AAS 104 CONTEMPORARY ISSUES & ANTHROPOLOGY

This course explores the complex inter-relation of race, class and gender in contemporary America, both in people's subjective identities in their objective life chances. The materials assigned include first-person narratives of particular life experiences; quantitative analyses of general statistical patterns; and long-term historical explanations of these experiences and patterns.

Offered: Spring

AAS 106 COLONIAL & CONTEMPORARY AFRICA

This course uses film, literature, and historical studies to understand the transformation of African societies during the colonial era and its neocolonial aftermath. It maps out the forging of new national identities, creation of wage laborers, restructuring of rural communities, and changing power relations between women and men, the young and old. Students will also explore how African men and women, from their homes and workplaces, and as part of nationalist and national liberation movements during and after the Cold War, have sought to redefine their place in the global economy amidst new opportunities and challenges presented by environmental degradation, the HIV/AIDS pandemic, hunger, international debt, and Chinas growing thirst for the continents seemingly inexhaustible natural resources.

Offered: Fall

AAS 107 HISTORY OF ISLAM

The development of Islam from its origins in the Qur'an and Muhammad's teachings, through the codification of the classical tradition in its various forms, and finally to the living Islam of the contemporary world.

Offered: Fall

AAS 121 WORLD MUSIC IN CONTEXT

Engaging an extraordinary diversity of sound, this course explores some of the world's major traditions of musical performance, including classical, ritual, and ceremonial music from around the globe. Through weekly reading and listening assignments, we will study musical sound structures within a variety of social, political, and religious contexts, investigating relationships between music, people, and place. In addition to well-known modes of music making, we will look at many fascinating but less familiar forms of musical expression, such as aboriginal pop music from Australia, the throat-singing traditions of Tuva and Mongolia, and the freedom songs of South Africa. The course will culminate in a semester-long final project.

Offered: Fall

AAS 122 HISTORY OF JAZZ

This study of Jazz, as an American musical art form, will be structured around the lives and music of jazz musicians, across a range of instrumental, vocal, and ensemble genres. Course focuses on jazz titans, those individuals and musical groups distinguished by their seminal and permanent influences, such as Louis Armstrong, Miles Davis, or Coleman Hawkins or shorter intense careers, such as Charlie Parker. Blues, ragtime, swing, bebop, cool, progressive, and free jazz are landmark terms. And finally, study of the musical history will be enhanced by considerations from sociological, linguistic, and philosophical perspectives. The instructional format includes lectures, discussion and intense emphasis on listening. This course is designed for students with little or no musical training; simple technical, musical vocabulary and concepts will be provided. Reading, listening assignments, brief written assignments and two exams. No prerequisites. (Fall Only)

Offered: Fall

AAS 125 REL,RACE,ETHNICTY IN AMERICA

AAS 141 AFRICAN-AMERICAN HISTORY I

After examining the primary features of pre-European African society we will assess the disruptions triggered by European arrival. A discussion of the "Middle Passage" -- the transportation of enslaved Africans to North America -- and the Africans' adjustment to their new environment will compose the first section of the course. We will then focus on the process of "Americanization" as the Africans became African-Americans. The struggle for freedom and citizenship will conclude our survey. The course readings will be selected from autobiographies by African and African-American authors, and some brief selections from secondary texts. Using the autobiographies as historical source material, we will examine the values and cultural practices of Africans in America, and the ways in which African-Americans adapted to and shaped American life and culture.

Offered: Fall Spring

AAS 151 THE BLUES

The course covers the history and influence of the music called "the Blues"; the origins of blues in the context of African American culture in the late 19th and early 20th centuries, the blues' rapid rise to becoming the dominant popular music in the African American community, and the discovery of blues by white audiences. Class format combines lecture, listening and discussion.

Offered: Fall Spring

AAS 156 INTRODUCTION TO AFRICAN-AMERICAN LITERATURE

This course surveys African-American literature of a variety of genres-poetry, drama, autobiography, fiction, and non-fiction essays-from the 18th Century to the 20th. The course interprets this tradition not only as the production of American writers of African descent, but also as a set works that display formal characteristics associated with black cultural traditions. Discussion topics include the meanings of race, the construction of black identity, and intra-racial differences of class, gender, and sexuality. Special attention will be paid to approaching literary texts from a variety of critical perspectives.

Offered: Fall

AAS 157 AFRICAN RELIGIONS OF THE DIASPORA

A study of the Interfaith Movement from the late 19th to the early 21st century, including issues of identity, religious conflict, and women's voices.

AAS 162 MODERN AFRICAN-AMERICAN ENG

AAS 165 INTRODUCTORY MBIRA ENSEMBLE

AAS 168 WEST AFRICAN DRUMMING BEG

In this course, students will work on expanding their repertory of rhythms from Guinea, West Africa, and on improving their playing technique on the djembe, dunun, sangban, and kenkeni. In particular, we will concentrate on learning extended solo sequences for the djembe, and more advanced arrangements played on the dunun, sangban, and kenkeni. Students will also work on developing skills specific to performance, adding choreographed onstage movement to complement their drumming. Pre-requisite: At least one semester of previous enrollment in the Intro West African Percussion Ensemble.

Offered: Fall Spring

AAS 170 RELIGION & HIP HOP CULTURE

AAS 182 WEST AFRICAN DANCE FORMS 1A

A continuation of Dance 181 that allows the student to deepen their experience and hone their skills in West African Dance.

Offered: Spring

AAS 183 INCARCERATION NATION

AAS 185 AFRICAN AMER RELIGIOUS HIST

AAS 202 NEW PERSPECTIVES GLOBAL HIST

The concept of a Third World. The origins of colonialism and "underdevelopment" in the rise of European capitalism. The struggles of the colonial and postcolonial peoples for political independence, cultural autonomy, and economic development.

Offered: Spring

AAS 204 EARLY CIVILIZATION AFRICA

AAS 205 ANTHROPOLOGY OF "ROBOTS"

AAS 208 SHERLOCK:RACE, GEND, CRIME

AAS 210 NGOMA:DRUM-DANCE&RIT S AFR

American Culture? Is there such a thing? This class will explore, discuss and debate this question and some more: If there is an American culture, how can we tackle it? How does anthropology, famous for its research away from home, help us understand current major debates in the United States? How do outsiders understand and evaluate American culture? Is there a return of religion to American public life? How do Americans address power relations, class, gender, ethnicity and race? To tackle these questions we will use assigned readings, films, and current events seen through print and electronic media.

Offered: Fall

AAS 213 POLITICS OF NATURE

AAS 218 UNEQUALDEVSTATE POL BRAUSNIG

AAS 220 RACE & GENDER IN POPULAR FILM

This course explores Hollywood's current fascination with race and gender as social issues and spectacles. In particular, we will focus on the ways that social difference have become the sites of increasingly conflicted narrative and visual interactions in our films. To examine competing representations of racial difference and sexual difference in contemporary US culture, we analyze popular films of the 1980s and 1990s, from thrillers to action films to comedies.

AAS 223 THE SOUTH AND THE WORLD

AAS 228 THE POLITICS OF SPORT

AAS 229 Pause: The Politics of Race, Gender, and Sexuality in Hip Hop

This course examines the complex and dynamic relationship between race, gender, and sexuality in hip hop. The goals: 1) To introduce students to emergent scholarship in the interrelated fields of critical race theory, feminist and gender studies, and queer theory; and 2) To not only use these theoretical rubrics to analyze hip hop, but to also use hip hop as a heterogeneous and constantly shifting cultural and political formation that informs, complicates, and offers new of imaginings of these fields of study. We will look at hip hop figures like Jay Z and Nicki Minaj, subgenres like “sissy bounce” and “gangsta rap,” activist ideologies like “hip hop feminism,” and socio-political issues like mass incarceration and HIV/AIDS in Black communities in order to trace how the historical and contemporary social organizations of sexuality, gender, and race are mutually negotiated, contested, and constructed within hip hop music, film, dance, dress, and other sites of cultural performance.

Offered: Spring

AAS 230 SLAVE NARRATIVES & NEO SLAVE NARRATIVES

Autobiography is the foundational genre in the tradition of African-American literature. It is also the genre that both illustrates and represents the process of the construction of identity. Autobiography is not only writing about a life authored by oneself, but also the life of the self made manifest in the form of writing. This course surveys the tradition of autobiographical writings by African Americans, from slave narratives to recent bestsellers, in order to promote an understanding of autobiography as a narrative form shaped by its historical context and the purposes of the author. In addition, the course provides students with insights into various topics in African-American culture and history. Readings include texts by Maya Angelou, Frederick Douglass, Olaudah Equiano, Zora Neale Hurston, Harriet Jacobs, Audre Lorde, Barack Obama, Booker T. Washington, Richard Wright, Malcolm X, and more.

Offered: Spring

AAS 231 AFRICAN-AMERICAN DRAMA

Study of dramatic works by African-American playwrights during the twentieth and twenty-first century.

AAS 232 WAR, GENOCIDE & JUSTICE

AAS 234 PHONO-GRAPHY/MUSIC & AA LIT

AAS 235 THE BLACK BODY

AAS 236 AFRICAN ART TODAY

AAS 239 SPIRITUALISM IN AMERICA

The primary aim of this course is to explore the historical development and structural make-up of modern American Spiritualism. This course offers students a historical narrative that ranges from the early development of modern Spiritualism in upstate New York to current forms, such as African American Spiritual churches of New Orleans. In addition to this historical survey, the course examines major principles making up the framework of modern Spiritualism in America. Class format includes lectures, discussions, films, and field trips.

Offered: Fall

AAS 240 CORRUPTION GLOBAL ECONOMY

AAS 242 URBAN CHANGE&URBAN POLITICS

AAS 242W URBAN CHANGE&URBAN POLITICS

AAS 243W MUHAMMAD & THE QUR'AN

This course is a study of the prophet Muhammad, the Qur’an, and their importance to medieval and modern Muslim culture. The prophet’s life and major themes of the Qur’an are discussed together with interpretations of them found in Islamic legal, theological, philosophical, and mystical writings.

AAS 244 MUTILATED BODIES, MUTILATED DISCOURSE

'Transnational sisterhood' or cultural imperialism? Legitimate ritualized practice or outdated violent ritual? Genital cutting, female circumcision, female genital surgery? The controversy over this practice already begins with the act of its naming. If there seems to be a consensus about the physical violence imposed on the female body, why is it that western feminist discourse is suspected of perpetuating the mutilation African voices? This course seeks to provide an understanding of the context in which a fragmented 'transnational sisterhood' allows for a proliferation of mutilated discourses on mutilated postcolonial bodies. Readings and Films include Alice Walker (Warrior Marks), Florence Ayissi Fauziya Kassindja (Do They Hear You When You Cry), Maryse Conde and more critical and theoretical readings from African, French and North American authors. In English.

Offered: Spring

AAS 246 CRY FREEDOM

Since the 1960's certain Christian theologians have attempted to re-think and re-express their religious beliefs in ways that can lead to the radical transformation of people's lives and social institutions. The movement this group of diverse Christian thinkers has set in motion is often referred to as liberation theology. In this course we will look at the principal ideas of various liberation theologians -- Latin American, Asian, African, Afro-American, and feminist. As well as looking at the ideas of these thinkers, we will also examine the social worlds in which they think and write, thus trying to see the connection between their ideas and the social environments they want to liberate.

Offered: Spring

AAS 247 BLACK PARIS

AAS 249 THE CIVIL WAR

The course suggests that there existed two distinct views as to how the new nation would be structured. Once these views clashed and became sectional, the nation was thrown into a political, theological, and, ultimately, a military contest the demands of which led to the incorporation of structural changes that had the effect of resolving the very issues that had propelled the nation into war. As we identify and discuss the causes, conduct, and consequences of the Civil War, we will examine the changing ideas about nation, government, work, race, and gender, and ask: How different were Northern and Southern institutions and, to what extent were northern and southern Americans fundamentally different people?

Offered: Fall Spring

AAS 250 FOOD, JUSTICE, URBAN FARMING

This course provides a basic introduction to some of the major works and themes in American literature, focusing primarily on the development of the novel and short story, with limited attention to poetry and drama. We will begin in the nineteenth century and work our way through such contemporary writers as Toni Morrison and Tony Kushner. Our focus will be on the creation of

a national identity and how issues of race, gender, class, and sexuality intersect in the formation of an American literary tradition. Students will trace a number of important themes such as the relationship between politics and art, the impact of slavery and the Civil War, immigration, the American dream and the development of a national mythology and ideology. In our study of various movements in the American literary tradition, we will also pay close attention to the intellectual debates concerning audience, language, and the purpose of art that have shaped key texts and historical time periods.

Offered: Fall Spring

AAS 251 AFRICAN DIASPORA IN LAT AMER

This course introduces students to the emergent field of U.S. Latino/Latina writing and culture. Does the rich diversity of Latino communities in the United States—stretching from Los Angeles and the southwest to Miami and New York via Texas, Chicago, Minneapolis, and all stops in-between—frustrate or cancel any attempt to group their experiences under a single ethnic-racial term like “Latino/a”? What exactly is “the browning of the Midwest”? To what kind of gender, sexual, and racial codes are the inhabitants of these communities subjected? How do Latino/a narratives map the conflicted terrains of “utopias without borders,” free-trade zones, diasporas, nomadic workforces, and even the Internet? Latinos, Latin Americans, immigrants, exiles, refugees, border peoples, rafters—it is increasingly as difficult to define the legal status of individuals and communities as it is to talk about social, economic, and cultural identities.

AAS 252 ECONOMIES & SOCIETIES IN LATIN AMERICA

Provides an historical explanation for the general problem of material poverty and the attendant sociopolitical crises that characterize contemporary Latin America and the Caribbean.

Offered: Fall

AAS 253 ECONOMICS & SOCIAL CONDITIONS OF AFRICAN-AMERICANS

Economic development of African Americans during the twentieth century, with an examination of the economics of discrimination. Same as HIS 253 and AAS 253.

Offered: Fall

AAS 254 WEST AFRICAN DANCE FORMS I

Students will experience dancing African styles from the traditional cultures of Ghana and Guinea, West Africa. Technical emphasis will focus on foot patterns and placement, as well as developing the proper physical stance for African dance styles. Students will practice the dances and drum songs called Kpanlogo & Gota from Ghana, and Yankadi, Makru, & Kuku from Guinea, as well as various other selections. Outside work is required, including performance attendance, video viewing, article analysis, and journaling. Students can expect to gain a broadened perspective on contemporary West Africa and its cultural practices.

Offered: Fall Spring

AAS 256 HIS OF RACE IN AMERICA

AAS 257 LINCOLN, DOUGLASS & BLACK FREEDOM

In what was probably the world’s greatest century, marked by several national and international struggles for human freedom, two men stand head and shoulders above the many great men and women who participated in a civil war for American freedom: Abraham Lincoln and Frederick Douglass. At first glance, these two men had little in common; one born free on the American frontier, the other unfree in the heartland of slavery. Yet they had much in common; both largely self-educated, they both attained a mastery for words and the ability to communicate simply and directly with their fellow man. As if born to fight in one major battle for human freedom, these two men traveled diverse roads to meet on a momentous battlefield: black freedom and the future of America. Utilizing a wide range of sometimes opposing tactics, each in his own way shaped nineteenth-century Americans’ understanding of what it meant to be free and a citizen.

Offered: Fall

AAS 260 NIGERIA SINCE ISLAM REV 1804

In the context of the global economy, Nigeria, the most populous country in Africa, is blessed with vast mineral resources and agricultural lands able to produce a wide variety of tropical products and foods. The country's large population is made up of talented and highly resourceful individuals, who are quick to respond to economic incentives. Thus, it is hard to understand why

the country has one of the lowest per capita incomes in the world and why the country's economy occupies such a lowly position within the global economy. We focus on the historical development of socio-economic/political structures over time to explain why the giant of Africa continues to slumber. Some of the country's central problems, such as ethnic and religious contradictions, are similar in some way to those in the U.S. The solutions attempted by the governments of both countries, such as affirmative action, are also somewhat similar. We will conduct a comparative analysis of contemporary historical issues in the two countries.

Offered: Spring

AAS 261 TRUTH & POWER

AAS 262 AFRICAN-AMERICAN ART

AAS 263 ARCHAEOLOGY AFRICAN DIASPORA

AAS 265 History of the African Diaspora in Latin America

This course examines the historical experiences of Africans and their descendants in Latin America and the Caribbean. The guiding questions of this course are: What is the African diaspora? What is the utility of such a framework for writing the histories of African descended peoples living in Latin America? What do the experiences of Afro-Latin Americans living in the region reveal about the grand narrative of Latin American history? While the course will begin with the era of colonial slavery, most of our attention will focus on the histories of Afro-Latin Americans after emancipation. Topic we will explore include: the particularities of slavery and emancipation in the Americas, gender and the formation of African-descended communities, the role of race and Afro-Latin American peoples in processes of nation formation, and the transnational dimensions of African diaspora history. (cross listed with HIS 248)

Offered: Spring

AAS 267 FRENCH IN FILM

AAS 270 AFRICAN-AMERICAN VIS CULTURE

AAS 272 HARLEM RENAISSANCE

AAS 273 ETHNOARCHAEOLOGY OF AFRICA

AAS 280 GUINEA'S CULTURAL REVOLUTION

AAS 281 STATE ROLE GLOBAL PERSP

AAS 286 ISLAM AND THE THIRD WORLD

AAS 287 SOC CONST OF WHITENESS

AAS 288 HISTORY OF THE AMERICAN SOUTH: 1896-1945

Blue States! Red States! Why so many "Red States" in the South? Why such close attachment to family, religion, and community? Why such a penchant for a distinct music, food, and sports culture? Why has the region been for so long associated with social backwardness—violence, racism, and political conservatism? These and other characteristics (real or imagined) have roots that extend back to Europe and Africa while many are the result of more recent events dating back only a few generations. This course will address these and other questions in the search of historical answers to the roots of southern peculiarities and the origins of those "Red States."

Offered: Spring

AAS 302 ARCHAEOLOGY OF AFRICA

AAS 356 BLACK FAMILY IN SLAVERY & FREEDOM

After a discussion of the Moynihan Report controversy and an assessment of the literature on the black family, the readings will investigate why and how stable black families were encouraged, and how they developed under slavery. The impact of factors

such as economics, politics, religion, gender, medicine, and the proximity of free families, on the structure of the black family will be given special attention. In this way, the structure of the slave family on the eve of Emancipation, and its preparedness for freedom, will be tested and assessed. Students will be encouraged to identify persistent links between the "history" of slavery and the black family, and the development of social policy.

Offered: Spring

AAS 380 SENIOR SEMINAR

Students will draw upon their exposure to the theory methods of AAS to produce an interdisciplinary research paper on a topic of their own choosing. Open only to senior majors. Permission of Department required.

Offered: Fall Spring

AAS 390 SUPERVISED TEACHING

AAS 391 INDEPENDENT STUDY

Independent studies on some aspect of the problems of energy resource development in lower-income countries, solutions to it, and relationship to development issues, including work with the instructor’s Access to Hydrocarbon Energy for African Development project, can be done within this course.

AAS 391W INDEPENDENT STUDY

AAS 393 SENIOR PROJECT

May be an independent course with a faculty sponsor or may be taken in an advanced research seminar in which the student elects to write the essay but not to do all the required readings; as such it does not meet the 300-level seminar requirement, but it may be used as a distribution requirement within the area.

AAS 394 INTERNSHIP

Experience in an applied setting supervised on site. Approved and overseen by a University instructor.

AAS 396 SENIOR THESIS

AAS 444 BLACK INTELLECTUALS

AAS 449 THE CIVIL WAR

AAS 456 HIS OF RACE IN AMERICA

AAS 472 HARLEM RENAISSANCE

AAS 986V FULL TIME VISITING STUDENT

AAS 997 DOCTORAL DISSERTATION

AH 100 INTRODUCTION TO VISUAL & CULTURAL STUDIES

The aim of this course is two-fold: First, to develop an understanding of the extraordinary variety of ways meaning is produced in visual culture; secondly, to enable students to analyze and describe the social, political and cultural effects of these meanings. By studying examples drawn from contemporary art, film, television, digital culture, and advertising we will learn techniques of analysis developed in response to specific media and also how to cross-pollinate techniques of analysis in order to gain greater understanding of the complexity of our visual world. Grades are based on response papers, class attendance and participation, and a midterm and a final paper. Occasional film screenings will be scheduled as necessary in the course of the semester.

Offered: Spring

AH 101 INTRO TO ART & VISUAL CULTURE

This course is designed to introduce the student to aspects of the history of Western painting, sculpture, & architecture from the Renaissance through the present. We will examine the various schools & movements in their historical contexts, while paying particular attention to the histories that bear upon them, such as the influence of the classical past, religion, gender, political power, & the rise of the artist. The course will therefore attempt two goals; one, to familiarize students with the principal monuments of the western tradition from about 1400 onward, that is, the paintings, sculptures, buildings, & artifacts which form the substance of this narrative; two, to develop visual literacy, that is, the ability not only to identify but also to discuss art works in a way that develops critical competence & an understanding of how the western tradition of art has come about.

AH 102 INTRO TO MEDIA STUDIES

This course introduces students to the theory and practice of media studies. We will look at a range of both media and historical tendencies related to the media, including manuscript culture, print, and the rise of the newspaper, novel, and modern nation-state; photography, film, television and their respective differences as visual mediums; important shifts in attitudes towards painting; the place of sound in the media of modernity; and the computerization of culture brought about by the computer, social networks, video games, and cell phones. In looking at these, we will consider both the approaches that key scholars in the field of media studies use, and the concepts that are central to the field itself (media/medium; medium-specificity; remediation; the culture industry; reification and utopia; cultural politics). By the end of the class, students will have developed a toolkit for understanding, analyzing, and judging the media that shape their lives in late modernity.

AH 103 WAYS OF SEEING: Avant-garde Bodies

Ways of Seeing is an introductory course in Visual Studies and Art History. We look at images and objects and learn “ways of seeing”: in other words, how these artifacts visually relate to history, to their producers, and to the people who look at and live with them. Considering issues like gender, class, sexual identity and race and ethnicity, we develop visual skills by looking at a wide range of images, reading histories and analyses, and holding wide-ranging class discussions. This course, which changes “topic” very frequently, is an excellent introduction to art history.

AH 104 SCREENING BLACKNESS: VISUAL CULTURE & THE BLACK BODY

Come explore the history and aesthetic of film’s technology, from the pre-cinematic days to the advent of digital. What were cinematographers able to do before digital technologies? Did it look good? From George Méliès to Star Wars, what happened to film? This course will offer you an in depth overview of film techniques, placed in their technological, historical and geographical context. Our aim will not only be to understand what film producers were able to do, but what possibilities trick photography and special effects opened for cinema, from the early days and on. This journey through cinema will be an attempt to define special effects: can we consider, for example, that sound, color or even continuous narration are special effects? Would that make cinema an art of artifice or mimesis? The majority of this class will be devoted to analog technologies and we will look at digital technologies through the medium of analog photography.

AH 106 INTRODUCTION TO ARCHAEOLOGY

This course introduces the student to the field of archaeology through three units of study: 1) The history of excavation from ancient to modern times, 2) The techniques of excavation and the analysis of material remains, 3) Modern theories of cultural interpretation of archaeological sites. We will discuss the value of archaeological approaches to the fields of anthropology, history, architectural and art history, religious and classical studies. Much of the instruction will be illustrated by case studies of sites; although the view will be global, there will be a concentration in Old World material from prehistory to the early modern period. Students will be required to write three essays, with subjects selected from each of the three course units.

AH 110 THE CITY: CONTESTED SPACES

What does it mean to live in a city? Can you reshape people’s lives by redesigning city spaces? How do city dwellers, architects, politicians, and others interact with and appropriate their own urban past? This interdisciplinary course will introduce students to different ways of looking at cities, framing them as the contested products of a range of human actions. Through an in-depth examination of four complex urban environments – Chicago, Istanbul, Delhi, and Rome – we will learn about the interplay between space, aesthetics, time, memory, and power. Weekly lectures by an anthropologist, an architect, and a historian will complement discussions of film, historical documents, fiction, and relevant case studies. In addition to writing four short papers, students will hone their analytical skills by observing urban life and form with a series of field studies in the city of Rochester.

AH 112 FEMINIST BODY IN PERFORMANCE

AH 114 CREATING ARCHITECTURE - an Introduction

Buildings are among the most public, visible & long lived artifacts that a culture creates. The built environment serves as both a repository of cultural information & exerts an influence that extends beyond the society that created it. This introductory course will explore a visual survey of Architecture from Ancient Times to the present day using a slide lecture & discussion format that will invite each student to participate in the discourse of the class. The studio portion of this course will provide students an opportunity to create their own structures from sketch to 3 dimensional pieces exploring basic design elements & materials. No prior studio experience is necessary. Students will be expected to purchase basic tools used in this course. A materials supply list will be provided at the first class. Students are expected to pay the $50 studio fee to cover the use of shared supplies & equipment. Not open to seniors. To be added to the wait list, please contact stephanie.ashenfelder@rochester.edu.

AH 120 INTRO DIGITAL MEDIA STUDIES

This course will serve as a hands-on introduction to the study of digital media. Through a mix of critical and theoretical readings we will historicize the concepts of both “new” and “media” and look at their applications in the Humaniites and Social Sciences. Paying particular attention to ideas of practice and networking—through a combination of individual and collaborative projects--we will explore the meaning of authorship in the digital age. This class will have a required lab that will meet in Rettner Hall at a time to be determined.

AH 124 NEW GODS: SUPER HEROES & DIGITAL CINEMA

This is an introductory course that explores the relationship between the music industry and different documentary practices. We will study the sociopolitical importance of music culture by means of the aesthetics of documentary. By looking at a variety of musical genres such as punk, rock, reggae, electronic music, pop, tango, experimental music, jazz, flamenco, and hip-hop, we will focus on specific questions around gender, class, sexuality and political resistance. We will look at musicians such as Nirvana, Fugazi, Katheleen Hanna, Nina Simone, The Rolling Stones, Eminem, Snoop Dogg or Pussy Riot. As well as filmmakers such as Jem Cohen, Les Blank, Maysles brothers, Carlos Saura, Sini Anderson, Penelope Spheeris, Shirley Clark and, the Otolith Group.

AH 125 The Mediterranean Emporia: The Art and Archaeology of Phoenician Culture(s) in the First Millennium B.C.E.

The Phoenician world spanned the entire Mediterranean in the first millennium B.C.E., reaching the conceptual edge of the world beyond the Pillars of Hercules, clashing with Greek, Roman and indigenous Mediterranean cultures. This course will approach the visual arts and archaeological presence of Phoenician and subsequent Carthaginian cultures in the first millennium B.C.E. The course will also take into consideration Phoenician and Carthaginian trading practices and their influence on indigenous lifeways from the Levant to Western North Africa. The topics discussed over the course of the semester will serve to showcase the sometimes overlooked, yet dramatic influence of Phoenician culture on the trajectory of the ancient Mediterranean world.

AH 128 MODERN ART

This course introduces students to art made from the late 19th century to the present. We examine the various movements in their historical contexts, from Impressionism and post-Impressionism through Cubism, Abstraction Expressionism, Pop and Minimalism, as well as contemporary developments like installation and performance art. We consider how issues of gender, technological developments, and wars and social movements have affected art. The course is taught through a combination of lecture and discussion, and we will be constantly looking at images to understand how ideas, social change, and history are refracted in works of modern art.

AH 133 CRITICALLY QUEER

AH 136 INTRODUCTION TO THE ART OF FILM

The primary visual, aural, and narrative structures and conventions by which motion pictures create and comment upon significant human experience.

AH 137 INTRODUCTION TO MODERN ARCHITECTURE

This course provides an introduction to modern architecture starting with its nineteenth-century roots and continuing to the present day. We will explore the impact of technological, economic, political, and social change on architecture, as well as study major figures of modern architecture such as Le Corbusier, Mies van der Rohe, and Frank Lloyd Wright.

AH 138 BEYOND BANSKY, GRAFF/STR ART

This course introduces students to critical approaches to the cultural practice of street art and graffiti, considering the very surface of the city as a site for negotiating meaning and belonging. Building an interdisciplinary framework grounded in urban anthropology, sociology, art history, and cultural theory, we will examine and problematize popular understandings, canonical figures, and historical trajectories of graffiti and street art. Visual objects such as photographic archives, magazines, documentaries, and digital projects will form an integral part of the course. For their final projects students will be asked to engage with their very own local context and devise a self-directed research project to be conducted in Rochester. Topics may include the abandoned Rochester subway, the WALL\THERAPY mural festival or the role of graffiti and street art in the process of urban renewal.

AH 142 ARTS OF EAST ASIA (I): ca. 10,000 BCE – 1000 CE

This course introduces the arts of China, Japan, and Korea from the Neolithic times to around the end of the first millennium CE. It provides a general understanding of prehistoric and historical cultures and civilizations of East Asia through a selection of objects, monuments, and artworks. It aims to narrate histories and map geographies by considering the roles of the arts. We will look at both regional resources and the mobility of materials and artifacts in transregional contexts. We will discuss them in terms of ritual uses, socioeconomic forces, intellectual impetuses, as well as processes of historical changes, religious transmissions, and cultural encounters.

Offered: Fall Spring

AH 187 THE ARCHAEOLOGY OF HOME

Why is there no place like home? What makes home such a special place? Why did the human home evolve? Homes evoke powerful emotions about place and also highlight the dynamic and complex nature of people, their relationships to each other, and the broader society they live in. Archaeologists, therefore, must study the material culture found in and around domestic dwellings in order to identify any reoccurring patterns of those materials to reconstruct their household practices and social relations. This course will focus on the ways that material traces from the past shed light on the diversity of domestic life, which includes household organization; economic strategies; diet and status of families; rituals, and identity. To this end, we will read case studies from household archaeology about all types of homes (mobile shelters to sedentary palaces), but also review key anthropological texts about place-making.

AH 188 CITIES & URBANISM IN PRE-COLUMBIAN MESOAMERICA AND THE ANDES

The discipline of archaeology can make unique contributions to our understanding of urbanism and daily life given its ability to examine long-term processes of development and change. The goal of this course is to provide an introduction and overview of urbanism as exemplified by the indigenous cities of the New World (e.g. Mesoamerica and South America). While regional differences will be discussed, we will focus mainly on identifying the theoretical issues that intersect all of the regions we will be studying.

AH 199 THE ANCIENT CITY

AH 202 CHINESE FILM

AH 207 FILM HISTORY: 1989-PRESENT

AH 208 EARLY MODERN CHINESE PNTG

This seminar considers painting as both a socio-cultural practice and a historical agent in early modern China, ca. 1400–1800. Starting from the fifteenth century, Chinese painting underwent significant change in terms of representational mode as well as art-historical consciousness. Modern understandings of Chinese painting have been influenced by artistic criticism written by literati at that time, which perpetuate painting’s anachronistic status as a seemingly idealizing cultural vehicle, categorizing this period as the “post-history” of Chinese painting history. Our goal will be to understand the historical nuances of painting of this period. We will explore how painting, as both an artistic practice and an aesthetic mode, entangled in constructing people’s everyday lives including interior display, garden construction, outdoor spaces, religious sites, and commercial and urban surroundings. We will also examine the intellectual impetus in the innovation of painting’s composition, space, and representation

AH 209 WRITING ON ART

This course seeks to improve students' writing and analytical skills through analysis and experimentation with different styles of writing about contemporary and historical arts. Students analyze prose by artists, historians, cultural critics, poets, and others

who have written on the visual arts, with an eye towards how writing on art can be a tool for improving expression in many areas. Slide lectures, discussions, and writing projects on objects of diverse media and historical eras will be augmented by visiting speakers and field trips to museums and galleries. This course fulfills one-half of the upper level writing requirement for both studio and art history majors. Permission of instructor required.

AH 210 OBJECT LESSONS: ENCOUNTERING THE WORK OF ART

This class will examine 8 works of art from different eras and geographical locations in order to understand the multi-vocal ways that visual objects communicate ideas about culture, religion, philosophy, aesthetics, politics, and a host of other issues. We will focus on how to analyze different kinds of objects--a building, a piece of furniture, a painting, a contemporary installation, among them--in order to see how artists, art historians and critics "read" a work of art in different ways. Some field trips to museums and cultural sites will be part of the class, as will intensive reading and writing about art.

AH 213 RACE & GENDER IN POP FILM

This course explores Hollywood's current fascination with race and gender as social issues and spectacles. In particular, we will focus on the ways that social difference have become the sites of increasingly conflicted narrative and visual interactions in our films. To examine competing representations of racial difference and sexual difference in contemporary US culture, we analyze popular films of the 1980s and 1990s, from thrillers to action films to comedies.

AH 215 SEMINAR IN CONTEMPORARY ART

The Seminar in Contemporary Art is a course designed to bring together studio art and art history majors and minors in an extended discussion of contemporary artistic practices. We often look backwards to the 1960s or earlier but usually focus on a method, issue, or aspect to contemporary art (e.g. participation; photography; authorship). This course prepares students for critical engagement with contemporary art practices and can serve as an excellent preparation for Art New York or for a career in the arts.

