4 status.

Prerequisite: U3 or U4 standing for non-physics majors; one D.E.C. E or SNW course. All Physics/Astronomy majors need permission of department to enroll, please consult the Director of UG Studies.

DEC: *H*
SBC: *STAS*

3 credits

PHY 335: Electronics and Instrumentation Laboratory

Students will design, build and test basic DC and AC circuits which perform a useful function, as viewed by physicists, involving resistors, capacitors, transformers, diodes, transistors and operational amplifiers. Students will measure these circuits using digital multi-meters and digital oscilloscopes. Understanding of analog circuits will be stressed including negative feedback applied to operational amplifiers. Two three-hour laboratories per week. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: PHY 251 and WRT 102

SBC: *TECH*

3 credits

PHY 382: The Quantum Moment: Quantum Mechanics in Philosophy, Culture, and Life (III)

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: one Physics or Philosophy course and U3 or U4 standing

DEC: *H*
SBC: *STAS*

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 303
Pre- or corequisite: PHY 302

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

3 credits

PHY 431: Nuclear and Particle Physics

Students will study a selection of topics from the properties of elementary particles, the strong, weak, and electromagnetic forces, symmetries, particle interaction and decay rates, nuclear structure, nuclear reactions, nuclear forces, the interaction of radiation with matter, accelerators and radiation detectors.

Prerequisite: PHY 308

3 credits

PHY 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

PHY 445: Senior Laboratory

A selection of historically important experiments from atomic and nuclear spectroscopy, particle physics, solid-state and low-temperature physics 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 individual, ethical, professionally acceptable analysis and presentation of results, both orally and in writing. Two three-hour laboratory sessions per week. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: PHY 308, PHY 335, and WRT 102

SBC: *ESI, SPK*

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 451: Quantum Electronics

Introduction to modern atomic physics for the laser era. Emphasis on the interaction between atoms and light, as well as on atomic structure and how it affects this interaction. Modern applications such as laser cooling, atom trapping, precision spectroscopy with frequency comb, quantum information, and others will be discussed.

Pre- or corequisite: PHY 405

3 credits

PHY 452: Atomic Physics and Lasers

This course begins with an in-depth introduction to modern atomic physics for the laser era. Emphasis is on the fundamentals of light-matter interactions as well as on atomic structure and how it affects the interaction. The main topics include laser fundamentals, atom trapping, precision spectroscopy with frequency comb, quantum information and others.

Prerequisites: PHY 300 and PHY 308

SBC: *TECH*

3 credits

PHY 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any PHY course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

PHY 459: Write Effectively in Physics

A zero credit course that may be taken in conjunction with any 300- or 400-level PHY course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

0-6 credits

POL

Political Science

POL 101: 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.

DEC: *F*
SBC: *GLO, SBS*

3 credits

POL 102: 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.

DEC: *F & 4*
SBC: *SBS, USA*

3 credits

POL 103: 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.

DEC: *F*
SBC: *SBS*

3 credits

POL 201: 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 any other course that satisfies the major's methodology requirement. 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 or SBC category QPS or MAT Placement Score of level 2 or higher
Advisory Prerequisite: POL 101 or 102 or 103 or 105

DEC: *C*
SBC: *QPS*

3 credits

POL 214: Modern Latin America

An introduction to the major themes in the history of modern Latin America, from the early nineteenth century to the present. Students will gain a deeper understanding of some of the central historical themes that have shaped Latin American society and politics since achieving independence, thus providing the basis for making sound observations and judgments about the political, economic, social, and cultural realities affecting Latin America today. The class advances chronologically as well as thematically, covering topics such as nationalism, political economy, U.S.-Latin American relations, revolutionary & counterrevolutionary struggle, and cultural practices. Lectures approach the hemisphere comparatively, drawing similarities and differences between different nation-states and regions. This course is offered as both HIS 214 and POL 214.

DEC: *J*
SBC: *GLO, SBS*

3 credits

POL 216: 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.

DEC: *J*
SBC: *GLO, SBS*

3 credits

POL 270: Experiments in Political Science

The purpose of this course is to develop students' ability to critically analyze and evaluate the use of experiments to develop evidence-based claims about politics. The course will examine the philosophical and statistical foundations of the method, as well as ethical, normative, and practical limitations of experimentation. The course will also examine the findings of experimental research in several prominent areas of political science.

Prerequisite: U1 or U2 standing
Advisory Prerequisite: POL 102 and POL 103

SBC: *SBS*

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

SBC: *ESI*

0-3 credits, S/U grading

POL 305: 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; U2 or higher standing

DEC: *I*
SBC: *SBS+*

3 credits

POL 308: Women Islam and Political Change in Africa

Explores the impact of Islam on political institutions and representation in Africa. Using the example of how Muslim women in West, North, Southern, and East Africa are mobilizing to address gender inequality, explores variations in the formation of Islamist movements and examine the influence of moderate, progressive, and more radical forms of political Islam on the experiences of women. In order to provide students with a comprehensive picture, Islam and politics is contextualized by focusing on the experiences of selected countries from East and West Africa including Tanzania, Kenya, Somalia, Nigeria, Ghana, and Senegal. This course is offered as both AFS 308 and POL 308.

Prerequisite: U2 or higher standing

DEC: *J*
SBC: *GLO, SBS+*

3 credits

POL 309: 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: U2 or higher standing
Advisory Prerequisite: POL 101 and 103

DEC: *I*
SBC: *SBS+*

3 credits

POL 310: 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: U2 or higher standing or approval of professor

DEC: *F*
SBC: *DIV, SBS+*

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: POL 101; U2 or higher standing

SBC: *SBS+*

3 credits

POL 313: 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; U2 or higher standing. Advisory Prereq: POL 201 or any other course satisfying the major's methodology requirement

DEC: *F*
SBC: *SBS+*

3 credits

POL 317: 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: U2 or higher standing
Advisory Prerequisite: POL 102

DEC: *F*
SBC: *SBS+*

3 credits

POL 318: 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: U2 or higher standing
Advisory Prerequisite: POL 102; POL 201 or any other course satisfying the major's methodology requirement

DEC: *F*
SBC: *SBS+*

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: U2 or higher standing

3 credits

POL 320: 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; U2 or higher standing

DEC: *F*
SBC: *SBS+*

3 credits

POL 322: 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: U2 or higher standing
Advisory Prerequisite: POL 102

DEC: *F*
SBC: *SBS+*

3 credits

POL 323: 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: U2 or higher standing
Advisory Prerequisite: POL 102

DEC: *F*
SBC: *SBS+*

3 credits

POL 324: 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: U2 or higher standing
Advisory Prerequisite: POL 102

DEC: *F*
SBC: *SBS+*

3 credits

POL 325: 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: U2 or higher standing
Advisory Prerequisite: POL 320

DEC: *F*
SBC: *SBS+*

3 credits

POL 327: 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 Unites 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; U2 or higher standing

DEC: *K*
SBC: *SBS+*

3 credits

POL 328: 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: U2 or higher standing
Advisory Prerequisite: POL 320

DEC: *F*
SBC: *SBS+*

3 credits

POL 330: 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: U2 or higher standing
Advisory Prerequisite: POL 102 or WST 102

DEC: *K*
SBC: *DIV, SBS+*

3 credits

POL 332: 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: U2 or higher standing
Advisory Prerequisite: POL 102

DEC: *F*
SBC: *SBS+*

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; U2 or higher standing

3 credits

POL 334: Modern Terrorism

Examines the origins, ideology, and tactics of modern non-state actors who use terrorism to achieve their ends. What circumstances lead to the founding and growth of organizations engaged in terrorism? In what contexts are they successful? What are the underlying socio-economic factors that explain their behaviors? What links do they have to existing governmental and cultural organizations?

Prerequisite: POL 101; POL 103; U2 or higher standing

SBC: *SBS+*

3 credits

POL 336: 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: U2 or higher standing
Advisory Prerequisite: POL 101 or POL 102 or POL 103

DEC: *F*
SBC: *SBS+*

3 credits

POL 337: 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; U2 or higher standing

DEC: *J*
SBC: *SBS+*

3 credits

POL 338: 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 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: One previous course in AAS or POL; U2 or higher standing

DEC: *J*
SBC: *GLO, SBS+*

3 credits

POL 339: 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 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; U2 or higher standing

DEC: *J*
SBC: *GLO, SBS+*

3 credits

POL 344: 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; C or higher in POL 201 or any other course satisfying the major's methodology requirement; U2 or higher standing

DEC: *F*
SBC: *SBS+*

3 credits

POL 346: 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: U2 or higher standing

DEC: *F*
SBC: *SBS+*

3 credits

POL 347: 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: U2 or higher standing
Advisory Prerequisite: POL 102

DEC: *K*
SBC: *DIV, SBS+*

3 credits

POL 348: 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: U2 or higher standing.
Advisory Prereq: POL 201 or any other course satisfying the major's methodology requirement

DEC: *F*
SBC: *SBS+*

3 credits

POL 349: Social Psychology and Law

Examines the interface between social psychological research and the law to address such questions. We will consider scientific evidence and scholarly perspectives surrounding the role of psychological experts in the legal system; the use of social science in the law and public policy; eyewitness memory; police interrogation and false confessions; jury selection and decision-making; judicial and prosecutorial discretion.

Prerequisite: POL 102; U2 or higher standing

DEC: *F*
SBC: *SBS+*

3 credits

POL 350: 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: U2 or higher standing

DEC: *I*
SBC: *SBS+*

3 credits

POL 351: Social Surveys in Contemporary Society

An interdisciplinary course on the history, uses, design, and implementation of the social survey. Emphasis is given to the use of surveys in politics, the media, and business.

Prerequisite: POL 102; U2 or higher standing. Advisory prerequisite: POL 201 or any other course satisfying the major's methodology requirement

SBC: *SBS+*

3 credits

POL 352: Current Political Events

Addresses how political research explains current political events. Attention will be paid to primarily to American national politics. The course will address theories of presidential elections, presidential-congressional relations, and current public opinion. The course will analyze whether those theories apply to current U.S. politics or whether the theories are outdated because of recent developments.

Prerequisite: POL 102; U2 or higher standing

SBC: *SBS+*

3 credits

POL 353: Contemporary Race Relations in American Politics

Introduces students to the dynamics of race/ethnicity in United States and specifically examines the role of race/ethnicity in American politics. To help students understand different perspectives on the topic, this course utilizes an interdisciplinary approach that incorporates theoretical frameworks, survey data, and commentary to understand concepts of race and identity.

Prerequisite: POL 102; U2 or higher standing

SBC: *DIV, SBS+*

3 credits

POL 359: Public Policy Analysis

A course analyzing the connection between the administrative processes of government in the United States and the public policy process. It focuses on the analysis of policy formulation and the broader connections between public policy and the American political process.

Prerequisite: POL 102; U2 or higher standing

DEC: *F*
SBC: *SBS+*

3 credits

POL 365: 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: U2 or higher standing
Advisory Prerequisite: POL 102; POL 201 or any other course satisfying the major's methodology requirement

DEC: *F*
SBC: *SBS+*

3 credits

POL 366: Press & the Presidency

Students examine the complex, difficult, co-dependent relationship between the news media and the president including the role of the press in a presidential campaign. The course includes a study of the historical relationship between the press and the president, the reasons for the fundamental deterioration of the press-White House relationship over the last 50 years, the impact of the digital revolution on the relationship, and whether voters can make an informed decision based on the information provided by the news media. This course is offered as both JRN 366 and POL 366.

Prerequisite: U2 or higher standing

3 credits

POL 367: 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: U2 or higher standing
Advisory Prerequisite: POL 102

DEC: *F*
SBC: *SBS+*

3 credits

POL 368: Social Networks and Politics

An examination of social networks in contemporary politics. The course progresses from interpersonal social networks to the use of online social networks. Attention given to how interpersonal social networks shape political attitudes and behavior, how online social networks are used to organize movements, and to communicate political information.

Prerequisites: POL 102; POL 201 or any other course satisfying the major's methodology requirement; U2 or higher standing

SBC: *SBS+, WRTD*

3 credits

POL 369: Introduction to Political Informatics

Recent advances in the availability of large data sets, analytic methods, and technology tools have impacted the foundations of democratic society, specifically the ability of elections to provide representation for the underlying population. This course presents the information aspects of these advances. Topics covered include election data capture, election result data sets, gerrymandering, redistricting, micro-targeting, voter surveys, election security, election district geometry, impact of social media, measures of political quality, and the prediction of election results. This course is offered as both ISE 369 and POL 369.

Prerequisite: AMS 102, AMS 110, AMS 310, or POL 201 or any other course satisfying the POL Major Methodology requirement
Advisory Prerequisite: POL 102; CSE 101, CSE 114, or IAE 101

SBC: *SBS+, TECH*

3 credits

POL 371: Politics of Climate Change

The course covers multiple dimensions of climate change as a social and political problem. It examines public opinion, domestic legislation, and international agreements related to climate policy. It also explains how science and technology shapes opinion and policy.

Prerequisites: POL 101, POL 102, POL 103, and POL 201 or any other course satisfying the major's methodology requirement; U2 or higher standing

SBC: *STAS*

3 credits

POL 373: The Biology of Politics

The study of politics has traditionally focused on factors such as demography, socioeconomic status, mobilization, electoral institutions, and social norms to answer questions of political attitude formation and political participation. However, scholars have recently begun to explore the possibility that biological differences may, at least in part, help to explain individual differences in political attitudes and behavior. This course explores the relationship between biology and political behavior with an emphasis on how the two may be linked. We examine human political behavior from evolutionary, genetic, and neurobiological perspectives, considering literature on non-human animals, developmental psychology, personality, psychophysiology, neurobiology, genetics, hormones, disgust sensitivity, and mating.

Prerequisite: U2 or higher standing
Advisory Prerequisite: POL 102

DEC: *E*
SBC: *SBS+, SNW*

3 credits

POL 374: 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: One SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

POL 375: The Political Animal

Examines political behavior from the perspective of evolutionary biology. We compare human social behavior to similar behaviors observed in chimpanzees, baboons, dolphins, honeybees, and other animal species. We look at behaviors such as altruism, mating, fighting, dominance hierarchies, alliances, punishment, trade, risk sharing, group decision-making, social learning, and culture. For each social behavior, we consider the underlying psychological systems, how they process information, and what evolutionary functions they perform. We will focus particularly on evidence from experiments. Finally, we explore how humans invent new political institutions that extend our evolved political strategies.

Prerequisite: U2 or higher standing

SBC: *SBS+, SNW*

3 credits

POL 380: Government and Politics of the Middle East

This course examines the international relations of the contemporary Middle East contextualizing the study in a historical and comparative framework. The course covers the relevant history of the region, and engages in comparative analysis of the international, domestic politics, civil society and political economy of Middle Eastern states and non-state actors. We draw from the conceptual framework introduced in POL 101: World Politics.

Prerequisites: POL 101 or 103; U2 or higher standing

SBC: *GLO, SBS+*

3 credits

POL 390: Topics in Political Science

May be repeated as the topic changes.

Prerequisite: U2 or higher standing

3 credits

POL 401: Seminar in Advanced Topics

May be repeated as the topic changes.

Prerequisite: U3 or U4 Standing

3 credits

POL 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any POL course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

POL 459: Write Effectively in Political Science

A zero-credit course that may be taken with permission of the Director of Undergraduate Studies. The course provides an opportunity to demonstrate the skills and techniques of effective academic writing through the submission of a portfolio of papers.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits, S/U grading

POL 477: Qualitative & Mixed Methods

Exposes students to qualitative and mixed methods research including epistemological, ontological debates, research design, methodologies, data analysis, and applications in scholarly published works. A combination of mixed methods approaches utilized in political science and the interdisciplinary fields of African Studies, Africana Studies, and Women's and Gender Studies are explored. Key methods that will be covered include interviews (unstructured, semi-structured, structured), oral histories, case studies, analytical narratives, participant observation and ethnography, focus groups, large-N studies, GIS, sequencing of methods, databases, and content analysis. Students will develop a research proposal that can be utilized for senior projects. This course is offered as both AFS 477 and POL 477.

Prerequisite: U3 or U4 status

SBC: *CER, ESI, SBS+*

3 credits

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.

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

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.

SBC: *ESI, WRTD*

3 credits

POR

Portuguese

POR 111: Elementary Portuguese I

An introduction to spoken and written Portuguese, stressing pronunciation, speaking, comprehension, reading, and writing with a focus on Brazilian Portuguese. Designed for students with no prior knowledge of the language. A student who has had two or more years of Portuguese in high school (or who has otherwise acquired an equivalent proficiency) may not take POR 111 without written permission from the supervisor of the course.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

POR 112: Elementary Portuguese II

An introduction to spoken and written Portuguese, stressing pronunciation, speaking, comprehension, reading, and writing, with a focus on Brazilian Portuguese.

Prerequisite: C or better in POR 111 or instructor consent

DEC: *S3*
SBC: *LANG*

4 credits

POR 411: Portuguese for Spanish Speakers

A one semester accelerated course in Brazilian Portuguese for students with a native of near-native command of Spanish. This course uses Spanish as a base for the study of Portuguese grammar, vocabulary and pronunciation. By the end of the semester students will be prepared to read advanced materials and will have acquired a basic proficiency in speaking, writing and comprehension of standard Brazilian Portuguese. This course also functions as an introduction to Brazilian peoples and cultures.

Prerequisite: SPN 321 or permission of the department

SBC: *GLO, LANG*

3 credits

PSY

Psychology

PSY 103: 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.

DEC: *F*
SBC: *CER, SBS*

3 credits

PSY 201: 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, BIO 211, 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 completion of QPS or Level 2+ or higher on the mathematics placement examination

DEC: *C*
SBC: *QPS*

3 credits

PSY 220: Survey in Developmental Psychology

A study of growth and change in humans. Psychological, physical, social, and cognitive changes will be considered and the role of environmental and genetic influences on development will be examined.