AH 216 ORIENTALISM ART & ARCH

This seminar addresses the construction of knowledge through politics and how this process has colored ideological dispositions and means of representation—specifically literary, artistic and architectural—across time. Orientalism is the seminar’s specific example but also posits parallels and intersections with other discursive settings where cultural representations have been historically constructed by one cultural group of another. This course is organized as a series of encounters between “Western” culture and the “Orient’s” Islamic, South Asian and East Asian cultures in both historical periods¬—covering antiquity to the present day—and representational contexts, covering literature, art and architecture.

AH 217 FRAMEWORKS:SPACE & PLACE IN THE WORK OF ART

In the late 1960s and early 1970s the notion of site specificity emerged in art, posing a challenge to the “pure” and “objective” exhibition space of the museum, as well as the overall commercialization of the art object. Art moved out of the museum and into the world, embracing immateriality, duration, and—above all—the question of location. In this course we will consider the historical, cultural, discursive, institutional, and physical frameworks that allow us to draw meaning from art, juxtaposing modern and contemporary examples with classical, Renaissance, and other pre-modern traditions. We will explore the connection between art’s physical and conceptual frameworks, navigating the changeable worlds that exist within and beyond the frame.

AH 218 PHOTOGRAPHY IN EAST ASIA

AH 221 CLA ARCH: ROMAN ART AND ARCH

AH 222 TRADITIONAL JPN CULTURE

What is a copy? The question may seem trivial and the answer obvious, yet just what do we mean when we say a work is a copy? Is a copy the same thing as a reproduction, replication, repetition, imitation, duplicate, or facsimile? And what of related terms such as fake, forgery or counterfeit? Throughout history artists have addressed the work of others, and sometimes their own work, from the point of view of imitating it, appropriating it, and refashioning it. As a practice copying in its many forms has underpinned the production of art since earliest times. As a theory imitation precedes notions of authenticity and originality, and may be said to bring these latter concepts into being. This course will examine copying across the full range visual media – painting, sculpture, architecture, printmaking photography, film and new media.

AH 224 RUSSIAN ART

AH 225 CLSCL ARCHAEO:GREEK ART&ARCH

AH 226 (AREZZO) IT MONUMENTS

AH 227 POETICS OF TELEVISION

AH 228 ARCHAEOLOGY AFRICAN DIASPORA

This course asks what happens if you think about art as a commodity rather than in terms of creators, aesthetics, or iconography. Rather than looking at art as self-expression or the work of individual artists, this course looks at art as a commodity and in relation to economic forces. What determines the value of a work of art or an art object and why does value change over time? We will look at case studies providing a historical perspective and at the present-day explosive art market. We will investigate historical evidence on ways in which art was exchanged and evaluated, and how the profession of art dealing evolved. We will look at how dealers became involved in creating brands for artists and ways in which the contemporary art fair has blurred the line between curator and dealer. We will consider how artists work with and against the market and how art and museums figure in economic development. The class will require short writing assignments, a presentation and a research paper.

AH 229 ART IN AGE OF ENLIGHTENMENT

The principal objective of the course is to undertake a reevaluation of the received ideas associated with the eighteenth-century styles known as Rococo and Neo-Classicism. Neither term adequately describes the breadth and complexity of the art produced in the eighteenth century, and neither satisfactorily identifies the complexities and contradictions of the cultural milieu that supported this visual culture. In place of these over-simplified terms, we will consider themes such as the pictorial sublime; the picturesque; the hierarchy of the genres, the role of scientific progress and philosophical debate, art and industry, urbanization; travel and exploration, politics and revolution, and the taste for the antique – in short the influence of the intellectual movement known as the Enlightenment.

AH 233 THINKING THROUGH THE COPY

What is a copy? The question may seem trivial and the answer obvious, yet just what do we mean when we say a work is a copy? Is a copy the same thing as a reproduction, replication, repetition, imitation, duplicate, or facsimile? And what of related terms such as fake, forgery or counterfeit? Throughout history artists have addressed the work of others, and sometimes their own work, from the point of view of imitating it, appropriating it, and refashioning it. As a practice copying in its many forms has underpinned the production of art since earliest times. As a theory imitation precedes notions of authenticity and originality, and may be said to bring these latter concepts into being. This course will examine copying across the full range visual media – painting, sculpture, architecture, printmaking photography, film and new media.

AH 234 ART AND ENVIRONMENT

Environment is the unification of space, time, and value. What does art have to do with it? This seminar examines the possibilities of art by considering its engagement with or alienation from the living worlds and beyond. It challenges the dualist views of culture and nature by instead examining the interdependence and interconnections among human bodies and other living organisms or non-living things. It will consider current pressing issues of Anthropocene, climate change, eco-aesthetics and the dark sides of the ecosystems, as well as the economy and politics of scaling relative to the views of the local, global, and planetary spaces. Besides reading a set of interdisciplinary literature on relevant topics, we will focus on examples and case studies of Chinese landscape paintings throughout history.

AH 236 HISTORY OF FRENCH CINEMA

This course surveys the history of French cinemafrom its early experiments through the "Tradition of Quality" to the moment imeediately preceding the emergence of the New Wave. We will study films selected from the work of the following directors: Lumier, Melies, Gance, Dulac, Leger, Clair, Vigo, Renoir, Carne, Ophuls, Pagnol, Clement, and Bresson. Readings will include contemporary critical and theoretical discussions, as well as historical analyses.

AH 237 ISLAMIC ARCHITECTURE IN CONTEXT

This course presents a review of key works of Islamic architecture from pre-modern, early modern and modern times. It will also focus on key historiographic trends from the last two centuries, introducing critical issues surrounding orientalism, imperialism, abstraction, ornament, symbolism and expertise. This course does not aim to essentialize Islamic architecture or its temporal or geographic categories. It will rather challenge and think anew the traditions that have formulated this relatively young and, as some have described, “unwieldy” field of art history. Emphasis will be placed on the multicultural and polyvalent traditions

of the built environment in the Islamic world. Prior knowledge of Islam or architecture is not necessary, as important concepts and terms will be introduced through readings and discussed in class.The course emphasizes writing, critical thinking, and presentation skills through class discussions and a multi-component digital term project.

AH 238 AFRICAN ART TODAY

Feminist art historians have changed the way we think about images of women, works by women artists, and the very notion of artistic genius. This course will investigate the way in which visual images of women participate with other cultural and social factors in the construction of the idea of woman. It will look at types and conventions in works by male and female artists, as well as in anonymous prints and advertising from different periods, with a concentration on the 19th and 20th centuries. Readings will introduce a variety of approaches.

AH 239 DOCUMENTARY FILM AND MEDIA

This course explores the intellectual, social, political, economic and religious aspects of medieval culture of the 12th and 13th centuries through its art and architecture. There will be stylistic and iconographical analysis of the monument as well as a consideration of the materials and techniques of the artists and the structural developments of the architecture. The organization of the lectures will provide the main guideline in course content, but reading assignments and extensive classroom discussion will be equally emphasized, and individual inquiries will be encouraged in the selection of topics.

AH 240 ANDY WARHOL: TOPICS IN CONT

As the most famous artist of the second half of the twenthieth century, Warhol has been the subject of a growing literature that expands upon art history and criticism to encompass queer theory and cultural studies. But the most important shift in Warhols reception has been brought about by the restoration and return to circulation of his prolific film output from the years 1963-69. The films will be the main focus of this course, but we will also consider Warhols early work as a fashion illustrator, his entrepreneurship at the Factory, his voracious collecting, and, of course, his paintings. We will read Warhols writings, including A a Novel. The Philosophy of Andy Warhol, and Popism; and we will examine new approaches to Warhol and ask how they illuminate not only the art but also such issues as consumption, publicity, visibility, celebrity, sexuality, identity, and selfhood.

AH 241 AESTHETICS

AH 242 HISTORY OF PHOTOGRAPHY: 1839-1915

The French author Roland Barthes described the emergence of photography in the early 19th century as a “truly unprecedented type of consciousness.” This class traces the emergence of this photographic consciousness in the 19th century as it develops within a number of specific arenas of culture & representation, from the medium’s conception in the early 19th century to its modernization in the early 20th century. The class will allow for general discussion of the history of photography with some detailed discussion of particular photographers, images, & texts. The class will look at photography as a cultural phenomenon as much as an art form, critically studying the various discursive arenas that this new medium helped to foster and redefine. We will also ask what makes photographic images so compelling, what we expect to see in them & what, distinguishes in the photographic realm a document from an artwork, & an ephemeral image from a material object.

AH 243 ARCHITECTURE IN THE CLASSICAL WORLD

The architecture of Greece and Rome is fundamental to our understanding of the heritage of the West. We will trace the origin and development of building types in Greece: the temple and its sacred area, buildings of public cultural use such as theaters and the invention of town planning. The development of Roman architecture will also be examined for its sources and meaning, considering local Italic traditions, Etruscan and Greek. In addition to determining the meaning of architectural forms, two major themes will be followed: the spatial aspect of planning and building and the inventiveness of Roman constructional practices.

Offered: Spring

AH 244 (AREZZO) ART, ARCHITECTURE

When we look at works of art in museums, galleries, and churches we are, in most cases, looking at them out of context. Furthermore, when we look at early Renaissance paintings we do not see them through the eyes of the people who produced them or for whom they were produced. We have to learn to see them as they might have been seen. We can begin to do this by learning how to read and to interpret the complex elements at play beneath the immediate surface by setting the artist, his work, and his public in their social and religious historical contexts, and by exploring the universal unspoken language of signs and symbols used by artists. The course content is based on painted forms, i.e., panels, canvases, and frescos from the Trecento and

Quattrocento with an emphasis on Tuscan painting. The selection, as far as possible, takes advantage of the availability of works in churches, museums, and galleries within easy visiting distance of Arezzo.

AH 249 PERFORMANCE STUDIES

AH 251 PREHISTORY OF ANCIENT PERU: THE INCAS AND THEIR ANCESTORS

From Machu Picchu to the geoglyphs on the Nasca desert, the Andean region of South America has a long and rich pre-Columbian history. This course will survey the archaeological approaches to understanding the development of Andean cultures that ranges from hunter-gatherers to the Inca Empire. Some of the prehistoric cultures we will be examining include Caral, Chavin, Nasca, Wari, and the Inca. This will class will also discuss plant and animal domestication, inequality, gender, ceramics, urbanization, and the rise and fall of states and empires.

AH 252 FILM HISTORY: EARLY CINEMA

AH 253 FILM HISTORY: 1929-1959

This course provides a transnational survey of film history, examining the technical and formal aspects of the medium in its production and exhibition. As we explore the development of cinema during this period, we will address a number of aesthetic and technological issues. For example, how did the development of sound technology affect film form? How did it affect cross-cultural cinematic exchange? What is the significance of genre across various film traditions? What did the studio system contribute to Hollywood's success in the international market? How did immigrant and exiled film personnel shape the industries they joined? Weekly screenings and film journals required.

AH 254 FILM HISTORY: 1959-1989

This course will explore developments in world cinema—industrial, social, and political—from 1959 to 1989. It will explore film aesthetics, technologies, and circulation questions, considering questions like the following: What’s new about the French New Wave? What do we mean by Third Cinema? How do different national cinemas influence each other? In what ways have various national cinemas responded critically to Hollywood’s commercial dominance and to its conventions? How do popular and “art” cinemas speak to each other. How does cinema respond to the pressures and provocations of other media at the inception of the digital age? Weekly screenings and film journals required.

AH 255 ARTS IN AMERICAN CULTURE

What did it mean to be American? What did America look like, geographically and in terms of its people? What part did art and photography play in documenting and giving an identity to Americans in the century between 1850 and 1950? Attention will be given to documenting and representing the West, immigration, and the emerging urban environment. Students will work with the collections of George Eastman House and the Memorial Art Gallery. Requirements for the course include a short museum paper, a term paper, with draft, and take-home midterm and final exams.

AH 260 GLOBAL VIDEO GAMES:CULTURES

This course will explore the production, distribution, and consumption of video games as a global phenomenon. Through case studies and hands-on approach, we will consider how the juxtaposition of history, theory, and gaming practices operates in different geographical contexts. Focusing on a combination between regions not usually examined by video game studies as well as mainstream video game market, this course will expose students to a nuanced and fluid picture of video games as a medium and as a culture. No experience in game design or game development is necessary.

AH 261 BUF RES PROJ:CITY & CONT

This course will explore the city of Buffalo in three contexts of modern design: urban design, landscape design, and architectural design. This course will probe both the specific and universal aspects of these contexts and how the likes of Le Corbusier, Reyner Banham, and Frederick Law Olmsted have held the city up as an exemplar of modernist principles. In addition to a broad survey of literature, students will conduct in depth research on specific designs within the city. This research will work towards material to be included in a permanent exhibition at the new Buffalo Architecture Center, thus giving students unique exposure to the curatorial process for which they will also receive recognition. Students should expect one or two field trips to the city. Course instructor approval required.

AH 262 IMPRESSIONISM & POST-IMPRESSIONISM

Covering artists from Edouard Manet to Vincent Van Gogh, and from Edgar Degas to Mary Cassatt, this course examines the work and social context of a constellation of artists whose practice in late-nineteenth-century Europe came to be known as Impressionist and Post-Impressionist. These artists' representations of the city, the suburbs, leisure, labor, class and gender roles communicate a complex worldview in addition to a radical aesthetic. In developing general skills of analysis through the lectures, course readings, and museum visits, students should emerge from the course with a critical comprehension of the artists and their significant works, including the means to interpret the style, subject matter, and history of an emergent modernist art form.

AH 263 THE ART AND ARCHAEOLOGY OF ANCIENT EGYPT

Ancient Egypt has long fascinated the public, from ancient scholars to modern video game representations. But who were the ancient Egyptians? What led to the powerful artistic and cultural legacy of this ancient area? This course will delve into the main concepts of Egyptian art, archaeology and history, ranging from the Predynastic Period to the last gasp of Cleopatra VII and the Ptolemaic Kingdom. Topics will range from Egyptian religion, temple culture, funerary remains, monumental constructions, daily life, domestic archaeology, dynastic progression and the afterlife. This course will also discuss modern representations of ancient Egypt and the enduring symbols of the culture.

AH 264 FILMS OF THE 1930S

AH 266 AFRICAN-AMERICAN VIS CULTURE

This course will survey African-American visual culture (including painting, sculpture, architecture, pottery, photography, prints, textiles, installations, performance, and video) in the United States from colonial times to the present. Its purpose is to introduce students to a wide range of artistic production and to provide a social historical frame for the interpretation and analysis of works of art. Students will explore the ways in which African-American visual culture has been impacted by the training and education of artists, public and private patronage, art criticism and analysis, and its construction as a category by different art world constituencies. We will read primary sources by W.E.B. Du Bois, Alain Locke, Romare Bearden, and Elizabeth Catlett, as well as engage periods such as slavery, the New Negro movement, the Black Art movement, and postmodernism.

AH 267 ANIMATION AND THE ARTS

AH 269 THE ART MARKET

This course asks what happens if you think about art as a commodity rather than in terms of creators, aesthetics, or iconography. Rather than looking at art as self-expression or the work of individual artists, this course looks at art as a commodity and in relation to economic forces. What determines the value of a work of art or an art object and why does value change over time? We will look at case studies providing a historical perspective and at the present-day explosive art market. We will investigate historical evidence on ways in which art was exchanged and evaluated, and how the profession of art dealing evolved. We will look at how dealers became involved in creating brands for artists and ways in which the contemporary art fair has blurred the line between curator and dealer. We will consider how artists work with and against the market and how art and museums figure in economic development. The class will require short writing assignments, a presentation and a research paper.

AH 270 CONTEMPORARY CHINESE ART

AH 273 ETHNOARCHAEOLOGY OF AFRICA

AH 279 CLOCKS AND COMPUTERS

AH 280 NATIVE AMERICAN ART & RELIGION

This class will explore the various spiritual and artistic traditions of the indigenous peoples of North America. Ranging from the Canadian arctic to the desert Southwest, we will look at various practices including: shamanism, art and hunting magic in the Arctic, art and curing societies in the Great Lakes and Eastern Woodlands, evidence for religious practice in archaeological contexts, and Kachina societies in the Pueblo southwest. More in-depth readings will focus on Navajo sand painting and healing, and Plains Indian spiritual traditions including the Sun Dance and Vision Quest, and their manifestations in the artistic record. We shall also examine late 19th century crisis cults such as the Ghost Dance Religion, and pan-Indian movements in the 20th century like the Peyote Religion, as well as issues concerning secrecy, privacy, and ethics in the study of Native artistic and religious traditions.

AH 281 ART & THE CITY: NY IN THE 70's

The recession and fiscal crisis of the 1970s was paradoxically a highly productive period of artistic experimentation in New York City. In the wake of the transforming art movements of the 1960s—Pop, Minimalism, and Conceptual Art—the 1970s saw the invention of new and hybrid media—video art, performance art, and site-specific installation works. As the city's economy became one based on real estate speculation and financial services, artists moved into the abandoned spaces of nineteenth-century industry. SoHo and Tribeca were remade into living and working spaces for artists, art galleries, and alternative spaces such as 112 Greene Street (now White Columns), the Kitchen Center for Video and Music, and Artists Space. By the end of the decade a new artists' group that came to be known as the Pictures generation began showing in these alternative spaces. In this seminar we will study how the de-industrialization of New York contributed to new kinds of art making and examine how artists used the city.

AH 284 MODERN ARCHITECTURE & URBANISM: LA MODERN

The architecture of Los Angeles will serve two different purposes in this seminar. On the one hand, we will study the whole range of modern architecture--from mission style (Gill), arts and crafts (Greene and Greene), and the early modernists (Wright, Schindler), to high modernism (Neutra, the Case Study houses), and postmodernism (Gehry)--as a singular regional, but nevertheless representative development of modern architecture. On the other hand, using architecture as a starting point, we will look at the strange utopia/dystopia of Los Angeles as an example of a new kind of urbanism and style of living. Our texts will include not only studies of architecture, but also Hollywood films (Chinatown, Bladerunner), detective novels (Raymond Chandler), new journalism (Joan Didion), and urban theory (Reyner Bahnam, Mike Davis).

AH 285 HISTORY OF PHOTOGRAPHY II

AH 287 CULTURE ON DISPLAY

This course looks at the phenomenon of the museum, asking questions about the relation of culture and institutions. How do museums and the selection of what things go into them and the way objects are arranged and displayed shape the way we think about our past, about art? Why are "natural history" and "history" and "art" displayed in different institutions? What are the implications of reproduction for the "original"? Do museums have a future?

AH 288 PHILOSOPHY OF ART

AH 289 COMIC BOOKS

AH 290 POLISH ART: PAST & PRESENT

The development of Polish art since the 10th c. Special emphasis will be placed on the importance of Poland within Europe, including the formative effects of geopolitics on the development of Polish artistic movements, Polish church art, folk art, poster and architecture. In-depth art history lectures will be conducted both at the University and in museums. The course will be accompanied by a program of field trips. Offered on location in Krakow.

AH 292 THE MODERN CITY

This course takes an interdisciplinary approach to examining the modern city in both moments of triumph and crisis. The idea of the "city" has played a major role in conceptualizing modernity (as well as Postmodernity). We will look at representations of the metropolis in painting, photography, film and philosophy. Using critical theory, urban planning documents, as well as fictional accounts, we will explore competing ideological perspectives on and debates over the place of the city in modern culture.

AH 292W THE MODERN CITY

AH 300 ART NY NEW MEDIA CULTURE

Harvestworks will offer this course as an introduction to digital art for Art New York interns. Special application is required. Permission of instructor only.

AH 302 ARCHAEOLOGY OF AFRICA

AH 305K ART NEW YORK COLLOQUIM

As an integral part of the internship program, all students participating in ANY will meet weekly with the program's resident director. The class will visit museums, art galleries, film & media screenings, & learn from these visits through readings,

papers, presentations & discussions. The colloquium will also serve to provide an intellectual framework for understanding the operations of the NY art world & to allow students to discuss with one another their experiences at the various institutions where they intern. Each student will be expected to make a presentation about their internship to the ANY group. There will be an entrepreneurial component which will introduce the students to a wide variety of entrepreneurial activity & innovative practices within arts and culture. Through guest speakers, seminars & field trips the students will learn how entrepreneurial endeavors develop. By the end of the semester, the students will create their own proposal for an entrepreneurial project.

AH 307 RHETORIC OF THE FRAME

The task of any discussion of frames and framing in the visual arts whether in painting, sculpture, film, performance, architecture, graphic novels and cartoon strips, or digital media - is first and foremost to counter the tendency of framing devices to invisibility with respect to the artwork they supposedly contain. We see the work, but we do not see the frame. It is against this tendency to ignore the frame that this seminar is directed. At first glance the frame may seem to be as unproblematic. Starting from a consideration of the foundational texts of frame theory in the philosophy of Immanuel Kant, we will examine the discursive limits of the material and non-material border in the writings of, among others, Mayer Schapiro, Martin Heidegger, Jean-Claude Lebensztejn, Louis Marin, Craig Owens, and Jacques Derrida.

AH 308 MIMESIS: THEORY & PRACTICE

This seminar course will address the issue of imitation and Mimesis through the consideration of key texts from antiquity to the present. Texts will include the foundational philosophies of Plato and Aristotle, the many theorists of literature and art of the sixteen and seventeenth-centuries who wrote on imitation, and the reaction against imitation in modern art. Both graduate and undergraduate students will have the opportunity to select a topic related to their own interests and develop it into a research paper, graduate students will in addition present their paper in class.

Offered: Fall

AH 311 DANCE, ART, AND FILM

This course explores relations among dance, art,and film at significant moments in the 20th & 21st centuries. We will study instances in which the forms are closely aligned, including the famous productions by artists Gontcharova, Picasso, & Matisse, for Diaghilev's Ballets Russes; Martha Graham's partnership with Isamu Noguchi; & Merce Cunningham's work with Robert Rauschenberg. We will look simply at how dance is filmed or how dance uses film. The course will concentrate on two figures of the postwar American avant-garde: Merce Cunningham & Yvonne Rainer. Cunningham's dances choreographed for film in collaboration with film & video makers & Rainer's move from choreography to filmmaking & eventually to hybrids of the two will constitute the core of the course. Other major figures will be explored: choreographers George Balanchine, Doris Humphrey, Trisha Brown, William Forsythe, Anne Teresa De Keersmaeker; & filmmakers Maya Deren, Ed Emshwiller; Babette Mangolte, Dominique Delouche, Thierry de May, etc.

AH 313 ARCHITECTURE, PHOTOGRAPHY, MODERNISM/POSTMODERNISM

The subject of this course is inspired by a series of photographs commissioned from Hiroshi Sugimoto for the Los Angeles Museum of Contemporary Arts' exhibition At the End of the Century: One Hundred Years of Architecture. Sugimoto's photographs show canonical works of modern architecture shot out of focus, reduced to both icon and phantom. The seminar considers the changing relations between photography and architecture, between image and space, between picture and object from the advent of modernism to the present. The course looks at these relations in the New Objectivity and the New Vision, Surrealism, the International Style, Mid-Century Modern, and ends by considering the uses of the photography of architecture in Conceptual art and the fascination with modernist architecture in contemporary photographic work. Students read critical studies of modernist architecture and photography and plot the relations between these discourses and practices.

AH 314 ITINERANT THINGS

AH 316 PHOTOGRAPHY & THE EVERYDAY

What is the value of the everyday in modern and contemporary culture? And how does photography permit greater, more immediate access to ordinary life? This seminar will explore these two related questions starting with the underlying assumption that the modern experience is unthinkable without the proliferation of photographic technologies. Studio portraits, identification cards, family snapshots, newspaper photos, posters, and viral images all represent as well as constitute the ins-and-outs of daily life in ways conscious and unconscious, thoughtful and entirely indiscriminate.

AH 317 STREET PHOTOGRAPHY

This seminar course explores critical issues in the photographic history of urban public space from glass negatives to Google's "street view." With the advent of fast exposures and hand-held cameras in the late nineteenth century, photographic practice quickly merged with the experiences of men and women on the level of the street. Street photography – whether viewed as a genre, a practice, a historical phenomenon, or a formal canon – takes on the subject of urban space and its occupants, exploring everything from pavement stones, graffiti, lights, cars, and trains, to pigeons, pedestrians, crowds, mobs, and demonstrations. Some photographers in this category dedicated themselves to a visual style that matched the spontaneity of urban life, while others sought to record identity, history, and politics as it unfolded in the public sphere. Class participants will examine the photographs and photographers that define street photography, which practices are behind this class of images, and where street photograph

AH 319 MATERIAL CULTURE

This upper-level course interrogates the cultural meaning of things in an increasingly digital age. Paying attention to objects in their native as well as virtual frameworks, we will look at a variety of media (film, photography, fine art, popular culture) in material and on-line contexts to investigate paradigm shifts in 21st century scholarship, archiving, and understanding of material culture.

AH 323 MATERIALITY IN ARCHITECTURE

AH 341 ART OF INFRASTRUCTURE

This course will examine the aesthetics of several key typologies of human infrastructure in modern times. Most works of civil engineering and other built manifestations of human organization are typically thought of in the contexts of utility, efficiency and functionality and not as veritable objects of beauty born of design philosophy. This broad overview, everything from sidewalks to transport networks, demonstrates that infrastructure has, counter to common believe, very often been at the forefront of aesthetic thought and has played a formative role in rendering human innovation and ingenuity in visual and physical terms. This seminar is organized typologically and will comprise the reading of one recent scholarly book per week from a broad range of disciplines including the history of architecture, the history of science, history, science and technology studies and the history of art. The course material will be augmented by three field trips to important sites in the Rochester area.

AH 348 DIG MEDIA & PART. CULTURES

This course will explore the notion that digital media technologies have liberating potentials to further democratic empowerment and produce a more inclusive public sphere. We will focus our exploration on the concept of participatory cultures in which developments of digital media technologies have transformed passive users into progressive and active "produsers" (producers and users), indicative in the concept of Web 2.0's "user-generated content." We are going to explore how contemporary digital media's participatory characteristics affect strategies and manifestations in social and political activisms at a global scale. We will study, for instance, how social networking platforms and mobile computing have placed powerful capabilities in the hands of individuals who collectively have used them in innovative ways to break free of powerful forces, expose corruption, challenge institutional surveillance, and even bring down regimes once thought immoveable—such as in the case of the "Arab Spring."

AH 361 CLASSICAL FILM THEORY

This course examines the philosophical, aesthetic, and social issues that are central to classical film theory. It traces the historical development of film theory from 1900 to the 1950s. We will begin with on thinkers in the period of early cinema, including Germaine Dulac, Jean and Marie Epstein, and then we will examine the development of film theory in the work of later theorists, such as Jean Mitry, Sergei Eisenstein, Dziga Vertov, Siegfried Kracauer, Walter Benjamin, Andre Bazin and Christian Metz. Weekly screenings of historically contemporary films will allow us to examine the ongoing dialogue between the evolving medium and the developing theoretical discussion.

AH 385 VISUAL CULTURE OF HERITAGE & IDENTITY

Cultural critic Stuart Hall has observed "Heritage is a discursive practice. It is one of the ways in which the nation slowly constructs for itself a sort of collective social memory." In this upper level seminar, we will look at case studies of how people (through the collectivities of gender, ethnicity, race, or nation) construct visual narratives about the past. Among the topics for consideration are Holocaust memorials, Native American and Polynesian museums and cultural centers, African American quilt histories, and even individual artists' projects of the last few decades (Judy Chicago, Fred Wilson, Silvia Gruner, José Bedia, and Jolene Rickard, among others). Readings will be drawn principally from the disciplines of history, anthropology, cultural studies, and art criticism.

AH 386V VISITING STUDENT IN ART HIST

AH 390 SUPERVISED TEACHING

AH 391 INDEPENDENT STUDY

Independent study under faculty guidance of a limited field of art history or individual study on a single topic at an advanced level under the guidance of a member of the art history faculty.

AH 391W INDEPENDENT STUDY

Independent study under faculty guidance of a limited field of art history or individual study on a single topic at an advanced level under the guidance of a member of the art history faculty.

AH 392 PRACTICUM

Each student will intern in an institution arranged or approved by the Art and Art History faculty. The purpose of this internship is to give students an insiders' view of the workings of the art world. Students will be expected to document their internship experiences as a means of evaluation at the end of the semester. This program is limited to second, third, fourth and fifth year undergraduate students interested in learning about all aspects of contemporary art, about how art gets made, how it reaches its public, and the processes of its interpretation. Internships will consist of 20 hours per week, for which students will receive eight credits. Permission of instructor required.

AH 393 ART HISTORY HONORS PROJECT

See "Requirements for Honors in Art History."

AH 393W ART HISTORY HONORS PROJECT

AH 394 INTERNSHIPS

Internships in London and the United States.

AH 394B EURO ARTS INTRNSP BELGIUM

AH 394G EUR ARTS INTRNSP BONN,GRMNY

AH 394L UK ARTS INTRNSP LONDON

AH 396 MUSEUM INTERNSHIP

AH 397 EUROPEAN ARTS INTERNSHIP

AH 397F UK ARTS INTERNSHIP

AH 398 SENIOR SEMINAR: CONTEMPORARY ART

The Seminar in Contemporary Art is a course designed to bring together studio art and art history majors and minors in an extended discussion of contemporary artistic practices. We often look backwards to the 1960s or earlier but usually focus on a method, issue, or aspect to contemporary art (e.g. participation; photography; authorship). This course prepares students for critical engagement with contemporary art practices and can serve as an excellent preparation for Art New York or for a career in the arts.

AH 402 CHINESE FILM

AH 407 FILM HISTORY: 1989-PRESENT

AH 408 EARLY MODERN CHINESE PNTG

AH 413 RACE & GENDER IN POP FILM

This course explores Hollywood's fascination with race and gender as social issues and as spectacles. In particular, we will focus on the ways that social difference have become the sites of conflicted narrative and visual interactions in our films. To examine competing representations of racial difference and sexual difference in US culture, we analyze popular films from the 1950's to the present.

AH 415 SEM IN CONT ART: PERF

Spring 2010. Please see AH 215 for description.

AH 416 ORIENTALISM ART & ARCH

AH 417 FRAMEWORKS SPACE AND PLACE

AH 418 PHOTOGRAPHY IN EAST ASIA

AH 422 PHOTOGRAPHIC PROCESSES

This course acts as an introduction to photographic preservation through the investigation of historic photographic materials. THIS COURSE IS RESTRICTED TO PPCM STUDENTS ONLY.

AH 423 COLLECTIONS MNGT & CARE

This course provides an overview of collection registration and cataloguing. THIS COURSE IS RESTRICTED TO PPCM STUDENTS ONLY.

AH 424 HISTORY OF PHOTOGRAPHY II

This history of photography through the careful study of photographic objects from the collection at GEH. We will investigate the ways in which technological change influences the practice of image making, and the way the needs and dreams of artists, scientists and ordinary citizens inspired new uses of cameras and photographic materials. We will seek to understand the historical, cultural and artistic context within which photographic images were first seen and used, and also to understand how meanings and uses of those images change over time. In addition to seminar participation, students will conduct original research about a photograph, photographer, or body of work using methods we develop over the semester to produce a paper that illuminates their chosen subject, showing how it fits within a larger history of photography, and within the history of the time and place from which it has come.

AH 425 CATALOG & RESEARCH METHODS

The cataloging portion of the class is designed to familiarize students with the basic principles behind descriptive and subject cataloging. The research methods component is dedicated to teaching the methodologies that will allow students to undertake scholarly projects focused on the history of photography. By the end of this course, students will demonstrate proficiency with providing accurate and discoverable information about photographic objects as well as the primary research required to write an academic research paper about photographs.

AH 427 POETICS OF TELEVISION

AH 428 THE ART MARKET

AH 430 HISTORY OF PHOTOGRAPHY

AH 433 THINKING THROUGH THE COPY

AH 434 ART AND ENVIRONMENT

AH 436 HISTORY OF FRENCH CINEMA

This course examines Christian art in its cultural context in Eastern Europe, the Near East, and the Slavic world. The main theme will be the art of the Byzantine Empire centered in Constantinople until 1453, but in addition, we will look at developments in Post Byzantine Greece, the Balkans, Bulgaria, Kievan Rus', Armenia, and Georgia.

AH 437 ISLAMIC ARCH IN CONTEXT

AH 438 IMPRESS & POST IMPRESS

AH 439 DOCUMENTARY FILM AND MEDIA

AH 440 ANDY WARHOL: TOPICS IN CONT

As the most famous artist of the second half of the twenthieth century, Warhol has been the subject of a growing literature that expands upon art history and criticism to encompass queer theory and cultural studies. But the most important shift in Warhols reception has been brought about by the restoration and return to circulation of his prolific film output from the years 1963-69. The films will be the main focus of this course, but we will also consider Warhols early work as a fashion illustrator, his entrepreneurship at the Factory, his voracious collecting, and, of course, his paintings. We will read Warhols writings, including A a Novel. The Philosophy of Andy Warhol, and Popism; and we will examine new approaches to Warhol and ask how they illuminate not only the art but also such issues as consumption, publicity, visibility, celebrity, sexuality, identity, and selfhood.