Prerequisite: PSY 103

DEC: *F*
SBC: *SBS+*

3 credits

PSY 230: 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

DEC: *F*
SBC: *SBS+*

3 credits

PSY 240: 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

DEC: *F*
SBC: *DIV, SBS+*

3 credits

PSY 250: Survey in Biopsychology

Introduction to the neural basis of sensory processes, motor control, attention, emotion, and learning.

Prerequisite: PSY 103 or ANP 101 or BIO 203

DEC: *F*
SBC: *SBS+, STEM+*

3 credits

PSY 260: 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

DEC: *F*
SBC: *SBS+, STEM+*

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

SBC: *EXP+*

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

SBC: *EXP+*

1-3 credits, S/U grading

PSY 301: Advanced Statistics

Survey of probability and sampling theory, descriptive and inferential statistics, and introduction to experimental design.

Prerequisite: PSY 201 or any other course satisfying the department's statistics requirement

3 credits

PSY 310: 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisites: Psychology major; PSY 103; C or better in PSY 201 or any other course satisfying the department's statistics requirement

SBC: *ESI, SPK, WRTD*

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.

Prerequisite: PSY 220 or PSY 230 or PSY 240 or PSY 260
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.

Prerequisite: PSY 220 or PSY 230 or PSY 240

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.

Prerequisite: permission of the instructor or admission to the teacher education program

3 credits

PSY 329: Special Topics in Developmental Psychology

May be repeated as the topic changes.

Prerequisite: PSY 220 or PSY 230 or PSY 240
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: Autism Spectrum Disorders

This course will provide information on history and current research into the causes (etiology), types (nosology), characteristics (symptomatology), prevalence, and treatment of autism spectrum disorders (ASDs). Topics to be dealt with include: etiology, assessment, family roles, social development, cognitive development, sensory and motor development, comorbidities, long-term outcomes, public policy legal issues, and future directions for research and practice.

Prerequisite: PSY 230
Advisory Prerequisite: PSY 220

DEC: *F*
SBC: *SBS+*

3 credits

PSY 338: Abnormal Child Psychology

Development and modification of behavioral deviations in children; application of principles derived from experimental analysis of behavior to problems of children.

Prerequisite: PSY 220 or PSY 230 or PSY 240

3 credits

PSY 339: Special Topics in Clinical Psychology

May be repeated as the topic changes.

Prerequisite: PSY 220 or PSY 230 or PSY 240

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 220 or PSY 230 or PSY 240 or PSY 250 or PSY 260

3 credits

PSY 342: Psychology of Women's Health

An investigation of psychological aspects of women's health and gender differences in health through readings, lectures, films, guest speakers and presentations, class discussions, a writing assignment, and other educational activities.

Prerequisite: PSY 220 or PSY 230 or PSY 240

SBC: *DIV*

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 220 or PSY 230 or PSY 240
Advisory Prerequisite: PSY 310

3 credits

PSY 346: Health Psychology

The role of psychological factors in the maintenance of health or in coping with illness. Topics include health behaviors such as exercise, sleep, eating, and substance use; the relationship of stress and illness; and coping with chronic and terminal illnesses.

Prerequisite: PSY 103

3 credits

PSY 347: 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

DEC: *F*
SBC: *SBS+*

3 credits

PSY 348: Special Topics in Social Psychology

May be repeated as the topic changes.

Prerequisite: PSY 220 or PSY 230 or PSY 240

3 credits

PSY 349: Special Topics in Social Psychology

May be repeated as the topic changes.

Prerequisite: PSY 220 or PSY 230 or PSY 240

3 credits

PSY 354: Neurobiology of Learning and Memory

Our ability to be shaped by our experiences and our sense of personal identity require that our brain encode and store information as one of its fundamental functions. In this course we will look in detail at how neurons and neural circuits respond and change when an organism learns something new or recalls something learned in the past. The focus will be on integrating current work in basic cellular and molecular neurobiology with the experimental psychology of learning and memory. Not for credit in addition to PSY 358 with topic of "Learning and Memory."

Prerequisite: PSY 250 or BIO 202 or BIO 203 or BIO 208

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 or BIO 208 or BIO 338
Advisory Prerequisite: PSY 310

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 or BIO 208

3 credits

PSY 357: Animal Learning

Principles of adaptation and behavioral change with emphasis on techniques of reward and punishment and of stimulus control.

Prerequisite: PSY 250 or PSY 260
Advisory Prerequisite: PSY 310

3 credits

PSY 358: Special Topics in Biopsychology

May be repeated as the topic changes.

Prerequisite: PSY 250 or BIO 202 or BIO 203 or BIO 208

3 credits

PSY 359: Special Topics in Biopsychology

May be repeated as the topic changes.

Prerequisite: PSY 250 or BIO 202 or BIO 203 or BIO 208

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 250 or PSY 260

3 credits

PSY 365: The Psychology of Language

Examination of theories and research concerning the processes and representations that underlie language comprehension, production, and acquisition.

Prerequisite: PSY 250 or 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 250 or 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 250 or PSY 260

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 250 or PSY 260

3 credits

PSY 369: Special Topics in Cognition and Perception

May be repeated as the topic changes.

Prerequisite: PSY 250 or PSY 260

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.

Prerequisite: PSY 220 or PSY 230 or PSY 240 or PSY 250 or PSY 260

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: PSY 103; C or higher in PSY 201, AMS 110, or any other course satisfying the department's statistics requirement

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: PSY 103; C or higher in PSY 201, AMS 110, or any other course satisfying the department's statistics requirement Advisory Prerequisite: PSY 240

SBC: *ESI, WRTD*

4 credits

PSY 386: Research Lab: Cultural Psychology

Research methods in cultural psychology, including natural observation, surveys, and experimental design. Three hours of lecture and two hours of field or laboratory research per week.

Prerequisite: PSY 310

4 credits

PSY 389: Research Lab: Special Topics

Research methods in varying topics in psychological research including natural observation, surveys, and experimental design. Three hours of lecture and two hours of field or laboratory research per week. May be repeated for credit as the topic changes. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: PSY 310

4 credits

PSY 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

PSY 447: Readings in Psychology

Directed readings under the guidance of a faculty member. May be repeated once.

Prerequisite: permission of instructor

1-6 credits

PSY 459: Write Effectively in Psychology

A zero credit course that may be taken in conjunction with any 300- or 400-level PSY course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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.

Prerequisite: permission of instructor

SBC: *EXP+*

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.

Prerequisite: permission of instructor

SBC: *EXP+*

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.

Prerequisite: PSY 273; permission of instructor and department

SBC: *EXP+*

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.

Prerequisite: permission of the supervising faculty member and undergraduate director

SBC: *EXP+*

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

First course of a two-semester directed-research activity employing methods and theories of psychological research. Students are expected to design and execute a research project and submit a thesis under the supervision of appropriate faculty sponsorship. Students enrolled in PSY 495 are obliged to complete PSY 496. Students receive only one grade upon completion of the sequence.

Prerequisite: permission of department Corequisite: PSY 487

SBC: *ESI, WRTD*

1 credit

PSY 496: Senior Honors Seminar

Second course of a two-semester directed-research activity employing methods and theories of psychological research. Students are expected to design and execute a research project and submit a thesis under the supervision of appropriate faculty sponsorship. Students enrolled in PSY 495 are obliged to complete PSY 496. Students receive only one grade upon completion of the sequence.

Prerequisite: PSY 495; permission of department
Corequisite: PSY 487

SBC: *ESI, WRTD*

1 credit

RLS

Religious Studies

RLS 101: 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.

DEC: *B*
SBC: *GLO, HUM*

3 credits

RLS 102: Eastern Religions

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.

DEC: *B*
SBC: *GLO, HUM*

3 credits

RLS 240: Confucianism and Daoism

An introduction to the basic philosophies and doctrines of Confucianism and Daoism, such as the concept of Dao, 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.

DEC: *J*
SBC: *GLO, HUM*

3 credits

RLS 256: 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: one D.E.C. B or HUM course

DEC: *J*
SBC: *GLO, HUM*

3 credits

RLS 260: 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.

DEC: *J*
SBC: *GLO, HUM*

3 credits

RLS 270: 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.

DEC: *I*
SBC: *GLO, HUM*

3 credits

RLS 280: 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.

DEC: *J*
SBC: *GLO, HUM*

3 credits

RLS 287: Islam in China

Muslims entered China by the Silk Road shortly after the death of Muhammad in 632 and established permanent communities by the year 1000. Current estimates of the Muslim population in China begin at twenty million and go up. The course will survey the cultural history of the community, showing how it adapted Islamic teachings to a language that had been shaped by three non-theistic traditions Confucianism, Daoism, and Buddhism and illustrating the manner in which it integrated the distinctive monotheistic features of Islam into the cosmological and humanistic visions of the Chinese traditions. This course is offered as both AAS 287 and RLS 287.

SBC: *GLO, HUM*

3 credits

RLS 366: 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.

Advisory Prerequisite: any 200-level or higher RLS course

DEC: *G*
SBC: *HFA+*

3 credits

RLS 368: 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.

Advisory Prerequisite: one previous course in AAS or RLS

DEC: *J*
SBC: *HFA+*

3 credits

RLS 380: 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.

Advisory Prerequisite: AAS/RLS 280

DEC: *G*
SBC: *HFA+*

3 credits

RLS 382: 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.

Advisory Prerequisite: AAS/RLS 260

DEC: *G*
SBC: *HFA+*

3 credits

RLS 387: 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.

Advisory Prerequisite: AAS 260 or RLS 260 or AAS 280 or RLS 280; U3 or U4 standing

DEC: *J*
SBC: *HFA+*

3 credits

RLS 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 459: Write Effectively in Religious Studies

A zero credit course that may be taken in conjunction with any 300- or 400-level RLS course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

3 credits, S/U grading

RUS

Russian Language and Literature

RUS 101: 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.

DEC: *S3*
SBC: *LANG*

6 credits

RUS 111: Elementary Russian I

An introduction to Russian. The course, together with its continuation RUS 112, is designed to develop functional competence in speaking, listening, reading, writing at the elementary level of Russian and to acquaint students with aspects of Russian culture. Course consists of 3 hours per week in group setting plus an online recitation hour. The course is designed for students who have no prior knowledge of the language.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

RUS 112: Elementary Russian II

An introduction to Russian. The course is a continuation of RUS 111, and is designed to develop functional competence in speaking, listening, reading, writing at the elementary level of Russian and to acquaint students with aspects of Russian culture. Course consists of 3 hours per week in group setting plus an online recitation hour.

Prerequisite: C or better in RUS 111

DEC: *S3*
SBC: *LANG*

4 credits

RUS 211: Intermediate Russian I

Intermediate course in Russian stressing an active command of the language. The course continues RUS 111/112 and focuses on the development of functional competence in all four language skills: speaking, reading, listening and writing, while building a solid grammatical base. May not be taken for credit in addition to RUS 213.

Prerequisite: RUS 112

DEC: *S3*
SBC: *GLO, LANG*

3 credits

RUS 212: Intermediate Russian II

Intermediate courses in Russian stressing an active command of the language that continues RUS 211 and focuses on further development of functional competence in all four language skills: speaking, reading, listening and writing, while building a solid grammatical base. May not be taken for credit in addition to RUS 213.

Prerequisite: RUS 211

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

RUS 213: Intermediate Russian for Students of Russian-Speaking Background

A course intended for students who already speak Russian and who need training in writing, reading, and grammar. May not be taken for credit in addition to RUS 211 or 212. The course is not intended for students who have the equivalent of a Russian high school education.

Prerequisite: Native-speaking proficiency in Russian

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

RUS 311: 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

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

RUS 312: Russian Conversation and Composition

A course in the active use of spoken and written Russian. Particular emphasis is placed on contemporary idiom.

Prerequisites: RUS 212 or 213; permission of instructor required for students of Russian-speaking background

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

RUS 323: 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

DEC: *G & 3*
SBC: *HFA+*

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.

Prerequisites: RUS 212 and 213, or equivalent

SBC: *HFA+*

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

SBC: *HFA+, LANG, SPK*

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

SBC: *HFA+, LANG*

3 credits

RUS 439: Structure of Russian

The study of Russian phonetics, phonology, and morphology, with a discussion of different theoretical approaches as well as practical application. This course is especially recommended for prospective teachers of Russian.

Prerequisite: RUS 212 or equivalent proficiency in Russian

DEC: *S3*
SBC: *HFA+*

3 credits

RUS 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

RUS 447: Directed Readings in Russian

A program of independent advanced study for qualified juniors and seniors under the supervision of a faculty member. Repeatable to a maximum of 12 credits.

Prerequisites: RUS 311, 312 or equivalent proficiency in Russian; a 300- or 400-level course in Russian literature; permission of instructor and department

DEC: *S3*
SBC: *EXP+*

1-3 credits

RUS 475: 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

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

RUS 476: 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

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

RUS 491: 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

DEC: *G & 3*
SBC: *HFA+*

3 credits

RUS 492: Special Genre or Period

A detailed study of a special genre such as the Russian novel or Russian drama, or period such as Soviet literature. Readings are in Russian, and classes are conducted largely in Russian. May be repeated as the topic changes.

Prerequisites: HUR 141, 142; RUS 312 or equivalent proficiency in Russian

DEC: *G & 3*
SBC: *HFA+*

3 credits

RUS 495: Senior Honors Project in Russian

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

Prerequisite: Permission of department

DEC: *S3*
SBC: *EXP+*

3 credits

SBU

Stony Brook University

SBU 101: Introduction to Stony Brook

A seminar intended to integrate freshman 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. This course is a graduation requirement for all first year students (students in their first year of college study). 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

1 credit, S/U grading

SBU 102: Undergraduate College Seminar

A seminar for all students in Undergraduate Colleges. The seminar covers various topics under the general scope of the themes of the Undergraduate Colleges. Seminars vary by section and include examination of topics such as performance, philosophy, language arts, cultural studies, theater arts, dance, music, art, film making, and communications. This course is a graduation requirement for all first year students.

Pre-req SBU 101 and not currently a new freshman or new transfer

1 credit

SBU 275: Undergraduate College Fellows Seminar

Creates a curricular component for the second year of the Undergraduate College Experience. College fellows will enroll in SBU 275 in the spring semester of their freshman year and SBU 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.

1 credit, S/U grading

SBU 276: Undergraduate College Fellows Practicum

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

SBC: *EXP+*

1 credit, S/U grading

SBU 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

SBC: *EXP+*

1 credit, S/U grading

SBU 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

SBC: *EXP+*

0-3 credits, S/U grading

SCH

University Scholars Program

SCH 101: Introduction to University Scholars & Stony Brook

A seminar intended to integrate students into the University Scholars Program and the University community by providing information about Stony Brook and a forum for discussion of values, intellectual and social development, and personal and institutional expectations. Students will have opportunities to reflect on the meaning and purpose of honors education. This course is a graduation requirement for all first-year students (students in their first-year of college study). Not for credit in addition to ADV 101, GLS 101, ACH 101, LDS 101, HON 101, HDV 101, ITS 101, SSO 101, SBU 101, LSE 101, or WSE 101.

Prerequisite: Member of the University Scholars Program

1 credit, S/U grading

SCH 102: University Scholars Seminar

A seminar for all second-semester freshmen in the University Scholars Program. The seminar covers various topics under the general scope of the Scholars Program's three pillars: leadership, service, and academic excellence. Seminar topics will vary by section and include examination of different areas of science, technology, humanities, service-learning and leadership development. This course is a graduation requirement for all first year Scholars. Not for credit in addition to ACH 102, GLS 102, HDV 102, ITS 102, LDS 102, or SSO 102.

Prerequisite: Member of the University Scholars Program

1 credit

SCH 275: University Honors Fellows Seminar

University Honors Fellows enroll in SCH 275 in the spring semester of their freshman year and SCH 276 in the fall semester of their sophomore year. This seminar prepares students for supervised learning and teaching experiences that will occur primarily in the fall 276 course. Main content areas include student development theory; mentorship; leadership development; best practices in teaching and learning; and honors education. This seminar is offered as HON 275, SCH 275, and WSE 275.

Prerequisite: A grade of "S" in HON/SCHWSE 101; member of a University Honors Program; permission of the instructor

1 credit, S/U grading

SCH 276: University Honors Fellows Practicum

The second semester course in the sequence following SCH 275. Students assume higher responsibility and are given opportunities to apply teaching theories and concepts as learned in 275. Fellows serve as a Teaching Assistants for SCH 101. This course is offered as HON 276, SCH 276, and WSE 276.

Prerequisite: A grade of "S" in HON/SCH/WSE 275; member of a University Honors Program (HON/SCH/WSE); permission of the instructor

SBC: *EXP+*

1 credit, S/U grading

SCH 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

SCH 475: Scholars 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 SCH 101 or 102 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: Member of the University Scholars Program; permission of the instructor and department

SBC: *EXP+*

1 credit, S/U grading

SCH 488: University Scholars Internship

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

Prerequisite: Member of the University Scholars Program; permission of the instructor

SBC: *EXP+*

0-3 credits, 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 P-12 Science Learning Standards is emphasized, in addition to the importance of inquiry-based learning, nature of science, laboratory activities, and laboratory safety. Students plan lessons and make several presentations. Experiences in SCI 449 are incorporated into SCI 410.

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.

Prerequisites: C or higher in SCI 410; satisfactory completion of SCI 449; minimum G.P.A. of 2.75
Corequisite: SCI 450

SBC: *CER, EXP+, SPK*

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 assignments that are 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 SCI 420. Due to public school schedules, the majority of these experiences occur during morning hours.