AH 441 AESTHETICS

AH 442 HIST OF PHOTO: 1839-1915

AH 443 FOUCAULT & ETHICS

AH 453 FILM HISTORY: 1929-1959

AH 454 FILM HISTORY: 1959-1989

This course will explore developments in world cinema—industrial, social, and political—from 1959 to 1989. It will explore film aesthetics, technologies, and circulation questions, considering questions like the following: What's new about the French New Wave? What do we mean by Third Cinema? How do different national cinemas influence each other? In what ways have various national cinemas responded critically to Hollywood's commercial dominance and to its conventions? How do popular and "art" cinemas speak to each other. How does cinema respond to the pressures and provocations of other media at the inception of the digital age? Weekly screenings and film journals required. FMS 132, "Introduction to the Art of Film," typically a prerequisite.

AH 455 ARTS IN AMERICAN CULTURE

What did it mean to be American? What did America look like, geographically and in terms of its people? What part did art and photography play in documenting and giving an identity to Americans in the century between 1850 and 1950? Attention will be given to documenting and representing the West, immigration, and the emerging urban environment. Students will work with the collections of George Eastman House and the Memorial Art Gallery. Requirements for the course include a short museum paper, a term paper, with draft, and take-home midterm and final exams.

AH 460 MASTERS SEMINAR

AH 461 BUF RES PROJ:CITY & CONT

AH 462 IMPRESS & POST IMPRESS

Spring 2010. Please see AH 262 for description.

AH 463 20TH CENTURY ART & CULTURE

This course will explore selected aspects of twentieth-century art, including issues of identity, difference, and the body and ways in which institutions have shaped art. Works in different media will be considered, including examples from George Eastman House. The course will focus on a limited time period or a theme.

AH 464 FILMS OF THE 1930S

AH 466 AFRICAN-AMERICAN VIS CULTURE

AH 469 THE ART MARKET

AH 470 CONTEMPORARY CHINESE ART

AH 479 CLOCKS AND COMPUTERS

AH 481 ART & CITY:NY IN THE 70'S

The recession & fiscal crisis of the 1970s was paradoxically a highly productive period of artistic experimentation in New York City. In the wake of the transforming art movements of the 1960s--Pop, Minimalism, and Conceptual Art--the 1970s saw the invention of new and hybrid media: video art, performance art, & site-specific installation works. By the end of the decade a new group of artists that came to be known as the Pictures Generation began showing in alternative spaces such as Artists Space. In this seminar we will study how the de-industrialization of New York contributed to new kinds of art making & examine how art works take the city as their subject. Among the artists we will consider are Bernd & Hilla Becher, Gordon Matta-Clark, Joan Jonas, Peter Hujar, Danny Lyon, Cindy Sherman, and Thomas Struth. Avant-garde film also took the city as its subject; the course will include the work such film & video-makers as Dara Birnbaum, Ernie Gehr, Peter Hutton, Babette Mangotle, and Charles Simonds.

AH 484 MODERN ARCH & URBANISM

The architecture of Los Angeles will serve two different purposes in this seminar. On the one hand, we will study the whole range of modern architecture--from mission style (Gill), arts and crafts (Greene and Greene), and the early modernists (Wright, Schindler), to high modernism (Neutra, the Case Study houses), and postmodernism (Gehry)--as a singular regional, but nevertheless representative development of modern architecture. On the other hand, using architecture as a starting point, we will look at the strange utopia/dystopia of Los Angeles as an example of a new kind of urbanism and style of living. Our texts will include not only studies of architecture, but also Hollywood films (Chinatown, Bladerunner), detective novels (Raymond Chandler), new journalism (Joan Didion), and urban theory (Reyner Bahnam, Mike Davis).

AH 485 HISTORY OF PHOTOGRAPHY II

AH 487 CULTURE ON DISPLAY

This course looks at the phenomenon of the museum, asking questions about the relation of culture and institutions. How do museums and the selection of what things go into them and the way objects are arranged and displayed shape the way we think about our past, about art? Why are "natural history" and "history" and "art" displayed in different institutions? What are the implications of reproduction for the "original"? Do museums have a future?

AH 488 PHILOSOPHY OF ART

AH 489 COMIC BOOKS

AH 491 INDEPENDENT STUDY

AH 492 THE MODERN CITY

AH 493 MASTER'S ESSAY

AH 507 RHETORIC OF THE FRAME

The task of any discussion of frames and framing in the visual arts whether in painting, sculpture, film, performance, architecture, graphic novels and cartoon strips, or digital media - is first and foremost to counter the tendency of framing devices to invisibility with respect to the artwork they supposedly contain. We see the work, but we do not see the frame. It is against this tendency to ignore the frame that this seminar is directed. At first glance the frame may seem to be as unproblematic. Starting from a consideration of the foundational texts of frame theory in the philosophy of Immanuel Kant, we will examine the discursive limits of the material and non-material border in the writings of, among others, Mayer Schapiro, Martin Heidegger, Jean-Claude Lebensztejn, Louis Marin, Craig Owens, and Jacques Derrida.

AH 508 MIMESIS: THEORY & PRACTICE

AH 511 DANCE, ART, AND FILM

This course explores relations among dance, art,and film at significant moments in the 20th & 21st centuries. We will study instances in which the forms are closely aligned, including the famous productions by artists Gontcharova, Picasso, & Matisse, for Diaghilev's Ballets Russes; Martha Graham's partnership with Isamu Noguchi; & Merce Cunningham's work with Robert Rauschenberg. We will look simply at how dance is filmed or how dance uses film. The course will concentrate on two figures of the postwar American avant-garde: Merce Cunningham & Yvonne Rainer. Cunningham's dances choreographed for film in collaboration with film & video makers & Rainer's move from choreography to filmmaking & eventually to hybrids of the two will constitute the core of the course. Other major figures will be explored: choreographers George Balanchine, Doris Humphrey, Trisha Brown, William Forsythe, Anne Teresa De Keersmaeker; & filmmakers Maya Deren, Ed Emshwiller; Babette Mangolte, Dominique Delouche, Thierry de May, etc.

AH 513 ARCHITECTURE, PHOTOGRAPHY, MODERNISM/POSTMODERNISM

The subject of this course is inspired by a series of photographs commissioned from Hiroshi Sugimoto for the Los Angeles Museum of Contemporary Arts' exhibition At the End of the Century: One Hundred Years of Architecture. Sugimoto's photographs show canonical works of modern architecture shot out of focus, reduced to both icon and phantom. The seminar considers the changing relations between photography and architecture, between image and space, between picture and object from the advent of modernism to the present. The course looks at these relations in the New Objectivity and the New Vision, Surrealism, the International Style, Mid-Century Modern, and ends by considering the uses of the photography of architecture in Conceptual art and the fascination with modernist architecture in contemporary photographic work. Students read critical studies of modernist architecture and photography and plot the relations between these discourses and practices.

AH 514 ITINERANT THINGS

AH 516 PHOTOGRAPHY & THE EVERYDAY

AH 517 STREET PHOTOGRAPHY

AH 519 MATERIAL CULTURE

This upper-level course interrogates the cultural meaning of things in an increasingly digital age. Paying attention to objects in their native as well as virtual frameworks, we will look at a variety of media (film, photography, fine art, popular culture) in material and on-line contexts to investigate paradigm shifts in 21st century scholarship, archiving, and understanding of material culture.

AH 523 MATERIALITY IN ARCHITECTURE

AH 541 ART OF INFRASTRUCTURE

AH 561 CLASSICAL FILM THEORY

This course examines the philosophical, aesthetic, and social issues that are central to classical film theory. It traces the historical development of film theory from 1900 to the 1950s. We will begin with on thinkers in the period of early cinema, including Germaine Dulac, Jean and Marie Epstein, and then we will examine the development of film theory in the work of later theorists, such as Jean Mitry, Sergei Eisenstein, Dziga Vertov, Siegfried Kracauer, Walter Benjamin, Andre Bazin and Christian Metz. Weekly screenings of historically contemporary films will allow us to examine the ongoing dialogue between the evolving medium and the developing theoretical discussion.

AH 583 VISUAL & CULTURAL STUDIES

The Colloquium introduces students in the Visual and Cultural Studies Program to aspects of the histories, theories, and methodologies of our field of study. We proceed in three ways: First, we read and discuss together a series of texts on and in visual and cultural studies. Second, various faculty members in the program conduct sessions in their areas of expertise based on readings that they select for us. And third, each student presents his or her own work to the colloquium. For this final part, it is important that students engage with visual and cultural studies models and provide relevant readings to other members of the colloquium.

AH 585 VISUAL CULTURE OF HERITAGE

AH 586V YORK WUN PHD VISITING STUDNT

AH 590 PHD READINGS

AH 591 INDEPENDENT STUDY

AH 594 PHD RESEARCH INTERNSHIP

AH 595 PHD RES/VIS&CULTRL STUDIES

AH 595A PHD RESEARCH IN ABSENTIA

AH 595B PHD RSRCH IN ABSENTIA ABROAD

AH 598 SENIOR SEMINAR:CONTEMPORARY ART

The Seminar in Contemporary Art is a course designed to bring together studio art and art history majors and minors in an extended discussion of contemporary artistic practices. We often look backwards to the 1960s or earlier but usually focus on a method, issue, or aspect to contemporary art (e.g. participation; photography; authorship). This course prepares students for critical engagement with contemporary art practices and can serve as an excellent preparation for Art New York or for a career in the arts.

AH 895 CONT OF MASTERS ENR

AH 897 MASTERS DISSERTATION

AH 897A MS DISSERTATN IN ABSENTIA

AH 899 MASTER'S THESIS

AH 985 LEAVE OF ABSENCE

AH 986V FULL TIME VISITING STUDENT

AH 995 CONT OF DOCTORAL ENROLLMENT

AH 997 DOCTORAL DISSERTATION

AH 997A DOCT DISSERTATN IN ABSENTIA

AH 997B DOC DISS IN-ABSENTIA ABROAD

AH 999 DOCTORAL DISSERTATION

AH 999A DOCT DISSERTATN IN ABSENTIA

AH 999B DOC DISS IN-ABSENTIA ABROAD

AME 140 INTRO TO AUDIO MUSIC & ENGIN

Provides an introduction to the science and technology of audio. Students will learn about the vibration of strings, musical tuning systems, overtones and timbre, modes of oscillation through the concept of a guitar. Fourier analysis, transducers and passive electrical components and circuits will be introduced when discussing amps and audio components. Hands on projects introduce the fundamental concepts of electronics, including voltage, current, resistance and impedance, basic circuit analysis, ac circuits, impedance matching, and analog signals. The course then introduces basic digital signal processing concepts, where they will use Arduinos and Pure Data to learn about conversion of sound to digital format, frequency analysis, digital filtering and signal

processing and musical sound synthesis. AME140 is recommended as an introduction to the Audio and Music Engineering major but is accessible to students of music or other non-technical disciplines who wish to learn the fundamentals of music technology.

Offered: Fall

AME 191 ART AND TECH OF RECORDING

This course covers the acoustical and psychoacoustic fundamentals of audio recording including the nature of sound, sound pressure level, frequency and pitch, hearing and sound perception, reflection, absorption and diffusion of sound, sound diffraction, room acoustics, reverberation, and studio design principles. The course also provides practical experience in audio recording including an introduction to recording studio equipment, microphones and microphone placement techniques, signal flow, amplification, analog and digital recording, analog to digital conversion, digital processing of sound, multi-track recording and an introduction to mixing and mastering. Each student is required to complete a substantive recording project at the end of the course.

Offered: Fall Spring

AME 192 LISTENING AND AUDIO PROD

This course is a continuation of AME191. Emphasis is on the development of critical listening skills and proficiency in audio mixing and mastering. Fundamental topics covered include the human auditory system, theories of hearing and audio perception, perception of loudness and pitch, critical bands and auditory masking, beats and roughness, temporal and pitch acuity, binaural hearing. Listening skills development include hearing “width” and “depth” in audio, mixing techniques in various musical genres, recognition of various effects including reverb, delay, compression, phasing and distortion. Production skills development includes equalization and achieving spectral balance, the use of compression and dynamic range control, achieving depth and dimension in recordings, panning and auditory scene control.

Offered: Fall Spring

AME 193 SOUND DESIGN

The course is intended to provide students a basic understanding of sound design, audio recording, and working with sound for picture. The emphasis is on demonstrations and hands-on The course is intended to provide students a basic understanding of sound design, and working with sound for picture. The emphasis is on demonstrations and hands-on experience to enable students to gain a practical knowledge of sound and music production using computers. Topics include synthesizers & samplers; recording and editing with Pro Tools; sound effect creation; foley & automatic dialog replacement; basic soundtrack composition; and working to picture. Many techniques are explored employing software and hardware based sound creation tools throughout the course. Students will complete a major project at the conclusion of the course.

Offered: Fall Spring

AME 194 AUDIO FOR VISUAL MEDIA

This course is intended to provide students with a basic understanding of the process and the skills for creating music for picture. The course emphasizes hands-on experience where students gain practical skills in scoring to picture using computers and it features guest lectures by industry leading professionals, who will share their insights on creating music for TV Shows, Advertising, Movies, Gaming, Animation, and Industrial Work. Topics also include soft synthesizers, samplers and virtual instruments; recording and editing with Pro Tools and Logic; and sound design on audio workstations. Students will complete a number of projects throughout the course.

Offered: Fall Spring

AME 196 Interactive Music Programming

In this course, students will explore digital audio synthesis and real-time interactive technologies by studying two audio programming languages, ChucK and Pure Data. They will be able to manipulate sound with MIDI controllers, laptops, mobile devices, joysticks, mice, and Wiimotes. Students will have a midterm presentation to demonstrate their programs in ChucK and at the end of the semester, we will have an interactive performance showcase. This interdisciplinary course does not require any programming experience.

Offered: Fall

AME 197 Audio for Gaming

The course is intended to provide students a basic understanding of audio for gaming. The emphasis is on demonstrations and hands-on experience to enable students to gain a practical knowledge of the integration of sound and music into video games using middleware. Students will primarily work with Wwise, Unity, Reaper, Pro Tools and Logic Pro X; Topics will include basic soundtrack composition for interactive; Advanced sound effect creation; foley; Dialog recording and editing; Working directly within a game environment; and audio for virtual reality. Supplementary software discussed will include FMod, Unreal, Fabric, Nuendo, and Elias. The course will also feature guest lectures by industry leading professionals, who will share their experience and insights.

AME 223 AUDIO ELECTRONICS

The devices, circuits, and techniques of audio electronics are covered in this course. Included is a survey of small signal amplifier designs and small-signal analysis and characterization, operational amplifiers and audio applications of opamps, large-signal design and analysis methods including an overview of linear and switching power amplifiers. The course also covers the design of vacuum tube circuits, nonlinearity and distortion. Other important audio devices are also covered including microphones, loudspeakers, analog to digital and digital to analog converters, and low-noise audio equipment design principles.

Offered: Spring

AME 233 MUSICAL ACOUSTICS

Engineering aspects of acoustics. Review of oscillators, vibratory motion, the acoustic wave equation, reflection, transmission and absorption of sound, radiation and diffraction of acoustic waves. Resonators, hearing and speech, architectural and environmental acoustics.

Offered: Spring

AME 240 Revolutions in Sound: Artistic and Technical Evolution of Sound Recording

This course provides a multifaceted account of the evolution of sound technologies, starting with Edison's invention of the phonograph in 1877 through the development of microphones, radio, magnetic tape recording, vinyl records, multi-track recording, digital audio, compact discs, the MP3 format, surround sound, online music streaming, and 3D audio. We will discuss how technology has shaped the musical experience, and, conversely, how the performance of various genres of music, including classical, rock, jazz, hip-hop, and country, has influenced the development of audio technologies. We will also investigate, drawing from a variety of primary and secondary sources, how certain legendary recordings were produced, including those of Enrico Caruso, Bessie Smith, Les Paul, Louis Armstrong, Elvis Presley, The Beatles, Michael Jackson, and Madonna. A special topic focuses on spatial audio for virtual reality (VR) and augmented reality (AR), binaural recording, and ambisonics.

Offered: Spring

AME 262 AUDIO SOFTWARE DESIGN I

This course aims to give students the ability to develop their own audio/music programs in C and a few major open-source audio programming languages. It begins with an introduction to computer music and audio programming, and a comparative survey of audio programming languages. After an overview of the C language, we then explore the topics of programming for sound synthesis. The second half of this course introduces the primary techniques of sound design using the audio programming environments of Pure Data and CSound. Students will practice their programming techniques through a series of programming assignments and a final project.

Offered: Fall

AME 264 AUDIO SOFTWARE DESIGN II

This course is a sequel to AME262/ECE475/TEE475 Audio Software Design I. The first part of the course will explore designing audio plug-ins with Faust (Function AUdio STream), which is a high-level functional programming language designed for real-time audio digital signal processing (DSP) and sound synthesis. Students will learn how to design plug-ins for Pro Tools, Logic and other digital audio workstations (DAWs). The second part of the course will focus on audio programming for iOS apps in Swift, which is the new programming language for iOS and OS X. Students will learn how to make musical apps with the sound engine libpd, which turns Pure Data (Pd) into an embeddable library. A special topic will introduce audio programming for video games with Wwise and FMod.

Offered: Spring

AME 272 AUDIO SIGNAL PROCESSING

This course is a survey of audio digital signal processing fundamentals and applications. Topics include sampling and quantization, analog to digital converters, time and frequency domains, spectral analysis, vocoding, digital filters, audio effects, music audio analysis and synthesis, and other advanced topics in audio signal processing. Implementation of algorithms using Matlab and on dedicated DSP platforms is emphasized.

Offered: Spring

AME 277 COMPUTER AUDITION

See AME 477

Offered: Fall

AME 292 ACOUSTICS PORTFOLIO

This is a follow on course to AME233, Musical Acoustics. In this course students will complete a major project in acoustics, such as the acoustical characterization of an architectural space, design or re-design of an architectural or studio space, development of acoustical computer simulation tools, design or characterization of acoustic musical instruments, design and fabrication of loudspeakers, design and implementation of a live sound or sound reinforcement system, or any other project in acoustics with the agreement of the instructor. Weekly meetings and progress reports are required.

Offered: Fall

AME 294 AUDIO DSP PORTFOLIO - LAB

This is a follow on course to AME272, Audio Digital Signal Processing. Students will complete a major design/build project in the area of audio digital signal processing in this course. Examples include a real-time audio effects processor, music synthesizer or sound analyzer or other projects of student interest. Weekly meetings and progress reports are required.

Offered: Fall Spring

AME 295 AUDIO ELECTRONICS PORTFOLIO

This is a follow on course to AME223, Audio Electronics. In this course students will complete a major design/build project in the area of audio electronics. Examples include a solid state or tube-based instrument amplifier, audio power amplifier, audio effects processor, audio analog/digital interface or any other audio electronic project with the agreement of the instructor. Weekly meetings and progress reports are required.

Offered: Spring

AME 386 SENIOR Design Project I

Senior Design Project in Audio and Music Engineering. In this first semester of the year-long AME Senior Project course students will define their product, possibly in collaboration with an outside customer, and then develop product concept documentation, detailed requirements specifications, system level designs, detailed sub-system designs and hopefully build demonstration prototypes.

Offered: Fall

AME 387 SENIOR DESIGN PROJECT II

Senior Design Project in Audio and Music Engineering. In the second semester of the year-long AME Senior Project course students will complete their projects including final system level designs, detailed sub-system designs, prototype building, testing, evaluation and final presentation to the customer.

Offered: Spring

AME 391 INDEPENDENT STUDY

AME 433 MUSICAL ACOUSTICS

AME 460 DIGITAL PROGRAMS & PROG I

The course is intended to provide students a basic understanding of sound design, and working with sound for picture. The emphasis is on demonstrations and hands-on experience to enable students to gain a practical knowledge of sound and music production using computers. Topics include MIDI; synthesizers & samplers; recording and editing with Pro Tools and Logic Pro

X; sound effect creation; foley & automatic dialog replacement; basic soundtrack composition; and working to picture. Many techniques are explored employing software and hardware based sound creation tools throughout the course.

Offered: Fall Spring

AME 461 DIGITAL PROGRAM. AND PROG II

This course is intended to provide students with a basic understanding of the process and the skills for creating music for picture. The course emphasizes hands-on experience where students gain practical skills in scoring to picture using computers and it features guest lectures by industry leading professionals, who will share their insights on creating music for TV Shows, Advertising, Movies, Gaming, Animation, and Industrial Work. Topics also include soft synthesizers, samplers and virtual instruments; recording and editing with Pro Tools and Logic; and sound design on audio workstations. Students will complete a number of projects throughout the course.

Offered: Fall Spring

AME 462 AUDIO FOR GAMING

The course is intended to provide students a basic understanding of audio for gaming. The emphasis is on demonstrations and hands-on experience to enable students to gain a practical knowledge of the integration of sound and music into video games using middleware. Students will primarily work with Wwise, Unity, Reaper, Pro Tools and Logic Pro X; Topics will include basic soundtrack composition for interactive; Advanced sound effect creation; foley; Dialog recording and editing; Working directly within a game environment; and audio for virtual reality. Supplementary software discussed will include FMod, Unreal, Fabric, Nuendo, and Elias. The course will also feature guest lectures by industry leading professionals, who will share their experience and insights.

Offered: Fall

AME 472 AUDIO SIGNAL PROC

This course is a survey of audio digital signal processing fundamentals and applications. Topics include sampling and quantization, analog to digital converters, time and frequency domains, spectral analysis, vocoding, digital filters, audio effects, music audio analysis and synthesis, and other advanced topics in audio signal processing. Implementation of algorithms using Matlab and on dedicated DSP platforms is emphasized.

Offered: Spring

AME 473 Audio for Gaming

The course is intended to provide students a basic understanding of audio for gaming. The emphasis is on demonstrations and hands-on experience to enable students to gain a practical knowledge of the integration of sound and music into video games using middleware. Students will primarily work with Wwise, Unity, Reaper, Pro Tools and Logic Pro X; Topics will include basic soundtrack composition for interactive; Advanced sound effect creation; foley; Dialog recording and editing; Working directly within a game environment; and audio for virtual reality. Supplementary software discussed will include FMod, Unreal, Fabric, Nuendo, and Elias. The course will also feature guest lectures by industry leading professionals, who will share their experience and insights.

AME 477 COMPUTER AUDITION

Computer audition is the study of how to design a computational system that can analyze and process auditory scenes. Problems in this field include source separation (splitting audio mixtures into individual source tracks), pitch estimation (estimating the pitches played by each instrument), streaming (finding which sounds belong to a single event/source), source localization (finding where the sound comes from) and source identification (labeling a sound source).

AME 481 SOUND DESIGN

AME 491 MASTER'S READING

AMS 200 THE IDEA OF AMERICA

Explores issues in recent scholarly writing about American culture, past and present, from an interdisciplinary perspective.

ANT 101 CULTURAL ANTHROPOLOGY

Provide an understanding of cultural variation and how anthropologists interpret it.

Offered: Fall Spring

ANT 102 INTRODUCTION TO MEDICAL ANTHROPOLOGY

Exploration of anthropological interpretation, research, and writing on the ways different peoples understand and deal with issues of illness and disease.

Offered: Fall

ANT 104 CONTEMPORARY ISSUES & ANTHROPOLOGY

The course shows distinctive ways anthropologists study the world, and considers how ethnographic research can contribute to our understanding of pressing contemporary social problems and their solutions.

Offered: Fall

ANT 105 LANGUAGE & CULTURE

ANT 110 INTRODUCTION TO LINGUISTIC ANALYSIS

Investigates the structure of human language, covering the basic techniques and concepts in the subfields of contemporary linguistic analysis.

ANT 120 JUSTICE AND EQUALITY

ANT 121 THE CITY: CONTESTED SPACES

ANT 126 THE ARCHAEOLOGY OF HOME

ANT 182 RELIGION AND LAW

ANT 201 THEORY AND METHOD IN ANTHROPOLOGY

A survey of major developments in anthropological thought. Explore the relationship between sociocultural theory and the methodologies used by anthropologists to conduct ethnographic research.

Offered: Spring

ANT 202 MODERN SOCIAL THEORY: KEY TEXTS & ISSUES

A close textual analysis by authors who established the framework of modern social theory, such as Karl Marx, Max Weber and Sigmund Freud.

Offered: Fall

ANT 203 RITUAL, MYTH & COSMOLOGY

Major anthropological approaches to the study of the symbolic knowledge embedded in life-cycle rituals, origin myths and religious scriptures.

Offered: Fall

ANT 204 ETHNOGRAPHIC THEMES

The role ethnographic texts play in posing and answering questions about human culture and society.

Offered: Spring

ANT 205 THEORIES & DEBATES IN ANTHROPOLOGY

Contemporary and historical debates which have shaped theory and method in cultural anthropology, showing how they have shifted over time and differed between national traditions.

Offered: Spring

ANT 213 WORLD MUSIC IN CONTEXT

Some of the world's major music traditions, including theater music from China and Japan, Indian and Indonesian classical music, ritual and ceremonial music from West Africa, Eastern Europe, and the United States. Focuses on musical sound structures as well as social, political, and religious contexts for musical performances.

Offered: Fall

ANT 214 LOVE, FRIENDSHIP & COMMUNITY

A neurosociological perspective on strong interaction and strong personal ties - high-frequency social dynamics marked by strong mutual coupling.

Offered: Fall

ANT 215 PUBLIC HEALTH ANTHROPOLOGY

Using a critical lens, this course examines how forms of social organization create good health for some groups and poor health for other groups.

Offered: Spring

ANT 216 MEDICAL ANTHROPOLOGY

Cultural and social dimensions of health and illness including the political and economic dimensions.

Offered: Spring Summer

ANT 222 MATERIALITY & MEANING

In this course, we will explore the social and communicative roles that objects play in human society and investigate how people use objects to communicate, rebel, exert power, or make sense of the world around them in both market and non-market contexts.

Offered: Spring

ANT 224 ANTHROPOLOGY & DEVELOPMENT

Major trends in the anthropological study of international development through ethnographic case studies from around the world.

Offered: Spring

ANT 227 LOCAL & GLOBAL MARKET RESEARCH

Focuses on understanding consumer behavior in terms of cultural symbols and values. It shows how an ethnographic approach to market research contributes to development of marketing and advertising strategies.

Offered: Fall

ANT 230 WAR, GENOCIDE & JUSTICE

This course will explore how societies attempt to achieve justice in the wake of political violence such as genocide or civil war.

Offered: Fall

ANT 231 (IL)LEGAL ANTHROPOLOGY

Examines the power of law in the contemporary world through a focus on illegal practices.

Offered: Spring

ANT 232 INDIGENOUS RIGHTS AND WORLDS

This course explores the legal, political, and philosophical dimensions of the concept of indigenous people; how it differs from overlapping concepts such as peasantry, race, ethnicity, language, culture, and religion; how its definition varies according to the history of colonialism in different parts of the world; and why this movement gained momentum after the end of the Cold War.

Offered: Spring

ANT 235 THE BLACK BODY

ANT 246 ANTHROPOLOGICAL APPROACHES TO GENDER & SEXUALITY

This course will examine gender as a key component of social, economic, and political life.

ANT 248 COLONIAL & CONTEMPORARY AFRICA

The impact of capitalism on African socioeconomic institutions during and after the era of formal colonialism.

Offered: Fall

ANT 257 CHINESE SOCIETY AFTER MAO

Adopts an anthropological approach towards understanding the dramatic socio-cultural transformations that have followed in the wake of China's post-Mao economic reforms.

Offered: Fall Spring

ANT 260 NATIVE AMERICAN ART & RELIGION

This examination of selected spiritual and artistic traditions of the indigenous peoples of North America will range from the Canadian arctic to the desert southwest, as we look at various ways in which the visual arts articulate religious and philosophical systems of thought.

ANT 261 TRUTH & POWER

ANT 264 ISLAM & GBL POLITICS

The response of the Islamic world to European colonialism and American foreign policy.

Offered: Fall

ANT 265 GLOBAL HEALTH

The social and cultural circumstances that give rise to religious fundamentalism, explore the reasons for its attraction to adherents, and look at its contrasts with other forms of religious practice.

ANT 266 ANTHROPOLOGY OF GLOBALIZATN

Discussions of globalization within cultural anthropology and related disciplines. How, why, and with what consequences people and money, ideas and technologies variously move across the planet.

ANT 268 SCIENCE, CULTURE & EXPERTISE

In this course, we will investigate how people develop knowledge about the natural and social worlds. Through these case studies, we will explore the ways in which personal relations, cultural values, and power struggles are essential to scientific production rather than peripheral to it.

Offered: Fall

ANT 269 EARLY CIVILIZATION AFRICA

ANT 270 RADICAL SOCIAL THEORY

This course examines the arguments and the rhetoric of radical thinkers who have tried to change the world rather than just interpret it since the revolutions of 1848.

Offered: Spring

ANT 273 ARCHAEOLOGY OF AFRICA

ANT 283 PREHIST OF ANC PERU:INCAS

ANT 284 ANTHROPOLOGY OF TOURISM

ANT 285 Res. Coll.: Morgan Bicent.

This colloquium will facilitate research into the life, works and legacies of Lewis Henry Morgan (1818-1881).

ANT 287 CITIES & URBANISM

ANT 288 SOC CONST OF WHITENESS

ANT 290 MALAWI SUPERVISED TEACHING

ANT 294 ARCHAEOLOGY AFRICAN DIASPORA

ANT 296 ETHNOARCHAEOLOGY OF AFRICA

ANT 299 MALAWI IMMERSION SEMINAR

A three week study abroad/experiential learning program focusing on the health, social, political and cultural issues in Malawi, Africa.

Offered: Summer

ANT 301 ADVANCED TOPIC SEMINAR: NATURE

"NATURE" -- As biology, kinship, and environment--in anthropology.

Offered: Fall

ANT 303 ADVANCED TOPIC SEMINAR: MIGRATION

Migration is a universal part of human life, but it takes on special meanings in a contemporary world divided by the borders of nation-states. This course will investigate migration in a broad anthropological context, with a special focus on recent studies of migration in the Americas (North, South, and Central). Readings will include contemporary studies from the anthropology and sociology of migration, as well as classic texts on topics like: boundaries and the social order, language and nationalism, structure and agency, shifting gender roles, and the politics of cultural identity. Students will also be expected to conduct some original research on a topic related to migration

Offered: Fall

ANT 305 ADV TOP SEM: MONEY AND MORALITY

This course examines classic and contemporary anthropological debates concerning the effects of money and capitalist relations on social life, cultural values, and interpersonal relationships.

Offered: Fall

ANT 309 ADV SEM:INDIGINEOUS PEOP MOV

The legal, political, and philosophical dimensions of the concept of indigenous peoples.

Offered: Spring

ANT 310K SOCIAL NETWORK THEORY & ENTREPRENEURIAL ACTIVITY IN SILICON VALLEY I

Network theory is at the forefront of an emerging collaboration among academics, with many new and interesting interdisciplinary implications, especially for entrepreneurship. Students will analyze cutting-edge research and network modeling techniques.

Offered: Spring

ANT 311K SOCIAL NETWORK THEORY & ENTREPRENEURIAL ACTIVITY IN SILICON VALLEY II

This course is designed for students who have already taken SOC/ANT 310K. It aims to deepen and extend skills in the same areas for which 310K was an introduction: social network theory and the new sociology of business and entrepreneurial activity.

Offered: Spring

ANT 312 ADV MONEY AND MORALITY

ANT 384 VISUAL CULTURE OF HERITAGE & IDENTITY

How people (through the collectivities of gender, ethnicity, race, or nation) construct visual narratives about the past.

ANT 390 SUPERVISED TEACHING

For ANT 101, Cultural Anthropology. By application only. The TA program requires students to work in teams and to lead group discussion.

ANT 391 INDEPENDENT STUDY

ANT 392 PRACTICUM IN ANTHROPOLOGY

ANT 393 HONORS RESEARCH & ANTHROPOLOGY

ANT 393W SENIOR PROJECT

ANT 394 INTERNSHIP

Internships will be graded on a pass/fail basis only.

ANT 395 READINGS IN ANTHRO

ANT 416 MEDICAL ANTHROPOLOGY

ANT 422 MATERIALITY & MEANING

ANT 457 CHINESE SOCIETY AFTER MAO

Offered: Fall

ANT 464 ISLAM AND GLOBAL POLITICS

ANT 466 ANTHROPOLOGY OF GLOBALIZATN

ANT 468 SCIENCE, CULTURE & EXPERTISE

In this course, we will investigate how people develop knowledge about the natural and social worlds. Through these case studies, we will explore the ways in which personal relations, cultural values, and power struggles are essential to scientific production rather than peripheral to it.

ANT 485 Res: Coll: Morgan Bicent

This colloquium will facilitate research into the life, works and legacies of Lewis Henry Morgan (1818-1881).