Prerequisites: C or higher in SCI 410; satisfactory completion of SCI 449; minimum G.P.A. of 2.75
Corequisite: SCI 420 Note: you must register for the same sections of SCI 420 and 450

SBC: *CER, EXP+, SPK*

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; PSY 327; SSE 350; LIN 344; CEF 347; grade of S in SCI 450; 2.75 GPA; all grad reqs; pre-ST interview; dept permission. Corequisites: SCI 452 & 454 Note: students must register for equiv sections of SCI 451, 452, 454

SBC: *CER, EXP+, SPK*

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.

Prerequisite: dept permission; C or higher in SCI 420; SSE 350, PSY 327; LIN 344; & CEF 347; S grade in SCI 450; GPA 2.75;completion of all grad reqs; pre-ST interview Corequisites: SCI 451/454;students must register for equiv sect of SCI 451, 452, 454

SBC: *CER, EXP+, SPK*

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; LIN 344; and CEF 347; 2.75 cum GPA; completion/grad reqs; pre-ST interview; Dept perm. Corequisites: SCI 451 and 452; Note: students must register/equiv sections of SCI 451, 452, 454.

SBC: *CER, EXP+, SPK*

3 credits

SCI 487: Applied Research

Repeatable to a maximum of 6 credits.

Prerequisite: Permission of science education program

SBC: *EXP+*

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

SKT 112: Elementary Sanskrit II

An introduction to Sanskrit, the classical language of Indian religion and philosophy, including grammar, translation, and readings from selected texts of Hinduism and Buddhism.

Prerequisite: C or better in SKT 111

DEC: *S3*
SBC: *LANG*

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.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

SLN 112: 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

DEC: *S3*
SBC: *LANG*

3 credits

SLN 211: Intermediate Sign Language I

An intermediate course in American Sign Language, the visual-gestural language of the deaf; incorporates nonverbal communication techniques, intermediate vocabulary, grammar principles, and conversational skills.

Prerequisite: SLN 112 or permission of instructor

DEC: *S3*
SBC: *GLO, LANG*

3 credits

SLN 212: Intermediate Sign Language II

An intermediate course in American Sign Language, the visual-gestural language of the deaf; further develops the nonverbal communication techniques, intermediate vocabulary, grammar principles, and conversational skills learned in SLN 211.

Prerequisite: SLN 211 or permission of instructor

DEC: *S3*
SBC: *GLO, HUM, LANG*

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

SBC: *EXP+*

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

SBC: *EXP+*

3 credits, S/U grading

SOC

Sociology

SOC 105: 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.

DEC: *F*
SBC: *SBS*

3 credits

SOC 110: Fire Ecology,Climate Change,& Indigenous Knowledge

Fire Ecology, Climate Change and Indigenous Knowledge is an interdisciplinary course that examines fire from ecological and sociohistorical perspectives. Centering Indigenous land management prior to, during, and post European colonization, the course investigates the increase in fires - especially in fire-prone Mediterranean ecosystems - alongside links to forest conservation and climate change. The course concludes by exploring adaptations to changing fire patterns, such as retreating from fire prone areas, developing partnerships with Indigenous groups, and using "cultural burning" as a tool to fight climate change.

SBC: *DIV, SBS, SNW*

3 credits

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.

SBC: *SBS*

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

SBC: *ESI*

3 credits

SOC 202: 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, AMS 110, ECO 320, POL 201, or PSY 201. 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: Level 2+ on the mathematics placement exam or satisfactory completion of D.E.C. C or QPS

DEC: *C*
SBC: *QPS*

3 credits

SOC 204: Intimate Relationships

The dynamics of forming, maintaining, and dissolving intimate relationships. Attention is focused on dating, partner selection, sexuality, marriage, divorce, and remarriage.

DEC: *F*
SBC: *SBS*

3 credits

SOC 243: Sociology of Youth

Adolescent socialization; age structures and intergenerational conflict; peer groups and youth subcultures.

DEC: *F*
SBC: *SBS*

3 credits

SOC 247: 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.

DEC: *K*
SBC: *DIV, SBS*

3 credits

SOC 248: 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: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *GLO, SBS+*

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.

Prerequisite: permission of instructor

3 credits

SOC 302: 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: one D.E.C. F or SBS course or U3/U4 status

DEC: *K*
SBC: *DIV, SBS+*

3 credits

SOC 303: Social Inequality

Theories of social stratification; patterns of differentiation in wealth, prestige, and power; social mobility; power structures and elites.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 304: Sociology of the Family

An historical and cross-cultural analysis of the family as a major social institution in society; the demography of contemporary American families; selected policy issues involving the family.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 309: Social Conflicts and Movements

An examination of aggregate phenomena; revolutionary and counterrevolutionary programs and organizations. Historical and cross-cultural examples are emphasized.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 310: Racism and Ethnic Relations

The comparative experience of ethnic and other minority groups within the United States, including formation, migration, and conflict; prejudice, discrimination, and minority self-hatred. 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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *K*
SBC: *DIV, SBS+*

3 credits

SOC 315: 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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *H*
SBC: *STAS*

3 credits

SOC 323: Urban Society

The emergence of cities and the process of urbanization; an examination of urban structure; the consequences of the urban milieu for interpersonal relations and institutions.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *K*
SBC: *SBS+*

3 credits

SOC 330: 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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 336: Social Change

Development and modernization are studied in a historical and comparative perspective that emphasizes the universality of social change in human societies. The approach is macrosociological, focusing on broad patterns of change in economic, social, and political organization in the modern era. Revolutions as dramatic instances of socio-political change receive particular attention.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 337: Social Deviance

Competing theories of the nature of social deviance; stigmatizing, labeling, and application of informal social controls; technical, legal, and ethical issues related to "non-victim" crimes.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 338: The Sociology of Crime

The application of formal social control to criminally prosecutable offenses; the relationship of law and society; the criminal justice system.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 339: Sociology of Alcoholism and Drug Abuse

An examination of the sociological literature on alcoholism and drug abuse. Topics include addictive careers, the epidemiology (spread) of abuse, history of attempts to control alcohol and drugs, treatment approaches, and policy alternatives.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 340: 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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *H*
SBC: *STAS*

3 credits

SOC 344: Environmental Sociology

Analysis of how populations gain sustenance from their environments through organization, information, and technology. Evolution of technology and its ecological consequences for population growth, urbanization, social stratification, environmental destruction, and the quality of life. Problems in managing the human environment and communities.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *GLO, SBS+*

3 credits

SOC 348: Global Sociology

The impact of globalization on human societies, cultures, organizations, and identities. Consideration of the roles of institution such as the United Nations, organizations such as media conglomerates and transnational corporations, and religious associations in shaping an emerging global society including a survey of contemporary global issues such as the environment, human rights, and economic development.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *GLO, SBS+*

3 credits

SOC 352: Sociology of Religion

The ways in which sociocultural processes affect and are affected by religious belief systems and organizations; changing structures and functions of religious institutions.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 356: Political Sociology

Social structure and processes as they affect, and are affected by, political behavior and organizations; the sociology of power, authority, and legitimacy.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 361: Historical Development of Sociological Theory

Main currents in the development of modern sociology, with an emphasis on Marx, Weber, and Durkheim, among other leading theorists.

Prerequisites: SOC 105; U3 or U4 standing

DEC: *F*
SBC: *SBS+, WRTD*

3 credits

SOC 362: Contemporary Sociological Theory

A systematic treatment of the dominant general orientations in sociology including structural-functional analysis, symbolic interactionism, and modern versions of Marxism.

Prerequisites: SOC 105; U3 or U4 standing

DEC: *F*
SBC: *SBS+*

3 credits

SOC 364: 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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *J*
SBC: *SBS+*

3 credits

SOC 365: Global Africa

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: one D.E.C. F or SBS course or U3/U4 status

DEC: *J*
SBC: *GLO, SBS+*

3 credits

SOC 371: 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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *K*
SBC: *SBS+*

3 credits

SOC 374: 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: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 380: Social Psychology

Individual and social factors in human behavior; the structure of personality; identity development; communication processes; and attitudes.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 381: Sociology of Organizations

Bureaucracy as a form of organization; the structure of relations between and within organizations.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 384: Sociology of the Life Course

Change and stability of individuals through the life course (from childhood to old age) in the context of social structure and interactional processes. Covers such topics as socially structured periods and transitions in the life course; identity formation; continuity and change; life crises; changing roles and transitions.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 390: Special Topics

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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 391: Special Topics

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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 392: Special Topics

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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 393: Special Topics in Health, Medicine, and Social Change

Selected topics in health, medicine, and in social change. Topics may include the Sociology of Aging, Sociology of Sexuality, Healthcare Delivery, and the Sociology of Disability. Designed for upper-division students, this course provides an in-depth study of a specific topic within social sciences disciplines. 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 discipline. May be repeated as the topic changes.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *SBS+*

3 credits

SOC 394: Special Topics, Experiential Learning

Past topics have included titles such as The Sociology of Aging and (Re)Thinking Masculinities and Manhood. 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. This course satisfies the Experiential Learning SBC category. Students will be required to complete a community intervention project. May be repeated as the topic changes.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *F*
SBC: *EXP+, SBS+*

3 credits

SOC 395: 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. May be repeated as the topic changes.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *H*
SBC: *STAS*

3 credits

SOC 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any SOC course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

SOC 459: Write Effectively in Sociology

A zero credit course that may be taken in conjunction with any 300- or 400-level SOC course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

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

SBC: *EXP+*

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. Intended for students without any prior knowledge of the language. All entering students should take a placement exam to evaluate their proficiency. Please see https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/Placement_Exam for more information.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

SPN 112: Elementary Spanish II

An introduction to spoken and written Spanish, stressing pronunciation, speaking, comprehension, reading, and writing. Language laboratory supplements class work. All entering students should take a placement exam to evaluate their proficiency. Please see https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/Placement_Exam for more information.

Prerequisite: C or better in SPN 111 or placement into 112 (LVL2). See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *LANG*

4 credits

SPN 211: Intermediate Spanish I

A comprehensive review of the Spanish language in its global context. The course is intended to develop competence in reading, writing, and speaking Spanish through the study of grammar and interpretation of selected literary texts. All entering students should take a placement exam to evaluate their proficiency. Please see https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/Placement_Exam for more information. Not intended for students of Spanish-speaking background.

Prerequisite: SPN 112 or placement into 211 (LVL3). See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, LANG*

3 credits

SPN 212: Intermediate Spanish II

A comprehensive study of the Spanish language in its global context. 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.

Prerequisite: SPN 211 or placement into 212 (LVL4). See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

SPN 213: 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

DEC: *S3*
SBC: *GLO, HUM, LANG*

3 credits

SPN 214: Intermediate Medical Spanish I

Intended for students studying or planning a career in medicine. It combines an overview of Intermediate-level Spanish grammar with vocabulary and cultural elements relevant to the healthcare field.

Prerequisite: SPN 112 or placement into 211. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

SBC: *DIV, LANG*

3 credits

SPN 215: Intermediate Medical Spanish II

A medical Spanish course for students studying or planning to study a career in the health sciences. The second in a series of intermediate-level courses aimed at developing students' speaking, reading, listening and writing skills in Spanish through the use of complex grammatical structures in a variety of communicative activities, with emphasis on medical vocabulary and cultural awareness regarding the Latino population in the US.

Prerequisite: SPN 211 or SPN 213 or SPN 214 or Placement Test. See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

SBC: *LANG*

3 credits

SPN 310: 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: fluency in Spanish equivalent to SPN 212

DEC: *S3*
SBC: *DIV, HFA+, LANG*

3 credits

SPN 311: Spanish Conversation and Composition

A thorough review of Spanish grammar and of the active use of spoken and written forms. May not be taken for credit in addition to SPN 310.

Prerequisite: SPN 212 or placement into 311 (LVL5). See https://www.stonybrook.edu/commcms/llrc/placement_challenge_exams/ for more information.

DEC: *S3*
SBC: *DIV, HFA+, LANG*

3 credits

SPN 312: 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.

Pre- or corequisite: SPN 310 or SPN 311

DEC: *G & 3*
SBC: *HFA+, SPK*

3 credits

SPN 321: 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.

Prerequisite: SPN 310 or SPN 311

DEC: *S3*
SBC: *CER, HFA+, WRTD*

3 credits

SPN 322: Practical Spanish

A course for students who wish to become more proficient in reading, writing, and translating Spanish, to be used in job applications, business, administration, health professions and in other fields. Emphasis is placed on the idiomatic peculiarities of the Spanish language and the relation of Spanish to the structure of English. Not valid for Spanish major credit. Valid for Spanish minor credit.

Prerequisite: SPN 310 or SPN 311

DEC: *S3*
SBC: *HFA+*

3 credits

SPN 323: Advanced Spanish Conversation

A course designed to develop and maintain complete fluency in the language. Not open to native-background speakers or students who have been in a Spanish-speaking country for a considerable length of time.

Prerequisite: SPN 310 or SPN 311

DEC: *S3*
SBC: *HFA+, LANG*

3 credits

SPN 384: Introduction to Latin American Literature and Culture I

The study of culture, society, art and literature of Latin America in global context from its native origins through colonial rule. Formerly offered as SPN 395; not for credit in addition to SPN 395.

Prerequisites: SPN 312

DEC: *J & 3*
SBC: *DIV, GLO, HFA+*

3 credits

SPN 385: Introduction to Latin American Literature and Culture II

The study of culture, society, art, and literature of Latin America in global context from the late colonial period to the nineteenth century. Formerly offered as SPN 396; not for credit in addition to SPN 396.

Prerequisites: SPN 312

DEC: *J & 3*
SBC: *DIV, GLO, HFA+*

3 credits

SPN 386: Introduction to Latin American Literature and Culture III

The study of culture, society, art and literature of Latin America in global context in the twentieth and twenty-first centuries.

Prerequisites: SPN 312

DEC: *J & 3*
SBC: *DIV, GLO, HFA+*

3 credits

SPN 387: Introduction to Spanish Literature and Culture I

The study of culture, society, art, and literature of the Iberian Peninsula in European and global context through the seventeenth century. Formerly offered as SPN 397; not for credit in addition to SPN 397.

Prerequisites: SPN 312

DEC: *I & 3*
SBC: *GLO, HFA+*

3 credits

SPN 388: Introduction to Spanish Literature and Culture II

The study of culture, society, art and literature of the Iberian Peninsula in European and global context in the eighteenth and nineteenth centuries. Formerly offered as SPN 398; not for credit in addition to SPN 398.

Prerequisites: SPN 312

DEC: *I & 3*
SBC: *GLO, HFA+*

3 credits

SPN 389: Introduction to Spanish Literature and Culture III

The study of culture, society, art and literature of Spain in European and global context in the twentieth and twenty-first centuries.

Prerequisites: SPN 312

DEC: *I & 3*
SBC: *DIV, GLO, HFA+*

3 credits

SPN 390: Communication, Media and Journalism in Spanish

Reading, analyzing, writing, producing and publishing news and media material in Spanish. Emphasis will be on the new digital media culture of globalized Latin America, Latino USA and Spain in relation to specific historical and social contexts, power relations, gender and ethnic politics and ethical issues. The intersection of Latin American journalism and literature (the crónica), the new testimonial documentaries and the tensions between storytelling and information will be central in our multimedia work. The final group project will involve a multimedia digital publication in Spanish related to current events in Spanish speaking communities. Taught in Spanish. Formerly offered as SPN 399; not for credit in addition to SPN 399.

Prerequisite: SPN 312 or permission of the instructor

SBC: *GLO, HFA+*

3 credits

SPN 391: The Culture and Civilization of Spain

The evolution of the culture and civilization of Spain as seen through its history, art, and literature in global context.

Prerequisites: SPN 312

DEC: *I & 3*
SBC: *GLO, HFA+*

3 credits

SPN 392: The Culture and Civilization of Latin America

The evolution of the culture and civilization of Latin America as seen through its history, art, and literature in global context.

Prerequisites: SPN 312

DEC: *G & 3*
SBC: *GLO, HFA+*

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 variations of Latin American and Peninsular Spanish

Prerequisite: SPN 321

SBC: *SBS*

3 credits

SPN 405: Issues in Hispanic Cultural Studies

Readings, viewings, and theoretical discussion of Spanish or Latin American culture with special focus on one or more issues (colonialism, imperialism, national identity, indigenism, subjectivity) as manifested in a specific cultural form or forms (testimonial literature, popular culture, cinema, novel, short story, poetry, television). May be repeated as the topic changes.

Prerequisite: SPN 384 or SPN 385 or SPN 386 or SPN 387 or SPN 388 or SPN 389

DEC: *S3*
SBC: *ESI, HFA+*

3 credits

SPN 410: Theory in Contexts

Text analysis as they relate to Spanish or Latin American political, social, and gender relations and institutions. Sample topics include gender and representation, the body, popular and media cultures, the picaresque, visual and performance studies. May be repeated as the topic changes.

Prerequisite: SPN 384 or SPN 385 or SPN 386 or SPN 387 or SPN 388 or SPN 389

DEC: *S3*
SBC: *ESI, HFA+*

3 credits

SPN 415: Hispanic Cultures in Contact

Contemporary perspectives on Hispanic cultures in contact with each other and with non-Hispanic cultures. Sample topics include the literature of exile, migrations, border literature, ethnicity, indigenous cultures, Latino/Latina literature, Spanish and Latin American cultural contacts. May be repeated as the topic changes.

Prerequisite: SPN 384 or SPN 385 or SPN 386 or SPN 387 or SPN 388 or SPN 389

DEC: *S3*
SBC: *ESI, HFA+*

3 credits

SPN 420: Topics in Spanish and Latin American Cinema

May be repeated as the topic changes.

Prerequisite: SPN 384 or SPN 385 or SPN 386 or SPN 387 or SPN 388 or SPN 389

SBC: *ARTS, HFA+*

3 credits

SPN 435: Topics in Latin American Literature from the Colonial Period to the Present

May be repeated as the topic changes.

Prerequisite: SPN 384 or SPN 385 or SPN 386 or SPN 387 or SPN 388 or SPN 389

DEC: *S3*
SBC: *ESI, HFA+*

3 credits

SPN 443: Medical Spanish Experiential Learning

The course will offer credit for experiential learning through a collaboration with Stony Brook Hospital or other organizations across Long Island that work with immigrant communities, assisting Spanish-speaking patients in a variety of non-clinical tasks or providing translation or interpreting services.

Prerequisite: SPN 214 or permission of instructor and director of undergraduate studies

SBC: *EXP+*

0-3 credits, S/U grading

SPN 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-

world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

SPN 445: Topics in Spanish Literature from the Middle Ages to the Present

May be repeated as the topic changes.

Prerequisite: SPN 384 or SPN 385 or SPN 386 or SPN 387 or SPN 388 or SPN 389

DEC: *S3*
SBC: *ESI, HFA+*

3 credits

SPN 447: 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

DEC: *S3*
SBC: *EXP+*

1-6 credits

SPN 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any SPN course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

SPN 459: Write Effectively in Spanish

A zero credit course that may be taken in conjunction with any 300- or 400-level SPN course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

SPN 463: 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

DEC: *S3*

3 credits

SPN 465: Topics in Hispanic Linguistics

May be repeated as the topic changes.

Prerequisite: SPN 393 or LIN 101 or HUL 324

DEC: *S3*
SBC: *HFA+*

3 credits

SPN 475: Undergraduate Teaching Practicum I in Spanish

An opportunity for selected upper-division students to collaborate with the faculty in teaching a Hispanic language, literature or culture class. Responsibilities include attending all classes, preparing material for practice sessions, meeting with the faculty to discuss matters relating to the course and collaborating in the teaching process.

Prerequisites: U3 or U4 Spanish major; preferably U4 standing; permission of director of undergraduate studies

DEC: *S3*
SBC: *EXP+*

3 credits, S/U grading

SPN 476: Undergraduate Teaching Practicum in Spanish II

An opportunity for selected upper-division students to collaborate with the faculty in teaching a Hispanic language, literature or culture class. Responsibilities include attending all classes, preparing material for practice sessions, meeting with the faculty to discuss matters relating to the course and collaborating in the teaching process.

Prerequisite: SPN 475; U3 or U4 Spanish major; permission of director of undergraduate studies

SBC: *EXP+*

3 credits, S/U grading

SPN 488: Internship

Participation in local, state, and national public and private organizations. 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.

Prerequisite: 12 credits of Spanish; 2.50 g.p.a.; permission of instructor and department

SBC: *EXP+*

0-6 credits, S/U grading

SPN 495: Spanish Senior Honors

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: 3.50 g.p.a. in major; Spanish courses in major; 3.00 overall g.p.a.; U4 standing; permission of department

DEC: *S3*
SBC: *EXP+*

3 credits

SSE

Social Studies Education

SSE 100: 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

DEC: *F*
SBC: *SBS*

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: Junior or Senior 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)

SBC: *CER, EXP+, SPK*

3 credits

SSE 400: Experiential Learning, Speak Effectively, Practice Critical and Ethical Reasoning

A zero credit course that may be taken in conjunction with any SSE course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's CER, EXP+, and SPK learning objectives.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *CER, EXP+, SPK*

0 credit, S/U grading

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)

SBC: *EXP+*

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)

SBC: *CER, EXP+, SPK*

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 hgher in SSE 398 (formerly SSI 398); enrollment in the Social Studies Secondary Teacher Preparation Program; approval of social studies director
Corequisites: SSE 452 and 454 (formerly SSI 452 and 454)

SBC: *CER, EXP+, SPK*

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 hgher in SSE 398 (formerly SSI 398); enrollment in the Social Studies Secondary Teacher Preparation Program; approval of social studies director
Corequisites: SSE 451 and 454 (formerly SSI 451 and 454)

SBC: *CER, EXP+, SPK*

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.

Prerequisite: C or higher in SSE 398 (formerly SSI 398)
Corequisites: SSE 451 and 452 (formerly SSI 451 and 452)

SBC: *CER, EXP+, SPK*

3 credits

SSE 475: Undergrad Teachng 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.

SBC: *EXP+*

3 credits, S/U grading

SSE 476: Undergrad Teachng 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.

SBC: *EXP+*

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 instructor

0-6 credits

SSP

Simons STEM Scholars Program

SSP 101: Introduction to Stony Brook

This course is designed to enhance your first-year experience at Stony Brook University. You will be provided with a supportive and structured environment to assist you in making your transition from high school to college through academic advice, learning about campus resources, group discussion, and collaborative teaching. You will be encouraged to use critical thinking skills to set goals and make responsible decisions regarding academics, major and career planning, and social relationships. Core topics include student success, diversity and inclusion, health and wellness. A special emphasis on the practice of mindfulness will also be explored to support student success and academic wellness.

Prerequisite: Admission to the Simons STEM Program; first-semester freshman

1 credit, S/U grading

SSP 105: Opportunities in STEM & Beyond

A course composed of discussions and explorations of various science, technology, engineering and mathematics (STEM) career paths, and worldwide relevance. Guest speakers, STEM PhDs will describe their STEM work in a global context. Students will reflect upon their interests, values, talents, and skills, such as resourcefulness, curiosity, and emotional intelligence, needed to tackle future global STEM challenges. The interdisciplinary, universality and civic values of STEM are emphasized through projects that link STEM to other disciplines including global issues, humanities and the arts.

Prerequisite: SSP 101

SBCP: *This course provides partial credit for the following: GLO_PART*

1 credit

SSP 205: Pathway to STEM PhD I

A course which focuses on tackling subjects such as intersectionality, systemic racism and individuality and its application to a professional research career. In addition to these topics, students will be instructed on research dynamics, finding a research mentor, hidden curriculum of the lab space and the general operations of working as an undergraduate researcher, and basics of developing a research proposal/project plan. This course will analyze these topics in a global context covering issues like Eurocentrism in STEM across the LatinX and African Diasporas, as well as exploring careers in STEM at an international scale. The intention of this course is to lay the groundwork for research to be conducted in the coming summer/semester. Students will produce a reflective essay on the course as part of their preparation for lab work. This course is intended for Simons STEM students.

Prerequisite: SSP 105

SBC: *DIV*
SBCP: *This course provides partial credit for the following: GLO_PART*

1 credit

SSP 305: Pathways to the STEM PhD II

An active learning course that builds upon the awareness of self and knowledge of career fields, focusing on preparation for experiential learning and PhD programs/graduate school. Students will gather and organize knowledge, skills, strengths, and artifacts of their collegiate accomplishments, and design a strategy for their professional brand with CV, personal statement, LinkedIn profile and elevator pitch. Students will actively apply for experiences on and off campus as part of the course. In addition, the course uses a proactive approach to career and life design with a focus on careers for STEM PhDs. Students will build a network of professionals in a variety of STEM PhD career pathways, practicing elevated communication and outreach skills. A financial module will incorporate budgeting and personal fiscal planning with a focus on transition to graduate school.

Prerequisite: SSP 205

1 credit

SSP 380: Research and Discovery in STEM

This course consists of a combination of theory and practice. The theoretical component involves an overview of research methodologies in science, technology, engineering and mathematics (STEM) disciplines, including literature reviews, research design, data collection, and quantitative analyses. In addition, there is hands-on experience in doing research in STEM disciplines. Students may perform research in a laboratory of their choice under the supervision of a faculty member and prior approval of a research plan by the course coordinator, or may select among some offered research experiences. Within the research settings, students are given background literature, instructed in the problem to be studied, learn the necessary technical tools, jointly make a research plan and carry out experiments related to the problem, and discuss the social implications of the research problem. Students prepare papers and/or make presentations related to the projects in which they participate.

Prerequisite: SSP 105

3 credits

SSP 475: Teaching Practicum

Students assist the faculty in teaching courses and outreach experiences by conducting recitation or laboratory sections that supplement a lecture course or outreach. Permission to register requires an outlined teaching assistantship plan for a course under the supervision of a faculty member or for an outreach plan with the appropriate supervisor, which will be approved by the SSP Honors Director. The student receives regularly scheduled supervision from the faculty instructor. A final report and possibly a presentation are required. May be repeated, but only two credits of teaching practicum may be counted toward the SSP Honors requirement.

Pre or corequisite: SSP 305; Permission of instructor and department.

SBC: *EXP+*

3 credits

SSP 477: Mentoring/Leadership Practicum

Students with the appropriate background and mentoring skills participate in mentoring opportunities for undergraduate or pre-college students. Permission to register requires an outlined mentorship plan for an activity or group of students under the supervision of a faculty member or professional, which will be approved by the SSP Honors Director. The student receives regular mentoring and supervision for their mentoring experiences. A final report and possibly a presentation are required. May be repeated but only two credits of practicum may be counted toward the SSP Honors requirement.

Pre or corequisite: SSP 305; Permission of instructor and department.

0-3 credits

SSP 487: Research Practicum

An independent research project with faculty supervision. Permission to register requires a research plan, the agreement of a faculty member to supervise the research and the approval from the SSP Honors Director. A final report and presentation are required. May be repeated but only two credits of internship may be counted toward the SSP Honors requirement.

Pre or corequisite: SSP 305; Permission of instructor and department.

SBC: *EXP+*

0-3 credits

SSP 488: Internship Practicum

An independent off-campus STEM project under faculty and/or STEM professional supervision. Permission to register requires a project plan, the agreement of a supervisor and the approval from the SSP Honors Director. A work plan and final report are required. May be repeated but only two credits of internship may be counted toward the SSP Honors requirement.

Pre or corequisite: SSP 305; Permission of instructor and department.

SBC: *EXP+*

0-3 credits

SUS

Sustainability Studies

SUS 111: Introduction to Sustainability

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. Formerly offered as SBC 111; not for credit in addition to SBC 111.

SBC: *SNW*

3 credits

SUS 113: 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. Formerly offered as SBC 113; not for credit in addition to SBC 113.

DEC: *E*
SBC: *SNW*

3 credits

SUS 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. Formerly offered as SBC 114; not for credit in addition to SBC 114.

Pre- or corequisite: SUS 113 (formerly SBC 113)

1 credit

SUS 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. Formerly offered as SBC 115; not for credit in addition to SBC 115.

Prerequisite: MAT 123, MAT 125, MAT 131, MAT 132, AMS 151, or level 4 or higher on math placement exam

SBC: *SBS*

3 credits

SUS 117: 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. Formerly offered as SBC 117; not for credit in addition to SBC 117.

DEC: *D*
SBC: *TECH*

3 credits

SUS 121: Climate Change: Science, Impacts, Justice, and Solutions

Integrates Earth's physical aspects of climate change with societal impacts, human impacts and policy decisions. Topics include: climate science, current impacts, and likely future predictions under various socioeconomic pathways; resiliency and social practices; reaching and communicating scientific consensus to differing audiences; critical examination of the issues in communicating climate science to non-scientists which can translate into actions.

SBC: *STAS*

3 credits

SUS 200: 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 of the world's population currently lives 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. Formerly offered as SBC 200; not for credit in addition to SBC 200.

DEC: *F*
SBC: *SBS*

3 credits

SUS 201: Systems and Models

Introduction to the dynamic modeling of complex systems. Students will learn to use simulation software that facilitates the visualization, formulation, and analysis of systems. Students will learn about systems with positive and negative feedbacks, the effects 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. Formerly offered as SBC 201; not for credit in addition to SBC 201.

Prerequisite: AMS 102 or AMS 151 or MAT 125 or MAT 131 or MAT 141 or a score of 4 or better on the Math Placement Exam; declared major in COS, EDP, EHI, EHM, or SUS

SBC: *TECH*

3 credits

SUS 202: Introduction to Environmental Humanities

An interdisciplinary inquiry into ethics, arts, culture, and theory in relation to environmental humanities. The course will be an overview of the emerging field of environmental humanities and will draw from multiple disciplines (philosophy, history, cultural studies, and literary criticism) to better our relationship to the nonhuman world. This course is a reading and writing intensive seminar and will require extensive writing practice, journaling, fieldwork, and formal essays. While you will be presented with established ideas and trends in environmental humanities, students will also be encouraged to formulate their own approaches to the material. The instructor values projects which exhibit critical and creative thinking along with a thorough understanding of rhetorical skills. Formerly offered as EHM 202; not for credit in addition to EHM 202.

Prerequisite: WRT 102

DEC: *G*
SBC: *HUM*

3 credits

SUS 203: Interpretation and Critical Analysis

An introduction to interdisciplinary inquiry and representation in arts, culture, and theory with emphasis on the roles of analysis, argument, and imagination in multiple media. Requires serious engagement with sophisticated texts. Formerly offered as SBC 203; not for credit in addition to SBC 203.

Pre- or corequisite: WRT 102

DEC: *G*
SBC: *CER, HUM, WRTD*

3 credits

SUS 204: 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. Formerly offered as SBC 204; not for credit in addition to SBC 204.

Prerequisite: MAT 125, MAT 131, or AMS 151

DEC: *E*
SBC: *STEM+*

3 credits

SUS 206: 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 affects 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. Formerly offered as SBC 206; not for credit in addition to SBC 206.

Prerequisite: ECO 108

DEC: *F*
SBC: *SBS+*

3 credits

SUS 301: 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. Formerly offered as CSK 302; not for credit in addition to CSK 302.

Prerequisite: WRT 102 and declared major in: COS, EDP, EHI, EHM, ENS, or SUS

SBC: *SPK*

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: SUS 201 (formerly SBC 201); U3/U4 status

3 credits

SUS 305: 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. Formerly offered as CSK 305; not for credit in addition to CSK 305.

Prerequisite: SUS 111 (formerly SBC 111) or ENS 101
Advisory Prerequisite: POL 102 or SOC 105

DEC: *F*
SBC: *SBS+*

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: ECO 108

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: SUS 206 (formerly SBC 206)

SBC: *STAS*

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 the 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: SUS 206 (formerly SBC 206)

3 credits

SUS 311: 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? Formerly offered as SBC 311; not for credit in addition to SBC 311.

Prerequisite: SUS 111 (formerly SBC 111), or ENS 101, or GEO 101; POL 102 or SOC 105

DEC: *H*
SBC: *STAS*

3 credits

SUS 314: 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. Formerly offered as EHM 314; not for credit in addition to EHM 314.

Prerequisite: U3 or U4 status

DEC: *J*
SBC: *GLO*

3 credits

SUS 316: Cuba and Sustainability

For a variety of reasons, Cuba represents a wonderful case study for the value of using the natural history, arts, media and cultural traditions as a means of encouraging citizens to adopt environmentally sustainable practices. Working with the University of Havana Geography department, as well as Artes Escenicas Cubanas (Peforming Arts organization) and Cuban writers about the environment, the class will explore the complexities of sustainability with an emphasis on the role of humanities in a global context with hands-on experience. Formerly offered as EHM 316; not for credit in addition to EHM 316.

DEC: *G*
SBC: *EXP+, GLO, HUM*

3 credits

SUS 317: 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. Formerly offered as SBC 307; not for credit in addition to SBC 307.

Prerequisite: WRT 102

DEC: *K & 4*
SBC: *SBS+, USA*

3 credits

SUS 318: 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. Formerly offered as SBC 308; not for credit in addition to SBC 308.

Prerequisite: POL 102

DEC: *K*
SBC: *SBS+*

3 credits

SUS 319: 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. Formerly offered as EHI 310; not for credit in addition to EHI 310.

Prerequisite: BIO 201

SBC: *STEM+*

3 credits

SUS 320: Utopia and Dystopia and the Environment in Literature and Culture

Examines 20th and 21st century Western cultural depictions of utopias and dystopias in literature (nonfiction, fiction). The course will consider literary representations of ideal or fallen societies, as well as 'real life' communities such as intentional, communal, co-operative `utopic' models across the globe. Students will consider the `sustainability' implications of living in `utopic' and `dystopic' communities. Students will write six short analytical essays about the course readings, give an oral and visual presentation on a real-life global utopic/dystopic community, and design their own model environmental utopic/dystopic community. Formerly offered as EHM 321; not for credit in addition to EHM 321.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher

DEC: *G*
SBC: *HFA+*

3 credits

SUS 321: 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. Covers the Interdisciplinary topic for the English major. This course is offered as both EGL 319 and SUS 321. Formerly offered as SBC 321; not for credit in addition to SBC 321.

Prerequisite: WRT 102
Advisory Prerequisite: SUS 203 (formerly SBC 203)

DEC: *G*
SBC: *HFA+, WRTD*

3 credits

SUS 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. Formerly offered as EHI 322; not for credit in addition to EHI 322.

Prerequisite: BIO 201

SBC: *STEM+*

3 credits

SUS 323: Environmental Justice

Explores the inequitable distribution of environmental risks, such as exposure to toxic chemicals and materials, versus environmental benefits such as access to environmental protections and natural resources. Most importantly, this course explores the essential question of 'why' there is such an inequity and, oftentimes, 'who' permits or allows disparate treatment. As Dr. Robert Bullard states, "who gets what, why, and how much?" Understanding the moral questions that underpin environmental justice requires exploration from the sociopolitical standpoint, but also through legal, economic, policy, and historical standpoints on a domestic, international, and transnational scale. The course will include readings from sociology and political science texts and perspectives, as well as literary and film portrayals of environmental justice topics. Formerly offered as EHM 323; not for credit in addition to EHM 323.