ANT 491 MASTER'S READINGS IN ANTHRO

ANT 493 MASTER'S ESSAY

ANT 495 MASTER'S RESEARCH IN ANTHRO

ANT 499 MALAWI IMMERSION SEMINAR

A three week study abroad/experiential learning program focusing on the health, social, political and cultural issues in Malawi, Africa.

Offered: Summer

ANT 509 ADV SEM:INDIGINEOUS PEOP MOV

ANT 591 PHD READINGS IN ANTHROPOLOGY

ANT 592 GRAD TEACHING ASSISTANTSHIP

ANT 595 PHD RESEARCH IN ANTHROPOLOGY

ANT 595A PHD RESEARCH IN ABSENTIA

ANT 895 CONT OF MASTER'S ENROLLMENT

ANT 899 MASTER'S DISSERTATION

ANT 985 LEAVE OF ABSENCE

ANT 986V FULL TIME VISITING STUDENT

ANT 995 CONT OF DOCTORAL ENROLLMENT

ANT 997 DOCTORAL DISSERTATION

ANT 997A DOCT DISSERTATN IN ABSENTIA

ANT 999 DOCTORAL DISSERTATION

ANT 999A DOCT DISSERTATN IN ABSENTIA

ARA 101 ELEMENTARY ARABIC I

An introduction to Modern Standard Arabic including the alphabet, pronunciation, vocabulary, grammar, elementary conversation, and reading.

Offered: Fall

ARA 102 ELEMENTARY ARABIC II

A continuation of Arabic 101 from the Fall semester. Introduction of writing complex sentences and reading paragraphs. In addition, more vocabulary building, and longer conversational sessions. This course will require basic fundamentals of the Arabic language such as reading simple sentences and engaging in a simple conversation. This course is designed to help students gain more knowledge in their vocabularies, grammar, and oral skills.

Offered: Spring

ARA 103 INTERMEDIATE ARABIC

Continuation of the sequence of introductory Arabic courses. Readings and oral and written exercises introduce students to more complex sentence structures, and there is an increased emphasis on vocabulary building.

Offered: Fall

ARA 104 INTERMEDIATE ARABIC II

A continuation of Arabic 103. This course is designed to enable students to engage in an intermediate conversation with a native Arabic speaker in different scenarios. The course will cover all the materials which can help a student with writing and reading as a professional Arabic speaker.

Offered: Spring

ARA 105 TOPICS IN ARABIC LANGUAGE

This course serves as an intermediate between the 101-104 sequence and the 200 courses. The emphasis falls on morphology--recognizing word patterns, that is--vocabulary building and improving reading speed and translating short prose articles.

ARA 148 THE ARABIAN NIGHTS

The Arabian Nights, a classic of world literature, is discussed in term of the major themes - love and sex, comedy and adventure - that have given the stories their universal appeal and their timeless relevance. The readable English translation of Malcolm C. Lyons (Penguin Classics) is used, and classes are mostly devoted to discussion.

Offered: Fall

ARA 149 THE ARAB REVOLUTIONS: FICTIONS AND CURRENT EVENTS IN THE ARAB WORLD

This course combines contemporary Arabic fictions in translation with discussion of the recent history and current events of the Arab world to help us to understand what is happening there now.

ARA 202 ARABIC PROSE SEMINAR II

Exploration of a variety of contemporary prose genres to expand the students' vocabulary and increase their familiarity with different prose styles. Among the genres we will read will be the short story, the essay, and newspaper articles.

ARA 203 ARABIC PROSE SEMINAR III

This class focuses on three areas: reading and writing modern standard Arabic and conversational Arabic.

ARA 204 ADV ARABIC PROSE SEM I

ARA 205 ADV ARABIC PROSE SEMINAR II

ARA 206 ADV ARA PROSE SEM III

Content varies; offered upon request.

ARA 390 SUPERVISED TEACHING

ARA 391 INDEPENDENT STUDY

ARA 391W INDEPENDENT STUDY

ARA 394 INTERNSHIP

ASL 101 BEGINNING AMERICAN SIGN LANGUAGE I

This course is online only with no on campus classroom time. An introductory course in American Sign Language as developed and used by the Deaf community in most areas of North America. Everyday communication is the centerpiece of every lesson. Topics revolve around sharing information about our environment and us. Grammar is introduced in context, with an emphasis on developing question and answer skills. You learn conversational strategies to help you maintain a conversation. Students will also be exposed to native signers modeling appropriate language and cultural behaviors in various situations. On line interaction activities allow you to rehearse what you’ve learned.

Offered: Fall Spring

ASL 102 BEGINNING AMERICAN SIGN LANGUAGE II

A continuation course in American Sign Language as developed and used by the Deaf community in most areas of North America. Everyday communication is the centerpiece of every lesson with a focus on expressing the language. Topics revolve around sharing information about our environment and us. Grammar is introduced in context, with an emphasis on developing question and answer skills. You learn conversational strategies to help you maintain a conversation. Students will also be exposed to Deaf Culture/history and native signers modeling appropriate language and cultural behaviors in various situations. Interaction activities allow you to rehearse what you’ve learned. Experience with the local Deaf community is required.

Offered: Fall Spring

ASL 105 INTERMEDIATE AMERICAN SIGN LANGUAGE I

The third in a sequence of courses, this course focuses on further development of conversational skills in ASL. Students will acquire and expand different conversational strategies and increase ASL vocabulary. Grammatical principles and functions will

be emphasized. Appropriate cultural behaviors and conversational regulators in ASL will continue to be an important part of class. Information on Deaf Culture/history will be expanded. Experience with the local Deaf community is required.

Offered: Fall Spring

ASL 106 INTERMEDIATE AMERICAN SIGN LANGUAGE II

The fourth in a sequence of courses, this course focuses on further development of conversational and narrative skills in ASL. Students will learn and expand different conversational strategies and increase ASL vocabulary. An introduction to analysis of grammatical principles and functions will be included. Appropriate cultural behaviors and conversational regulators in ASL will continue to be an important part of class. Experience with the local Deaf community is required. NOTE: MUST obtain permission code from ASL Program advisor to register for this course. ASL Majors & Minors will be permitted to register first.

Offered: Fall Spring

ASL 110 COMPARATIVE STUDY OF FRENCH SIGN LANGUAGE

An introductory course in French Sign Language (LSF) as developed and used by the Deaf community in France. Everyday communication is the centerpiece of every lesson. Topics revolve around sharing information about our environment and us. Grammar is introduced in context, with an emphasis on developing question and answer skills. You learn conversational strategies to help you maintain a conversation. Interaction activities allow you to rehearse what you've learned. Cultural behaviors of the Deaf Community in France will be introduced in various and appropriate situations.

Offered: Spring

ASL 112 LSF EXCHANGE EXPERIENCE

ASL 113 FRENCH SIGN LANGUAGE & DEAF CULTURE IN FRANCE

A unique study abroad experience in France for Deaf and hearing college-level ASL students and professionals. Take this opportunity to be immersed in French Sign Language and the French Deaf Community in various settings and further your understanding of the international Deaf World. Written and spoken French are not required.

Offered: Summer

ASL 200 SIGNE LANGUAGE STRUCTURE

An examination of signed languages and the cognitive constraints that shape them, through a detailed consideration of the structure of American Sign Language and other natural signed languages of the world. Includes training in sign language notation and analysis.

Offered: Spring

ASL 201 INTRODUCTION TO ASL LITERATURE

This course will introduce students to ASL literature by studying selected videos. Student will learn the origin, characteristics of ASL literature. Emphasis will be placed on historical background, meaning of the story content, discussion of grammatical features, styles revealed in these contexts and many different examples of literature delivered in American Sign Language (ASL): stories, humor, poems and folklore.

Offered: Fall

ASL 202 HISTORY & CULTURE OF AMERICAN DEAF COMMUNITY

An overview of various aspects of American Deaf culture, including descriptions of deafness, Deaf history, education, art and sports will allow students to explore and discuss issues facing the Deaf community. Contrasting a Deaf cultural view with the majority medical view will be discussed. Analysis of the local Deaf community is required.

Offered: Fall

ASL 203 ADVANCED ASL

The fifth in a sequence of course, this course is designed for the advanced study of ASL. It provides students with the opportunity to increase their ASL expressive competence, and to use ASL in a variety of discourse and narrative settings. Skills to be developed are: storytelling, semantic awareness analysis, in-depth exploration of ASL grammar and complex uses of space, ways

of making transitions between ideas, use of classifiers, and determining appropriate perspective in specific texts. Experience with the local Deaf community through interviews is required. Satisfies the upper level writing requirement.

Offered: Fall Spring

ASL 204 THEORY & PRACTICE OF SIGN LANGUAGE INTERPRETING

This course introduces students to the theory and practice of Sign Language interpreting in the United States. This survey will provide students with the tools necessary for understanding: 1) the history of sign language interpreting and its impact on current models of interpreter processing, 2) the work that interpreters do, 3) the ethical foundations of the field, and 4) the multi-faceted issues related to working across languages and cultures. The course follows a seminar format and is highly interactive in nature to encourage critical thinking based on in-class discussions, assigned readings, and student projects.

Offered: Fall

ASL 205 ART OF TRANSLATION ASL & ENGLISH

This course will explore the meaning of translation, practice various translation methods, and analyze both written English and recorded ASL texts, with a focus on the analysis of English texts and the development of ASL translations. Extensive discussion of various types of texts and the factors that must be considered when preparing an accurate ASL or English translation will contribute to students' translation work. Satisfies the upper level writing requirement.

Offered: Spring

ASL 208 LANGUAGE DEVELOPMENT

Basic introduction to children's language development; including the acquisition of phonology, syntax, and semantics. Focuses on the acquisition of a first language by young children, and compares the acquisition of various spoken and signed languages to find possible universal principles of language learning. No signing skills required. Students should have a background in at least one of the fields pertinent to the course: language structure, psycholinguistics, cognitive science, developmental psychology, or general psychology.

Offered: Spring

ASL 209 TEACHING ASL AS A 2ND LANGUAGE

This course is designed to provide hands-on experience in teaching different subjects in ASL and evaluating student competencies in ASL and to develop an understanding of current methods and theories regarding ASL as the classroom language. Students learn about the history of teaching and resources to support such efforts. Students are provided opportunities to practice basic teaching techniques and select appropriate materials to incorporate relevant cultural and grammatical features in their lessons. The course follows a seminar format and is highly interactive in nature to encourage discussions based on in-class lectures, assigned readings, and student teaching projects.

Offered: Spring

ASL 210 NARRATIVE & POETIC STYLES OF ASL

This course examines techniques for telling stories and creating different ASL literary forms throughout the course with guidance from the instructor. ASL poems on video will be analyzed for their poetic elements and devices, such as: eye gaze, role shifting, spatial referencing and appropriate use of classifiers.

Offered: Spring

ASL 222 ASL FINE ART

Over the course of the semester, the student will be introduced to the unique aspects of ASL Fine Arts. We will consider some original works of Fine Arts delivered in American Sign Language (ASL): Deaf writings and literature, Deaf arts, Deaf Theater and Deaf films. In addition, some questions we will explore as follows: What is ASL Fine Arts? How does ASL Fine Arts compare to other Fine Arts? How do Deaf people and ASL contribute to themes in these works? The instructor will show to you many different examples of ASL Fine Arts. Students are involved in having projects and give a presentation for each topic.

Offered: Spring

ASL 250 SOCIO-LINGUISTICS OF DEAF COMMUNITY

A discussion and analysis of variation in ASL and its relation to variables of social situation and identity in American Deaf communities. Topics include theoretical and methodological concepts in sociolinguistics, levels of grammatical variation, and

social variables such as region, identity, register and attitude. Research includes the language behavior of Deaf signers, children of deaf adults, third culture groups and the role of hearing L2 signers in the Deaf community.

Offered: Spring

ASL 260 LANGUAGE & PSYCHOLINGUISTICS

An overview of the nature and processing of human languages, including comparisons between language and animal communication systems, a consideration of the biological bases of human language, and discussion of the cognitive mechanisms used in producing and understanding language. Students taking this course should have a background in at least one of the fields pertinent to the material of the course: language structure, psycholinguistics, cognitive science, or general psychology.

Offered: Fall

ASL 280 DEAF-RELATED CAREERS

Bringing together historical information and career preparation strategies for teaching, service provision and other related fields, this course is designed to provide an understanding of the interaction between hearing signers and deaf signers in various professional settings. Inherent in these interactions is the concept of “Third Culture”, the place where deaf and hearing people meet and relate with one another; a neutral zone where the cultures of each group sometimes co-exist and sometimes collide. The course also provides an opportunity to explore ways of navigating this Third Culture zone as hearing people work and interact with deaf people. The course follows a seminar format and is highly interactive in nature to encourage discussions based on in-class lectures, assigned readings, and student projects.

Offered: Fall

ASL 391 INDEPENDENT STUDY

ASL 392 PRACTICUM

ASL 394 INTERNSHIP

ASL 395 HONORS RESEARCH

ASL 987V PART TIME VISITING STUDENT

AST 102 RELATIVITY, BLACK HOLES AND THE BIG BANG

A physical and astronomical (but non-mathematical) picture of the workings of Einstein's theories of relativity, and their application to cosmology and to black holes and wormholes, the most exotic and energetic objects known to scientists. Our aims in this course are two: to demystify black holes, big-bang cosmology, and the nature of space and time for non-science majors, in order that they may evaluate critically the frequent references to these esoteric concepts in the press and in popular science and science-fiction literature; and to provide non-science majors with a glimpse of the processes by which scientific theories are conceived and advanced. Typical textbook: Kip Thorne, "Black Holes and Time Warps"

Offered: Fall

AST 104 THE SOLAR SYSTEM

To acquaint the nonphysical science concentrator with aspects of the historical and modern study of the solar system, including results from space probe studies, and with theories dealing with the evolution of the solar system.

Offered: Spring

AST 105 INTRO TO THE MILKY WAY GALAXY

In this course we introduce students to our home galaxy, the Milky Way, and use the structure and contents of this normal galaxy to illustrate the origins of stars like the Sun, the origins of the chemical elements from which we are formed, and the evolution of galaxies through the life of the Universe. The emphasis in the presentation is on the descriptive astronomy and the physical principles describing the operation of the various celestial objects, with a minimum of mathematical detail.

Offered: Fall

AST 106 COSMIC ORIGINS OF LIFE

A review of the evidence for habitats and the building blocks of life in extraterrestrial space, the possibilities for the development of life elsewhere, and the light that these ideas cast on the origins of life on Earth. We also discuss the future of civilizations like ours, the possibilities of travel to other habitable planets, and communication between advanced cultures spread widely through space. The material we discuss will be drawn very widely from astronomy, physics, geology, chemistry, biology, paleontology and history, presented with a minimum of mathematical complexity. Typical textbook: Neal Evans, "Extraterrestrial Life," fifth edition.

Offered: Fall Spring Summer

AST 111 THE SOLAR SYSTEM & ITS ORIGIN

A study of the the structure and composition of the individual planets and smaller solar-system bodies, the orbital dynamics and overall structure of the Solar system and its contents, and the formation of planetary systems like ours. Designed for freshmen who intend to major in science or engineering, the course involves the use of ideas learned in mathematics and physics courses taken concurrently or in high school, such as single-variable calculus, Newton's laws of motion and gravity, and the ideal-gas law. The course also includes a night-time observing project taking CCD images of planets and their satellites using the Mees Observatory 24-inch telescope. Typical textbook: "Fundamental Planetary Science: Physics, Chemistry and Habitability" by Jack J. Lissauer & Imke de Pater

Offered: Fall

AST 142 ELEMENTARY ASTROPHYSICS

Application of the physics and math techniques learned in the introductory course sequences, to the study of celestial objects outside the Solar system. We discuss stars and their formation from interstellar matter, the structure of galaxies and their distribution in the Universe, and the origins and large-scale structure of the Universe: all topics that are developed much further in the AST 200-level courses. The course also includes a night-time observing project, based upon student use of professional-style telescopes and CCD cameras. Registration of recitation is required at the time of course registration. Typical textbook: Marck Kutner, "Astronomy" A Physical Perspective," second edition.

Offered: Spring

AST 231 GRAVITATION & GENERAL RELATIVITY

Introduction to special & general relativity with applications to astrophysics & cosmology. A thorough study of special relativity & then on general relativity. The discussion of the latter begins with the connection between geometry and physics, the equivalence principle, and presentation of the metrics (the solutions to the Einstein field equation) for simple geometries. We will discuss first the spherically-symmetric (Schwarzschild) solution as an intro. to spacetime warping in strong & weak gravity; the basic physics of orbits around black holes; the connection of black holes & accretion disks; use the emergent concepts to understand astronomical objects that contain BH-accretion disk combinations, such as X-ray binaries & active galactic nuclei. Discussion on the effect of black hole rotation on the metric. Gravitational lensing will be introduced; homogeneous & isotropic (Roberts-Walker) solution, & apply this metric cosmology & the large-scale structure of the universe.

Offered: Fall

AST 232 THE MILKY WAY GALAXY

Introduction to the internal physics and astronomy of galaxies using the Milky Way as a primary example. The course will focus on the dynamics of stars and gas inside galaxies and how gravity works therein to produce the observed stellar motions and internal structures. The course will address both the observations and the theory of galactic structure.

Offered: Fall

AST 233 ASTRODYNAMICS

Survey of the dynamics of planetary systems and galaxies

AST 241 STELLAR ASTROPHYSICS

This introduction to the physics of stars is taken primarily by juniors and seniors majoring in physics and astronomy, physics, optics, or mathematics. The elements of radiative transfer and gas dynamics are presented and applied to the study of the atmospheres of stars. The interior structure and evolution of stars of various types are also discussed.

Offered: Spring

AST 242 ASTROPHYSICAL FLUID DYNAMICS

An Introduction to Astrophysical Fluid Dynamics. This class explores topics in astrophysics while giving a solid foundation in the fundamentals of fluid mechanics. We introduce the theory of the motion of gases and fluids necessary to understand and explore a wide range of astronomical phenomena including stellar structure, supernovae blast waves and accretion discs. We will cover ideal fluid mechanics, Eulerian and Lagrangian views, conservations laws, hydrostatic equilibrium, self-similar flows, blast waves, spherical accretion and wind flows, astrophysics shocks, viscous flows, vorticity, accretion disks, atmospheric waves, hydrodynamic instabilities, and radiative heating and cooling. We will introduce finite difference numerical techniques so that dynamics in 1 dimension can be explored numerically. At the end of the term we will explore topics of recent interest such as gamma ray bursts, astrophysical turbulence or winds from exoplanets.

Offered: Spring

AST 390 SUPERVISED TEACHING

Introduction to the techniques of physics instruction, active observation, and participation in the teaching of an undergraduate course under the guidance of a faculty member. (Same as AST 390).

Offered: Fall Spring Summer

AST 391 INDEPENDENT STUDY

Normally open to seniors concentrating in physics and astronomy. Independent study project under the direction of a faculty member of the Department of Physics and Astronomy.

AST 391W INDEPENDENT STUDY

Normally open to seniors concentrating in physics and astronomy. Independent study project under the direction of a faculty member of the Department of Physics and Astronomy. This course can be used towards satisfying the upper level writing requirement.

AST 393 SENIOR PROJECT

Completion of an independent research project under the direction of a faculty member of the Department of Physics and Astronomy.

Offered: Fall Spring Summer

AST 393W SENIOR THESIS

Completion of an independent research project under the direction of a faculty member of the Department of Physics and Astronomy. This course includes a writing component and can be used to satisfy part of the upper-level writing requirement.

Offered: Fall Spring Summer

AST 395 SPECIAL TOPICS

Completion of an independent research project under the direction of a faculty member.

Offered: Fall Spring Summer

AST 395W INDEPENDENT STUDY

Independent research project under the direction of a faculty member of the Department of Physics and Astronomy. This course includes a writing component and can be used to satisfy part of the upper-level writing requirement.

Offered: Fall Spring Summer

AST 461 PHYSICS OF ASTROPHYSICS I

One half of the required 2 part sequence (can be taken before or after AST 462). Focuses on the physics of radiation production by ionized and atomic matter, the transfer of radiation through matter, and what we measure from astrophysical objects. Concepts are developed from first principles and many applications in astrophysics are studied. (course is cross-listed with PHY 451).

Offered: Spring

AST 462 PHYSICS OF ASTROPHYSICS II

One half of the required 2 part sequence (can be taken before or after AST 461). Focuses on hydrodynamic and plasma processes relevant to astrophysics. Fundamentals of fluid dynamics and magnetohydrodynamics, fluid, MHD, and thermal instabilities, turbulence, supersonic and subsonic flow. Accretion physics, shocks, dynamos, particle accelerations in plasmas, dynamics of magnetic fields. Concepts are developed from first principles and many applications in astrophysics are studies. (Cross-listed with PHY 452).

Offered: Spring

AST 554 COSMOLOGY

Introduction to cosmology, covering the following broad topics: Introduction to the universe, introduction to general relativity, cosmological models and the Fridemann-Walker universe, thermodynamics of the early universe, particle physics of the early universe, and the formation of large-scale structure (same as PHY 554).

Offered: Fall

AST 564 HIGH-ENERGY ASTROPHYSICS

A survey of current research in high energy astrophysics. Topics drawn from X-ray and gamma x-ray astrophysics, supernovae and planetary nebulae, binary accretors, astrophysics of compact objects (black holes, neutron stars, white dwarfs, plasma astrophysics, magnetic field-particle interactions, cosmic rays, astrophysical jets, active galactic nuclei. (cross-list PHY 564).

AST 591 PHD READINGS IN ASTROPHYSICS

Special study or work, arranged individually.

Offered: Fall Spring

AST 595 PHD RESEARCH IN ASTROPHYSICS

Special topics in Astronomy and Astrophysics.

AST 595A PHD RESEARCH IN ABSENTIA

Special topics in astronomy or astrophysics

AST 895 CONT OF MASTERS ENROLLMENT

AST 899 MASTER'S DISSERTATION

AST 985 LEAVE OF ABSENCE

AST 995 CONT OF DOCTORAL ENROLLMENT

AST 997 DOCTORAL DISSERTATION

AST 999 DOCTORAL DISSERTATION

AST 999A DOCT DISSERTATN IN ABSENTIA

ATH 299G DIGITAL ARCHAEOLOGY AFRICA

BCS 110 NEURAL FOUNDATIONS OF BEHAVIOR

Introduces the structure and organization of the brain, and its role in perception, movement, thinking, and other behavior. Topics include the brain as a special kind of computer, localization of function, effects of brain damage and disorders, differences between human and animal brains, sex differences, perception and control of movement, sleep, regulation of body states and emotions, and development and aging.

Offered: Fall Spring Summer

BCS 111 FOUNDATIONS OF COGNITIVE SCIENCE

Introduces the organization of mental processes underlying cognition and behavior. Topics include perception, language, learning, memory, and intelligence. This course integrates knowledge of cognition generated from the field of cognitive psychology with findings from artificial intelligence and cognitive neuroscience.

Offered: Fall Spring Summer

BCS 151 PERCEPTION & ACTION

Explores how the biology of our senses shapes perceptual experiences of reality. Emphasizes sense of sight primarily and hearing secondarily. An important theme is that our sensory systems play a crucial role in the execution of coordinated movements of our bodies, as we navigate in, and interact with, the environment.

Offered: Fall

BCS 152 LANGUAGE & PSYCHOLINGUISTICS

Overviews the nature and processing of human languages, including comparisons between language and animal communication systems, the biological bases of human language, and the cognitive mechanisms used in producing, understanding, and learning language.

Offered: Fall

BCS 153 COGNITION

Considers human cognitive processes, including behavioral and computational methods used to understand the nature of cognition. Explores how we perceive and integrate sensory information to build a coherent perception of the world; how we memorize and retrieve information; how we reason and solve problems.

Offered: Spring

BCS 172 DEVELOPMENT OF MIND & BRAIN

Introduces human development, focusing on the ability to perceive objects and sounds, to think and reason, and to learn and remember language and other significant patterned stimulation. Includes the nature and mechanisms of development in humans and an overview of what is known about brain and behavioral development in other species.

Offered: Spring Summer

BCS 183 ANIMAL MINDS

Considers the cognitive and communicative abilities of animals, especially primates, as compared with humans. Topics include thinking, reasoning, remembering, communicating, and understanding number, time, and causality, in animals ranging from ants to apes.

Offered: Fall

BCS 185 SOCIAL COGNITION

Social cognition combines classic social psychology with methods and theories from cognitive psychology and neuroscience to study how people make sense of each other and the social world. We will examine how the social environment influences cognitive processes such as attention, heuristics, and appraisals, and how these processes in turn affect decisions, behaviors, and health. We will critically evaluate research on a variety of topics, such as emotion regulation, stereotyping and prejudice, and stress and decision making.

Offered: Fall

BCS 203 LAB IN NEUROBIOLOGY

Introduces the various methods used in neurobiological research. Covers anatomical, behavioral, molecular, and physiological approaches to studying neural organization and function and concludes with a research project that extends over a period of five weeks. STUDENTS MUST REGISTER FOR A WORKSHOP WHEN REGISTERING FOR THE MAIN SECTION.

Offered: Spring

BCS 204 LAB IN COGNITIVE NEUROSCIENCE

Introduces methods used in cognitive neuroscience, a field that examines cognitive phenomena in terms of their underpinnings in the brain. Covers functional anatomical approaches to studying brain function and dysfunction, behavioral and brain imaging

approaches to studying learning and memory, and neuropsychological approaches to understanding sensory, motor, and cognitive processing and disorders.

Offered: Fall

BCS 205 LAB IN DEVELOPMENT & LEARNING

Introduces behavioral methods used to study the development of perception, cognition, and language, and provides hands-on experience in the testing of human infants and children. Includes two research projects and a final powerpoint presentation.

BCS 206 UNDERGRADUATE RESEARCH IN COGNITIVE SCIENCE

Students will gain experience with research methods in cognitive science by performing a project that involves replicating an important finding in the field. Students will work collaboratively in small groups, and will gain extensive hands-on experience with critical analysis of scientific literature, experimental design, programming of stimuli and behavioral tasks, data collection, statistical analysis, oral presentation, and writing of research manuscripts. Students who enroll must also enroll in BCS 207 in the following semester. The course is open to rising juniors who are declared BCS majors and rising sophomores who fully intend to declare a BCS major.

Offered: Fall

BCS 207 ADVANCED UNDERGRADUATE RESEARCH IN COGNITIVE SCIENCE

This course must be taken immediately following BCS 206. The goal of this advanced course is to perform a more substantial original research project that builds upon the first semester project to address a novel research question. The end-goal of the course is for each group of students to produce a research manuscript that may be of sufficient quality to be submitted for publication.

Offered: Spring

BCS 208 LAB IN PERCEPTION & COGNITION

Introduces behavioral and psychophysical studies of perceptual and cognitive phenomena. Students perform, analyze, interpret, and report results from experiments that move from reproducing classic phenomena to conducting new studies independently.

Offered: Spring

BCS 220 THE INTELLIGENT EYE

Provides an interdisciplinary view of modern research into how the human brain solves the problems involved in perception, including how we perceive the three-dimensional structure of the world, how we recognize objects and how visual information is used to control action in the world. Students read contemporary research and, through classroom discussion and critical essays, explore and analyze the questions and debates that define contemporary perceptual science.

Offered: Spring

BCS 221 AUDITORY PERCEPTION

This course considers how we comprehend the auditory environment. Topics include the physical stimulus for hearing, the physiology of the auditory system (both at the periphery and in the central nervous system), the psychophysics of basic auditory perception (e.g., hearing thresholds), higher level auditory perception (including auditory scene analysis and the perception of complex auditory events such as speech and music), and hearing disorders. Considers research from a diverse range of perspectives including behavioral research, cognitive neuroscience, studies of individual differences, and research that adopts a comparative perspective.

Offered: Spring

BCS 223 VISION AND THE EYE

This course will reveal the intricate optical and neural machinery inside the eye that allows us to see. It will describe the physical and biological processes that set the limits on our perception of patterns of light that vary in luminance and color across space and time, We will compare the human eye with the acute eyes of predatory birds and the compound eyes of insects. The course will also describe exciting new optical technologies for correcting vision and for imaging the inside of the eye with unprecedented resolution, and how these technologies can help us understand and even cure diseases of the eye.

Offered: Spring

BCS 229 COMPUTER MODELS OF HUMAN PERCEPTION & COGNITION

How can computer models help us understand how people perceive and reason about their environments? This course addresses this question, with emphasis placed on how people use probabilistic reasoning in order to represent and manage ambiguity and uncertainty for the purpose of making intelligent decisions. The course is relevant to students with interests in computational studies of human perception and cognition, and to students with interests in artificial intelligence. Homework assignments will require students to write computer programs using either the Matlab, R, or Python programming languages.

Offered: Fall

BCS 232 ARTIFICIAL INTELLIGENCE

Introduces fundamental principles of artificial intelligence, including heuristic search, automated reasoning, handling uncertainty, and machine learning. Presents applications of AI techniques to real-world problems such as understanding the web, computer games, biomedical research, and assistive systems. This course is a prerequisite for advanced AI courses.

Offered: Spring

BCS 233 STATISTICAL SPEECH & LANGUAGE PROCESSING

An introduction to statistical natural language processing and automatic speech recognition techniques. This course presents the theory and practice behind the recently developed language processing technologies that enable applications such as speech-driven dictation systems, document search engines (e.g., finding web pages) and automatic machine translation. Students taking this course at the 400 level will be required to complete additional readings and/or assignments.

BCS 235 NATURAL LANGUAGE PROCESSING

An introduction to natural language processing: constructing computer programs that understand natural language. Topics include parsing, semantic analysis, and knowledge representation.

BCS 236 MACHINE VISION

Introduction to computer vision, including camera models, basic image processing, pattern and object recognition, and elements of human vision. Specific topics include geometric issues, statistical models, Hough transforms, color theory, texture, and optic flow.

BCS 240 BASIC NEUROBIOLOGY LAB

THIS LABORATORY IS FOR NEUROSCIENCE MAJORS ONLY. Students should register during online registration; do not wait until the semester begins. Due to time conflicts, students may not be able to take NSC 201P/BCS 240P and STT 212 in the same semester. Contact the Undergraduate Coordinator at ugcoord@bcs.rochester.edu if you have scheduling issues.

Offered: Fall

BCS 240P BASIC NEUROBIOLOGY LAB

THIS LABORATORY IS FOR NEUROSCIENCE MAJORS ONLY. Students should register during online registration; do not wait until the semester begins. Due to time conflicts, students may not be able to take NSC 201P/BCS 240P and STT 212 in the same semester. Contact the Undergraduate Coordinator at ugcoord@bcs.rochester.edu if you have scheduling issues.

Offered: Fall

BCS 242 NEUROPSYCHOLOGY

Examines clinical neuropsychology, which bridges neurology, neuroscience, and clinical psychology. Covers history of clinical neuropsychology, principles of neuropsychological assessment, and the interpretation of cognition and behavior as they relate to brain dysfunction. Considers specific neurological syndromes including neurodegenerative, cerebrovascular, toxic, and memory disorders; epilepsy; head trauma; infectious processes; pediatric neuropsychology; psychiatric syndromes; and forensic neuropsychology. Patient presentations (videotape and in-person interviews) supplement lectures.

Offered: Fall

BCS 243 NEUROCHEMICAL FOUNDATIONS OF BEHAVIOR

Introduces the field of neurochemistry with an emphasis on cellular and molecular neurochemistry. Topics range from study of neurochemical mechanisms that underlie normal neural function to discussion of behavioral disturbances that result from

neurochemical abnormalities. Considers neurochemical mechanisms of adaptive behavior, learning and memory, behavioral disorders, gender differences, and drug seeking behavior.

Offered: Fall

BCS 244 NEUROETHOLOGY

Explores the neural basis of naturally occurring animal behaviors. Emphasizes how information is integrated from interactions between molecules, cells, and groups of cells, all of which are necessary to produce behavior. Considers how hormones, neural development, anatomy, physiology, and evolution lead to behaviors such as orientation, communication, feeding, and reproduction.

Offered: Spring

BCS 245 SENSORY & MOTOR NEUROSCIENCE

Focuses on how single neurons and populations of neurons represent sensory information, how sensory signals are transformed and decoded to mediate perception, and how perceptual signals are converted into neural commands to initiate actions. Explores how simple behaviors (such as detection and discrimination) can be quantified and explained in terms of neural activity. Introduces students to quantitative approaches for linking neural activity to perception and decision-making. Emphasizes studies of the visual, oculomotor, and somatosensory systems, with some attention to the auditory and vestibular systems as well.

Offered: Spring

BCS 246 BIOLOGY OF MENTAL DISORDERS

Examines the neurobiology of anxiety/phobic conditions, mood disorders, and chronic psychotic states, particularly schizophrenia. Considers definitions of psychiatric syndromes, the problems of diagnosis, brain organization, and neurotransmitter systems involved in state functions. Introduces research approaches including epidemiologic, phenomenologic, family/adoption, longitudinal descriptive, psychophysiologic, neuropharmacologic, genetic linkage, and postmortem studies; emphasizes recent in vivo brain imaging and neuroreceptor studies.