Prerequisite: WRT 102
Advisory Prerequisite: SUS 203 (formerly SBC 203)

DEC: *H*
SBC: *CER, STAS, WRTD*

3 credits

SUS 324: Human Geography and the Environment

A study of the historical, geographical, and humanistic foundation for understanding the environment and the environmental issues that confront us today. The fundamental principle of this course is that environmental dynamics are inseparable from social, cultural, political, and economic processes and relations. By studying these complex relationships between humans and the natural environment over time and through space, students examine how human activity impacts the environment in different geographical regions and periods and how the environment responds.

Prerequisite: ENS 101 or POL 102 or SOC 105 or SUS 111 or SUS 307

SBC: *SBS+*

3 credits

SUS 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. Formerly offered as SBC 325; not for credit in addition to SBC 325.

Prerequisite: WRT 102
Advisory Prerequisite: SUS 203 (formerly SBC 203)

DEC: *G*
SBC: *HFA+, WRTD*

3 credits

SUS 326: 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. Formerly offered as EHI 326; not for credit in addition to EHI 326.

Prerequisite: BIO 201

DEC: *E*
SBC: *STEM+*

3 credits

SUS 328: Ecofeminism, Literature & Film

Ecofeminism, Literature, and Film will examine the connections among ecology and feminism in literature, film, conservation and sustainability. Ecofeminism is a complex ecocritical and philosophical approach to reading literature, film, and culture; it asks that we rethink our relationship to the earth and our responsibilities as human beings to all living creatures and to people of all races, cultures, and genders. In this course, students will study ecofeminist concepts in poetry, nonfiction essays, fiction, and films, and they will examine the work of prominent women ecologists, conservationists, and environmentalists. Formerly offered as EHM 322; not for credit in addition to EHM 322.

Prerequisite: WRT 102
Advisory Prerequisite: SUS 203 (formerly SBC 203)

DEC: *G*
SBC: *HFA+, WRTD*

3 credits

SUS 329: Environmental Film, Media, Arts

This course is designed to develop visual communication skills and strategies to inspire environmental awareness and advocacy. The course extends beyond two-dimensional graphic design to include critical approaches to the practice of environmental design, film and visual art. With a focus on strategic messaging and technical skills, students will learn design principles, image making and filmmaking to bridge environmental issues through diverse media texts. Students will pick one topic, which will be used throughout the course as a primary theme and applied to various media and art projects. Each media project will use the tools of visual communication to engage the public and foster positive environmental, social, political, and ethical change. Formerly offered as EHM 325; not for credit in addition to EHM 325.

Prerequisite: SUS 111 (formerly SBC 111) or ENS 101; U3 or U4 status
Advisory Prerequisite: SUS 203 (formerly SBC 203)

SBC: *HFA+*

3 credits

SUS 340: 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. Formerly offered as EHI 340; not for credit in addition to EHI 340.

Prerequisite: BlO 201

DEC: *H*
SBC: *STAS*

3 credits

SUS 342: Energy and Mineral Resources

This class will explore the origin, distribution, and importance of energy and mineral resources to modern civilization, with an emphasis 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 D.E.C. E or SNW course

DEC: *H*
SBC: *STAS*

3 credits

SUS 343: Age of the Anthropocene

Provides a deeper understanding of the ways in which humans have interacted with and transformed the planet during recent geologic time, including the Holocene, Industrial Revolution, and into the present. We consider Earth as a global ecosystem, characterized by interacting and dynamic systems, including natural and anthropogenic. This course critically examines the current interpretations and applications of the term Anthropocene, and identifies the key tenants and societal outcomes of this powerful, and sometimes conflicting, idea as applied today in science, sustainability, and beyond.

Prerequisite: one of the following courses: SUS 111 (formerly SBC 111), SUS 113 (formerly SBC 113), ENS 101, GEO 101, GEO 102, ENV 115, CHE 131

DEC: *H*
SBC: *STAS*

3 credits

SUS 344: 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. Formerly offered as EHI 343; not for credit in addition to EHI 343.

Prerequisite: SUS 111 (formerly SBC 111) or ENS 101; ENV 115 or CHE 131; BIO 201

DEC: *H*
SBC: *STAS*

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. May be repeated as the topic changes.

Prerequisite: ENS 101 or SUS 111 (formerly SBC 111); U3/U4 status

3 credits

SUS 351: Design and Implement a Research Project in Ecotoxicology

Research, design and implement a unique project in ecotoxicology. Course covers literature reviews, hypothesis formation, initial implementation of a research project, and some write-up. Projects vary by year but may involve ecotoxins such as acid rain, heavy metals, pesticides, plastics or herbicides and organisms such as soil microbes and/or earthworms. Students are encouraged but not required to enroll in SUS 352, offered in the spring, to complete and communicate their project. Course may be repeated once with director's approval. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Formerly offered as EHI 350; not for credit in addition to EHI 350.

Prerequisite: C or better in one of the following: BIO 201, BIO 202, BIO 203, CHE 115, CHE 123, CHE 129, CHE 131, CHE 141, CHE 152, PHY 121, PHY 125, ENV 115

SBC: *EXP+, STEM+*

3 credits

SUS 352: Conduct and Communicate a Research Project in Ecotoxicology

Conduct and communicate a student-designed project in ecotoxicology. Course covers data collection, data analysis and write up. Students will communicate their research at an appropriate venue such as URECA. Projects vary by year and will involve ecotoxins such as acid rain, heavy metals, pesticides, plastics or herbicides and organisms such as soil microbes or earthworms. Course builds on a project initiated in SUS 351, but SUS 351 is not a prerequisite. Course may be repeated once with the director's approval. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Formerly offered as EHI 351; not for credit in addition to EHI 351.

Prerequisite: C or better in one of the following: BIO 204, 205, 207, CHE 133, 134, 154, PHY 123, 124, 133, 134, 191, 192, SUS 351 (formerly EHI 350)

SBC: *EXP+*

3 credits

SUS 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. Formerly offered as SBC 354; not for credit in addition to SBC 354.

Prerequisite: SUS 117 (formerly SBC 117)

SBC: *STEM+*

3 credits

SUS 362: Resilient Communities

Resilience as a process can be embodied by communities who proactively prepare for, absorb, recover from, and adapt to actual or potential future adverse events, instead of bearing repeated damage and continuously demand for federal disaster assistance. This course explores the idea of resilience as an

outcome and as a process from different perspectives and in different contexts. We will first study resilience through the lens of sociopolitical ecology of risk and vulnerability. Then we will explore resilience in the face of natural, social and economic instabilities or shocks. Finally we will discuss long term risk management, governance models, policies and politics involved in making our communities more resilient.

Prerequisite: EDP 301 or EDP 302 or SOC 344

3 credits

SUS 366: Philosophy of 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. This course is offered as both PHI 366 and SUS 366.

Prerequisite: PHI 104 or PHI 105

DEC: *G*
SBC: *CER, HFA+*

3 credits

SUS 374: Environment and Development in African History

Provides a critical exploration of the history and political-economy of environmental changes and human activities in Africa from earlier times to the present. It examines the ways in which the dynamics of human-environment relationship have shaped the development of African societies and economies from the rise of ancient civilizations to the contemporary problems of war and famine. Although significant attention will be given to the pre-colonial era (like the impacts of iron-working, irrigation, deforestation and desertification), the focus of the course will be on the 20th and century and after, looking at the impacts of imperialism, colonialism, globalization and the postcolonial quest for development on the state of the environment in Africa. In the discussion, we will demonstrate that the shaping of African environments and ecologies is a product of complex, evolving and interconnected developments between humans and nature within and beyond the African continent. Offered as both AFS 374 and SUS 374. Not for credit in addition to SBC 320 or SBC 374.

Prerequisite: U3 or U4 status

DEC: *J*
SBC: *GLO, SBS+*

3 credits

SUS 386: The Maya

For many, the word 'Maya' evokes images of a long dead culture and ruined pyramids. This course uses that familiarity as a starting point and follows the history of the Maya from ancient times to the present. We begin with an overview of what scholars know about the ancient Maya before tracing their experiences since the Spanish conquest, placing emphasis on Spanish colonization in the lowland areas of Mesoamerica, Mexico's War of the Castas, and the diverse experiences of the modern Maya including the Guatemalan Civil War and the Chiapas uprising, the impact of foreign tourism, and the experience of transnational migration. Special attention will be paid to the ways in which environmental and agrarian issues have impacted this diverse group of peoples. Offered as both HIS 386 and SUS 386. Formerly offered as EHM 386; not for credit in addition to EHM 386.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *J*
SBC: *SBS+*

3 credits

SUS 390: Environmental Humanities Capstone

This course is a capstone experience in which students will develop a research topic, identify an audience of appropriate stakeholders, decide on the appropriate medium, develop a significant portfolio of peer-reviewed sources, vetted sources, interviews, and direct experiences, shaping and structuring this research into a final product which will be presented in class for peer review and then will be presented to your designated audience in a venue outside the university. The goal of this class is that students not only learn how to create a major project but that they also seek the appropriate audience and create possibilities for future internships and/or employment.

Prerequisite: U3 or U4 status; major in SUS or permission of the department

SBC: *ESI, HFA+*

3 credits

SUS 401: Integrative, Collaborative Systems Studies

Problem-based capstone course. Formerly offered as SBC 401; not for credit in addition to SBC 401.

Prerequisite: U3 or U4 status; major in COS, EHI, EHM, or SUS, or permission of the department

SBC: *ESI*

3 credits

SUS 405: Environmental Sustainability in Tanzania

Focus on environmental issues in Tanzania as a sample of the developing world, with emphasis on present condition and future prospects. We examine how climate, technology development, and agriculture affect the environment. Also, impacts of environmental degradation and national policies (including the United Nations Sustainable Development Goals) on poverty reduction, natural resources, health and economic growth are discussed.

Prerequisite: one of the following: SUS 111 (formerly SBC 111), ENS 101, GEO 101

SBC: *EXP+, GLO*

3 credits

SUS 406: Coastal Housing Resilience

This course addresses the inequalities of coastal housing vulnerability. With the increasing frequency of coastal hazards, affordable housing is disproportionately damaged, while the tourism industry loses revenue. These perilous dynamics are widening disparities in availability and vulnerability of housing types that serve two different groups: low-moderate income permanent residents and seasonal residents and tourists. Through case studies and community-engaged learning, this course will engage students in learning the processes and mechanisms that shape the inequalities in vulnerability, recovery and resilience of housing in coastal communities.

Prerequisite: SUS 362 or permission of instructor.

3 credits

SUS 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/

policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

SUS 459: Write Effectively in Sustainability

A zero-credit course that is taken in association with a 300- or 400-level course approved by the major. SUS 459 provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

SUS 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

SBC: *EXP+*

0-3 credits, S/U grading

SUS 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

SBC: *EXP+*

3 credits, S/U grading

SUS 487: Research in Sustainability

Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.

Prerequisite: Permission of instructor

SBC: *EXP+*

0-6 credits

SUS 488: Internship in Sustainability Studies

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 SoMAS Undergraduate Program Director

SBC: *EXP+*

0-12 credits, S/U grading

SWA

Swahili

SWA 101: Intensive Elementary Swahili

An intensive course covering the elementary Swahili program in one semester, satisfying the language requirement. This course is designed for students who have no prior knowledge of the language.

DEC: *S3*
SBC: *LANG*

6 credits

THR

Theatre Arts

THR 100: Performing and Performance

Study and practice in performance and communications: interpersonal communication, public presentations, and theatrical performance.

DEC: *D*
SBC: *ARTS*

3 credits

THR 101: 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.

DEC: *D*
SBC: *ARTS*

3 credits

THR 103: Introduction to Theatre Design

An introduction to design and technology for theatrical performances. Through the lens of design and technology, this course highlights the collaborative nature between this field with performance and dramatic text. The course will examine genres, innovations, cultural context, and the creative process as it applies to design and technology and its integral relationship with all areas of production. It also takes a cross-disciplinary approach while examining a full array of theatrical forms and creation, from Broadway to the most current trends in theatre making. This course is an essential foundational step for students interested in the field of theatre arts or live performances.

DEC: *D*
SBC: *ARTS*

3 credits

THR 104: 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.

DEC: *B*
SBC: *HUM*

3 credits

THR 105: Acting I

The basic vocabulary and skills of the actor's craft. Students explore acting techniques through theatre games and improvisation.

DEC: *D*
SBC: *ARTS*

3 credits

THR 107: The Broadway Musical

A study of Broadway musicals and the development of musical theatre, from the early origins through the groundbreaking classics of the Golden Age up to today. The course includes an examination of styles, cultural influences, performances, and the theatre artists who shaped this unique and popular art form.

SBC: *ARTS*

3 credits

THR 110: Public Speaking

An introduction to public speaking techniques that includes increased awareness of physical and vocal expression and speech content.

SBC: *SPK*

3 credits

THR 111: Shop Safety

Students are taught the correct way to use power tools, lighting equipment and hand tools to insure the safety of themselves and others in the shop. Hands on experience, and no previous experience needed.

1 credit

THR 115: Stagecraft

An introduction to theatre stagecraft, this course teaches practical skills in stage-work, sound and lighting. In addition to class periods, labs at the end of the semester will be required. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

SBC: *TECH*

4 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. This course is offered as both MDA 117 and THR 117.

3 credits

THR 200: Theatre Practicum I

Students develop their skills in various areas of costume, set construction, lighting, props, media, sound, makeup, scene painting, and marketing through work on building crews for Theatre Arts department productions. Assignments are project-based and require considerable time outside of class. May be repeated once.

Prerequisite: THR 115

0-3 credits

THR 201: 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

DEC: *B*
SBC: *HFA+*

3 credits

THR 202: 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

DEC: *B*
SBC: *HFA+*

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 207: The Theatre of Baseball

The study and analysis of the American Pastime, its history, presentation, and impact through the lens of theatre and performance.

DEC: *G*
SBC: *ARTS*

3 credits

THR 214: Theatre in New York

A workshop seminar on contemporary, alternative performance forms and mainstream theatre. Emphasis is on the development of critical perspectives and the writing skills needed to articulate responses to theatrical experiences through seminar discussions and writing workshops relevant to performances seen on trips to theatres in New York City and the region. This course requires students to make frequent trips to New York City to see productions; and students are responsible for the cost of tickets, most of which will be $20 or less.

Prerequisite: U2 standing or higher

DEC: *D*
SBC: *ARTS*

3 credits

THR 215: Introduction to Design

A course covering the aesthetics and traditions of scenic, costume and lighting design. The lighting portion of the course includes an exploration of color, intensity and control through projects with theatre light boards as well as lighting design and drafting principles. The costume portion of the course introduces design and rendering basics as well as intermediate skill projects. The scenic part of the course includes exercises in design rendering, drafting and modeling which allow students to conceive and develop design concepts and ideas.

Prerequisite: THR 115

3 credits

THR 216: 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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

DEC: *D*
SBC: *ARTS*

3 credits

THR 224: Experimental Studio

A collaboration studio in which students explore their creativity while learning the basic compositional skills of theatre. Students create short performances that focus on the living actor, experimentation, collective action and the sharing of work and ideas with the public.

DEC: *D*
SBC: *ARTS, EXP+*

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 and permission of the instructor

3 credits

THR 245: Movement for Actors

This class investigates movement unique to theatre performances. In addition to enhancing physical flexibility students explore the use of masks and character development. Range of motion as it relates to the details of alignment,

support, weight, space, and time are linked to an understanding of anatomy in the process of creating movement-based performances, including neutral mask, character building and abstracts compositions. Course assignments will combine readings in acting theory with practical application. Students will learn the basic principles of solo movement-based performance as well as ensemble work. Requires significant physical participation.

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. This course is offered as both MDA 277 and THR 277.

3 credits

THR 291: Marketing for the Arts and Performing Arts

A creative, practical, project oriented class in arts marketing, this course teaches strategic ways of thinking about audience, community, and performing arts markets. Students will receive hands on training by applying marketing theories to the Department of Theatre Arts' productions. Students will design audience development and community outreach strategies that add value to and encourage participation in arts events throughout the community, including market research to gain a greater understanding of the market forces that drive ticket sales and arts participation.

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 300: Theatre Practicum II

Students serve as running crew and crew chiefs, while developing their skills in various areas of costume, set construction, lighting, props, media, sound, makeup, scene painting, and marketing through work on building crews for Theatre Arts department productions. Assignments are project-based and require considerable time outside of class. May be repeated once.

Prerequisite: THR 320 or THR 321

0-3 credits

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 the instructor

1 credit

THR 304: Arts Marketing

This is a creative, practical, project-oriented class in arts marketing, community building through the arts, and entrepreneurism. This course teaches strategic ways of thinking about audience, community, and performing arts markets. Students will receive hands-on training by applying marketing theories to Department of Theatre Arts' productions and Staller [Off]-Center events. Occasional guest speakers will support class topics. Students will design audience-development and community-outreach strategies, adding value to and encouraging participation in arts events throughout the community. They will do market research and gain greater understanding of the market forces that drive ticket sales and arts participation. The course will culminate in students designing and presenting a complete marketing plan for an arts organization of their choice (subject to instructor's approval). Repeatable to a maximum of 6 credits.

SBC: *EXP+*

3 credits

THR 305: Lighting and Sound Laboratory

Development of skills needed in installation and control of lighting and sound equipment. May be repeated once. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Permission of the instructor

1 credit

THR 306: Stagecraft Laboratory

Development of skills needed in theatre construction. May be repeated once.

Prerequisite: Permission of the instructor

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: Permission of the instructor

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 preceeding fall semester.

Prerequisite: THR 308

3 credits

THR 312: American Theatre and Drama

The study of American theatre and dramatic literature from its earliest origins, including the influence of the European tradition, through its original contributions to world theatre in the 20th century. Emphasis will be placed on major events and cultural influences in American society, especially the emergence of underrepresented voices in mainstream drama.

Prerequisite: WRT 102; one ARTS or HUM course

DEC: *K*
SBC: *DIV, HFA+, WRTD*

3 credits

THR 313: 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.

Prerequisite: WRT 102 and departmental consent

DEC: *J*
SBC: *HFA+*

3 credits

THR 315: Topics in Theatre History & Theory: The Classical Age

Taking a deep dive into particular topics in theatre history and theory from earliest records of ritual and performance through the early 18th century, this course will focus on an area, such as the drama of the Greeks and the Renaissance, the acting theory of Zeami and the Natyasastra, or the relationship between theatre and religion in the medieval period and the Spanish Golden Age. We will study particular playwrights, performance conventions, and dramaturgy. We will cover the historical and cultural context in which different forms of theatre occurred, changes in theatrical convention, and the drama of the period. Previously offered as THR 315 Advanced Topics in Theatre History I. Course may be repeated to a maximum of 6 credits.

Prerequisite: U3 or U4 status
Advisory Prerequisite: a 200-level EGL or THR course

DEC: *I*
SBC: *HFA+*

3 credits

THR 316: Topics in Theatre History & Theory: The Modern Era

Taking a deep dive into particular topics in theatre history and theory from the early 18th century to contemporary performance. We will study innovators, artists, and theorists to think about the modern era from the perspective of theatre and performance. We will cover the historical and cultural context in which different forms of theatre occurred, changes in theatrical convention, and the drama of the period. We will examine topics such as Realism, Surrealism, Portstructuralism, and Postcolonialism. Some of the figures we may investigate more deeply are Stanislavsky, Chekhov, Brecht, Artaud, Meyerhold, O'Neil, Soyinka, and Wilson (both August and Robert). Previously offered as THR 316 European History and Drama: The Modern Era. Course may be repeated to a maximum of 6 credits.

Prerequisite: U3 or U4 status
Advisory Prerequisite: a 200-level EGL or THR course

DEC: *I*
SBC: *HFA+*

3 credits

THR 319: AIDS Drama, 1980s & 90s

A study of the early years of the AIDS epidemic and the theatre's response. This course will focus on the seminal AIDS plays and films of the 1980s and 90s, with emphasis on the artists who revealed the impact of AIDS on the gay community, and the social-political reaction to both. Parallels to the COVID-19 pandemic will also be made. Guest speakers may be invited to address scientific and social aspects of HIV/AIDS, as they relate to the topics addressed in the plays and films.

Prerequisite: WRT 102; one ARTS or HUM course

SBC: *HFA+*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: THR 115

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: THR 115

3 credits

THR 322: Acting III

Advanced work in scene study limited to one or two major playwrights.

Prerequisites: THR 205, THR 230, and THR 245

3 credits

THR 323: Costume Design

Advanced study in costume design involving play analysis, design, and presentation techniques with special emphasis on historical research. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: THR 223

3 credits

THR 325: Screenwriting

A course covering the fundamentals of screenwriting--structure, character creation, visual storytelling, format, the writing of narrative and dialogue--via focused, creative exercises and the writing of several short screenplays. Covers the Genre / Media topic for the English major. Formerly offered as THR 325 Scriptwriting for Film and Television; not for credit in addition to THR 325 Scriptwriting for Film and Television. This course is offered as both EGL 325 and THR 325.

Prerequisite: WRT 102; one D.E.C. B or HUM course; or permission of the instructor

SBC: *ARTS*

3 credits

THR 326: Playwriting

A workshop devoted to planning and writing finished scripts for the stage. Covers the Genre / Media topic for the English major. This course offered as both EGL 387 and THR 326.

Prerequisite: WRT 102; one D.E.C. B or HUM course; one D.E.C. D or ARTS course

SBC: *ARTS*

3 credits

THR 334: Performance Art I: The European Avant-Garde

This course explores the history and theory of avant-garde performance from its inception in the early 20th century through Surrealism. Questions addressed focus on the choices made by artists, and the forces within the culture that encourage the forms they use.

Course projects include a performance that reconstructs an event from one of the periods studied and a term paper. This course is offered as both ARH 334 and THR 334.

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

DEC: *G*
SBC: *HFA+*

3 credits

THR 335: The Musicals of Stephen Sondheim

This course will examine the major works of one of the most influential composer-lyricists in the musical theatre: Stephen Sondheim. The varied musical styles and theatrical genres of his works will be discussed, including the exciting challenges they present for a director and the singing-actor when staging them. The contributions of the collaborators who brought Sondheim's work to life on stage will also be covered. No music training or performing background is required.

Prerequisite: one course in SBC categories ARTS or HUM
Advisory prerequisites: THR 101 or THR 104 or THR 107

SBC: *ARTS*

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. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Prerequisite: THR 115

SBC: *TECH*

3 credits

THR 344: 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

DEC: *G*
SBC: *HFA+*

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 115

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. 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. 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 354: Topics in Theatre

In-depth study of a specific subject in the history, theory, aesthetics, criticism, or dramatic tradition of the theatre. May be repeated as the topic changes.

Prerequisite: WRT 102

3 credits

THR 355: Media and Production Design for Theatre

Uses analysis and design to explore how media and projections can be used to construct narrative in theatre and support non-narrative forms of performance. Digital and analog media are explored for their potentials and limitations. Students learn how the media is produced and transmitted will be discussed as part of creating a video design. Students will produce projection projects using different kinds of media during the course requiring work outside of class time.

Prerequisite: THR 115

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: Creative Process in Theatre I

Students in this course prepare a theatrical event for a future production. Students will undertake dramaturgical work including analysis of the subject matter, study of the historical context, and examination of controversies in public discourse. Depending on the subject of the proposed production, students will generate material through improvisation, creating scenarios, and constructing images that may be used in the final project. The course will require in-class presentations, small group work, and participation in final class projects. Students are expected to spend time outside of class gathering material and completing computer-based assignments relevant to the production.

Prerequisite: U3 and U4 status and permission of the instructor

3 credits

THR 381: Creative Process in Theatre II

A continuation of THR 380. Students rehearse, design, build, market, and perform projects initiated during the first course in the sequence. The course culminates in a public performance. Students are expected to spend time outside of class researching, developing material, rehearsing, and completing other assignments needed for the success of the production.

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.

Prerequisites: U4 standing; permission of instructor

SBC: *ESI*

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: Junior or Senior Standing

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, THR 230, and THR 245

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 439: Directing II

Advanced work in interpretation and handling of production complexities. Students mount a production.

Prerequisite: THR 333 or THR 438

3 credits

THR 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any THR course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

THR 459: Write Effectively in Theatre Arts

A zero credit course that may be taken in conjunction with any 300- or 400-level THR course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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 minor credit.

Prerequisite: Theatre arts major; U4 standing; permission of instructor and department

SBC: *EXP+*

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 minor credit.

Prerequisite: THR 475; permission of instructor and department

SBC: *EXP+*

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. This course is offered as both MDA 480 and THR 480.

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. Repeatable to a maximum of six credits.

Prerequisite: Permission of department

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.

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. This course is offered as both MDA 488 and THR 488.

Prerequisites: Permission of instructor and department

SBC: *EXP+*

0-6 credits, S/U grading

TRK

Turkish

TRK 101: Intensive Elementary Turkish

An intensive course covering the elementary Turkish program in one semester, satisfying the language requirement. This course is designed for students who have no prior knowledge of the language.

DEC: *S3*
SBC: *LANG*

6 credits

TRK 111: Elementary Turkish I

An introduction to spoken and written Turkish, stressing pronunciation, speaking, comprehension, reading, writing, and culture. This course is designed for students who have no prior knowledge of this language. A student who has had two or more years of Turkish in high school (or who has otherwise acquired an equivalent proficiency) may not take TRK 111 without written permission from the supervisor of the course. May not be taken for credit in addition to TRK 101.

SBCP: *This course provides partial credit for the following: LANG_PART*

3 credits

TRK 112: Elementary Turkish II

A continuation of the introduction to spoken and written Turkish, stressing pronunciation, speaking, comprehension, reading, writing, and culture. By the end of the class, students will understand and communicate at the novice-mid or novice-high level on the ACTFL scale. May not be taken for credit in addition to TRK 101.

Prerequisite: C or better in TRK 111

DEC: *S3*
SBC: *LANG*

3 credits

TVW

Televison Writing

TVW 220: Advanced TV Writing

An in-depth study of the techniques for writing for television. Topics include: Writing the Comedy Script; writing the Drama Script. May be repeated as topic changes.

Prerequisite: FLM 215

SBC: *HFA+, WRTD*

3 credits

TVW 221: The Writers Room

A collaborative writing workshop designed to mimic a professional writers room. Students collaboratively develop and write a tv show or web series.

Prerequisite: TVW 220

SBC: *HFA+, WRTD*

3 credits

UKR

Ukrainian

UKR 111: Elementary Ukrainian I

An introduction to spoken and written Ukrainian, stressing pronunciation, speaking, comprehension, reading, and writing. The course is designed for students who have no prior knowledge of the language.

SBCP: *This course provides partial credit for the following: LANG_PART*

4 credits

UKR 112: Elementary Ukrainian II

An introduction to Ukrainian. The course is a continuation of UKR 111, and is designed to develop functional competence in speaking, listening, reading, writing at the elementary level of Ukrainian and to acquaint students with aspects of Ukrainian culture.

Prerequisite: C or better in UKR 111 or placement into 112.

SBC: *LANG*

4 credits

VIP

Vertically Integrated Projects

VIP 102: Vertically Integrated Project Exploration

Students participate in weekly meetings of a Vertically Integrated Projects (VIP) team. VIP teams are advised by one or more faculty and engage sophomores through doctoral team members on multi-year multidisciplinary projects in research, design, innovation and entrepreneurship on various topics. Students of this class are candidate members and must apply to continue participation on the team. This course satisfies the 102-seminar graduation requirement for all first-year students. Not for credit in addition to SBU 102.

1 credit

VIP 295: Introductory Multidisciplinary Project

Students participate in a multi-term, multidisciplinary project, working with team members ranging from sophomores through seniors and graduate students. Projects are advised by one or more faculty on topics of research, design, innovation and entrepreneurship. While a project is framed within a faculty member's area of expertise, contributions are needed from a diverse array of disciplines.This course is intended for introductory team members; students are expected to maintain involvement with the same project team for multiple terms. Interested students must apply for admission to the Vertically Integrated Projects Program. May be repeated for a maximum of 3 credits.

Prerequisites: VIP Program participant

1 credit

VIP 395: Intermediate Multidisciplinary Project

Students participate in a multi-term, multidisciplinary project, working with team members ranging from sophomores through seniors and graduate students. Projects are advised by one or more faculty on topics of research, design, innovation and entrepreneurship. While a project is framed within a faculty member's area of expertise, contributions are needed from a diverse array of disciplines. This course is intended for intermediate team members or students who have working knowledge of the project topic. Students are expected to maintain involvement with the same project team for multiple terms. This course may be repeated for a maximum of 3 credits.

Prerequisites: VIP 295 or permission of VIP Program Director; VIP Program participant

SBCP: *This course provides partial credit for the following: EXP+_PART*

1 credit

VIP 396: Intermediate Multidisciplinary Project Practicum

This course is a supplement to VIP 395 for team members wishing to commit more effort towards their multidisciplinary project. Students who enroll in 1-credit of VIP 395 may register for 1-credit of VIP 396 in a semester for a maximum of 2 VIP credits. This course may be repeated for a maximum of 3 credits.

Corequisite: VIP 395

1 credit

VIP 487: Advanced Project Experience

Students participate in a multi-term, multidisciplinary project, working with team members ranging from sophomores through seniors and graduate students.

Projects are advised by one or more faculty on topics of research, design, innovation and entrepreneurship. While a project is framed within a faculty member's area of expertise, contributions are needed from a diverse array of disciplines. This course is intended for team members who wish to continue their project throughout the summer or who wish to remain an integral part of the team without taking on additional credits. May be repeated.

Prerequisites: VIP Program participant

0 credit, S/U grading

VIP 495: Advanced Multidisciplinary Project

Students participate in a multi-term, multidisciplinary project, working with team members ranging from sophomores through seniors and graduate students. Projects are advised by one or more faculty on topics of research, design, innovation and entrepreneurship. While a project is framed within a faculty member's area of expertise, contributions are needed from a diverse array of disciplines. This course is intended for advanced team members with two or more semesters of experience on the same project. Students are expected to maintain involvement with the same project team for multiple terms. This course may be repeated for a maximum of 5 credits.

Prerequisites: VIP 395 or permission of VIP Program Director; VIP Program participant

SBCP: *This course provides partial credit for the following: EXP+_PART*

1 credit

VIP 496: Advanced Multidisciplinary Project Practicum

This course is a supplement to VIP 495 for team members wishing to commit more effort towards their multidisciplinary project. Students who enroll in 1-credit of VIP 495 may register for up to 2-credits of VIP 496 in a semester for a maximum of 3 VIP credits. This course may be repeated for a maximum of 10 credits.

Corequisite: VIP 495

1-2 credits

WAE

Writing Academic English

WAE 190: Intermediate Writing Academic English

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. Writing placement score determines placement in the course. A through F grading only. The GPNC option may not be used. This course may be repeated until a satisfactory grade is achieved.

Prerequisite: A score of 1 on the writing assessment

3 credits

WAE 192: High Intermediate Writing Academic English

The purpose of the course is to provide students with writing experiences designed to help them express ideas effectively in sentences and paragraphs. It strives to develop students' writing skills through the use of the dictionary, practicing structures of written English, and learning to edit in preparation for advanced editing in WES 194. To accomplish these goals, students work on expanding their English competence on the sentence level, work on expanding their vocabulary through reading and use of the dictionary, work on strategies that promote independence and editing of their writing and complete many short writing assignments. Grammar proficiency tests are administered throughout the semester. These tests emphasize the use of particular grammatical points in the context of a creative effort on the part of the student. A final exam is administered that is judged by a committee composed of ESL writing instructors. The committee decides if the student possesses the skills necessary to succeed in ESL 194. A through F grading only. The GPNC option may not be used. This course may be repeated until a satisfactory grade is achieved.

Prerequisite: A score of 1.5 on the writing assessment or a grade of C or better in WAE 190

3 credits

WAE 194: Advanced Writing Academic English

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. Writing placement score or successful completion of ESL 192 determines placement in the course. A through F grading only. The GPNC option may not be used. This course may be repeated until a satisfactory grade is achieved.

Prerequisite: A score of 2 on the writing assessment or a grade of C or better in WAE 192

3 credits

WRT

Writing

WRT 101: Introductory Writing Workshop

An introduction to the foundations of writing, offering students a variety of rhetorical strategies and helping them develop creative and critical thinking, fluency, and correctness. Coursework creates ample opportunities for significant practice in reading, writing, and critical analysis. Emphasis on writing as a revision-based process. WRT 101 prepares students for WRT 102 and postsecondary academic writing. This course may be repeated until a satisfactory grade is achieved.

Prerequisite: Writing Placement Score of 3 or WAE 194 with a C or higher

DEC: *A1*
SBCP: *This course provides partial credit for the following: WRT_PART*

3 credits, ABC/U grading

WRT 102: Intermediate Writing Workshop

A study of strategies for extended academic writing assignments including critical analysis, argument or point of view, and multi-source, college-level research essays. Students continue to develop rhetorical awareness, analytical proficiency, and academic research skills. At the end of the course students create a multimodal ePortfolio of final revised essays to be evaluated by their instructor and at least one outside reader. This course may be repeated until a satisfactory grade is achieved.

Prerequisite: One of the following: Writing Placement Score of 4, WRT 101 with C or higher or transfer equivalent, SAT EBRW >= 580, ACT ELA >=23, AP ELC or AP ELGC >=3

DEC: *A2*
SBC: *WRT*

3 credits, ABC/U grading

WRT 200: The Rhetoric of Grammar and Style

Students will examine conventions of grammar and style to understand how they are derived and applied in common formal and informal writing situations. Students will experiment with prose style as a way to achieve rhetorical effectiveness. Students will study aspects of grammar that are most relevant to clear

writing, including punctuation, nouns, verbs, adjectives, adverbs, conjunctions, phrases, clauses, gerunds, participles, infinitives, and complete sentences. Sentence imitation, sentence combining, and sentence invention techniques are used to help students become more flexible in their syntactic fluidity.

Prerequisite: WRT 102 or equivalent or permission of the Undergraduate Program Director

SBC: *ESI, HUM*

3 credits

WRT 201: Principles of Professional Writing

An introduction to the principles and practices of professional writing, this course is designed to teach students about foundational skills and approaches needed for a variety of professional writing situations. Students learn and apply core concepts, analytical skills, and strategies of effective workplace writing through genres common to a range of fields, such as business, industry, education, the arts, publishing, nonprofit organizations, law, international affairs, and public service and health-related professions. Through engagement with writing studies theory and research, and exposure to different types of professional writing, students will develop an understanding of relevant rhetorical, social, cultural, and ethical considerations.

Prerequisite: WRT 102 or equivalent

SBC: *ESI, SPK*

3 credits

WRT 300: Theories and Methods in Rhetoric and Writing

An exploration of theories and methods of rhetoric and rhetorical criticism. Moving through historical approaches to rhetorical study to provide a foundation in rhetorical theory, the class examines contemporary methods in rhetoric research and practice to equip students with skills in invention, deliberation, and persuasion. The course includes a final project that uses contemporary rhetorical methods to examine the ethical practices underlying persuasion in every-day activities, communications, or objects.

Prerequisites: WRT 102 and COM 100

SBC: *CER, HFA+*

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: WRT 102 or equivalent

3 credits

WRT 302: 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: WRT 102 or equivalent

DEC: *G*
SBC: *HFA+*

3 credits

WRT 303: The Personal Essay

We all have stories to tell about our lives. In this course, we will explore how to tell them through the personal essay, a notoriously slippery and flexible form that we will engage by writing our own personal essays, as well as by reading and responding to writers who work in that genre. Students will also prepare a personal statement for their application to graduate or professional school, or for another academic or professional opportunity.