Offered: Spring

BCS 247 TOPICS IN COMPUTATIONAL NEUROSCIENCE

This course will provide an introduction to computational neuroscience, the study of both the computations performed by the brain, and of computational models of neuronal responses. In the course we will focus on the visual system.

Offered: Spring

BCS 248 NEUROECONOMICS

We will discuss the neuroscience and psychology underlying reward-based decisions. Topics of discussion will include behavioral economics, neuroimaging studies of consumer behavior, physiological studies of the reward system, and computational models of choice and reinforcement learning. Students will be expected to read several scholarly articles each week, attend lectures, and participate in discussions.

Offered: Fall

BCS 249 DEVELOPMENTAL NEUROBIOLOGY

Advanced treatment of the development of the nervous system, including the nature/nurture issue and factors that influence the development of neural organization and function. Topics include the production, migration, differentiation and survival of neurons; functional specialization of neural regions; axonal navigation; target mapping. Compares and contrasts developmental plasticity with forms of neural plasticity exhibited in adults.

Offered: Spring

BCS 259 LANGUAGE DEVELOPMENT

Introduces children's language development, including the acquisition of phonology, syntax, and semantics. Focuses on the acquisition of a first language by young children, comparing the acquisition of a variety of spoken and signed languages to find possible universal principles of language learning.

Offered: Spring

BCS 260 MUSIC & THE MIND

Introduction to the discipline of music cognition. Topics include empirical methods, psycho-acoustic principles, influence of Gestalt psychology, music and language, metric and tonal hierarchies, music and the brain, aspects of musical development, and research on musical memory, expectation, and emotion.

Offered: Fall

BCS 261 LANGUAGE USE & UNDERSTANDING

Explores the cognitive mechanisms used to speak and understand language, with a special focus on contextually situated language use. Studies the moment-by-moment processes underlying language production and comprehension, including how speakers choose words and phrases and how listeners understand them.

Offered: Spring

BCS 264 SIGNED LANGUAGE STRUCTURE

Examines signed languages and the cognitive constraints that shape them, through a detailed consideration of the structure of American Sign Language and other natural signed languages of the world. Includes training in sign language notation and analysis. Knowledge of sign language is required.

Offered: Spring

BCS 265 LANGUAGE & THE BRAIN

Examines how the comprehension and production of language is implemented in the human brain. Uses evidence from neuropsychological and brain imaging studies to consider the following questions: What is the network of brain areas that subserves language processing? What are the specific functions of these areas? What happens when these brain areas are damaged? What is the timing of brain activity in these areas during language processing? Finally, how do the brain areas involved in language processing overlap with those involved in other complex cognitive processes?

Offered: Spring

BCS 310 SENIOR SEMINAR

A 2-credit-hour course required of all senior BCS majors who do not enter the honors program. Emphasizes reading, evaluating, and discussing primary research papers. Each student chooses a topic, becomes familiar with it, selects a classic paper, leads a class discussion, and writes an evaluation of the paper as though providing peer review for a journal.

Offered: Fall Spring

BCS 311 HONORS SEMINAR

A 2-credit course required of seniors in the BCS Honors program. Students choose a classic paper for the class to read, lead a discussion of it, and give a formal oral and written presentation of their honors theses. To be taken in the semester the honors thesis is completed. See BCS 310 and refer to the Undergraduate Programs Coordinator in the Dept. of Brain & Cognitive Sciences for more information.

Offered: Spring

BCS 390 SUPERVISED TEACHING

BCS 391 INDEPENDENT STUDY

BCS 391W INDEPENDENT STUDY

BCS 392 PRACTICUM

BCS 393 SENIOR PROJECT

BCS 395 INDEPENDENT RESEARCH

BCS 396 SPECIAL TOPICS IN BCS

BCS 435 NATURAL LANGUAGE PROCESSING

BCS 491 MASTER'S READINGS

BCS 493 MASTER'S SPECIAL TOPICS

BCS 501 LANGUAGE

An interdisciplinary introduction to the field of natural language, emphasizing behavioral, linguistic, and computational perspectives. Topics include language structure, production, comprehension, and acquisition

BCS 502 COGNITION

An interdisciplinary introduction to cognition. Topics covered include learning, memory, attention, concepts and categories, cognitive development, and reasoning, each considered from the perspectives of behavioral study, computational processes, and neural mechanisms.

BCS 504 SENSORY SYSTEMS

An introduction to the functioning of the senses and the physiological mechanisms underlying them. Topics include vision, audition, somatosensation, the vestibular system, guestation and olfaction, with an emphasis on the general principles that govern mammalian sensory systems.

BCS 505 PERCEPTION & MOTOR SYSTEMS

An interdisciplinary introduction to perception and action. Topics covered include the perception of motion, depth, surfaces, pattern and object perception, eye movements, motor planning and organization, and attention.

BCS 507 BASIC NEUROBIOLOGY

BCS 507P BASIC NEUROBIOLOGY LAB

BCS 508 COGNITIVE NEUROSCIENCE

General introduction to neuroscientific studies of various aspects of human cognition and perception, e.g. object-recognition, development, attention, language, vision, etc. The class will consist both of lectures and also seminar-type discussions led by the students.

BCS 510 DATA ANALYSIS I

Issues of data analysis in experimental research. The course focuses on parametric techniques, specifically analysis of variance. Topics covered include simple and complex designs for between and within subjects factors, including mixed designs; analysis of covariance and trend and contrasts. The course includes a lab in which students are taught to use a popular statistical package for data analysis

BCS 511 BEHAVIORAL METHODS IN COGNITIVE SCIENCE

This course reviews the leading methods used to investigate cognitive skills and/or their neural substrate in humans. The course is divided into several sections: accuracy and psychophysics; RT and processing states; interference, neighborhood effects and system dynamics; investigations of natural data; brain imaging methods as applied to the cognitive sciences; and issues when studying special populations such as infants, patients, animals or any non-compliant subject. Technical articles on each technique are discussed in combination with specific illustrations of how each has been used to investigate research questions.

BCS 512 COMPUTATIONAL METHODS IN COGNITIVE SCIENCE

This course focuses on: (a) statistical tools that are useful for revealing structure in experimental data; and (b) representation and learning in statistical systems and the implications of these systems for the study of cognitive processes. Examples of the applications of computational methods from the cognitive neuroscience literature are examined throughout the course. Topics covered include: principal component analysis, multi-dimensional scaling, hierarchical and non-hierarchical clustering, regression, classification, time series modeling via hidden Markov models and Kalman filters, Hebbian learning, competitive learning, maximum likelihood estimation, and Bayesian estimation.

BCS 513 INTRO TO fMRI: IMAGING, COMPUTATIONAL ANALYSIS, & NEURAL REPRESENTATIONS

The core focus of the course will be on how fMRI can be used to ask questions about neural representations and cognitive and perceptual information processing. Some of the questions that the course will address include: 1) The basic fMRI signal just shows activation in different parts of the brain. How can we get from that to addressing questions about neural representations and neural information processing? 2) Ways of relating neural activation to behavioural performance. Can fMRI provide information over and above what can be obtained from behaviour alone? 3) Standard fMRI analysis using the General Linear Model, including preprocessing steps. 4) Multivariate fMRI analysis using machine learning approaches. There will also be a component, about 20% of the class, on the big-picture aspects of MRI physics and physiology which make fMRI possible.

BCS 514 LAB IN NEUROBIOLOGY

The first part of the course entails structured laboratory experiments to provide experience with neuroanatomical, neurophysiological and molecular biological approaches to studying neural organization and function. The course concludes with one of two 5-week long research projects that culminate in the production of a final research paper. In one project,students explore laterality in the basal ganglia and its influence on motor behavior. In the other project, students explore the molecular genetics of touch sensation in nematodes.

BCS 521 AUDITORY PERCEPTION

This course considers how we comprehend the auditory environment. Topics include the physical stimulus for hearing, the physiology of the auditory system (both at the periphery and in the central nervous system), the psychophysics of basic auditory perception (e.g., hearing thresholds), higher level auditory perception (including auditory scene analysis and the perception of complex auditory events such as speech and music), and hearing disorders. Considers research from a diverse range of perspectives including behavioral research, cognitive neuroscience, studies of individual differences, and research that adopts a comparative perspective.

BCS 528 SPECIAL TOPICS IN VISION

Advanced graduate seminar on a chose problem in vision sciences. In previous years, topics have included motion perception, stereopsis, color vision and visuo-motor control. Readings for the course are drawn from the scientific literature in the topic being covered. Students are typically required to lead discussions on papers.

Offered: Fall Spring

BCS 530 DATA-ENABLED RESEARCH

This course provides a hand-on introduction to experimental and analytical methods in cognitive science and artificial intelligence. Each year, it offers three modules from a rotating list, including topics such as brain imaging, computational linguistics, and computer vision. The course is open to graduate students in any discipline. The course is recommended for who intend to pursue research in the the intersection of cognitive science and computer science, but prior experience in those fields is not required.

BCS 531 PRACTICUM DATA-ENABLED

In this interdisciplinary project course, graduate students will work in mixed teams to develop an artifact that addresses a research question and/or infrastructure need in the intersection of cognitive science and artificial intelligence. Students will learn principles of design by participating in the stages of brainstorming, specification, initial design, prototyping, refinement, and evaluation. The artifacts created by this course could include online showcases, demonstrations, tutorials, blogs, scientific papers, and software components to support further research.

BCS 532 PROBABILISTIC THEORIES OF COGNITIVE PROCESSING

This course is a graduate-level seminar intended to teach students about state-of-the-art probabilistic theories of human cognitive processing. Topics covered include theories of language, perception, categorization, numerical cognition, and decision making.

BCS 533 STATISTICAL SPEECH & LANGUAGE PROCESSING

An introduction to statistical natural language processing and automatic speech recognition techniques. This course presents the theory and practice behind the recently developed language processing technologies that enable applications such as speech-driven dictation systems, document search engines (e.g., finding web pages) and automatic machine translation.

BCS 535 NATURAL LANGUAGE PROCESSING

An introduction to natural language processing: constructing computer programs that understand natural language. Topics include parsing, semantic analysis, and knowledge representation.

BCS 536 MACHINE VISION

Introduction to computer vision, including camera models, basic image processing, pattern and object recognition, and elements of human vision. Specific topics include geometric issues, statistical models, Hough transforms, color theory, texture, and optic flow

BCS 537 INFORMATION THEORY & COMPLEXITY IN COGNITION & NEUROSCIENCE

This seminar will present the fundamentals of information theory with applications to cognitive and neural systems. The course will closely follow textbooks by Cover & Thomas and Li & Vitanyi, aiming to combine mathematical foundations with applications to research. Covered topics will include probability, surprisal, entropy, mutual information, channel capacity, coding theory, and differential entropy. The course will also cover formal measures of complexity, including Kolmogorov complexity and related notions of data compression, minimum description length, and their relationship to learning and inference. Students taking the course for credit or auditing will present papers using these ideas across cognitive science and neuroscience.

BCS 541 INTEGRATIVE NEUROSCIENCE

see NSC 531

BCS 542 NEUROPSYCHOLOGY

Examines clinical neuropsychology, which bridges neurology, neuroscience, and clinical psychology. Covers history of clinical neuropsychology, principles of neuropsychological assessment, and the interpretation of cognition and behavior as they relate to brain dysfunction. Considers specific neurological syndromes including neurodegenerative, cerebrovascular, toxic, and memory disorders; epilepsy; head trauma; infectious processes; pediatric neuropsychology; psychiatric syndromes; and forensic neuropsychology. Patient presentations (videotape and in-person interviews) supplement lectures.

BCS 543 NEUROCHEMICAL FOUNDATIONS OF BEHAVIOR

Introduces the field of neurochemistry with an emphasis on cellular and molecular neurochemistry. Topics range from study of neurochemical mechanisms that underlie normal neural function to discussion of behavioral disturbances that result from neurochemical abnormalities. Considers neurochemical mechanisms of adaptive behavior, learning and memory, behavioral disorders, gender differences, and drug seeking behavior.

BCS 546 BIOLOGY OF MENTAL DISORDERS

Examines the neurobiology of anxiety/phobic conditions, mood disorders, and chronic psychotic states, particularly schizophrenia. Considers definitions of psychiatric syndromes, the problems of diagnosis, brain organization, and neurotransmitter systems involved in state functions. Introduces research approaches including epidemiologic, phenomenologic, family/adoption, longitudinal descriptive, psychophysiologic, neuropharmacologic, genetic linkage, and postmortem studies; emphasizes recent in vivo brain imaging and neuroreceptor studies.

BCS 547 INTRODUCTION TO COMPUTATIONAL NEUROSCIENCE

A review of recent progress in computational theories of the brain, emphasizing theories of representation and computation in neural circuits. The course begins with biophysical models of neurons and end with models of complex cognitive functions such as sensory motor transformations or sentence processing

BCS 548 NEUROECONOMICS

We will discuss the neuroscience and psychology underlying reward-based decisions. Topics of discussion will include behavioral economics, neuroimaging studies of consumer behavior, physiological studies of the reward system, and computational models of choice and reinforcement learning. Students will be expected to read several scholarly articles each week, attend lectures, and participate in discussions.

BCS 549 DEVELOPMENTAL NEUROBIOLOGY

Advanced treatment of the development of the nervous system, including the nature/nurture issue and factors that influence the development of neural organization and function. Topics include the production, migration, differentiation and survival of

neurons; functional specialization of neural regions; axonal navigation; target mapping. Compares and contrasts developmental plasticity with forms of neural plasticity exhibited in adults.

BCS 560 PROSEMINAR IN MUSIC COGNITION

The objective of this course is to engage in professional-level music-cognitive research. The course surveys primary research in the field of music cognition and functions as a laboratory course in experimental method. Students discuss and critique experimental studies published in journals and monographs. In addition, the class works collaboratively to build skills in experimental design and data analysis via readings and class demonstrations/activities. Each student is expected to design and run an empirical experiment or computational project as a final research paper.

BCS 564 SIGNE LANGUAGE STRUCTURE

An examination of signed languages and the cognitive constraints that shape them, through a detailed consideration of the structure of American Sign Language and other natural signed languages of the world. Includes training in sign language notation and analysis.

BCS 566 TOPICS IN UNDERSTANDING LANGUAGE

This seminar will focus on selected topics in language processing, for graduate students and faculty in the language sciences. The specific topic for a particular year will be announced.

BCS 581 MUSIC AND LANGUAGE

This course will explore relationships between musical and linguistic structure. In addition to reading and evaluating early writings on the subject by Bernstein and Lerdahl & Jackendoff, students will assess more recent work by Huron and Patel, and the linguists Hayes and Ladd on prosodic structure. We will also discuss experimental work on prosodic structure in language and on music acquisition in infants. Co-taught by a music theorist and linguist, the course will review basic aspects of phonology, intonational phonology, meter, and memory that are relevant to music. Each student will complete a piece of original research in the form of a term paper and class presentation. Permission of instructor required for non-Eastman students.

BCS 582 GRANT WRITING IN BCS

A workshop in which students will write a proposal for either a pre-doctoral or post-doctoral NRSA fellowship from NIH. Students will review old NRSA proposals, both successful and unsuccessful and analyze the components of a successful proposal. Through process of peer review and discussion, students will write and revise the main sections of an NRSA proposal, culminating in a penultimate proposal that will be reviewed by two mock study sections – one in the class and one by faculty in BCS and CVS. Reviews from these study sections will be returned a week before the deadline for NRSA proposals at NIH. Students are encouraged to use the class to prepare real proposals that they can submit to NIH.

Offered: Spring

BCS 591 PHD READINGS

BCS 595 PHD RESEARCH

BCS 595A PHD RESEARCH IN ABSENTIA

BCS 598 SUPERVISED TEACHING ASSISTANT

BCS 599 PROFESSIONAL DEVELOPMENT & CAREER PLANNING

The purpose of this 1-credit course is to provide first- and second-year graduate students with a set of guiding principles for optimizing their progression through the PhD program. The following topics will be discussed: fulfilling program requirements, advising and mentoring, time management, conference presentations and journal publications, writing skills for journals and grants, how to juggle, persist, drop, and collaborate in your research projects, the post-PhD job market and qualifications required for success.

Offered: Spring

BCS 895 CONT OF MASTER'S ENROLLMENT

BCS 899 MASTER'S DISSERTATION

BCS 985 LEAVE OF ABSENCE

BCS 986V FULL TIME VISITING STUDENT

BCS 995 CONT OF DOCTORAL ENROLLMENT

BCS 997 DOCTORAL DISSERTATION

BCS 997A DOCTORAL DISSERTATION IN ABSENTIA

BCS 999 DOCTORAL DISSERTATION

BCS 999A DOCTORAL DISSERTATION IN ABSENTIA

BCS 999B PHD IN-ABSENTIA ABROAD

BIO 101 GENES, GERMS, & GENOMICS

An introduction to selected principles of the biological sciences, explored through current topics in biology. Areas of study include the organization of life, the scientific method, and understanding data. Biological and biomedical topics of contemporary interest to be discussed may include, but are not limited to, cancer, aging, stem cells, genetic engineering, genetic counseling, the genetic and molecular basis of human disease, precision medicine and personal genomics, and the human microbiome.

Offered: Fall

BIO 102 NATURAL HISTORY

Introduction to identification and observation of plants and animals in their environment, focusing on common species and major ecological communities in the Rochester vicinity.

Offered: Fall

BIO 103 NATURAL HISTORY RESEARCH

Supervised independent research on local plants or animals, for students who have taken BIO 102.

Offered: Fall

BIO 104K ECOSYSTEM CONSERVATION & HUMAN SOCIETY

A new approach in conservation biology. Identifies, places economic value on natural ecosystems (clean water and air, waste decomposition, pollination and farm land productivity). Other approaches in conservation, review of services ecosystems provide, ways the value of services are determined, and influencing economic and political policy.

Offered: Fall

BIO 105 INTRODUCTORY BIOLOGY LABORATORY

Companion for the lecture course, Principles of Biology I. Protein and nucleic acid structure, enzyme activity, cell and tissue structure, and cell reproduction. Emphasizes experimental design and data analysis.

Offered: Fall

BIO 109 DARWIN & DARWINISM

Offered: Fall

BIO 110 PRINCIPLES OF BIOLOGY I

First semester in a course sequence for all biology majors. The course will provide an introduction to biochemistry, cell biology, molecular biology, and animal physiology. Emphasis will be placed on quantitative learning and data analysis; workshops

will emphasize the construction and interpretation of graphs, while laboratories will provide hands on experience with basic techniques and approaches.

Offered: Fall Spring Summer

BIO 111 PRINCIPLES OF BIOLOGY II

The second semester of the introductory sequence designed for majors in biology. Evolution Biodiversity, Physiology, Ecology and Conservation biology.

Offered: Spring Summer

BIO 111P INTRODUCTORY BIOLOGY LAB

This course is no longer offered. See BIO 117P.

BIO 112 PERSPECTIVES IN BIOLOGY I

First semester of a two-course introductory sequence. Biochemistry, molecular and cellular evolution, cell reproduction, fundamentals of genetics and molecular biology. Emphasis on chemistry underlying biological processes, experimental approaches, data analysis, and quantitative methods.

Offered: Fall

BIO 113 PERSPECTIVES IN BIO II

Second semester of a two-course introductory. Evolution, organismal diversity, ecology, and functional biology. Emphasis on experimental approaches, data analysis, quantitative methods, and reading original papers. Open only to freshmen.

Offered: Spring

BIO 115 INTRO TO ORGANISMAL EVOLUTIONARY BIOLOGY

Introductory class to organismal and evolutionary biology. Emphasis on evolution, biodiversity, ecology, and behavioral ecology.

Offered: Spring

BIO 116P INTRODUCTORY BIOLOGY LAB I

BIO 117P INTRODUCTORY BIOLOGY LAB II

Accompanies the lecture course Principles of Biology II, Perspectives in Biology II and Intro to Organismal Evolutionary Biology. Plant and animal diversity, biology of protista, animal behavior, bioinformatics, and physiology. Problem solving, critical thinking and experimental design.

Offered: Spring

BIO 151 INTRODUCTION TO BIOCHEMISTRY LAB

BIO 190 GENETICS & THE HUMAN GENOME

Basics of Mendelian and molecular genetics with a focus on the structure, function and evolution of the human genome.

Offered: Fall

BIO 198 PRINCIPLES OF GENETICS

The course covers the basics of Mendelian and molecular genetics with a focus on genetic approaches to scientific questions and the molecular biology of the " Central Dogma". Recommended for most Biology majors. The optional companion lab for this course is BIO 198P. A student cannot receive credit of both BIO 190 and BIO 198.

Offered: Fall Summer

BIO 198P PRINCIPLES OF GENETICS LAB

Introduction to basic genetic theory and laboratory practices. Classical inheritance in eukaryotes, bacterial genetics and molecular technology techniques. Emphasis is on data analysis and experimental design.

Offered: Fall Summer

BIO 201 LECTURES IN PHYSIOLOGY

Function of various mammalian systems with special emphasis on humans. Topics include: excitable tissue, respiration, nutrition, reproduction, endocrinology, skeletal, circulatory and renal systems; homeostatic mechanism. Laboratory exercises will not be conducted.

Offered: Fall

BIO 202 MOLECULAR BIOLOGY

Molecular mechanisms of gene replication, gene expression, and the control of gene expression in both prokaryotic and eukaryotic cells. Topics include: enzymatic mechanisms of DNA replication, recombination and repair; transposable elements; DNA transcription; RNA splicing; RNA translation; repressors, activators and attenuators; recombinant DNA and genetic engineering.

Offered: Fall

BIO 202W MOLECULAR BIOLOGY WRITING

Optional Upper-Level Writing Course for BIO 202

Offered: Fall

BIO 204 PRIN OF HUMAN PHYSIOLOGY

Normal function with an emphasis on humans. Topics include homeostatic regulation, various systems (endocrine, nervous, muscular, cardiovascular, respiratory, renal, digestive, and metabolic), and integration of function of those systems.

Offered: Fall

BIO 204P MAMMALIAN PHYSIOLOGY LAB

Offered: Fall

BIO 204W MAMMALIAN PHYSIOLOGY WRITING

Optional Upper-Level Writing Course for BIO 204

Offered: Fall

BIO 205 EVOLUTION

Broad survey of evolutionary biology. History of evolutionary thought; mathematical theory of population and quantitive genetics; phylogenetics and molecular evolution; origin and history of life; sexual selection; cooperation and conflict; speciation; human evolution. Theory- and concept-oriented; not a survey of organismal diversity.

Offered: Spring

BIO 206 EUKARYOTIC GENOMES

A course that discusses the remarkable diversity of eukaryotic genomes with an emphasis on the human genome. The course will emphasize the importance of understanding the forces of evolution to explain molecular and genetic topics such as the large variation in genome size and structure as well as the remarkable complexity of gene regulation.

Offered: Spring

BIO 206W EUKARYOTIC GENOMES WRITING

Optional Upper-Level Writing Course for BIO 206

Offered: Spring

BIO 207W BIO LAB COURSE DEV

BIO 208 INTRO TO PROGRAMMING FOR BIO

Offered: Fall

BIO 210 MOLECULAR CELL BIOLOGY

An intermediate level course that covers fundamental cell processes at the molecular level. Topics include organelle structure and functions, membrane biogenesis, cytoskeleton, cell signaling, cell cycle growth and death.

Offered: Spring

BIO 210W MOLECULAR CELL BIOLOGY WRITING

Optional Upper-Level Writing Course for BIO 210

Offered: Spring

BIO 214 BIOSTATISTICS

Descriptive statistics, graphics, estimation, elementary probability theory, distributions, hypothesis testing, goodness of fit tests, experimental design, correlation, analysis of variance, regression and likelihood. Optional recitations familiarize student with R.

Offered: Spring

BIO 214W BIOSTATISTICS WRITING

Optional Upper-Level Writing Course for BIO 214

Offered: Spring

BIO 217 PRINCIPLES OF HUMAN ANATOMY WITH LAB

Structures of the body with an emphasis on humans. Topics include the integumentary, skeletal, muscular, endocrine, nervous, cardiovascular, respiratory, renal, digestive, and reproductive systems. Students must register for lab (BIO217P). Students cannot receive credit for BIO 217 and BME 258.

Offered: Spring

BIO 217P MAMMALIAN ANATOMY LAB

BIO 217W PRINCIPLES OF HUMAN ANATOMY WITH LAB WRITING

Optional Upper-Level Writing Course for BIO 217

Offered: Spring

BIO 218P BIOSTATISTICS LAB

Offered: Spring

BIO 219 GENOMICS OF QUANT TRAITS

BIO 220 ADVANCED CELL BIOLOGY

Mechanistic understanding of cellular organization and function. Topics include cytoskeleton, membrane traffic, cell signaling, cell cycle. Primary research literature, classic and recent. Design and interpretation of experiments, drawn from biochemistry, microscopy and genetics. Oral presentations, written assignments, and classroom discussions.

Offered: Fall

BIO 220W ADVANCED CELL BIOLOGY WRITING

Optional Upper-Level Writing Course for BIO 220

Offered: Fall

BIO 222 BIOLOGY OF AGING

Emphasizing molecular mechanisms of aging. Will discuss popular theories of aging, model organisms used in aging research, evolution of aging, relation between aging and cancer, human progeroid syndromes, and interventions to slow aging.

Offered: Fall

BIO 222W BIOLOGY OF AGING WRITING

Optional Upper-Level Writing Course for BIO 222

Offered: Fall

BIO 225 ECOLOGY & EVOLUTIONARY BIOLOGY LAB

Development of testable questions and implementation of appropriate observations and experiments on a series of topics in ecology and evolution. Many mini-studies will be done in the field on non-model organisms native to New York. Experience on field and lab methods used in ecology and evolutionary biology, critiquing published scientific studies, writing scientific reports, and presentation of scientific results.

Offered: Fall

BIO 225W ECOLOGY & EVOLUTIONARY BIOLOGY LAB WRITING

Upper-Level Writing Course for BIO 225

Offered: Fall

BIO 226 DEVELOPMENTAL BIOLOGY

Cellular and molecular aspects of animal development, with emphasis on processes and underlying mechanisms. Topics include embryonic cleavage, gastrulation, early development of model vertebrates and invertebrates, patterning of cell fates along embryonic axes of Drosophila and vertebrates, organogenesis and stem cells.

Offered: Fall

BIO 226W DEVELOPMENTAL BIOLOGY WRITING

Optional Upper-Level Writing Course for BIO 226

Offered: Fall

BIO 243 EUKARYOTIC GENE REGULATION

This advanced course examines mechanisms of chromatin-mediated regulation of gene expression, relating molecular structures, dynamic interactions, nuclear processes, 3-D nuclear organization to biological functions. Lectures and readings draw heavily on primary literature both classic and most recent.

Offered: Spring

BIO 243W EUKARYOTIC GENE REGULATION WRITING

Optional Upper-Level Writing Course for BIO 243

Offered: Spring

BIO 247 ENVIRONMENTAL ANIMAL PHYSIOLOGY

BIO 247W ENVIRONMENTAL ANIMAL PHYSIOLOGY WRITING

BIO 250 INTRODUCTION TO BIOCHEMISTRY

Fundamental aspects of biochemistry, including biomolecular structure and catalysis, bioenergetics, protein folding, kinetic analysis of enzyme action and general intermediary metabolism.

Offered: Spring Summer

BIO 250H INTRO TO BIOCHEMISTRY - HONORS

This course is no longer offered. See BIO 252.

BIO 252 PRINCIPLES OF BIOCHEMISTRY

Offered: Spring

BIO 253 COMPUTATIONAL BIOLOGY

An introduction to the history, theory, and practice of using computers to conduct biological research. Topics include the fundamentals of Linux-based computing and perl programming, accessing and storing biological data, alignment of molecular sequences, and computer-based analysis of data.

Offered: Fall

BIO 253P COMPUTATIONAL BIOLOGY LAB

Practice of bioinformatics, analysis of sample datasets, implementing algorithms, and computer simulation using the Linux operating system.

Offered: Fall

BIO 253W COMPUTATIONAL BIOLOGY WRITING

Optional Upper-Level Writing Course for BIO 253

Offered: Fall

BIO 254 DATA MINING BIO&MED SCIENCE

Databases have become indispensable tools for all branches of research and medicine in this age of data abundance. This increase in amount of biological data has driven the development of data analysis methods that allow researchers to extract biologically important patterns from the datasets. This course will explore diverse biological and biomedical datasets and data types, such as metabolomics, longitudinal gene expression data, cancer datasets, antibiotic resistance datasets, protein-protein interactions datasets, to name a few. We will closely examine data architectures and data representation methods. Concurrently we will examine different techniques that are commonly used to analyze these data, such as clustering, classification, regression etc. Basic procedures to implement Bayesian and machine learning techniques will be taught.

Offered: Fall

BIO 254P DATA MINING IN BIO LAB

Offered: Fall

BIO 254W DATA MINING BIO&MED WRITING

BIO 256 DARWIN & RELIGION

Offered: Fall

BIO 257 APPLIED GENOMICS

This course is designed to teach students how the fast-moving field of genomics is applied to address important biological problems. Students will get hands-on training in genome analysis techniques and functional genomics. Major topics covered include genome sequencing, assembly and analysis, functional genomics, population genomics and genome evolution.

Offered: Fall

BIO 257W APPLIED GENOMICS - WRITING

Optional Upper-Level Writing Course for BIO 257

Offered: Fall

BIO 258 HUMAN ANATOMY

BIO 260 ANIMAL BEHAVIOR

Examines animal behavior from an ecological and evolutionary perspective. Topics include social organization, mating systems, foraging, aggression, and animal learning. Students also learn quantitative techniques in behavioral biology.

Offered: Fall

BIO 260W ANIMAL BEHAVIOR WRITING

Optional Upper-Level Writing Course for BIO 260

Offered: Fall

BIO 261W GENETIC RESEARCH A

Hands on experience in conducting animal behavior research, with a focus on the genetics of behavior using Nasonia vitripennis. Behaviors investigated include mate preference, host acceptance, courtship, dispersal, activity level, territoriality, aggression, and flight. Develop methods of quantitative behavioral observation, genetic crossing, data analysis, polymerase chain reaction (PCR), animal husbandry, research record keeping, basic bioinformatics, and research presentation.

Offered: Fall Spring

BIO 262W GENETIC RESEARCH B

Hands on experience in conducting genetic research, with a focus on the genetics of complex traits such as behavior, development, morphology and/or physiology. Genetics of complex traits is an exciting and rapidly growing field.

Offered: Fall

BIO 263 ECOLOGY

A survey of adaptations to the physical environment, dynamics of natural populations, interactions between species, and ecosystem function.

Offered: Fall

BIO 263W ECOLOGY WRITING

Optional Upper-Level Writing Course for BIO 263

Offered: Fall

BIO 265 MOLECULAR EVOLUTION

BIO 265W MOLECULAR EVOLUTION WRITING

BIO 268 LABORATORY IN MOLECULAR, CELL AND DEVELOPMENTAL BIOLOGY

This course is designed to provide (1) introduction to model organisms (2) training in specific methods used in molecular, cell and developmental biology research, with emphasis on data acquisition and analysis (3) experience in the design and execution of experiments, reading and writing scientific reports, and public scientific presentation.

Offered: Spring

BIO 268W LABORATORY IN MOLECULAR, CELL AND DEVELOPMENTAL BIOLOGY WRITING

Optional Upper-Level Writing Course for BIO 268

Offered: Spring

BIO 270W EXPLORING A RESEARCH TOPIC IN EVOLUTIONARY BIOLOGY: SEXUAL SELECTION AND MATE CHOICE

Why do peacocks have elaborate tails? One possibility, termed the “good genes” hypothesis, is that sexually selected traits like the peacock’s tail signal a male’s overall genetic quality, so that offspring of males with traits preferred by females will have above-average survival and vigor. Although this hypothesis was proposed by Darwin more than 150 years ago, there is little consensus today about its validity. In this class, we will evaluate the evidence for the good genes hypothesis by exploring the literature on sexual selection and mate choice. Starting from a core nucleus of papers, you will read and discuss the literature; everyone will lead a discussion of one paper and summarize it for a non-specialist audience. You will also work with your classmates on a joint project to find additional papers and outline the contribution that they make. Through discussion, feedback, and revision, you will hone your ability to read and communicate about primary reports as a scientist would.

Offered: Spring

BIO 272W DEVELOPING A PROFESSIONAL BIOLOGY WRITING PORTFOLIO

Writing in a way that describes science to non-scientists. Short writing assignments that tailor information about a single topic to different audiences. Identify the area(s) to concentrate efforts, and write and revise significant piece of scientific writing. Writing, revising, self-assessment, and peer-review.

Offered: Fall Spring

BIO 275W WRITING BIOLOGICAL REVIEWS

In this course,you will write a review article about a new and exciting topic in biology. Through multiple writing and speaking exercises, you will learn how to define scientific questions, review the relevant evidence, and tailor your writing and speaking to effectively communicate with different biology audiences.

Offered: Fall

BIO 390 SUPERVISED TEACHING

Credit-based teaching assistant experience.