Prerequisite: WRT 102 or equivalent

3 credits

WRT 304: Writing for Your Profession

In this course students learn about types of documents, rhetorical principles, and composing practices necessary for writing effectively in and about professional contexts. Coursework emphasizes each student's career interests, but lessons also address a variety of general professional issues, including audience awareness, research methods, ethics, collaboration, and verbal and visual communication. Students complete the course with practical knowledge and experience in composing business letters, proposals, and various kinds of professional reports. A creative, self-reflexive assignment also contextualizes each individual's professional aspirations within a bigger picture of his/her life and culture.

Prerequisite: WRT 102 or equivalent

3 credits

WRT 305: Writing for the Health Professions

Enables students interested in a health care career to strengthen their critical writing skills. While learning to gather information and to apply ethical principles in a logical, persuasive fashion, students will explore and write about various types of evidence concerning the health care needs of different populations: a field research project on a health issue affecting a local target population of their choice, a critique of government documents that contain data on that issue and population, and a review of scholarly research on the same issue as it affects the larger national population represented by that local one. Writing assignments will include drafts and final versions of a research proposal, field research results, numerical analysis, literature review and a final project incorporating all of the previous work conducted about that issue and population. Students will also write a reflective paper which can serve as the basis for a personal statement for medical or other health-related graduate school applications. This course will fulfill the second half of the Writing Pre-Med/Pre-Health prerequisite.

Prerequisite: WRT 102 or equivalent; U3 or U4 standing

SBC: *ESI*

3 credits

WRT 306: Tutor Training

This course is reserved for new tutors hired by the Writing Program to staff the Writing Center. Instructor permission is required to enroll in this course, which is designed to introduce new tutors to the discipline of writing pedagogy and help tutors contextualize their own experiences in scholarship associated with the field. This course is designed to help new tutors develop their own methodology for tutoring, grounded in some influential scholarship in Writing Center pedagogy.

Prerequisite: WRT 102 or equivalent

SBC: *EXP+*

3 credits

WRT 307: Rhetoric of Science, Technology, and Medicine

A writing-intensive critical seminar on the roles that argument and persuasion play in the development, circulation, and translation of medical and scientific knowledge. Class discussions and writing assignments will be organized around two mutually informing themes: first, consideration will be given to the rhetorical strategies experts use to produce technical arguments; second, emphasis will be placed on how non-experts interact with and contest those arguments. This course will address issues of power, access, and social justice as it traces how scientific discourses

move among diverse audiences. To that end, writing assignments will ask students to 1) analyze medical and scientific texts, 2) modify those texts to fit the unique demands of a particular community, and 3) conduct sustained original research into a scientific or medical controversy of their choosing.

Prerequisite: WRT 102

SBC: *ESI, HUM*

3 credits

WRT 319: Nonprofit Business Writing

A multimodal writing and analysis-intensive course focusing organizational analysis and public facing rhetoric of businesses with a special interest in nonprofits as a way to introduce students to a career in the nonprofit world. Using real nonprofits or other organizations as an example, students will apply theories of organizational rhetoric, visual rhetoric, genre, and more to analyze the ways in which a business internally communicates and externally presents itself in its public facing texts and artifacts particularly with an eye toward diversity, equity and inclusion and assumed power structures. For the first half of the class, students will choose a business or nonprofit organization to formally research, analyze and create content for. Genres include an organizational rhetorical analysis report, a writing profile, a researched spotlight brief and a video message. Students will then present their work in a 10 to 15-minute formal presentation, peer reviewed by the class. The second half of the semester, the class will partner with one or more businesses or local nonprofits through Stony Brook University's Center for Service Learning and Community Service (CSLCS). Using an asset based approach, students will work in groups to collaborate with the organization(s) to learn their needs then using what they learned from the first half, write mini white papers which will then be combined into a Collaborative White Paper for the organization(s).

Prerequisite: WRT 102

SBC: *EXP+, HUM, SPK*

3 credits

WRT 320: Rhetoric and Culture

An introduction to the history of rhetoric that highlights its relationship to reading, writing, and speaking in modern contexts. Emphasis will be placed on defining rhetoric - its traditions, forms, and enduring realms of influence. Specific content depends on instructor preference, but in general, this course will address key historical moments, especially the beginnings of rhetoric in antiquity and 20th century struggles against fascist rhetoric, alongside historical-critical perspectives on contemporary rhetorical theory and practice.

Prerequisite: WRT 102

3 credits

WRT 321: Writing for Social Justice

"This course grapples with the complex historical partnership between writing/ language and social justice: the manifestos, poetry, essays, editorials and political statements, the films, speeches, wall writing, testimonials and posters and zines from the many contexts in which people use language to move society toward equity and justice--even activist technical and professional writing that aims to change systemic inequities through the (re)writing of bureaucratic and policy texts. We will consider language broadly by looking at and experimenting with a range of communicative forms recruited to address social justice. "

Prerequisite: WRT 102 or equivalent

3 credits

WRT 375: Technical Communication

An exploration of technical communication, a field of inquiry and an approach to conveying complex information in professional contexts. Many industries and organizations require that their workers spend a significant amount of time communicating goals, project ideas, and technical knowledge to many different audiences. This course gives students the confidence and tools needed to communicate effectively and responsibly to colleagues and potential employers in a professional and valued manner.

Prerequisite: WRT 102 or equivalent

SBC: *SPK*

3 credits

WRT 376: Digital Rhetorics

In antiquity, rhetoric was an art of persuasion carried out through the medium of voice. Since the printing press, rhetoric and composition have been concerned with rhetoric in written word. Today, in the 21st century, we face digitality, defying any attempt to easily delineate speech, writing, and visuality. What does it mean to compose, interpret, and argue through digitality? What does it mean to practice rhetoric as a civic art when our communities are global and hyperconnected? This course explores the subfield of digital rhetoric, which aims to capture answers to these questions and more.

Prerequisite: WRT 102

3 credits

WRT 377: Special Topics in Digital Writing

A writing-intensive seminar with rotating topics exploring current issues in digitally based discourse. Sample topics include but are not limited to, Writing for the New Media; Authorship in the Digital Age; The Rhetoric of Surveillance; AI and Writing. Frequent substantial writing projects are central to every version of the course. May be repeated for credit as the topic changes.

Prerequisite: WRT 102

SBC: *HFA+, TECH*

3 credits

WRT 380: Advanced Research Writing: Theories, Methods, Practices

Good research skills are critical to academic success. Most disciplines require writing based upon research, as arguments and explanations make little impact on audiences without effective supporting evidence, drawn from relevant scholarship on the subject. This involves knowing how to use appropriate databases, source materials, and composing processes, as well as negotiating the values, genres, and languages of the scholarly communities in which one is researching. In this course, students will learn fundamentals of research methods, practice these methods in a series of integrated research and writing assignments, and engage in critical reflection about research and writing. Students will focus on an area of disciplinary interest to them, and practice these essential research and writing skills through a series of projects: library assignments, research log, research proposal, annotated bibliography, literature review, abstract, research paper and reflection paper.

Prerequisite: WRT 102 or equivalent

SBC: *ESI*

3 credits

WRT 381: Advanced Analytic and Argumentative Writing

Argumentative writing involves making a claim and supporting it with specific, related points and appropriate evidence--in other words, it is thesis-driven writing. Whenever we don't quite like someone else's idea and we want him or her to come closer to ours, argumentative writing is the most efficient method for such persuasion, in whatever profession you're considering. This class, therefore, will focus on learning how to effectively utilize argumentative and counter-argumentative writing strategies. Students will explore an area of disciplinary interest to them through several stages--proposal, preliminary draft, multiple versions, literature review--culminating in a 20-30 page piece of writing

in which they make a claim about a particular subject in that area of interest and support it with scholarly research and extensive elaboration. This course will fulfill the second half of the Writing Pre-Med/Pre-Health prerequisite. Covers the Interdisciplinary topic for the English major. This course is offered as both EGL 381 and WRT 381.

Prerequisite: WRT 102 or equivalent; U3 or U4 standing

SBC: *ESI*

3 credits

WRT 382: Grant Writing

Introduces students to the fundamentals of seeking and writing scholarly grants to fund research-based projects, from the earliest stages of planning to the completion of the grant application. In consultation with the instructor, each student works for the entire semester on applying for a real grant that is external to Stony Brook University. Key subjects to be taught include understanding funders and funding opportunities, researching and locating one's position in the disciplinary field of the grant, articulating relevant problems in that field, specifying appropriate and evidence-based solutions, addressing specific audiences, and utilizing rhetorical appeals. In addition to frequent low-stakes writing tasks, the course requires three high-stakes written projects: a literature review, a research proposal, and a grant application along with an abstract.

Prerequisite: WRT 102 or equivalent; U3 or U4 standing

SBC: *ESI*

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 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Pre- or corerequisite: WRT 102 or equivalent
Prerequisite: permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

WRT 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any WRT course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit

WRT 459: Write Effectively in a Discipline

A zero-credit course that may be taken in conjunction with any 300- or 400-level course in any department. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective. Students must request that the faculty member teaching the course for which the paper is written email their approval of the student enrollment in WRT 459 to the undergraduate program director of the Program in Writing and Rhetoric.

Prerequisite: WRT 102 or equivalent; permission of the Program in Writing and Rhetoric

SBC: *WRTD*

0 credit

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: WRT 102 or equivalent and permission of instructor and undergraduate program director

0-6 credits

WRT 488: Internship

Participation in local, state, and national public and private agencies and organizations. May be repeated up to a limit of 6 credits.

Prerequisite: WRT 102 or equivalent and permission of instructor and undergraduate program director

SBC: *EXP+*

0-6 credits, S/U grading

WRT 490: Rhetoric and Writing Senior Project

A capstone course for students in the Bachelor of Arts in Rhetoric and Writing. Students develop and compose a major project for a specific audience and need. Students attend a weekly seminar and work independently to produce their original, theory-driven, and evidence-orientated capstone composition. They are also expected to interact directly with members of the appropriate community for eliciting responses and making corresponding social impact.

Prerequisites: WRT 102 and WRT 300

SBC: *EXP+, WRTD*

3 credits

WSE

Women in Science & Engineering

WSE 101: Introduction to WISE and Stony Brook

A seminar intended to integrate students into the WISE Honors Program and the University community by providing information about Stony Brook and a forum for discussion of values, intellectual and social development, and personal and institutional expectations. Students will have opportunities to reflect on the meaning and purpose of honors education. This course is a graduation requirement for all first-year students in the WISE Honors Program (students in their first year of study). Not for credit in addition to ADV 101, GLS 101, ACH 101, LDS 101, HDV 101, HON 101, ITS 101, SSO 101, SBU 101, SCH 101, or LSE 101.

Prerequisite: first-year WISE student

1 credit, S/U grading

WSE 105: Opportunities in STEM and Beyond

A course composed of discussions and explorations of various science, technology, engineering and mathematics (STEM) career paths, and worldwide relevance. Guest speakers will describe their STEM work in a global context. Students will reflect upon their interests, values, talents, and skills, such as resourcefulness, curiosity, and emotional intelligence needed to tackle future global STEM challenges. The interdisciplinary, universality and civic values of STEM are emphasized through projects that link STEM to other disciplines including global issues, humanities and the arts.

Prerequisite: Member the WISE Honors Program or permission of the instructor and department

SBCP: *This course provides partial credit for the following: GLO_PART*

1 credit

WSE 201: Society and Gender in STEM

This course examines how gender intersects with science, technology, engineering and mathematics (STEM) in historical and contemporary contexts.This examination highlights how social, ethical, political, economic and cultural factors shape historical and contemporary understandings of STEM knowledge, as well as attitudes toward those who practice in STEM fields. The course focuses on women's historic and current participation in STEM disciplines, including why so few women are involved in these fields. We will consider how stereotypes are reinforced by popular culture and explore how we might reimagine STEM knowledge and practice to incorporate greater diversity. Not for credit in addition to WSE 242.

Prerequisite: WSE 105

SBC: *DIV, HUM*
SBCP: *This course provides partial credit for the following: GLO_PART*

3 credits

WSE 205: Career Planning in STEM

An active learning course that builds upon the awareness of self and knowledge of career fields, focusing on preparation for experiential learning. Students will gather and organize knowledge, skills, strengths, and artifacts of their collegiate accomplishments, and apply a strategic marketing lens for designing their professional brand by crafting a resume, personal brand statement, LinkedIn profile, elevator pitch and cover letter. Students will actively apply for experiences on and off campus as part of the course.

Prerequisite: WSE 105

1 credit

WSE 275: University Honors Fellows Seminar

University Honors Fellows enroll in WSE 275 in the spring semester of their freshman year and WSE 276 in the fall semester of their sophomore year. This seminar prepares students for supervised learning and teaching experiences that will occur primarily in the fall 276 course. Main content areas include student development theory; mentorship; leadership development; best practices in teaching and learning; and honors education. This course is offered as HON 275, SCH 275, and WSE 275.

Prerequisite: A grade of "S" in HON/SCHWSE 101; member of a University Honors Program; permission of the instructor

1 credit, S/U grading

WSE 276: University Honors Fellows Practicum

The second-semester course in the sequence following WSE 275. Fellows assume higher responsibility and are given opportunities to apply teaching theories and concepts as learned in 275. Fellows serve as teaching assistants for WSE 101. This course is offered as HON 276, SCH276, and WSE 276.

Prerequisite: A grade of "S" in HON/SCH/ WSE 275; member of a University Honors Program (HON/SCH/WSE); permission of the instructor

SBC: *EXP+*

1 credit, S/U grading

WSE 380: Research and Discovery in STEM

This course consists of a combination of theory and practice. The theoretical component involves an overview of research methodologies in science, technology, engineering, and mathematics (STEM) disciplines, including literature reviews, research design, data collection, and quantitative analysis. In addition, there is a hands-on experience in doing research in STEM disciplines. Students may perform research in a laboratory of their choice under the supervision of a faculty member and prior approval of a research plan by the course coordinator or may select among some offered research experiences. Within the research settings, students are given background literature, instructed in the problem to be studied, learn the necessary technical tools, jointly make a research plan, carry out experiments related to the problem, and discuss the social implications of the research problem. Students prepare papers and/or make presentations related to the projects in which they participate. Not for credit in addition to WSE 187.

Prerequisite: WSE 105

SBC: *TECH*

3 credits

WSE 381: Service-Learning in STEM

In this course, students will apply social science knowledge and methodologies to learn how to integrate meaningful community service within the context of science, technology, engineering and mathematics (STEM) to enrich the learning experience, engage in civic responsibility, and strengthen communities. STEM-related skills-based knowledge such as design optimization, systems and subsystem interconnectedness, constraints, trade-offs and side effects, and ethical considerations will be acquired as a result of the participation in the course. Students will be evaluated on the identification of a community need, the STEM design aspects of their proposed solution, and their communication of the problem, research and solution. As part of the course, direct engagement with community partners during and after the design phase should be established as students learn how to engage civically as part of a democratic citizenry with the depth of commitment to community service that the 21st century demands.

Prerequisite: WSE 380

SBC: *SBS*

1 credit

WSE 401: Women's Leadership in STEM

This course will provide an in-depth examination of the essential components of leadership in science, technology, engineering and mathematics (STEM). The course will explore how leadership theory, drawn from the social sciences, applies to real-life situations and challenges in STEM education, industry and policy. Key concepts of leadership will be introduced including: knowledge of organizational structures, culture, power, communication (written, verbal and non-verbal), politics, decision making, problem solving, collaboration, ethics and diversity. Students will apply theory in action by participating in STEM leadership opportunities through mentoring, tutoring, research, and/or service-learning experiences at the university, local communities, and/or industry internships.

Prerequisite: WSE 381

SBC: *STAS*

1 credit

WSE 405: Life Design in STEM

This course examines factors that shape contemporary careers and ways in which

individual adaptability is critical for long term success in a rapidly evolving career landscape. You will learn a proactive approach to career and life design to plan for continual development of skills and competencies that fuel career growth. A focus on developing and nurturing a network of professionals in a wide variety of fields, requiring elevated communication and outreach skills. A financial planning piece will incorporate budgeting, loan repayment, and personal fiscal planning.

Prerequisite: WSE 205

1 credit

WSE 475: Teaching Practicum

Students assist the faculty in teaching courses and outreach experiences by conducting recitation or laboratory sections that supplement a lecture course or outreach. Permission to register requires an outlined teaching assistantship plan for a course under the supervision of a faculty member or for an outreach plan with the appropriate supervisor, which will be approved by the WISE Honors Program. The student receives regularly scheduled supervision from the faculty instructor. A final report and possibly a presentation are required. May be repeated, but only two credits of teaching practicum may be counted toward the WISE Honors requirement.

Pre or corequisite: WSE 381; permission of instructor and department.

0-3 credits

WSE 477: Mentoring/Leadership Practicum

Students with the appropriate background and mentoring skills participate in mentoring opportunities for undergraduate or pre-college students. Permission to register requires an outlined mentorship plan for an activity or group of students under the supervision of a faculty member or professional, which will be approved by the WISE Honors Program. The student receives regular mentoring and supervision for their mentoring experiences. A final report and possibly a presentation are required. May be repeated but only two credits of practicum may be counted toward the WISE Honors requirement.

Pre or corequisite: WSE 381; permission of instructor and department.

0-3 credits

WSE 487: Research Practicum

An independent research project with faculty supervision. Permission to register requires a research plan, the agreement of a faculty member to supervise the research and the approval from the WISE Honors Program. A final report and presentation are required. May be repeated, but only two credits of internship may be counted toward the WISE Honors requirement.

Pre or corequisite: WSE 381; permission of instructor and department.