Offered: Fall Spring

BIO 390W SUPERVISED TEACHING WRITING

Offered: Fall Spring

BIO 391 INDEPENDENT STUDY

Offered: Fall Spring

BIO 391W INDEPENDENT STUDY WRITING

Offered: Fall Spring

BIO 393 SENIOR THESIS

Offered: Fall Spring

BIO 394 INTERNSHIP

Offered: Fall Spring

BIO 395 INDEPENDENT RESEARCH

Offered: Fall Spring

BIO 395W INDEPENDENT RESEARCH WRITING

Offered: Fall Spring

BIO 396 SUPERVISED TEACHING

Credit-based teaching assistant course.

Offered: Fall Spring

BIO 396W RESRCH PAPER WRITING IN BIO

BIO 399 BIO COMM ENGAGE PRACTICUM

BIO 402 MOLECULAR BIOLOGY

This course deals with the molecular mechanisms of gene replication, gene expression, and the control of gene expression in both prokaryotic and eukaryotic cells. Topics include enzymatic mechanisms of DNA replication, recombination and repair; transposable elements; DNA transcription; RNA splicing; RNA translation; repressors, activators, and attenuators; recombinant DNA and genetic engineering.

Offered: Fall

BIO 405 EVOLUTION

Fundamentals of Evolution. Topics include the history of evolutionary thought, population and quantitative genetics, molecular evolution, the history of life, speciation, and human evolution.

Offered: Spring

BIO 406 EUKARYOTIC GENOMES

A course that discusses the remarkable diversity of eukaryotic genomes with an emphasis on the human genome. The course will emphasize the importance of understanding the forces of evolution to explain molecular and genetic topics such as the large variation in genome size and structure as well as the remarkable complexity of gene regulation.

Offered: Spring

BIO 419 GENOMICS OF QUANT TRAITS

BIO 420 ADVANCED CELL BIOLOGY

An advanced course focusing on a mechanistic understanding of cellular organization and function. This course relies heavily on the primary research literature, classic and recent, and the design and interpretation of experiments, drawn from biochemistry, microscopy and genetics. Topics include the cytoskeleton, membrane traffic, cell-cell signaling and the cell cycle.

Offered: Fall

BIO 422 SQOLOGY OF AGING

This course focuses on molecular mechanisms of aging. We will discuss popular theories of aging, model organisms used in aging research, evolution of aging, relation between aging and cancer, human progeroid syndromes, and interventions to slow aging.

Offered: Fall

BIO 426 DEVELOPMENTAL BIOLOGY

This course deals with the cellular and molecular aspects of animal development, with emphasis on processes and underlying mechanisms. Topics include: embryonic cleavage, gastrulation, early development of model vertebrates and invertebrates, patterning of cell fates along embryonic axes of Drosophila and vertebrates, organogenesis, and stem cells.

Offered: Fall

BIO 443 EUKARYOTIC GENE REGULATION

This advanced course examines mechanisms of chromatin-mediated regulation of gene expression, relating molecular structures, dynamic interactions, nuclear processes, 3-D nuclear organization to biological functions. Lectures and readings draw heavily on primary literature both classic and most recent.

Offered: Spring

BIO 453 COMPUTATIONAL BIOLOGY

An introduction to the history, theory, and practice of using computers to conduct biological research. Topics include the fundamentals of Linux-based computing and perl programming, accessing and storing biological data, alignment of molecular sequences, and computer-based analysis of data.

Offered: Fall

BIO 453P COMPUTATIONAL BIOLOGY LAB

Practice of bioinformatics, analysis of sample datasets, implementing algorithms, and computer simulation using the Linux operating system.

BIO 457 APPLIED GENOMICS

This course is designed to teach students how the fast-moving field of genomics is applied to address important biological problems. Students will get hands-on training in genome analysis techniques and functional genomics. Major topics covered include genome sequencing, assembly and analysis, functional genomics, population genomics and genome evolution.

Offered: Fall

BIO 458 HUMAN ANATOMY

Offered: Spring Summer

BIO 460 ANIMAL BEHAVIOR

Examines animal behavior from an ecological and evolutionary perspective. Topics include social organization, mating systems, foraging, aggression, animal learning, and quantitative techniques in behavioral biology.

Offered: Fall

BIO 463 ECOLOGY

A survey of adaptations to the physical environment, dynamics of natural populations, interactions between species, and human impacts on the environment.

Offered: Fall

BIO 465 MOLECULAR EVOLUTION

This course is no longer offered by the Department of Biology.

BIO 468 LABORATORY IN MOLECULAR, CELL AND DEVELOPMENTAL BIOLOGY

This course is designed to provide (1) introduction to model organisms (2) training in specific methods used in molecular, cell and developmental biology research, with emphasis on data acquisition and analysis (3) experience in the design and execution of experiments, reading and writing scientific reports, and public scientific presentation.

Offered: Spring

BIO 471 ADVANCED ECOLOGY AND EVOLUTIONARY BIOLOGY A

A four-course sequence that provides comprehensive coverage of advanced topics in ecology and evolutionary biology. Areas covered include: population and community ecology; population and quantitative genetics; molecular evolution; evolutionary genomics; evo-devo; phylogenetics; and speciation. This course is intended for graduate students; exceptional undergraduate students can enroll by permission of the course coordinator.

Offered: Fall

BIO 472 ADVANCED ECOLOGY AND EVOLUTIONARY BIOLOGY B

A four-course sequence that provides comprehensive coverage of advanced topics in ecology and evolutionary biology. Areas covered include: population and community ecology; population and quantitative genetics; molecular evolution; evolutionary genomics; evo-devo; phylogenetics; and speciation. This course is intended for graduate students; exceptional undergraduate students can enroll by permission of the course coordinator.

Offered: Spring

BIO 473 ADVANCED ECOLOGY AND EVOLUTIONARY BIOLOGY C

A four-course sequence that provides comprehensive coverage of advanced topics in ecology and evolutionary biology. Areas covered include: population and community ecology; population and quantitative genetics; molecular evolution; evolutionary genomics; evo-devo; phylogenetics; and speciation. This course is intended for graduate students; exceptional undergraduate students can enroll by permission of the course coordinator.

Offered: Fall

BIO 474 ADVANCED ECOLOGY AND EVOLUTIONARY BIOLOGY D

A four-course sequence that provides comprehensive coverage of advanced topics in ecology and evolutionary biology. Areas covered include: population and community ecology; population and quantitative genetics; molecular evolution; evolutionary genomics; evo-devo; phylogenetics; and speciation. This course is intended for graduate students; exceptional undergraduate students can enroll by permission of the course coordinator.

Offered: Spring

BIO 480 GRADUATE LAB ROTATION

An introduction to research in the laboratories of individual faculty members.

Offered: Fall Spring

BIO 491 MASTER'S READINGS IN BIOLOGY

Offered: Fall Spring

BIO 495 MASTER'S RESEARCH IN BIOLOGY

Offered: Fall Spring

BIO 516 CELL/DEV/MOL BIOLOGY SEM

This one credit course examines current topics in cell, developmental and molecular biology. Student-led seminars and discussions based on representative publications in the recent literature. One or several broad topics, drawn from active fields of cell, developmental and molecular biology, will be covered each semester.

Offered: Fall

BIO 517 GRADUATE RESEARCH SEMINAR

Ph.D. students prepare and present their research findings to the Department. This course carries one credit.

Offered: Spring

BIO 580 JOURNAL CLUB IN ECOLOGY & EVOLUTION

Current topics in ecology and evolutionary biology are explored by reading research and review papers. Students choose topics for reading and lead discussions of their chosen topics. This course carries one credit.

Offered: Fall Spring

BIO 581 TOPICS IN CELL,DEV&MOL BIOL

This two-credit course will be taught by all faculty members of the Biology Department that conduct research in the areas of Cellular, Developmental and Molecular Biology. Each week one faculty will provide a general introduction to his/her field of interest and a comprehensive overview of their own research efforts. Short (1-2 page) papers will be assigned throughout the course, critiqued and returned for rewriting. Grades will be determined by participation in class discussions and the assigned writings.

Offered: Fall

BIO 584 SEMINAR IN EVOLUTION

Biology Colloquium. Members of the staff and advanced students in the biological sciences meet on regularly announced dates for presentation and discussion of research by members of the department or invited guests. These seminars are open to all.

Offered: Fall Spring

BIO 590 BIOLOGY TEACHING

Offered: Fall Spring

BIO 591 PHD READINGS IN BIOLOGY

Offered: Fall Spring

BIO 594 RESEARCH INTERNSHIP

Offered: Fall Spring

BIO 595 PHD RESEARCH IN BIOLOGY

Offered: Fall Spring

BIO 595A PHD RESEARCH IN ABSENTIA

Offered: Fall Spring

BIO 595B BIO RESEARCH IN ABSENTIA ABROAD
Offered: Fall Spring

BIO 895 CONTINUATION OF MASTERS ENROLLMENT
Offered: Fall Spring

BIO 897 MASTERS DISSERTATION
Offered: Fall Spring

BIO 899 MASTER'S DISSERTATION
Offered: Fall Spring

BIO 985 LEAVE OF ABSENCE
Offered: Fall Spring

BIO 986V FULL TIME VISITING STUDENT
Offered: Fall Spring

BIO 987V PART-TIME VISITING STUDENT
Offered: Fall Spring

BIO 990 SUMMER IN RESIDENCE
Offered: Summer

BIO 995 CONTINUATION OF DOCTORAL ENROLLMENT
Offered: Fall Spring

BIO 997 DOCTORAL DISSERTATION
Offered: Fall Spring

BIO 997A DOCTORAL DISSERTATION IN ABSENTIA
Offered: Fall Spring

BIO 999 DOCTORAL DISSERTATION
Offered: Fall Spring

BIO 999A DOCTORAL DISSERTATION IN ABSENTIA
Offered: Fall Spring

BIO 999B PHD IN-ABSENTIA ABROAD

BME 099 BIOMATL'S & COMPUTATION LAB
Shared lab course for BME221 and BME245.
Offered: Spring

BME 101 INTRODUCTION TO BIOMEDICAL ENGINEERING
An introductory overview of the multi-disciplinary field of biomedical engineering. Application of elementary engineering principles to the analyses of physiological systems. Course topics include biomechanics, cell and tissue engineering, biosignals,

biosystems, bioinstrumentation, medical imaging, medical optics, and bioethics. Includes weekly laboratory and introduction to the use of computers as tools for solving engineering problems.

Offered: Fall

BME 201 FUNDAMENTALS OF BIOMECHANICS

Teaches elementary mechanical equilibrium and motion with extended applications to biology. Lectures present a traditional analysis of idealized particles and rigid bodies. Topics include force and moment balances, frames, trusses and pulleys, systems with friction, mass centers, area moments, and the linear and rotational kinetics and kinematics of rigid bodies. Weekly exercises apply fundamental principles to non-biological problems in two and three dimensions. Weekly problems extend the application to biological problems ranging from human motion to the mechanics of cells. In an end-of-term project students analyze human motion using the MATLAB programming language. This is a required course for BME majors typically taken in the sophomore year. 4 credits. Prerequisites: MTH 161 and 162, BME 101 and PHY 121.

Offered: Fall

BME 201P MATLAB for Biomedical Engineering

Fundamentals of computer programming in MATLAB. Emphasis on programming basics, such as syntax, loop structures, logic, input/output, and graphics.

Offered: Fall

BME 210 BIOSYSTEMS & CIRCUITS

Introduction to electrical circuit theory. Examples will include bioelectric systems and signals and models of biological systems.

Offered: Spring

BME 212 VISCO IN BIO TISSUES

Viscoelastic materials have the capacity to both store and dissipate energy. As a result, properly describing their mechanical behavior lies outside the scope of both solid mechanics and fluid mechanics. This course will develop constitutive relations and strategies for solving boundary value problems in linear viscoelastic materials. In addition, the closely-related biphasic theory for fluid-filled porous solids will be introduced. An emphasis will be placed on applications to cartilage, tendon, ligament, muscle, blood vessels, and other biological tissues. Advanced topics including non-linear viscoelasticity, composite viscoelasticity and physical mechanisms of viscoelasticity will be surveyed.

BME 218 INTRODUCTION TO NEUROENGINEERING

Quantitative studies of neural responses at the cellular, circuit, and systems levels. Analytical and computational modeling of neurons and systems, including nonlinear behavior of neurons and neural circuits. Neural coding of information by single cells or neural populations. Introduction to neural networks. Techniques for recording neural activity.

Offered: Fall

BME 221 BIOMEDICAL COMPUTATION & STATISTICS

The application of numerical and statistical methods to model biological systems and interpret biological data, using the MATLAB programming language.

Offered: Spring

BME 228 PHYSIOLOGICAL CONTROL SYSTEMS

This course introduces students to the theory and practice of control systems engineering. Topics include frequency domain modeling, time domain stability, transient and steady-state error analysis, root locus and frequency response techniques and feedback system design. Emphasis is placed on analyzing physiological control systems, but the concepts and design techniques are applicable and applied to a wide variety of other systems including mechanical and electrical systems. Graduate students will have more homework problems and additional exam problems.

Offered: Fall

BME 230 BME SIGNALS, SYSTEMS AND IMAGING

Introduction to continuous and discrete time signals and linear time invariant systems, with applications to BME including imaging. Topics include convolution, Laplace and Z transforms, stability of systems, the Fourier series and transform, noise and filtering, and fundamental concepts in image processing and enhancement. Weekly homework assignments are supplemented with labs every other week. Two Midterms and a comprehensive final exam.

Offered: Fall

BME 245 BIOMATERIALS

This course provides a background in biomaterials: basic material properties, specifics on ceramics, polymers and metals used in the body, and special topics related to biomaterials including tissue engineering, biological responses to implanted materials, and drug delivery. You must register for a lab section (BME099) when registering for this course. BME099 will be a shared lab time with BME221. If you are co-enrolled in BME245 and BME221, please register for only one section of BME099.4 credits

Offered: Spring

BME 251 BIOMEDICAL ULTRASOUND

The course presents the physical basis for the use of high-frequency sound in medicine. Topics include acoustic properties of tissue, sound propagation (both linear and nonlinear) in tissues, interaction of ultrasound with gas bodies (acoustic cavitation and contrast agents), thermal and non-thermal biological effects of utrasound, ultrasonography, dosimetry, hyperthermia and lithotripsy.

Offered: Spring

BME 253 ULTRASOUND IMAGING

This course investigates the imaging techniques applied in state-of-the-art ultrasound imaging and their theoretical bases. Topics include linear acoustic systems, spatial impulse responses, the k-space formulation, methods of acoustic field calculation, dynamic focusing and apodization, scattering, the statistics of acoustic speckle, speckle correlation, compounding techniques, phase aberration correction, velocity estimation, and flow imaging. A strong emphasis is placed on readings of original sources and student assignments and projects based on realistic acoustic simulations.

Offered: Fall

BME 255 TRANSLATIONAL BIOMEDICAL OPT

This course provides considerations in designing optical instrument suitable for clinical translation, theory behind the light propagation in biological tissues, and data analysis and interpretation skills. In particular, fundamental theory behind the diffuse optical spectroscopy and tomography, diffuse correlation spectroscopy and photoacoustic tomography will be covered.

BME 257 ESSENTIAL MOLECULAR BIOLOGY

Cell biology and molecular biology are the core of modern biomedical science, whether applied to systems or to cells. The goal of this course is to provide students with a strong foundation of molecular biology and practical knowledge to support future research efforts, and to enable students without extensive backgrounds in biological sciences grasp fundamentals of molecular biological principles.

Offered: Summer

BME 258 HUMAN ANATOMY

Human Anatomy is the detailed study of the human organism at the cellular, tissue and organ systems levels. The relationship between structure and function is covered with emphasis on structural relationships. The course includes both lectures and laboratory sessions, an provides a basis for further professional and clinical experience. (Students should not take both BME (or BIO) 258 and BIO 203.)

Offered: Spring

BME 259 TRANSPORT PHENOMENA IN BIOLOGICAL SYSTEMS

This course will provide and overview of transport phenomena in biological systems that are critical to the function of all living organisms. The fundamental laws and equations of transport phenomena will be applied to topics including cellular, cardiovascular, respiratory, liver and kidney transport, blood flow and rheology, and circulation in tissues and arteries. Students will have homework problem sets, mid-term and final exams. In addition, students will give a presentation at the end of the semester based on a topic related to biological transport that they pick based on their interest.

Offered: Fall

BME 260 QUANTITATIVE PHYSIOLOGY

A quantitative, model-oriented approach to physiological systems is presented. Topics include muscle and nerve tissue, the cardiovascular system, the respiratory system, the renal system, and a variety of neural systems

Offered: Fall

BME 262 CELL & TISSUE ENGINEERING

This course teaches the principles of modern cell and tissue engineering with a focus on understanding and manipulating the interactions between cells and their environment. After a brief overview of Cell and Tissue Engineering, the course covers 5 areas of the field. These are: 1) Physiology for Tissue Engineering; 2) Bioreactors and Biomolecule Production; 3) Materials for Tissue Engineering; 4) Cell Cultures and Bioreactors and 5) Drug Delivery and Drug Discovery. Within each of these topics the emphasis is on analytical skills and instructors will assume knowledge of chemistry, mass transfer, fluid mechanics, thermodynamics and physiology consistent with the Cell and Tissue Engineering Track in BME. In a term project, students must present written and oral reports on a developing or existing application of Cell and Tissue Engineering. The reports must address the technology behind the application, the clinical need and any ethical implications.

Offered: Spring

BME 266 BIOPROCESS ENGINEERING

This course will explore the bioprocesses involved in producing a biopharmaceutical product (therapeutic proteins, cell therapy products, and vaccines). The course will take a stepwise journey through a typical production process from the perspective of a Bioprocess Engineer, starting with cell culture and moving downstream through purification and final fill. Engineering concepts involved in bioreactor design and control, cell removal/recovery operations, and protein purification will be examined. The course will also provide an introduction to the analytical methods used to test biopharmaceutical products for critical quality attributes The role of the regulatory agencies, like the US Food and Drug Administration, and the regulations that govern the industry will be introduced throughout the course in the context of the bioprocess to which they relate. Graduate students will need to complete a semester-end project in order to receive graduate credit for the course.

BME 270 BIOMEDICAL MICROSCOPY

This course covers the principles and practice of light microscopy as applied to biological and medical questions. Topics include basic light microscopy, DIC, phase epifluorescence, confocal and multiphoton laser-scanning microscopy, and selected methods such as CARS, FRET, FRAP, FCS, etc. This course is jointly listed as 470 for graduate students. Some homework problems are “470 only”.

Offered: Fall

BME 274 BIOMEDICAL SENSORS, CIRCUITS & INSTRUMENTATION

Course will cover circuits and sensors used to measure physiological systems at an advanced level. Both signal conditioning and sensor characteristics will be addressed. Topics will include measurement of strain, pressure, flow, temperature, biopotentials, and physical circuit construction. The co-requisite laboratory will focus on the practical implementation of electronic devices for biomedical measurements.

Offered: Spring

BME 283 BIOSOLID MECHANICS

In this course, we will survey the role of mechanics in cells, tissues, organs and organisms. A particular emphasis will be placed on the mechanics of the musculoskeletal system, the circulatory system and the eye. Engineering concepts will be used to understand how physical forces contribute to biological processes, especially disease and healing. Experimental and modeling techniques for characterizing the complex mechanical response of biosolids will be discussed in detail, and the continuum mechanics approach will highlighted.

Offered: Fall

BME 295 BME DESIGN SEMINAR

Introduction to design of medical devices and instruments. Students are introduced to methods and strategies for creative design while considering ethical, economic, regulatory and safety issues. In addition to benchmarking existing devices, students prepare for a design project to be completed in the following semester. 2 credits

Offered: Fall

BME 296 BME DESIGN PROJECT

Senior capstone design course in the Biomedical Engineering Program. Students work in teams to design, build, and test a medical device or instrument for a faculty, community or industrial sponsor. Accompanying lectures and discussions introduce issues related to ethics, economics, project management, regulation, safety, and reliability. Students will work in teams to design, build and test a prototype medical device, and document their activities through a variety of reports and presentations

Offered: Spring

BME 390 SUPERVISED TEACHING

BME 391 INDEPENDENT READINGS

BME 393 SENIOR PROJECT

BME 394 INTERNSHIP

BME 395 RESEARCH

BME 395W RESEARCH

BME 396 SPECIAL TOPICS

BME 404 COMPUTATIONAL METHODS APPLIED TO BIOLOGICAL SYSTEMS

The aim of this class is to gain experience solving analytically intractable research problems using computational methods. At the beginning of the course, general numerical analysis topics are reviewed. The rest of the course is oriented toward projects. Examples will be drawn from problems of biological systems.

BME 411 CELLULAR&MOLECULAR BIO FOUND

Molecular biology, biochemistry, and genetics that are required to understand the biomedical and broader biological issues that affect our lives.

BME 412 VISCO IN BIO TISSUES

Viscoelastic materials have the capacity to both store and dissipate energy. As a result, properly describing their mechanical behavior lies outside the scope of both solid mechanics and fluid mechanics. This course will develop constitutive relations and strategies for solving boundary value problems in linear viscoelastic materials. In addition, the closely-related biphasic theory for fluid-filled porous solids will be introduced. An emphasis will be placed on applications to cartilage, tendon, ligament, muscle, blood vessels, and other biological tissues. Advanced topics including non-linear viscoelasticity, composite viscoelasticity and physical mechanisms of viscoelasticity will be surveyed.

BME 418 INTRO TO NEUROENGINEERING

Quantitative studies of neural responses at the cellular, circuit, and systems levels. Analytical and computational modeling of neurons, including nonlinear behavior of neurons and neural circuits. Neural coding of information by single cells or neural populations. Applications of neural networks. Techniques for recording and monitoring neural activity, and applications of neural recording and stimulation to neural prostheses.

Offered: Fall

BME 420 BIOMEDICAL NANOTECH

This course is designed to provide students with detailed knowledge of the principles of nanotechnology and their applications in the biomedical field. Topics of study will include synthesis & assembly of nanoscale structures, lithography, and

nanobiomaterials. Students will focus on biomedically-relevant topics such as cancer treatment, bone disorder, diabetes; and learn how nanotechnology is helping diagnose, treat, and understand these medical disorders. Recent innovative research in the biomedical field will be highlighted during discussions of the latest journal articles. At the end of the course, students will have an appreciation of the enormous potential of biomedical nanotechnology, its current, and future applications

BME 425 HUMAN NEUROPHYS MEASUREMENT

BME 428 PHYSIOLOGICAL CONTROL SYSTMS

This course introduces students to the theory and practice of control systems engineering. Topics include frequency domain modeling, time domain stability, transient and steady-state error analysis, root locus and frequency response techniques and feedback system design. Emphasis is placed on analyzing physiological control systems, but the concepts and design techniques are applicable and applied to a wide variety of other systems including mechanical and electrical systems.

Offered: Spring

BME 431 FDA & Intellectual Property: Introduction to FDA Processes and Intellectual Property (IP) Considerations for Medical Products

This interactive course will offer students exposure to intellectual property (IP), patenting processes and regulatory pathways for new medical innovations. Students will learn the terminology, processes and challenges involved in FDA regulations, and the protection and evaluation of intellectual property for medical innovations. Differences between Regulatory Affairs and Regulatory Science will be highlighted with opportunities to work on Regulatory Science in a project setting. An emphasis will be placed on ways that knowledge of prior art and regulatory barriers can optimize concept selection, and early phase project planning to best identify projects suitable for commercialization.

BME 432 FDA & IP COMMERCIALIZATION: Implementing FDA Requirements and Practical Steps to Commercializing Medical Products

This interactive course focuses on Intellectual Property (IP) commercialization and FDA regulatory pathways for new medical innovations. Emphasis will be placed on the ways that knowledge of IP protection and evaluation, and regulatory barriers can optimize design, testing and commercialization strategies. Building on the basics learned in BME431, students will learn about the processes (and barriers) to bringing a product such as a novel medical device through clinical trials.

BME 442 Microbiomechanics

This course covers the application of mechanical principles to biotechnology and to understanding life at its smallest scales. Topics will vary with each course offering. Sample topics include force generation by protein polymerization, the mechanisms of bacterial motion, and the separation of biological molecules in porous media.

Offered: Spring

BME 448 CONTROLLED RELEASE SYSTEMS

This course will cover the principles, strategies, and materials used in controlled drug delivery systems.

BME 451 BIOMEDICAL ULTRASOUND

The physical basis for the use of high-frequency sound in medicine (diagnosis, therapy, and surgery) and biology. Topics include acoustic properties of tissues, sound propagation (both linear and nonlinear) in tissues, interactions of ultrasound with gas bodies (acoustic cavitation and contrast agents), thermal and non-thermal biological effects of ultrasound, ultrasonography, dosimetry, hyperthermia and lithotripsy. Graduate students will have extra assignments.

Offered: Spring

BME 452 MEDICAL IMAGING: THEORY & IMPLEMENTATION

Physics and implementation of X-ray, ultrasonic, and MR imaging systems. Special attention is given to the Fourier transform relations and reconstruction algorithms of X-ray and ultrasonic-computed tomography, and MRI.

Offered: Spring

BME 453 ADVANCED BIOMEDICAL ULTRASOUND

This course investigates the imaging techniques applied in state-of-the-art ultrasound imaging and their theoretical bases. Topics include linear acoustic systems, spatial impulse responses, the k-space formulation, methods of acoustic field calculation, dynamic focusing and apodization, scattering, the statistics of acoustic speckle, speckle correlation, compounding techniques, phase aberration correction, velocity estimation, and flow imaging. A strong emphasis is placed on readings of original sources and student assignments and projects based on realistic acoustic simulations.

Offered: Fall

BME 455 TRANSLATIONAL BIOMEDICAL OPTICS

This course will focus on the macroscopic biomedical optics techniques(e.g. diffuse optical spectroscopy and tomography, photoacoustic tomography) with high potentials for clinical translation. Students will learn the aspects of instrumentation design, analytic and numerical approaches for optical data analysis, and validation of new technologies in the clinical setting.

Offered: Spring

BME 458 HUMAN ANATOMY

The course analyzes the structural composition of the human body from cellular to organ levels. The goes is to provide a foundation in human anatomy appropriate for students interested in the bioscience and health care professions (e.g., nursing, physical therapy, medicine, bioengineering). Learning objective will be achieved through a combination of lecture and hands-on (laboratory) approaches, reinforced by clinical examples. Graduate students (BME458) will participate in small group discussions of clinical case studies, topic appropriate biomedical devices, and prepare a term paper on the subject of their choice from the topics listed at the end of the syllabus.

BME 459 APPLIED HUMAN ANATOMY

This course analyzes the structural composition of the human body from cellular to organ levels. The goal is to provide a foundation in human anatomy appropriate for students interested in the bioscience and health care professions (e.g. nursing, physical therapy, medicine, bioengineering). Learning objectives will be achieved through a combination of lecture and hands-on (laboratory) approaches, reinforced by clinical examples and analysis of how biomedical devices interface with anatomical structures. In addition, students will participate in small group discussions of clinical case studies, make group presentations of topic appropriate biomedical devices, and prepare a term paper on the subject of their choice selected from a list of topics generated by the instructor.

Offered: Spring

BME 460 QUANTITATIVE PHYSIOLOGY

A quantitative, model-oriented approach to physiological systems is presented. Topics include muscle and nerve tissue, the cardiovascular system, the respiratory system, the renal system, and a variety of neural systems

BME 462 CELL & TISSUE ENGINEERING

This course teaches the principles of modern cell and tissue engineering with a focus on understanding and manipulating the interactions between cells and their environment. After a brief overview of Cell and Tissue Engineering, the course covers 5 areas of the field. These are: 1) Physiology for Tissue Engineering; 2) Bioreactors and biomolecule production; 3) Materials for Tissue Engineering; 4) Cell Cultures and bioreactors and 5) Drug Delivery and Drug Discovery. Within each of these topics the emphasis is on analytical skills and instructors will assume knowledge of chemistry, mass transfer, fluid mechanics, thermodynamics and physiology consistent with the Cell and Tissue Engineering Track in BME. In a term project, graduate students must identify a technological need and present orally and in writing a proposal to meet the need.

Offered: Spring

BME 466 BIOPROCESS ENGINEERING

This course will explore the bioprocesses involved in producing a biopharmaceutical product (therapeutic proteins, cell therapy products, and vaccines). The course will take a stepwise journey through a typical production process from the perspective of a Bioprocess Engineer, starting with cell culture and moving downstream through purification and final fill. Engineering concepts involved in bioreactor design and control, cell removal/recovery operations, and protein purification will be examined. The course will also provide an introduction to the analytical methods used to test biopharmaceutical products for critical quality attributes The role of the regulatory agencies, like the US Food and Drug Administration, and the regulations that govern the industry will be introduced throughout the course in the context of the bioprocess to which they relate. Graduate students will need to complete a semester-end project in order to receive graduate credit for the course.

BME 474 BIOMED SENSORS,CIRCUITS&INTR

Course will cover circuits and sensors used to measure physiological systems at an advanced level. Both signal conditioning and sensor characteristics will be addressed. Topics will include measurement of strain, pressure, flow, temperature, biopotentials, data acquisition, and electrical safety. The laboratory will focus on the practical implementation of electronic devices for biomedical measurements.

Offered: Spring

BME 483 BIOSOLID MECHANICS

Application of engineering mechanics to biological tissues including bone, soft tissue, cell membranes, and muscle. Realistic modeling of biological structures, including the heart, cells, and musculoskeletal tissues. Experimental methods and material models.

Offered: Fall

BME 486 FINITE ELEMENTS

This course provides a thorough grounding on the theory and application of linear finite element analysis in solid and structural mechanics and related disciplines. Topics: matrix structural analysis concepts and computational procedures, review of linear elasticity, variational methods and energy formulation, weighted residual methods and Galerkin techniques, shape functions based on assumed displacements, isoparametric formulation, FE solution of heat transfer problems, global analysis aspects, error estimation and convergence. MATLAB is used extensively througout the course

Offered: Fall

BME 487 NONLINEAR FINITE ELEMENT

The theory and application of nonlinear FE methods in solid and structural mechanics, and biomechanics. Topics: review and generalization of linear FE concepts, review of solid mechanics, nonlinear incremental analysis, FE formulations for large displacements and large strains, nonlinear constitutive relations, incompressibility and contact conditions, hyperelastic materials, damage plasticity formulation, solution methods, explicit dynamic formulation.

BME 489 BIOSENSORS

This course introduces students to the highly interdisciplinary field of biosensors, with focus on electrochemical transduction. After an overview of the fundamental principles, the course will introduce various strategies to apply the scientific theory and mechanisms to practical issues such as immunoassays, detection of DNA mutation or environmental toxins, metabolic activity, and in-vivo neuronal signal monitoring. The students will be exposed to recent publications that highlight key advances in this field and learn how various chemical, biological and engineering concepts are used in synergy to achieve state-of-the-art sensing of important biological molecules. Emphasis is placed on active participation by students, including literature presentations, critical evaluation of articles, concise technical writing and in-depth discussions.

BME 491 MASTER'S READING IN BME

BME 492 SP TOP:MEDICAL DEVICE DESIGN

BME 493 MASTER'S ESSAY

BME 494 MASTERS INTERNSHIP

BME 495 MASTER'S RESEARCH IN BME

BME 496 CURRENT RESEARCH SEMINARS

BME 502 ANALYTIC FOUNDATIONS IN BME

The goal of this course is to introduce students to a select range of key concepts and methods from engineering and applied mathematics that are common across most subdisciplines of BME and to illustrate by example how these concepts and methods can be applied directly in the study of biological systems and/or for the solving of biological problems. We expect that students

completing the course will have acquired basic practical skills to develop novel analytic approaches to biological problems and will be well prepared for subsequent coursework in their chosen discipline.

Offered: Fall

BME 535 SP TOPIC: MED DEVICE DESIGN

BME 589 WRITING PROPOSALS IN BME

This course covers the essential aspects of organization and content for writing formal scientific proposals. Open to second-year Ph.D. candidates.

Offered: Spring

BME 591 PHD READINGS IN BME

Offered: Spring

BME 592 SPEC TOPICS: MECHANOBIOLOGY

BME 593 LABORATORY ROTATIONS IN BME

Attend seminars first half of the semester and then students rotate in at least 3 different labs during the first year of graduate study to learn of the diversity of research opportunities for Ph.D. research.