SBC: *EXP+*

0-3 credits

WSE 488: Internship Practicum

An independent off-campus STEM project under faculty and/or STEM professional supervision. Permission to register requires a project plan, the agreement of a supervisor and the approval from the WISE Honors Program. A work plan and final report are required. May be repeated but only two credits of internship may be counted toward the WISE Honors requirement.

Pre or corequisite: WSE 381; permission of instructor and department.

SBC: *EXP+*

0-3 credits

WSE 495: WISE Honors Project/Thesis I

This is a first course of a two-semester, six-credit, research or creative project in science, technology, engineering, and mathematics (STEM) to be approved by the course coordinator and a faculty supervisor. Students may substitute an appropriate credit-bearing departmental honors project, senior design project or thesis. 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 either their department or at an approved event by the course coordinator and must submit an appropriate thesis. Students only receive a grade upon completion of the sequence.

Prerequisite: WSE 381

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SPK_PART, WRTD_PART*

3 credits

WSE 496: WISE Honors Project/Thesis II

This is a second course of a two-semester, six-credit, research or creative project to be approved by the course coordinator and faculty supervisor. Students may substitute an appropriate credit-bearing departmental honors project, senior design project or thesis. The student is expected to make an oral presentation at their department or at an approved event by the course coordinator and must submit an appropriate thesis. Students only receive a grade upon completion of the sequence.

Prerequisite: WSE 495

SBCP: *This course provides partial credit for the following: CER_PART, ESI_PART, EXP+_PART, SPK_PART, WRTD_PART*

3 credits

WST

Women's Studies

WST 102: Introduction to Women's and Gender Studies in the Social Sciences

An introductory social sciences survey examining gender and sexuality theories, women's and feminist movements, and current debates within Women's, Gender, & Sexuality Studies. The course draws on theories and methods of anthropology, economics, geography, history, political science, psychology, and sociology to explore how gender intersects with sexuality, race, ability and other constructed identity categories to structure power, hierarchy, and privilege.

DEC: *F*
SBC: *CER, DIV, SBS*

3 credits

WST 103: Women, Culture, and Difference

An introductory humanities survey focusing on evolving ideas of gender and gender roles, and how gender intersects with sexuality, race, ability and other constructed identity categories. Through the disciplines of literature, art, philosophy, and history and the critical analyses of texts, objects, historical accounts, social media, and current events, the course explores how cultural ideas of gender are expressed in different genres in the humanities.

DEC: *G*
SBC: *CER, DIV, HUM*

3 credits

WST 111: Introduction to Queer Studies in the Humanities

A survey of historical representations of sexuality and queerness from the late 19th century to the present. Through examination of art, media, literature, and philosophy, and critical theory, students develop an interdisciplinary understanding of lesbian, gay, bisexual, transgender, and queer identities and the moral and ethical issues surrounding sexuality. Themes include the social construction of sexuality; theories of sex, desire, bodies, and sexuality; cisheterosexism and other intersecting forms of oppression; and the historical roots of these issues.

DEC: *G*
SBC: *CER, DIV, HUM*

3 credits

WST 112: Introduction to Queer Studies in the Social Sciences

An introduction to the field of queer studies emphasizing the perspectives of the qualitative social sciences. Through the examination of sociology, psychology, anthropology, and political science, students develop an interdisciplinary understanding of lesbian, gay, bisexual, transgender, and queer identities and the moral and ethical issues surrounding sexuality. Themes include the social construction of sexuality; theories of sex, desire, bodies, and sexuality; cisheterosexism and other intersecting forms of oppression; and the historical roots of these issues.

DEC: *F*
SBC: *CER, DIV, SBS*

3 credits

WST 210: 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 will consider legal, ethical, social, and political issues of the day, and will address the moral and ethical issues raised by them. 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 be repeated as the topic changes.

DEC: *F*
SBC: *CER, DIV, SBS+*

3 credits

WST 237: 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: one D.E.C. B or HUM course

DEC: *K*
SBC: *DIV, HUM, USA*

3 credits

WST 247: 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.

DEC: *K*
SBC: *DIV, SBS*

3 credits

WST 276: 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: WRT 102 or equivalent

DEC: *B*
SBC: *DIV, HUM*

3 credits

WST 282: Contemporary Caribbean Women's Literature

Examines the political, social, and historical experiences of women from anglophone francophone, and hispanophone Caribbean nations. The readings, movies, and projects selected for the course highlight reccurent themes in Caribbean literature such as exile, migration, identity, colorism, slavery, sexual oppression, transnational motherhood, and identity politics. Feminist criticism, Postcolonialsm, and critical race theory will be applied to our reading of the texts. This course is offered as both AFS 282 and WST 282.

SBC: *DIV, GLO, HUM*

3 credits

WST 284: Introduction to Feminist Theory (III)

The social construction of gender and how this construction affects philosophical thought and practice. The course provides an introductory survey of current feminist issues and analyses. It also examines the meaning of feminism for philosophy 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

DEC: *G*
SBC: *CER, HUM*

3 credits

WST 287: Research in Women's and Gender 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: Introduction to Feminist Theory

An introductory survey of historical and contemporary interdisciplinary theories used in Women's, Gender and Sexuality Studies. Theoretical debates on race, class, gender, nation, disability, sexuality, representation, and social movements are among the topics considered. The course will provide a strong theoretical foundation for further studies in Women's, Gender and Sexuality Studies.

Prerequisite: WST 102 or WST 103

DEC: *G*
SBC: *DIV, ESI, HFA+*

3 credits

WST 301: Histories of Feminism

A historical study of the theoretical and practical developments that form contemporary feminism and gender studies. Although the course concentrates primarily on feminist histories in the United States, it also places those histories within a transnational frame, paying close attention to class and race as well as gender. Key historical movements and events examined in the course include the suffrage movement, liberalism, socialist feminism, feminist internationalism, Black and women of color feminism, the women's liberation movement, radical feminism, and queer studies.

Advisory prerequisite: WST major or minor or WST 102 or WST 103

DEC: *K*
SBC: *DIV, SBS+*

3 credits

WST 305: Feminist Theories in Context

A study of major feminist and queer texts in the social sciences and humanities, providing a deeper examination of theories of bodies, power, and subjectivity. Embodiment, intersectionality, psychoanalysis, political economy, knowledge production, and representational systems are among the topics covered.

Prerequisite: one 100- or 200-level WST course

DEC: *G*
SBC: *HFA+*

3 credits

WST 310: Contemporary Feminist Issues

An analysis of major issues affecting women in today's society. Reproductive rights, women's employment, and political power are among the topics discussed.

Prerequisite: one 100- or 200-level WST course

DEC: *F*
SBC: *SBS+*

3 credits

WST 314: Music, Gender, and Sexuality

A study of music from the perspectives of gender and sexuality in a global context. Topics may include women as composers, performers, and listeners; genres understood as gay or queer; music as an expression of identity within various gender or sexuality social groups, and depictions of gender and sexuality in musical drama. All types of music may be considered, including classical, rock, pop, hip-hop, electronic styles, folk, and jazz. This course is offered as both MUS 314 and WST 314.

Advisory Prerequisite: MUS 101, 103, 105, 109, 119, 130, or equivalent musical experience

SBC: *SBS+*

3 credits

WST 315: Gender, Sexuality, Race & Ethnicity in Ancient Greek and Roman 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 and Rome. Major issues will include: the role of women in the Greek and Roman society, gender and sexual identities and practices in Greece and Rome, the role of race and ethnicity in the treatment and status of men and women in Greece and Rome, and the disjunction between ancient and modern understandings of sex, gender, race and ethnicity, among others. This course is offered as both CLL 315 and WST 315.

Prerequisite: one D.E.C. G or HUM course; U3 or U4 standing

DEC: *I*
SBC: *DIV, HFA+*

3 credits

WST 320: 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.

Prerequisite: One JDS or WST course

DEC: *F*
SBC: *SBS+*

3 credits

WST 323: Women of Color in the U.S.

In what ways is the history of race in America a gendered history? This course will focus on the creation of the modern color line in American history by analyzing the 20th century cultural productions of African American, Asian American, Native American, and Latina/Chicana women. Our central concern will be the ways in which race has been historically constructed as a gendered category. This course is offered as both HIS 323 and WST 323. This course is offered as both HIS 323 and WST 323.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *K*
SBC: *DIV, SBS+*

3 credits

WST 330: 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: U2 or higher standing
Advisory Prerequisite: POL 102 or WST 102

DEC: *K*
SBC: *DIV, SBS+*

3 credits

WST 331: Japanese Literature in the Feminine Domain

This course examines both writings of Japanese women and writings about Japanese women. It will challenge the application of current Western feminist standards to Japanese culture through the analysis of Japanese literary works. We will begin with Japanese mythology focusing on the stories of the creator goddess and Amaterasu, the sun goddess, from whom the imperial line was descended. We will consider the great Heian Era women writers and their culture, examining the difference between men's and women's writing. From the Heian era we will move to the Meiji Era, when Japan's isolationist period had ended and centuries' worth of Western literature was introduced to Japan. We will concentrate on the writings of Higuchi Ichiyo, noting how the position of women had changed by her day and how it affected her literary style. The course will close with a focus on how literature treats Japanese women in our own time. This course is offered as AAS 331 and WST 331.

DEC: *J*
SBC: *HFA+*

3 credits

WST 334: Women and Gender in Modern European History

This course will examine modern European history from a gender perspective. In other words, we will examine the ways in which the constantly challenged and changing social division of humans into the categories of women and men structured the political, economic, and cultural history of Europe during its period of global dominance. The period covered is roughly from the 18th century through the Second World War, with background provided at one end and a brief review of post-national Europe at the other. This course is offered as both HIS 336 and WST 334.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

WST 340: 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. E or SNW course in biology

DEC: *H*

SBC: *STAS*

3 credits

WST 347: 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: U2 or higher standing
Advisory Prerequisite: POL 102

DEC: *K*
SBC: *DIV, SBS+*

3 credits

WST 350: 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

DEC: *J*
SBC: *SBS+*

3 credits

WST 360: Women and Gender in Pre-Modern European History

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 334 and WST 360. Formerly offered as HIS 360.

Prerequisite: U3 or U4 standing; 1 D.E.C. F or SBS course

DEC: *I*
SBC: *SBS+*

3 credits

WST 371: 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.

Prerequisite: one D.E.C. F or SBS course or U3/U4 status

DEC: *K*
SBC: *SBS+*

3 credits

WST 372: Topics in Women and Literature

The study of texts written by and about women and of issues they raise relating to gender and literature. May be repeated as the topic changes. Covers the Interdisciplinary topic for the English major. 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

DEC: *G*
SBC: *HFA+*

3 credits

WST 374: 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.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: One of the following: WST 102, WST 103, WST 111, or WST 112

DEC: *F*
SBC: *DIV, SBS+*

3 credits

WST 377: 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

DEC: *F*
SBC: *SBS+*

3 credits

WST 381: 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.

Prerequisite: U3 or U4 standing; one D.E.C. E or SNW course

DEC: *H*
SBC: *SBS+*

3 credits

WST 382: 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. Covers the Interdisciplinary topic for the English major. This course is offered as AFH 382, EGL 382, and WST 382.

Prerequisite: U3 or U4 standing

DEC: *G*
SBC: *DIV, HFA+*

3 credits

WST 384: 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.

Prerequisite: one PHI course or one WST course
Advisory Prerequisite: PHI/WST 284

DEC: *G*
SBC: *CER, HFA+*

3 credits

WST 390: Special Topics in Women's and Gender Studies in the Humanities

Designed for upper-division students, this course provides an in-depth study of

specific current topics in women's and gender 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: one 100- or 200-level WST course

DEC: *G*
SBC: *HFA+*

3 credits

WST 391: Special Topics in Women's and Gender Studies in the Humanities

Designed for upper-division students, this course provides an in-depth study of specific current topics in women's and gender 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: one 100- or 200-level WST course

DEC: *G*
SBC: *HFA+*

3 credits

WST 392: Special Topics in Women and Science

Current topics in women's studies such as social issues in science or women in science. May be repeated as the topic changes.

Prerequisite: one 100- or 200-level WST course

SBC: *DIV, STAS*

3 credits

WST 394: Special Topics in Medicine, Reproduction, and Gender

Selected topics in gender and medicine and in human reproduction. May be repeated as the topic changes.

Prerequisite: one 100- or 200-level WST course

DEC: *H*
SBC: *STAS*

3 credits

WST 395: Topics in Global Feminism

This course provides an in-depth study of a specific topic relating to societies or cultures beyond the United States or the "West"/"Global North." With a focus on the development of feminisms beyond the United States and Europe, topics may include such titles as Transnational Feminisms; Latinas: History, Society, and Culture; and Global Reproductive Justice. May be repeated as the topic changes.

Prerequisite: one 100- or 200-level WST course

DEC: *J*
SBC: *DIV, GLO, SBS+*

3 credits

WST 396: 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: one 100- or 200-level WST course

DEC: *K & 4*
SBC: *SBS+*

3 credits

WST 397: Social Sciences Topics in Women's and Gender 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 Peacemeaking, and The Psychology of Sexual Orientation. May be repeated as the topic changes.

Prerequisite: one 100- or 200-level WST course

DEC: *F*
SBC: *GLO, SBS+*

3 credits

WST 398: Topics in Gender, Race, and Ethnicity

This course provides an in-depth study of a specific topic pertaining to the relationship between gender, race, and ethnicity. Past topics include 20th-Century Latina Literature; Race and Gender in Opera; and Gender, Ethnicity, and Capitalism. May be repeated as the topic changes.

Prerequisite: one 100- or 200-level WST course

DEC: *K*
SBC: *DIV, SBS+*

3 credits

WST 399: Topics in Gender and Sexuality

This course provides an in-depth study of a specific interdisciplinary topic in gender and sexuality studies. Past topics include Feminist Media Studies, Queer Activism and Visual Culture, Sports Studies, Transgender Studies. Students are expected to demonstrate knowledge of the interdisciplinary methods used for the topic focus of the class. May be repeated as the topic changes.

Prerequisite: one 100- or 200-level WST course

DEC: *G*
SBC: *DIV, HFA+*

3 credits

WST 401: Seminar in Women's and Gender Studies

Seminars on selected topics in women's and gender studies. May be repeated as the topic changes.

Prerequisite: one 100- or 200-level WST course

3 credits

WST 402: Seminar in Women's and Gender Studies

Seminars on selected topics in women's and gender studies. May be repeated as the topic changes.

Prerequisite: one 100- or 200-level WST course

3 credits

WST 407: Senior Research Seminar for Women's and Gender Studies Minors

The senior research seminar is the capstone course for the interdisciplinary minor in Women's, Gender, and Sexuality Studies. Utilizing research skills, concepts, methods, and materials generated from their coursework in Women's, Gender, and Sexuality Studies, students conduct interdisciplinary research to produce a research paper and formal presentation on their topic of choice formulated and developed in seminar activities.

Prerequisites: WST 291 or WST 301; 15 credits of WST coursework

SBC: *EXP+, SPK, WRTD*

3 credits

WST 408: Senior Research Seminar for Women's and Gender Studies Majors

The senior research seminar is the capstone course for the interdisciplinary major in Women's, Gender, and Sexuality Studies. Utilizing research skills, concepts, methods, and materials generated from coursework completed for the major, students conduct original interdisciplinary research on their topic of choice. Based on their investigations and collaborative peer feedback, students develop a novel scholarly argument and

produce a research paper and formal presentation that make an original contribution to Women's, Gender, and Sexuality Studies.

Prerequisite: WST 291 or WST 301; 15 additional credits of WST coursework; U4 standing; women's studies major or minor

SBC: *EXP+, SPK, WRTD*

3 credits

WST 444: Experiential Learning

This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a "real-world" setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.

Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)

SBC: *EXP+*

0 credit, S/U grading

WST 447: Directed Readings in Women's and Gender Studies

Intensive readings in women's and gender 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 458: Speak Effectively Before an Audience

A zero credit course that may be taken in conjunction with any WST course that provides opportunity to achieve the learning outcomes of the Stony Brook Curriculum's SPK learning objective.

Pre- or corequisite: WRT 102 or equivalent; permission of the instructor

SBC: *SPK*

0 credit, S/U grading

WST 459: Write Effectively in Women's Studies

A zero credit course that may be taken in conjunction with any 300- or 400-level WST course, with permission of the instructor. The course provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum's WRTD learning objective.

Prerequisite: WRT 102; permission of the instructor

SBC: *WRTD*

0 credit, S/U grading

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

SBC: *EXP+*

3 credits, S/U grading

WST 476: Undergraduate Teaching Practicum in Women's and Gender 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

SBC: *EXP+*

3 credits, S/U grading

WST 487: Independent Project in Women's and Gender 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

SBC: *EXP+*

0-6 credits, S/U grading

WST 495: Senior Honors Project in Women's and Gender Studies

First course of a two-semester project for Women's and Gender Studies majors who are candidates for the degree with honors. Arranged in consultation with the department through the mentoring faculty member and the Director of Undergraduate Studies, the project involves independent readings or research and the writing of a paper under the supervision and guidance of a faculty member. Students enrolled in WST 495 are obliged to complete WST 496 the following semester. Students receive only one grade upon complete of the two-course sequence.

Prerequisite: U4 standing; permission of instructor and department

SBC: *WRTD*

3 credits

WST 496: Senior Honors Project in Women's and Gender Studies

Second course of a two-semester project for Women's and Gender Studies majors who are candidates for the degree with honors. Arranged in consultation with the department through the mentoring faculty member and the Director of Undergraduate Studies, the project involves independent readings or research and the writing of a paper under the supervision and guidance of a faculty member. Students enrolled in WST 495 are obliged to complete WST 496 the following semester. Students receive only one grade upon complete of the two-course sequence.

Prerequisite: U4 standing; permission of instructor and department

SBC: *WRTD*

3 credits