Offered: Spring

BME 594P INTERNSHP RESEARCH PART-TIME

BME 595 PHD RESEARCH

BME 595A PHD RESEARCH IN ABSENTIA

BME 890 SUMMER IN RESIDENCE - MA

BME 895 CONT OF MASTER'S ENROLLMENT

BME 897 MASTER'S DISSERTATION

BME 897A MASTERS IN-ABSENTIA

BME 899 MASTER'S DISSERTATION

BME 985 LEAVE OF ABSENCE

BME 986V FULL TIME VISITING STUDENT

BME 990 SUMMER IN RESIDENCE

BME 995 CONT OF DOCTORAL ENROLLMENT

BME 997 DOCTORAL DISSERTATION

BME 997A DOCT DISSERTATN IN ABSENTIA

BME 999 DOCTORAL DISSERTATION

BME 999A DOCT DISSERTATN IN ABSENTIA

BME 999B PHD IN-ABSENTIA ABROAD

CAS 025 CREATNG INCLUSVE CAMPUS COMM

CAS 052 WORKSHOP LEADER GRAD

CAS 085 English as a Second Language (ESL) Course for Arts, Sciences and Engineering Graduate Students

Specifically for International Graduate Students, this course emphasizes the acquisition of English cultural and linguistic skills needed for clear communication in the university and career environments. Primary areas covered will be accent reduction, pragmatics (culture's role in language), nonverbal communication, public speaking, and academic and business writing.

Offered: Fall

CAS 089 ESL SUMMER INTENSIVE ENGLISH PROGRAM

The Summer Intensive English Program is offered for international graduate students at the University of Rochester. Classwork will allow students to practice and refine real-life, practical English skills before the start of Fall 2012 classes. The group size will be small, allowing each student ample opportunities to practice real speaking in a supportive environment. Topics include spoken interpersonal communication, English pronunciation, advanced conversational English grammar, and English for academic purposes. July 23-27, classes will be held from 1pm-5pm Monday-Friday. July 30-August 20, classes will be help from 9am-1pm. Permission of the Graduate Studies Dean's Office is required. Please contact 585-275-4153 or gradstudies@mail.rochester.edu for the permission code.

Offered: Summer

CAS 089A ESL:AM CULTR & COMM FOR ESL

This highly-interactive class is aimed at advanced speakers of English as a Second Language and teaches strategies for navigating everyday work and life situations. This class is designed for professionals whose jobs involve extensive spoken interpersonal communication, such as medical practitioners and teaching assistants/instructors. Linguistically and culturally challenging situations such as giving advice, relating disagreeable facts, making presentations, negotiating, networking, and interviewing for a job will be covered. *May be taken concurrently with any two other ESL courses.

Offered: Summer

CAS 089B ESL:ADV CONVERSTNL ENG GRAMR

This class teaches the basics of how sounds are made with the mouth, and the "musical patterns" [prosody] of English. Learners will have abundant, interactive opportunities to apply this knowledge to their own speech and become better understood by their listeners *May be taken concurrently with CAS 089A and one other ESL course or with any 1 other ESL offering.

Offered: Summer

CAS 089C ESL:ENG PRONUNCIATN&ACNT RED

This class is designed for speakers of English as a Second Language who are already familiar with English grammar rules, but still struggle to use them when speaking. This class will systematically review grammar rules and then provide students with conversational activities and intensive instructor feedback to help correct fossilized mistakes. *May be taken concurrently with CAS 089A and one other ESL course or with any 1 other ESL offering.

Offered: Summer

CAS 089D ESL:ENG FOR ACADEMIC PURPOSES

This course teaches writing, speaking, and listening strategies that English as a Second Language speakers can use to succeed in a classroom setting. Topics such as writing papers, giving academic presentations, and understanding academic lectures will be covered. *May be taken concurrently with CAS 089A and one other ESL course or with any 1 other ESL offering.

Offered: Summer

CAS 090 ESL: SUMMER INTENSIVE PROG

CAS 101 THE CITY: CONTESTED SPACES

What does it mean to live in a city? Can you reshape people's lives by redesigning city spaces? How do city dwellers, architects, politicians, and others interact with and appropriate their own urban past? This interdisciplinary course will introduce students to different ways of looking at cities, framing them as the contested products of a range of human actions. Through an indepth examination of four complex urban environments - Chicago, Istanbul, Delhi, and Rome - we will learn about the interplay between space, aesthetics, time, memory, and power. Weekly lectures by an anthropologist, an architect, and a historian will complement discussions of film, historical documents, fiction, and relevant case studies. In addition to writing four short papers, students will hone their analytical skills by observing urban life and form with a series of field studies in the city of Rochester.

CAS 104 CAREER EXPLORATION FOR SOPHOMORES

CAS 109 INTENSIVE ACADEMIC WRIT SEMR

CAS 111 PREPARING YOUR PORTFOLIO

CAS 112 K-12 TUTORING STRATEGIES

CAS 120 Exploring Intercultural Competence: Preparation for the Global Citizen

What is intercultural competence? What is intercultural communication? How does one become interculturally competent in their increasingly globalized lives? Intercultural competence provides the tools needed to interact with other cultures, socioeconomic statuses, political beliefs, racial and ethnic backgrounds, sexual orientations, gender expressions, gender identities, abilities, and religious affiliations. Learning with and by people of different backgrounds encourages collaboration and fosters innovation and creativity, thereby benefiting the entire community. This course will be interactive and discussion based. Discussions will include guest speakers, reading personal narratives, as well as using popular media. Assignments will encourage students to conduct research, create an intercultural activity, and interact with people by conducting interviews. This course culminates with a group project, allowing for integration of theory and practice.

CAS 125 CREATNG INCLUSVE CAMPUS COMM

CAS 142 METHODS OF INQUIRY

Workshop-style course will help you establish good study habits and hone your study skills. It is designed to help you sharpen your time management, note-taking, exam-preparation, and other skills and strategies, as well as work on increasing motivation and dealing with stress, so that you get the most out of your college career.

Offered: Fall Spring

CAS 147 THE CULTURE OF THE ACADEMY

CAS 149 CULTURE OF THE ACADEMY II

This course will guide Kearns Center Seniors through the process of applying for entry into PhD programs, as well fellowships and national awards for graduate study. One of the main goals of the Kearns Center, and specifically for the McNair program, is to encourage intellectually gifted undergraduates to enroll in graduate programs in various disciplines, and to complete the Ph.D. and enter the academy as college and/or university professors and researchers.

Offered: Fall

CAS 170 U.S. LIFE:CUSTOMS&PRACTICES

Through this course students will explore campus, community and American culture, enhance their intercultural competence, and build academic skills to improve their success in the American classroom. Students will compare cultures through a variety of readings, in class discussions, blogs and outside class activities. Topics include verbal and non-verbal communication, education systems, ethics, relationships, perception, beliefs, values and norms. *Registration for U.S. Life Workshops also required

CAS 202 INTRO TO COM-ENGAGED SCHLSHP

CAS 204 POVERTY AND MENTAL HEALTH

CAS 205 ANTHROPOLOGY OF "ROBOTS"

In contemporary cultural contexts where the pace and scope of social and economic change is historically unprecedented, “the rise of robots” is concurrently dreaded and desired. In this course, student participants will focus on what robots have in common with human workers. The primary goal is to define and refine what it means to be a worker and by extension what it means to a robot by answering the following questions: What are the most common features robots share with (human) workers and working, not just in America but across the globe? What are the moral implications of the displacement of human workers with robots and how are they impacted by race, class and gender? Would the displacement of human workers necessitate alternative economic systems such as universal guaranteed income? This course deploys three major images of workers-- human, enslaved people and robots--to interrogate the following premise: workers are robots and robots are humans.

CAS 206 COMMUNITY-ENGAGED SCHOLARSHP

This course examines advanced topics in community-engaged scholarship through readings, case studies, critical reflection, and guest lectures from faculty and practitioners. The course builds on CAS 202 and examines the field of engaged scholarship, highlights local community-university relationships and projects, and utilizes critical reflection methods to enhance learning and impact. This course is the second of two seminars designed for students pursuing the Citation in Community-Engaged Scholarship.

CAS 230 APPROACHES TO CONFLICT RES

CAS 240 Environmental Apocalypse and the Anthropocene

This course will study the end of the world in literature, film, new media, and critical/cultural theory , emphasizing the new geological epoch of the Anthropocene. Topics to be studied a range of dissolutions of nature/culture distinctions in the Anthropocene and the anxiety and promises therein. We will investigate how artists, theorists, and writers represent mass extinction, fertility crises, superstorms, climate change, genetic engineering, post-humanism, and environmental apocalypse. Fiction to be studied includes Cormac McCarthy's The Road, Octavia Butler’s Parable of the Sower, Ian McEwan’s Solar, Margaret Atwood’s Oryx and Crake, and Amitav Ghosh’s Hungry Tide. Films include Mad Max: Fury Road, Snowpiercer, Children of Men, Wall.E, Day After Tomorrow, and Beasts of the Southern Wild.

Offered: Fall

CAS 245 Literature and the Modern Environmental Imagination

Globalization, war, animal rights, mass media, consumer culture, eco-tourism, the rise of the megacity, and the conquest of indigenous peoples—these are just some of the issues raised in the selection of American environmental literary works surveyed in this course. Reading a diverse range of “green” texts, from slave narrative and nature writing to novels and political essays, we will study how writers imagine relationships to place and environment amidst accelerating social, economic, and technological change.

CAS 250 FOOD, JUSTICE, URBAN FARMING

CAS 251 INTRO TO GEOGRAPHIC INFO SYS

This course combines hands-on weekly labs and take home assignments to introduce students to Geographic Information Systems (GIS) tools and concepts. Using both commercial (ArcGIS) and open source software (QGIS, OpenLayers,etc), we will cover: GIS data structures, collecting and creating GIS data, map-making, exploring spatial patterns and data visualization. Topics will be framed using examples across disciplines (e.g. physical sciences, humanities and social sciences).

CAS 260 CLIMATE FUTURES

CAS 267 MEDIA SPACE

CAS 268 FOOD, MEDIA, LITERATURE

CAS 303 ECOREPS:INTRO LDRSHP&SUSTNBL

CAS 304 URBAN CRIME AND JUSTICE

This course offers a unique opportunity for students to engage critically with justice in courthouses in local communities. Students will participate in hands-on experiential work in a selected area of focus at the Monroe County Courthouse in Rochester.

Areas of focus to choose from include adult criminal justice, juvenile justice, treatment courts, domestic violence court, court-community partnerships, or equity disparities in the court. Weekly class meetings include university faculty and Judge Craig Doran, Chief Supervising Judge of all courts in the region, who share their perspectives, research, and experience on the matters addressed by students at the courthouse. This provides students with immediate immersion in both the theoretical and practical applications of justice in society. This course requires students spend 8 hours per week at the Monroe County Courts at the Hall of Justice in Rochester.

CAS 310 UG TEACHING ASST PROGRAM

CAS 312 ISSUES IN PEER ED/TUTORS

CAS 315 SCHOOL TO PRISON PIPELINE

Is the public school system with its widely embraced, inordinate surveillance, suspension and expulsion of Black and Brown students technically a “feeder system” for the criminal justice system, fueling the creation of a school-to prison (and/or deportation) pipeline? Is prison the new form of slavery? Beginning with the 13th Amendment and combining literary and ethnographic techniques merged to the personal narratives of the student participants, this course explores how schooling and mass incarceration are (dis)connected. Fieldwork, academic texts and popular media will be deployed in order to prepare student participants with the skills needed to complete the required auto-ethnography, the benchmark course requirement.

CAS 350 RISING LEADER:1ST YR LDRSHP

CAS 351 LDERSHIP IN THE COLL COMM I

Open by application only. This class is a requirement for Resident Advisor (RA) selection. Students wishing to participate in RA selection must apply in late October, and interview for a space in the class. The class explores important issues including: peer leadership, communication, diversity, and community development which are essential to the RA position.

CAS 352 WORKSHOP LEADERSHIP

This course surveys group dynamics, learning theory and pedagogy. The larger goals for this course are to develop leadership skills, to foster ongoing communication among faculty members and workshop leaders, and to provide an environment for focused review of workshop modules.

Offered: Fall Spring

CAS 353 WORKSHOP LEADERSHIP 2

This course surveys group dynamics, learning theory and pedagogy. The larger goals for this course are to develop leadership skills, to foster ongoing communication among faculty members and workshop leaders, and to provide an environment for focused review of workshop modules.

CAS 354 WORKSHOP LEADER 3 BIO 112

This course surveys group dynamics, learning theory and pedagogy. The larger goals for this course are to develop leadership skills, to foster ongoing communication among faculty members and workshop leaders, and to provide an environment for focused review of workshop modules.

Offered: Fall Spring

CAS 355 WORKSHOP LEADERSHIP

This course surveys group dynamics, learning theory and pedagogy. The larger goals for this course are to develop leadership skills, to foster ongoing communication among faculty members and workshop leaders, and to provide an environment for focused review of workshop modules.

Offered: Fall Spring

CAS 356 LEADERSHIP IN COLLEGE COMM

CAS 357 PEER MENTORING AND ADVISING

CAS 358 The Leadership Experience

Although leadership has been recognized throughout history, the study of this phenomenon has grown immensely in recent decades, exploring fundamental questions, including, "What is leadership?" and, "Can it be taught?" This course will provide you with an opportunity to learn about leadership history, theory and practice by engaging with other leaders, and by analyzing your own experiences. Through readings, lectures, video, and guest speakers, the course will introduce various concepts and models, with particular emphasis on the social change model of leadership. Students emerge from the class with a well-informed definition of this complex and multifaceted concept, and well-connected to exercise leadership on campus and beyond.

CAS 360 LEADERSHIP IN A DIVERSE WRLD

This course will explore themes at the intersection of community, diversity, innovation, leadership, and organization in American society. We will be especially concerned with how these themes emerge as central to the experience of students attending institutions of higher learning. Readings will vary from semester to semester.

CAS 370 APPLIED LDRSHP IN STUDNT GOV

CAS 375 THE ANTHROPOLOGY OF VIOLENCE

CAS 386V EARLY CONNECTNS AFRICA PRGRM

CAS 390 SUPERVISED TEACHING

CAS 391 INDEPENDENT STUDY

CAS 394 INTERNSHIP

CAS 394A EUROPN HLTH SCIENCE INTRNSHP

CAS 394B EUROPEAN BUSINESS INTERNSHIP

CAS 394G E HLTH SCI INTRN BONN,GRMNY

CAS 394I SPECIAL INTERNSHIP

This internship course is designed for students who would like to or are being required to register for credit by an employer or immigration requirement, including international students seeking CPT authorization. Consultation with the Career & Internship Center is necessary to obtain the registration permission code. Students will submit a learning agreement and completion assessment.A grade of pass/fail is awarded based on the internship supervisor's evaluation and successful completion of the learning assessment.

CAS 394L UK BUSINESS INTRNSP LONDON

CAS 396 REMS SEMINAR

CAS 396A SUMMER INTERNSHIP

This internship is designed for, and may only be taken by, students whose summer employers require them to "register for credit." The course carries 0 credit hours, but is graded "CREDIT/NO CREDIT." The Dean's approval is required before registration is permitted' students should see an adviser in the Center for Academic Support. No tuition or fees are charged.

CAS 396B SUMMER INTERNSHIP

This internship is designed for, and may only be taken by, students whose summer employers require them to earn credit. Consultation with the Career Center must precede registration. After student receives offer letter and completes learning Goals and Objectives with on-site supervisor, the student engages in an internship of at least 100 hours over at least five weeks. Ten specified topics concerning the organization and the student's experiences are addressed in analytic journals, normally submitted weekly via Blackboard. Written evaluation completed at end of internship. Graded Pass/Fail. (NOTE: International students follow separate CPT procedures; see ISO for further details.)

CAS 396C FALL INTERNSHIP

This internship is designed for, and may only be taken by, students whose employers require them to "register for credit." The course carries 0 credit hours, but is graded "CREDIT/NO CREDIT." The Dean's approval is required before registration is permitted; students should see an adviser in the Center for Advising Services.

CAS 396D SPRING INTERNSHIP

This internship is designed for, and may only be taken by, students whose employers require them to "register for credit." The course carries 0 credit hours, but is graded "CREDIT/NO CREDIT." The Dean's approval is required before registration is permitted; students should see an adviser in the Center for Advising Services.

Offered: Spring

CAS 396I SPECIAL INTERNSHIP

This internship course is designed for international students with F1/J1 visa status pursing paid internships in the U.S. The internship opportunity must relate to the student's program of study. Students will submit a learning agreement and completion assessment. Consultation with the College Center for Advising Services is required for registration. A grade of pass/fail is awarded based on the internship supervisor's evaluation and successful completion of the learning agreement.

CAS 397 SENIOR SCHOLAR RESEARCH

CAS 397A EUROPN HLTH SCIENCE INTRNSHP

CAS 397B EUROPEAN BUSINESS INTERNSHIP

CAS 397F UK BUSINESS INTERNSHIP

CAS 397H UK HEALTH SCIENCES INTERNSHP

CAS 397K KEY COURSE PRACTICUM

CGR 101 NEW TESTAMENT & CLASSICAL GREEK I

An introduction to Greek designed to prepare students to read the Classical Greek dramatists, philosophers, orators, and historians, and the New Testament.

Offered: Fall

CGR 102 NEW TESTAMENT & CLASSICAL GREEK II

A continuation of CGR 101.

Offered: Spring

CGR 103 INTERMEDIATE GREEK I

Review of Greek grammar through readings in Plato. Special focus given to more complex grammatical structures.

Offered: Fall

CGR 201 HOMER'S ILIAD

Select readings in Homer’s Iliad. Special attention given to meter, diction, and the oral poetics of Homeric Greek, as well as extended discussion of the place of Homer within Greek culture. Grade will be determined by two exams, two presentations, a final paper, and participation.

CGR 204 Sophocles

A close reading of play of Sophocles in its entirety in Greek. We will address pertinent questions of language, meter, context, staging, and scholarship.

CGR 208 THUCYDIDES

This course will consist of a close reading and translation of sections from The History of the Peloponnesian War by Thucydides, in both English and Greek. Special areas of focus will include an examination of authorial stance, reception, the use of oratory, and the book's relationship with other historical works.

CGR 210 EURIPIDES

By reading one of Euripides' plays, we will explore the structure, style, and performance of ancient tragedy.

CGR 214 HERODOTUS

CGR 215 SOCRATES: READING IN PLATO

Translation and discussion of various works of Plato as they pertain to the life and philosophy of Socrates. Students will also become familiar with some of the current thought and research on Plato.

CGR 390 SUPERVISED TEACHING

CGR 391 INDEPENDENT STUDY

CGR 392 HONORS RESEARCH

CGR 393 SENIOR PROJECT

CGR 394 INTERNSHIP

CGR 491 MASTER'S READING COURSE

CHE 113 CHEMICAL PROC ANALYSIS

Course Content and Method of Instruction: Lectures and discussion. Methodology and problem solving techniques in chemical engineering; the concepts of mass and energy conservation in both reacting and non-reacting chemical systems; the concept of equilibrium in chemical and physical systems and the basic principles of thermodynamics are presented; both steady state and transient behavior are discussed for some special systems.

Offered: Fall

CHE 116 NUMERICAl METHODS AND STAT

This course provides an introduction to numerical methods and engineering statistics for chemical engineers. Students learn to use computer models and statistics to understand engineering systems. The focus of numerical methods is translating engineering problems into algorithms and implementing them in a spreadsheet or programming language. Topics covered include basic data structures, programming flow control, plotting, function minimization, integration and differential equations. The statistics portion teaches students basic probability theory, the central limit theorem, hypothesis testing, confidence intervals, regression, model fitting and basic error analysis.

Offered: Spring

CHE 150 GREEN ENERGY

An introductory engineering course about energy production, conversion, and utilization. The first half of the course covers energy and power metrics, material and energy balances and the fundamental laws of thermodynamics. The remainder of the course examines traditional and alternative energy sources, energy distribution, and energy utilization. Course activities include weekly homework assignments, exams, and a project. Emphasis is on assumption-based problem solving.

Offered: Fall Spring

CHE 213 ENGINEERING OF SOFT MATTER

This course will provide an overview of several contemporary research topics pertaining to structured organic materials. Lectures will focus on intermolecular interactions and the thermodynamics of self-assembly. Additional lectures will introduce molecular crystals, polymer crystallinity, liquid crystals, self-assembled monolayers, surfactants, block copolymers, and biomimetic

materials. Homework assignments and a brief technical presentation will be required. Advanced undergraduate students are welcome. OFFERED EVEN YEARS

Offered: Spring

CHE 225 CHE THERMODYNAMICS

Lectures on the origin and use of the first and second laws of thermodynamics, followed by a discussion of equilibrium criteria. Thermodynamic descriptions of real gases and liquids are developed and applications of thermodynamics to phase and chemical equilibrium complete the course. Weekly problem assignments, problem review sessions, and student projects.

Offered: Fall

CHE 231 CHEMICAL REACTOR DESIGN

This course combines the concepts of mass balances, reaction rates, stoichiometry, and chemical equilibrium to introduce the fundamentals of chemical reactor design. Isothermal, uncatalyzed homogeneous reactions are considered initially, but more complex reactions, including heterogeneous, catalyzed reactions and biological reactions are also considered. Approaches to kinetic data acquisition and analysis techniques are presented, and then combined with knowledge of reaction mechanisms or the pseudo-state hypothesis to develop nonelementary rate laws. The course ends with nonisothermal reactor design.

Offered: Spring

CHE 243 FLUID DYNAMICS

An introduction to the basic fluid flow and conservation laws of transport phenomena including the principles and applications of fluid mechanics (momentum transport) to engineering problems. Topics include a detailed analysis of conservation of mass and momentum equations, microscopic and macroscopic balances, dimensional analysis and the application of fluid flow problems to chemical engineering.

Offered: Spring

CHE 244 HEAT & MASS TRANSFER

An introduction to heat and mass transfer mechanisms and process rates. The principles of energy and mass conservation serve to formulate equations governing conductive, convective, and radiative heat transfer as well as diffusive and convective mass transfer. Both steady-state and transient problems up to three dimensions are treated in the absence and presence of chemical reactions. The gained fundamental knowledge base is applied to design heat- and mass-transfer operations.

Offered: Fall

CHE 246 CHE PRINCIPLES LAB - LECTURE

Hands-on experience with concepts in phase equilibrium, heat and mass transfer, and chemical kinetics. Emphasis on measurement techniques, data analysis, and experimental design. Involves structured experiments, open-ended projects, and oral or written reports.

Offered: Spring

CHE 250 SEPARATION PROCESSES

Application of mass transfer and thermodynamics to chemical separation techniques. Fundamentals and design of processes, such as distillation, absorption, extraction, and crystallization. Fixed-bed operations, such as ion exchange and chromatography, and membrane processes are also considered.

Offered: Spring

CHE 255 CHE PROCESSES LAB - LECTURE

Operation and scale-up of chemical process equipment for chemical reaction and purification. Examination of the factors that affect performance in practice. Exploratory experiments and preliminary experimental design, as well as oral and written reports are required.

Offered: Fall

CHE 258 ELECTROCHEMICAL ENGINEERING & FUEL CELLS

The course will concentrate on presenting the principles of electrochemistry and electrochemical engineering, and the design considerations for the development of fuel cells capable of satisfying the projected performance of an electric car. The course is expected to prepare you for the challenges of energy conversion and storage and the environment in the 21st century. Course is offered October 24th - December 12th

Offered: Fall

CHE 259 TRANSPORT PHENOMENA IN BIOLOGICAL SYSTEMS

This course will provide an overview of transport phenomena in biological systems that are critical to the function of all living organisms. The fundamental laws and equations of transport phenomena will be applied to topics including cellular, cardiovascular, respiratory, liver and kidney transport, blood flow and rheology, and circulation in tissues and arteries.

Offered: Fall

CHE 260 SOLAR CELLS

This course will introduce students to the basics of photovoltaic devices: physics of semiconductors; pn junctions; Schottky barriers; processes governing carrier generation, transport and recombination; analysis of solar cell efficiency; crystalline and thin-film solar cells, tandem structures, dye-sensitized and organic solar cells. Students will learn about current photovoltaic technologies including manufacturing processes, and also the economics of solar cells as an alternative energy source. Critical analysis of recent advances and key publications will be a part of the course work.

Offered: Fall

CHE 264 BIOFUELS

This course will provide the student with a grounding in the fundamental principles of biofuels, including their sources, properties, and the biological processes by which they are made.

Offered: Fall

CHE 265 SUSTAINABLE CHEMICAL PROCESSES

Course Description: Elements of sustainable chemical processes. Bulk and fine chemicals derived from renewable resources-- e.g. carbohydrates, animal fats, plant seeds, lignocellulose, algae, and carbon dioxide. Use of environmentally benign solvents-- e.g. ionic liquids, supercritical carbon dioxide, fluorous solvents, and liquid polymer-- for chemical reactions and separations. Chemical reactions activated by unconventional means-- e.g. ball milling, microwave heating, and ultrasound irradiation-- requiring minimum energy, catalysts, and solvents. Polymers produced with monomers from renewable resources, designed for recovery and recycling beyond intended service. Chemical and enzymatic catalysis enhanced by process integration to minimize the need for product separation and purification. Microreactor technologies to maximize rates of heat & mass transfer, chemical reaction rates, product yields and selectivity, in addition to facilitating process control, optimization, and scale-up.

CHE 266 BIOPROCESS ENGINEERING

See BME 266 for course description

Offered: Spring

CHE 272 PROCESS DYNAMICS & CONTROL

Lectures, problem sets, and design projects. Introduction to the dynamic behavior of chemical engineering systems and to the analysis of feedback control systems. Methods of design of single feedback loops and multivariable systems are covered. (2 CRS)

Offered: Fall Spring

CHE 273 CHEMICAL ENGINEERING PROCESS DESIGN

The course will cover material related to the conception and design of chemical processes. Topics will include energy systems analysis, the attainability region approach for reactor network synthesis and the effects of statistical uncertainty on decision making when evaluating alternative designs. Modern techniques for stochastic simulation of random processes will also be studied. The use of computational software packages like MATHCAD and DESIGN II will be expected in doing many of the homework assignments. In addition to two examinations, a computer-oriented design project will be assigned involving the use of chemical engineering principles for the solution of a process flow sheet problem. A good back ground in computer programming is necessary since many of the course assignments make use of numerical techniques.

Offered: Fall

CHE 276 POLYMER SYNTHESIS

An introduction to polymerization reaction mechanisms. The kinetics of commercially relevant polymerizations are emphasized along with a discussion of important, contemporary polymerization schemes. Approaches to functionalize polymers and surface-initiated polymerizations will also be covered. An overview of polymer characterization techniques, emphasizing compositional analysis, will be presented. The course is intended for graduate students in Chemical Engineering, Chemistry, Materials Science, and Biomedical Engineering, but advanced undergraduates are welcome.

CHE 279 CHEMICAL ENGINEERING PRACTICE

Issues of relevance to the practice of chemical engineering. Topics include basic economic principles and marketing issues, ethics, plant safety, worker education and training and environmental implications in process designs. Students visit a local industry to gain perspective on the scale of a chemical process. Presentations by practicing engineers expose the versatility of a chemical engineering education.

Offered: Spring

CHE 282 PROCESSING MICROELECTRONIC DEVICES

This course features an overview of processes used in the fabrication of microelectronic devices, with emphasis on chemical engineering principles and methods of analysis. Modeling and processing of microelectronic devices. Includes introduction to physics and technology of solid state devices grade silicon, microlithography, thermal processing, chemical vapor deposition, etching and ion implantation and damascene processing. Course is offered August 31st - October 19th.

Offered: Fall

CHE 286 POLYMER PHYSICS

This course emphasizes the fundamental physics of polymer melts, solutions, networks, and glasses. Topics include: molecular weight and size, chain conformations, thermodynamics of polymer blends and solutions, networks and gelation, polymer dynamics and the glass transition, and morphology and order of semicrystalline polymers. Experimental methods will also be covered including viscometry, size exclusion chromatography, light scattering, scanning calorimetry and dynamic mechanical analysis. OFFERED ODD YEARS

Offered: Spring

CHE 287 SURFACE ANALYSIS

Graduate and advanced undergraduate course on surface-specific analytical techniques. The first few lectures of the course will cover basic thermodynamics and kinetics of solid-liquid and solid-gas interfaces, including surface energy and tension, surface forces, adsorption and chemisorption, and self-assembly. The rest of the class will focus on surface spectroscopy and microscopy, including X-ray and UV photoelectron spectroscopy, Auger spectroscopy, secondary ion mass spectrometry, IR and Raman spectroscopy/microscopy and scanning probe microscopy. OFFERED ODD YEARS

Offered: Spring

CHE 288 INTRO TO ENERGY SYSTEMS

The goal of this course is to provide a succinct introduction to the different means of producing energy. The first and second laws of thermodynamics are reviewed to introduce the concepts of conservation of energy and efficiency. Then these concepts are applied to a number of different energy technologies, including wind, hydroelectric, geothermal, fuel cells, biomass, and nuclear. For each type of technology, a technical introduction is given so that the student will understand the governing scientific principles.

Offered: Spring

CHE 289 BIOSENSORS

This course introduces students to the highly interdisciplinary field of biosensors, with focus on electrochemical transduction. After an overview of the fundamental principles, the course will introduce various strategies to apply the scientific theory and mechanisms to practical issues such as immunoassays, detection of DNA mutation or environmental toxins, metabolic activity, and in-vivo neuronal signal monitoring. The students will be exposed to recent publications that highlight key advances in this field and learn how various chemical, biological and engineering concepts are used in synergy to achieve state-of-the-art sensing of important biological molecules. Emphasis is placed on active participation by students, including literature presentations, critical evaluation of articles, concise technical writing and in-depth discussions.

Offered: Spring

CHE 292 BIOINTERFACES

The course will focus on interfacial phenomena in hybrid bio-inorganic systems. The goal of the course is to increase the understanding of interactions between biomolecules and surfaces. The course will aim at investigating the behavior of complex macromolecular systems at material interfaces and the importance of such systems in the fields of biology, biotechnology, diagnostics, and medicine. The first part of the course will focus on mechanisms of interactions between biomolecules and surfaces. The second part will focus on the characterization of physical, chemical, and morphological properties of biointerfaces. OFFERED EVEN YEARS

Offered: Spring

CHE 391 INDEPENDENT STUDY

CHE 391W INDEPENDENT STUDY

CHE 392 PRACTICUM

CHE 393 SENIOR PROJECT

CHE 394 INDEPENDENT INTERSHIP

CHE 395 RESEARCH

CHE 396 SPECIAL PROJECTS

CHE 398 SPECIAL TOPICS IN BIODIESEL PRODUCTION

Students will conduct operations and research in the University of Rochester Biodiesel lab. 2credits.

Offered: Fall Spring

CHE 400 APPLIED BOUNDARY VALUE PROB

See ME 201 for course description

Offered: Fall

CHE 413 ENGINEERING OF SOFT MATTER

This course will provide an overview of several contemporary research topics pertaining to structured organic materials. Lectures will focus on intermolecular interactions and the thermodynamics of self-assembly. Additional lectures will introduce molecular crystals, polymer crystallinity, liquid crystals, self-assembled monolayers, surfactants, block copolymers, and biomimetic materials. Homework assignments and a brief technical presentation will be required. Advanced undergraduate students are welcome. OFFERED EVEN YEARS

Offered: Spring

CHE 414 MATH METH OF OPTICS & PHY

See OPT 411 for course description

CHE 420 BIOMEDICAL NANOTECH

See BME 420 for course desscription

CHE 441 ADVANCED TRANSPORT PHENOMENON

This course will acquaint the student with important topics in advanced transport phenomena (momentum, heat and mass transport). Topics include laminar and turbulent flow, thermal conductivity and the energy equation, molecular mass transport and diffusion with heterogeneous and homogeneous chemical reactions. Focus will be to develop physical understanding of

principles discussed and with emphasis on chemical engineering applications. In addition to the text, the student will be exposed to classic and current literature in the field.

Offered: Fall

CHE 447 LIQUID-CRYSTAL MATERIALS AND OPTICAL APPLICATIONS

This course will introduce the student to the physical, chemical and optical properties of liquid crystals (LC) that are the basis for their wide and successful exploitation as optical materials for a broad variety of applications in optics, photonics and information display. Topics to be presented include: origins of LC physical properties in thermotropic and lyotropic materials as a function of chemical structure, influence of these structure-property relationships on macroscopic organization in LC mesophases, and the effect of molecular ordering and order parameter on properties of special significance for device applications. Operating principles for LC devices in a wide variety of applications will be described, including passive and tunable/switchable polarizers, wave plates, filters, information displays and electronic addressing, electronic paper, color-shifting polarizing pigments, optical modulators, and applications in photonics and lasers

Offered: Fall

CHE 448 CONTROLLED RELEASE SYSTEMS

See BME 448 for course description

CHE 454 INTERFACIAL ENGINEERING

Lectures on the fundamentals of colloids and interfaces, systems with high interfacial area, and their role in modern processes and products. Topics include interfacial tension, contact angle, adsorption, surfactants, miscelles, microemulsions, and colloidal dispersions. Techniques for formation and characterization of interfaces and colloids will be reviewed.

Offered: Spring

CHE 455 THERMODYNAMICS & STAT MECH

Please see CHM 455 for the course descripition.

CHE 458 ELECTROCHEMISTRY OF FUEL CELLS AND BATTERIES

The course will concentrate on presenting the principles of electrochemistry and electrochemical engineering, and the design considerations for the development of fuel cells capable of satisfying the projected performance of an electric car. The course is expected to prepare you for the challenges of energy conversion and storage and the environment in the 21st century.Course is offered October 23 - December 11.

CHE 460 SOLAR CELLS

This course will introduce students to the basics of photovoltaic devices: physics of semiconductors; pn junctions; Schottky barriers; processes governing carrier generation, transport and recombination; analysis of solar cell efficiency; crystalline and thin-film solar cells, tandem structures, dye-sensitized and organic solar cells. Students will learn about current photovoltaic technologies including manufacturing processes, and also the economics of solar cells as an alternative energy source. Critical analysis of recent advances and key publications will be a part of the course work.

Offered: Fall

CHE 462 CELL & TISSUE ENGINEERING

Teaches the principles of modern cell and tissue engineering with a focus on understanding and manipulating the interactions between cells and their environment. After a brief overview of Cell and Tissue Engineering, the course covers 5 areas of the field. 1) Physiology for Tissue Engineering; 2) Bioreactors and biomolecule production; 3) Materials for Tissue Engineering; 4) Cell Cultures and bioreactors and 5) Drug Delivery and Drug Discovery.

CHE 464 BIOFUELS

This course will provide the student with a grounding in the fundamental principles of biofuels, including their sources, properties, and the biological and chemical processes by which they are made.

Offered: Fall

CHE 465 SUSTAIBABLE CHEMICAL PROCESSES

Elements of sustainable chemical processes. Generation of transportation fuels and chemical platforms from renewable resources-- e.g. lignocellulose, algae, and carbon dioxide-- for production of bulk and fine chemicals traditionally derived from petroleum. Use of environmentally benign solvents-- e.g. ionic liquids, supercritical carbon dioxide, fluorous solvents, and liquid polymer-- for reactions and separations. Chemical reactions activated by unconventional means-- e.g. ball milling, microwave heating, and ultrasound irradiation-- requiring minimum energy, catalyst, and solvent. Chemical and enzymatic catalysis enhanced by process integration to minimize the need for product separation and purification. “Click reactions” applied to the synthesis of peptides and advanced materials. Microreactor technologies to maximize heat & mass transfer, reaction rate, product yield and selectivity, in addition to facilitating process control, optimization, and scale-up.

Offered: Spring

CHE 466 BIOPROCESS ENGINEERING

See BME 266 for course description

CHE 469 BIOTECHNOLOGY&BIOENGINEERING

The life science and engineering principles underlying biotechnology processes; established biotechnology processes including microbial and enzyme conversions, metabolic pathways, and fermentation kinetics; tools for biotechnology development including the recombinant DNA and monoclonal antibody techniques; emerging areas at the forefront of biotechnology, including immune technology and tissue and organ cultures.

Offered: Spring

CHE 476 POLYMER SYNTHESIS AND CHARACTERIZATION

An introduction to polymerization reaction mechanisms. The kinetics of commercially relevant polymerizations are emphasized along with a discussion of important, contemporary polymerization schemes. Approaches to functionalize polymers and surface-initiated polymerizations will also be covered. An overview of polymer characterization techniques, emphasizing compositional analysis, will be presented. The course is intended for graduate students in Chemical Engineering, Chemistry, Materials Science, and Biomedical Engineering, but advanced undergraduates are welcome.

CHE 477 ADVANCED NUMERICAL METHODS: THEORY TO IMPLEMENTATION

This is an advanced course where students will learn software engineering, advanced numerical methods, and high performance computing while completing four projects. This course is targeted at students with a programming, engineering and mathematics back-ground who want to use these skills simultaneously to independently solve challenging problems. The theme of the class is going from a set of equations describing a model to a complete implementation.Projects covered include Markov state modeling, Langevin dynamics, classification of protein structures, and multiscale modeling of molecular systems. Students will learn and apply software engineering concepts like unit testing, version control, software containers and high performance computing. Students will learn about advanced numerical methods such as optimizing floating point operations, parallel computing, and GPU computing.

Offered: Fall

CHE 482 PROCESSING MICROELECTRONIC DEVICES

This course features an overview of processes used in the fabrication of microelectronic devices, with emphasis on chemical engineering principles and methods of analysis. Modeling and processing of microelectronic devices. Includes introduction to physics and technology of solid state devices grade silicon, microlithography, thermal processing, chemical vapor deposition, etching and ion implantation and damascene processing. Course is offered August 30 - October 18.

CHE 485 THERMODYNAMICS & STATISTICAL MECHANICS

Introduction to the topic: Thermodynamics and Statistical Mechanics. In the beginning macroscopic thermodynamics including phase equilibria and stability concepts will be covered followed by material related to the principles of statistical mechanics. Applications to various modern areas of the topic will be examined including the Monte Carlo simulation method, critical phenomena and diffusion in disordered media. The course will require completion of a project as well as regular homework assignments.

Offered: Spring

CHE 486 POLYMER PHYSICS

This course emphasizes the fundamental physics of polymer melts, solutions, networks, and glasses. Topics include: molecular weight and size, chain conformations, thermodynamics of polymer blends and solutions, networks and gelation, polymer dynamics and the glass transition, and morphology and order of semicrystalline polymers. Experimental methods will also be covered including viscometry, size exclusion chromatography, light scattering, scanning calorimetry and dynamic mechanical analysis. OFFERED ODD YEARS

Offered: Spring

CHE 487 SURFACE ANALYSIS

Graduate and advanced undergraduate course on surface-specific analytical techniques. The first few lectures of the course will cover basic thermodynamics and kinetics of solid-liquid and solid-gas interfaces, including surface energy and tension, surface forces, adsorption and chemisorption, and self-assembly. The rest of the class will focus on surface spectroscopy and microscopy, including X-ray and UV photoelectron spectroscopy, Auger spectroscopy, secondary ion mass spectrometry, IR and Raman spectroscopy/microscopy and scanning probe microscopy. OFFERED ODD YEARS

Offered: Spring

CHE 488 INTRO TO ENERGY SYSTEMS

A succinct, yet complete and critical introduction to the different means of producing energy.

CHE 489 BIOSENSORS

This course aims to introduce students to the highly interdisciplinary field of electrochemical biosensors, and offer insight into the underlying engineering principles. After an overview of fundamental electrochemical principles and biosensors, the course will focus on introducing various designing strategies for electrochemical biosensors, with emphasis on practical applications such as immunoassays, DNA detection and in-vivo neuronal signal monitoring. The students will be exposed to recent publications that highlight key advances in this field. Strong focus will be given to active participation by the students, including literature presentations, critical evaluation of articles, concise technical writing and in-depth discussions.

Offered: Spring

CHE 491 MASTER'S READING COURSE CHE

CHE 492 BIOINTERFACES

The course will focus on interfacial phenomena in hybrid bio-inorganic systems. The goal of the course is to increase the understanding of interactions between biomolecules and surfaces. The course will aim at investigating the behavior of complex macromolecular systems at material interfaces and the importance of such systems in the fields of biology, biotechnology, diagnostics, and medicine. The first part of the course will focus on mechanisms of interactions between biomolecules and surfaces. The second part will focus on the characterization of physical, chemical, and morphological properties of biointerfaces. OFFERED EVEN YEARS

CHE 493 MASTER'S ESSAY

CHE 494 MASTERS INTERNSHIP

CHE 495 MASTER'S RESEARCH IN CHEM EN

CHE 496 RESEARCH SEMINAR

Offered: Fall

CHE 497 TEACHING CHEM ENGR

CHE 589 TEACH, RESEARCH, WORK AFRICA

CHE 591 READING COURSE

CHE 594 INTERNSHIP

CHE 595 PHD RESEARCH IN CHEM ENGR

CHE 595A PHD RESEARCH IN ABSENTIA

CHE 895 CONT OF MASTER'S ENROLLMENT

CHE 897 MASTERS DISSERTATION

CHE 897A MASTERS DISS IN ABSENTIA

CHE 897B MASTER'S IN-ABSENTIA ABROAD

CHE 899 MASTER'S DISSERTATION

CHE 899A MSTRS DISSERTATN IN ABSENTIA

CHE 985 LEAVE OF ABSENCE

CHE 986V FULL TIME VISITING STUDENT

CHE 995 CONT OF DOCTORAL ENROLLMENT

CHE 997 DOCTORAL DISSERTATION

CHE 997A DOCT DISSERTATN IN ABSENTIA

CHE 999 DOCTORAL DISSERTATION

CHE 999A DOCT DISSERTATN IN ABSENTIA

CHE 999B DOC DISS IN-ABSENTIA ABROAD

CHI 101 ELEMENTARY CHINESE I

This 6-credit course is designed for beginners of Chinese. It introduces students to the sounds, basic sentence structures, and the writing system of Mandarin Chinese. Pinyin, the phonetic translation system, is taught and required throughout the course. Emphasis will be on developing listening and speaking skills as well as building a vocabulary based on 400 ideographic characters.

Offered: Fall

CHI 102 ELEMENTARY CHINESE II

This 6-credit course is the continuation of Chinese 101. Knowledge of Pinyin is required. The focus continues to be on developing listening and speaking skills with an increasing emphasis on reading and writing in ideographic characters. It aims to build a vocabulary based on 500 characters.

Offered: Spring

CHI 111 INTENSIVE ELEMENTARY CHINESE

This 8-credit intensive Chinese course is designed for beginners of Chinese, it covers our regular semester CH101 and CH102 in eight weeks in an intensive manner. The curriculum goal is the same as both CH101 and CH102 and uses the same textbook. It is specifically designed for students who would like to learn Chinese, but whose busy schedules have prevented them during regular semesters. After learning this summer course, students will have an ideal beginning and solid foundation for further Chinese study and can continue on to CH151. This is one of the core courses in the Chinese program that counts toward cluster, minor or major. The course introduces students to the sounds, basic sentence structures, and the writing system of Mandarin Chinese. Pinyin, the phonetic translation system, is taught and required throughout the course. Emphasis will be on developing listening and speaking skills as well as building a vocabulary based on 800-1000 Chinese characters.

Offered: Summer

CHI 113 INTRODUCTION TO CLASSICAL CHINESE I

Students will become acquainted with the grammar and construction of Classical Chinese language—the written form that prevailed in China for centuries, into the early twentieth century when it was gradually replaced by vernacular writing. Any student interested in conducting original research on China prior to the twentieth century will find the course useful for deciphering older documents and even for reading more recent documents that may be heavily inflected with Classical-style diction. Emphasis will be on learning to read Classical Chinese, but in-class exercises will also include pronunciation and writing in Classical Chinese in order to ensure student comprehension. Minimum of one year of Modern Chinese language or equivalent required; two years preferred.

CHI 114 CONVERSATIONAL CHINESE I

Emphasis on speaking skills with focus on current issues in Chinese culture and society. May be taken concurrently with CHI 151.

Offered: Fall

CHI 115 CONVERSATIONAL CHINESE II

Emphasis on speaking skills with focus on current issues in Chinese culture and society. May be taken concurrently with CHI 152.

Offered: Spring

CHI 116 INTRO CLASSICAL CHINESE II

This course is a continuation of CHI 113. Students will continue to study the grammar and construction of Classical Chinese language—the written form that prevailed in China for centuries, into the early twentieth century when it was gradually replaced by vernacular writing. Emphasis will be on learning to read Classical Chinese texts, but in-class exercises will also include pronunciation and writing in Classical Chinese in order to ensure student comprehension.

Offered: Spring

CHI 151 INTERMEDIATE CHINESE I

This course is the continuation of CHI 102 (or CHI 111). Knowledge of the Pinyin system is required for the purpose of pronunciation. The course continues to focus on developing communication skills with an increasing emphasis on reading and writing ideographic characters and expanding vocabulary. Course work includes two weekly recitation sessions.

Offered: Fall

CHI 152 INTERMEDIATE CHINESE II

Continuation of Chinese 151. Supplementary materials will include short selections from contemporary Chinese writings. Written compositions in Chinese are required. A study of modern colloquial and literary styles, drawn from contemporary writings, readings, and movies scripts in material of social and cultural interests. Basic grammar and syntax will be constantly reviewed. Special emphasis will be devoted to the expansion of reading vocabulary, sentence patterns, writing and oral skills.

Offered: Spring

CHI 202 ADVANCED INTERMEDIATE CHINESE I

This course covers various aspects of contemporary Chinese culture as found in magazines, journals, television, film and videos. Class taught in Chinese.

Offered: Fall

CHI 203 ADVANCED INTERMEDIATE CHINESE II

This course covers various aspects of contemporary Chinese culture as found in magazines, journals, television, film and videos. Class taught in Chinese.

Offered: Spring

CHI 205 ADVANCED CHINESE I

This course covers various aspects of contemporary Chinese culture as found in magazines, journals, television, film and videos. Taught in Chinese.

Offered: Fall

CHI 206 ADVANCED CHINESE II

Based on a Chinese culture heritage course, taught in Chinese. Focus on reading, writing and demonstrating in Chinese with power point.

Offered: Spring

CHI 211 INTRODUCTION TO PRE-MODERN CHINESE LITERATURE AND CULTURE

In this survey we will read major authors, works, and literary genres of Chinese literature before the 20th century, with attention to several central and intertwining themes: literature and the spaces of the imagination; the experience of the past and the subversion of tradition; changing relations between fiction and history; the reimagining of gender relations through the retelling of narratives; and the emergence of a vibrant urban culture. No background in Chinese literature is required or assumed.

CHI 212 CITIES & THE COUNTRY IN MODERN CHINA

Explores changing cultural meanings of country and city from early 20th century urban culture through revolution and to the present era of mass migration and urban destruction and renewal.

CHI 213 THE HISTORY & STRUCTURE OF CHINESE & JAPANESE

It is well known that Chinese civilization was central to the broad historical development of East Asian cultures including that of Japan, a relationship that might suggest that of ancient Hellenic Greek and Italic Latin. While much of Japan’s vocabulary and its writing system are rooted in Chinese, however, it is less well known that Chinese and Japanese belong in fact to two entirely unrelated language families, Sinic and Japonic. This course examines the linguistic structures, historical development and interactions of the two languages. Course topics include: theories of origins and language-family affiliations; the historical development of phonological and grammatical features; the development of writing systems; and the complex role played by language in cultural influence and interaction.

CHI 214 DREAM OF THE RED CHAMBER

This course is devoted to an intensive reading of the greatest work of Chinese prose fiction, the eighteenth-century novel, Dream of the Red Chamber (Hongloumeng). We will pay close attention to the novel’s extended reflection on the relations between illusion, reality, and fabrication; its subversion of historical narrative; its construction of architectural and “natural” spaces; its intense obsession with the sensuousness of material culture; and its powerful narration of desire in early modern China. No background in Chinese literature, culture, or language assumed. All readings in English.

CHI 216 TOWARD A SOCIAL LITERATURE: THE COEVOLUTION OF LITERATURE AND SOCIETY IN LATE QING CHINA (READINGS IN TRANSLATION)

The latter years of China's Qing dynasty (1644-1911) bore witness to great political, economic, and social change. Periods of inter-ethnic tensions, famine, rebellion, war, and finally revolution all contributed to a rapidly changing landscape for the subjects of the Qing dynasty. As the socio-political reality changed, so too did the literary production that reflected and commented on that reality. In this class, we will read prominent works of fiction and non-fiction from the 19th and early 20th centuries in order to identify how cultural trends, literary preoccupations, and expectations for the social function of literature evolved alongside contemporary social and political shifts in tumultuous late Qing China. In particular, we will pay attention to the emergence of class, racial, ethnic, and nationalist consciousness; discourses of “modernity”; and the growing belief that popular fiction could serve as a tool for the education and reformation of dynastic subjects into potential future citizens.

CHI 217 WRITING VOLATILITY AND PROCESSING CHANGE: A SURVEY OF THE LITERATURES OF CHINA, TAIWAN, AND HONG KONG IN THE TURBULENT TWENTIETH CENTURY (READINGS IN TRANSLATION)

This course takes a broad historical and social approach to Chinese, Taiwanese, and Hong Kong literatures in the twentieth century. Beginning with the transformative May Fourth and New Culture movements of 1919 and the early 1920s, we will move through the twentieth century as represented in (or set as the backdrop for) iconic and thought-provoking works of literature (including fiction, essays, and poetry) produced by some of the era’s most prominent writers. We will consider these pieces as subjective snapshots presenting different perspectives on and preoccupations with the complexity of life in particular social, political, and geographic contexts. Students will thus learn not only about major schools of thought and intellectual/literary trends

over the course of the century, but the political and social events, periods of conflict and upheaval, and moments of transition that shaped China's, Taiwan's and Hong Kong's respective political and intellectual trajectories during the same period.

CHI 218 INTRO TO CHI POP CULTURE

CHI 221 LABORERS, SOJOURNERS, IMMIGRANTS: CHINESE JOURNEYS TO THE AMERICAS (19TH–20TH CENTURIES)

This course will focus on the wide variety of trajectories and circumstances that brought Chinese persons to sites throughout the Americas—e.g. the US, Canada, Mexico, Cuba, Peru—in the nineteenth and twentieth centuries, and the vastly different realities that awaited them in different locations and in different eras. Together, we will look at the historic socio-economic factors that spurred these voyages, the experiences of those who underwent them, and the lasting impacts Chinese communities have had on the locations in which they arrived. We will also explore the development of immigration-related legislation in the Americas and its impacts on migrant and minority communities. Readings will be drawn from a variety of non-fictional sources (in English).

CHI 230 CONTEMPORARY CHINESE ART

Course explores the emergence of experimental and documentary art in China since the end of the Cultural Revolution in 1976. We will consider how questions of the remainders of the past and new urban spaces, the shifting relations of writing and images, the politics of the body, and the changing of location of China in a global cultural economy have driven wide-ranging experiments with new materials, mediums, and exhibition spaces.

CHI 231 ASIAN CALLIGRAPHY: HISTORY & PRACTICE I

Offered: Fall

CHI 232 ASIAN CALLIGRAPHY: HISTORY & PRACTICE II

Offered: Spring

CHI 235 PHOTOGRAPHY IN EAST ASIA

Course explores the intertwining of photography, culture, and modernity in East Asia. Topics include the redefinition and transformation of photography within the visual cultures of 19-century Japan and early 20th-century China; and how in the photography of recent decades the border of art and documentary have become a site for engaging with urgent questions of place, displacement, the presence of the past, and an ever-changing world of images.

CHI 237 CHINESE FILM

This course presents an overview of cinema in China, Taiwan, and Hong Kong from the 1930s to the present, considering how cinema has served a means of representing and reshaping Chinese historical identities and everyday life at home and abroad. We will approach film as a mixed medium of narrative, image, and sound, and focus on how it represents the spectacle of modern China by mediating among recurring issues of modern (especially urban) life, the persistence of the past, the relations of place to Chinese and global culture, and the staging of these questions through issues of gender and ethnicity. Throughout, we will pay close attention to the interaction of themes, narrative genres (such as melodrama), formal techniques, and cultural and social context.

CHI 274 CHINESE RELIGIONS

CHI 275 RELIGION & CHINESE SOCIETY

CHI 390 SUPERVISED TEACHING

CHI 391 INDEPENDENT STUDY

CHI 392 PRACTICUM

CHI 418 INTRO TO CHI POP CULTURE

CHI 430 CONTEMPORARY CHINESE ART

CHI 435 PHOTOGRAPHY IN EAST ASIA

CHI 437 CHINESE FILM

CHM 100 PREP FOR COLLEGE CHEMISTRY

This two credit course is designed to provide students with the problem-solving skills required in high school A.P. Chemistry or college freshman inorganic chemistry. Topics include elementary atomic structure and bonding; moles and stoichiometry; gas laws; solution concentration; oxidation and reduction; reaction kinetics; equilibrium; and acid/base chemistry including weak acids and buffers. No audits, summer only.

Offered: Summer

CHM 131 CHM CONCEPTS, SYSTEMS, PRACTICE I

This 5 credit course is an introduction to the concepts of chemistry for science and engineering students, health professions students, and as a science course for students of the humanities and social sciences. Properties of chemical systems are discussed from a macroscopic and molecular perspective with examples developed from a wide range of disciplines. The topics covered include stoichiometry, atoms and molecules, properties of gases, thermochemistry, chemical equilibrium, acids and bases, solubility equilibria, and oxidation-reduction reactions. In addition to lectures, there is a weekly 75 min. workshop. Also, a 50 min. lab lecture and a 3-hour laboratory meet on alternate weeks. You must also register for the lab lecture and corresponding laboratory (Lab Lecture A students also sign up for a Lab A section)prior to the start of the semester. Workshops are offered at multiple times during the week and assigned during the first week of classes. Lab fee: $120/billed. Uses T/Th 8-9:30am common exam time.

Offered: Fall Summer

CHM 132 CHM CONCEPTS, SYSTEMS, PRACTICE II

A continuation of Chemical Concepts, Systems and Practices I, emphasizing molecular and macroscopic approaches to chemical systems with examples concerned with life sciences or energy and the environment. Topics covered include: Chemical kinetics, electrochemistry, thermodynamics, properties of atoms, atomic structure, and chemical bonding. In addition to lectures, there is a weekly 75 min. workshop. A 50 min. lab lecture and a 3-hour laboratory meet on alternate weeks. You must register for the lab lecture and laboratory (linked) prior to the start of the semester. Workshops are offered at multiple times during the week and assigned during the first week of classes. Lab fee: $117/billed. Uses T/Th 8-9:30am common exam time.

Offered: Spring Summer

CHM 137 CHEMICAL PRINCIPLES FOR ENGINEERS

CHM 137 is designed to give engineering students a conceptual foundation in the principles of chemistry that are relevant to solving engineering problems. Important topics include the nature of chemical compounds; stoichiometry, properties of gases; the Periodic Table; electrons and atoms; chemical bonding and applications to materials; thermodynamics and energy; rates of chemical reactions; chemical equilibrium; electrochemistry. Each unit will be discussed in the context of applications to relevant engineering problems, i.e., using chemical knowledge to design a material or process that solves an important problem. In addition to lectures there are weekly 75 min. workshops. Also, a 75 min lab lecture and 3-hour laboratory will be held every other week. You must register for the 137 lecture, workshop, lab lecture and corresponding laboratory (Lab A Lecture students need to also sign up for a Laboratory A section). Lab fee: $120/billed. Uses T/Th 8-9:30am common exam time.

Offered: Fall

CHM 171 FR ORGANIC CHEMISTRY

CHM 171 / 172 is a one year exploration of the basic observations, concepts and practice of organic chemistry, with a focus on the fundamental relationships among molecular structure and chemical reactivity. The exploration will require that students grapple in depth issues: defining questions, evaluating evidence, weighing arguments, reflecting on epistemological issues, constructing new experiments, etc. The study of organic chemistry will be carefully integrated with a review of the key concepts from general chemistry. Freshman Organic is designed for first year students with good preparation in chemistry (e.g., two years of general chemistry and Advanced Placement score 4 or 5). This sequence fast tracks students to more advanced chemistry courses and the fulfillment of degree requirements in other disciplines. In addition to lectures, there is a weekly workshop. Coregistration in CHM 173 (laboratory and lab/lecture) is required. Lab fee: $120 (billed). (Fall). Uses T/Th 8-9:30am common exam time.

Offered: Fall

CHM 172 FRESHMAN ORGANIC CHEM II

CHM 172 is the second semester of a one year exploration of the basic observations, concepts and practice of organic chemistry, with a focus on the fundamental relationships among molecular structure and chemical reactivity. The exploration will require that students grapple in depth issues: defining questions, evaluating evidence, weighing arguments, reflecting on epistemological issues, constructing new experiments, etc. The study of organic chemistry will be carefully integrated with a review of the key concepts from general chemistry. Freshman Organic is designed for first year students with good preparation in chemistry (two years of general chemistry and an Advanced Placement score of 4 or 5). This sequence fast tracks students to more advanced chemistry courses and the fulfillment of degree requirements in other disciplines. The accompanying lab for Chemistry majors is CHM 210 (2 credits). Lab fee: $116(billed). (Spring). This course uses the Tues/Thurs 8:00 - 9:30 am Common Exam time.

Offered: Spring

CHM 173 FR ORGANIC CHEM LAB

CHM 173 is the fall semester, one credit laboratory accompanying CHM 171, an exploration of the basic observations, concepts and practice of organic chemistry, with a focus on the fundamental relationships among molecular structure and chemical reactivity. The exploration will require that students grapple with in depth issues: defining questions, evaluating evidence,weighing arguments, reflecting on epistemological issues,constructing new experiments, etc. The study of organic chemistry will be carefully integrated with a review of the key concepts from general chemistry. Freshman Organic Chemistry is designed for first year students with good preparation in chemistry (see prerequisites). Co-registration in CHM 171 (lecture) is required. Lab fee: $120 (billed). (Fall).

Offered: Fall

CHM 203 ORGANIC CHEMISTRY

An introduction to organic chemistry that focuses on chemical bonding, structure and stereochemistry, reactions and reaction mechanisms of organic compounds. There are three 50 minute lectures and one workshop per week. The workshop is an informal, interactive two-hour session in which groups of eight students work on specially designed problems under the guidance of a trained leader. The purpose of the workshop is to provide a mechanism for students to work actively with the material and with each other. Coregistration in the one credit lab CHM 207 is required (lab fee $120 - billed). (Fall). This course uses the Tues/Thurs 8:00 - 9:30 am Common Exam time.

Offered: Fall Summer

CHM 204 ORGANIC CHEMISTRY II

A continuation of a two-semester sequence in the study of organic chemistry. Topics covered include the reactivity of various functional groups, approaches to organic synthesis,reactivity of conjugated systems and molecules of biological significance. There are three 50 minute lectures and one workshop per week. Coregistration required in the accompanying laboratory course CHM 208 or CHM 210 (2 credit lab recommended for CHM majors). Lab fee: $108 - billed. Grade of C- or better in CHM 203 (or equivalent). (Spring). This course uses the Tues/Thurs 8:00 - 9:30 am Common Exam time.

Offered: Spring Summer

CHM 207 ORGANIC CHEMISTRY I: LAB

A one credit organic chemistry laboratory course that provides an introduction to the characterization and reactivity of organic molecules using modern laboratory techniques. There is one 3-hour laboratory and one 50 minute laboratory lecture per week. Co-registration in CHM 203 is required. Lab fee: $120 (billed). (Fall).

Offered: Fall Summer

CHM 208 ORGANIC CHEM II: LABORATORY

A continuation of the laboratory sequence begun in CHM 207 with two components. The one credit laboratory section meets once each week for 2 hours and 40 minutes. In addition, the lab-lecture meets once each week for 50 minutes. Chemistry majors should take CHM 210, a 2 credit laboratory course. Lab fee: $117 (billed). (Spring).

Offered: Spring Summer

CHM 210 ORGANIC CHEMISTRY LAB LECTURE

A 2 credit laboratory using advanced, modern experimental techniques. As part of the course, students will be trained to use the department's NMR spectrometers. This requires extra time outside of scheduled laboratory hours (two, 3-hour laboratories and

a lab-lecture per week). This laboratory is required for chemistry majors. Lab fee: $117 (billed). Co-registration in CHM 172 or CHM 204 is required. (Spring).

Offered: Spring

CHM 210W ORGANIC CHEMISTRY LAB LECTURE

A 2 credit laboratory using advanced, modern experimental techniques. As part of the course, students will be trained to use the department's NMR spectrometers. This requires extra time outside of scheduled laboratory hours (two, 3-hour laboratories and a lab-lecture per week). Meets one of the required two upper level writing requirements for a chemistry major. Lab fee: $116 (billed). Co-registration in CHM 172 or CHM 204 is required. (Spring).

Offered: Spring

CHM 211 INORGANIC CHEMISTRY I

This course covers bonding in inorganic molecules, molecular symmetry, an introduction to solid-state chemistry, coordination chemistry and the properties of transition metal complexes. Two 75 minute lectures per week, 7 workshops, 6 problem sets, three midterm examinations and a final examination. Cross listed with CHM 411. (Fall).

Offered: Fall

CHM 231 CHEMICAL INSTRUMENTATION LABORATORY

This four credit course will provide an understanding of both the method and the application of modern chemical instrumentation to chemical problems and systems. The problems will be deliberately chosen to cover a range of different physical and biophysical chemistry topics. Writing clear, concise lab reports is a skill that every practicing scientist is expected to have. This course provides you with excellent opportunities to hone this important skill. Detailed lab reports are required for all computational problems and laboratory experiments. For CHM 231W, in addition to all the requirements of CHM 231, this writing section fulfills the College’s upper-level writing requirements through the completion of three additional written reports on topics in chemical instrumentation. Attendance is required at two lectures and 2 labs per week. Concurrent registration in CHM 251 is recommended. Not open to freshmen and sophomores. Lab fee: $108 (billed). (Fall).

CHM 231W CHEMICAL INSTRUMENTATION LABORATORY

This four credit course will provide an understanding of both the method and the application of modern chemical instrumentation to chemical problems and systems. The problems will be deliberately chosen to cover a range of different physical and biophysical chemistry topics. Writing clear, concise lab reports is a skill that every practicing scientist is expected to have. This course provides you with excellent opportunities to hone this important skill. Detailed lab reports are required for all computational problems and laboratory experiments. For CHM 231W, in addition to all the requirements of CHM 231, this writing section fulfills the College’s upper-level writing requirements through the completion of three additional written reports on topics in chemical instrumentation. Attendance is required at two lectures and 2 labs per week. Concurrent registration in CHM 251 is recommended. Not open to freshmen and sophomores. Lab fee: $120 (billed). (Fall).

Offered: Fall

CHM 232 MOLECULAR SPECTROSCOPY LABORATORY

A thorough study of the principles and practice of spectroscopic methods of modern physical chemistry. This is a four credit course with three lectures and one lab per week. Two exams and five laboratory reports. Course Topics: Overview, Classical view of spectroscopy Quantum view of spectroscopy, oscillator Rigid rotor and anharmonic oscillator Generation and detection of EM radiation Measurement methodology, noise, error OCS lab and Stark effect Electronic spectroscopy Basic Electronics Fine points of rovibrational spectra FTIR experiment 2 level theory, line broadening Laser induced fluorescence experiment Group theory, polyatomics, special topics Polyatomic spectroscopy/intro to Pyrene Pyrene lab instrumentation and analysis Theory of ESR spectroscopy ESR lab and instrumentation Lab fee: $108 (billed). (Spring).

Offered: Spring

CHM 232W MOLECULAR SPECTROSCOPY LABORATORY

A thorough study of the principles and practice of spectroscopic methods of modern physical chemistry. This is a four credit course with three lectures and one lab per week. Two exams and five laboratory reports. Meets one of the two required upper level writing courses for chemistry majors. Lab fee: $108 (billed). (Spring).

Offered: Spring

CHM 234 ADVANCED LABORATORY TECHNIQUES

Advanced laboratory techniques of synthesis, characterization, and analysis applied to problems in inorganic and organic chemistry. A four credit laboratory course with two or three 75-minute lectures for each lab. Labs are scheduled either Mon/Wed or Tue/Thur for approximately two-and-one-half hours each. Graded work includes five lab reports, a midterm, and two problem sets. 234W has an additional writing assignment. CHM 234W meets one of the two required upper level writing courses for the chemistry major. Lab fee: $117 (billed). (Spring).

Offered: Spring

CHM 234W ADVANCED LABORATORY TECHNIQUES

Advanced laboratory techniques of synthesis, characterization, and analysis applied to problems in inorganic and organic chemistry. A four credit laboratory course with two or three 75-minute lectures for each lab. Labs are scheduled either Mon/Wed or Tue/Thur for approximately two-and-one-half hours each. Graded work includes five lab reports, a midterm, and two problem sets. 234W has an additional writing assignment. CHM 234W meets one of the two required upper level writing courses for the chemistry major. Lab fee: $108 (billed). (Spring).

Offered: Spring

CHM 244W Advanced Nuclear Science Educational Laboratory (ANSEL)

Students enrolled in ANSEL will develop an understanding of our terrestrial radiation environment and some of the important applications of nuclear science and technology. Practical skills in the routine use of radiation detectors, monitors, and electronics. Develop the ability to assess radiation threats and prospects of their abatement. Four in-depth experiments are designed to help create a type of well-rounded, competent experimental nuclear scientist who is able to analyze an experimental problem, select, design, and set up appropriate nuclear instrumentation, and to conduct required measurements. Lab sessions will meet twice a week for two hours and 40 minutes. In addition to the lab component, students will attend a weekly lecture (50 minutes) to discuss the scientific background of the experiments and to relate principles of radiation detection and measurement to modern applications in physics, chemistry, environmental studies, power technology, medicine and forensics. (Spring, formerly CHM 245W).

Offered: Spring

CHM 251 PHYSICAL CHEMISTRY I

This course is an introduction to quantum mechanics with applications to spectroscopy and to atomic and molecular structure. There are weekly problem sets. Students also participate in workshops each week. Cross listed with CHM 441. (Fall). This course uses the Tues/Thurs 8:00 - 9:30 am Common Exam time.

Offered: Fall

CHM 252 PHYSICAL CHEMISTRY II

The course covers thermodynamics, equilibrium, statistical mechanics, solutions, and chemical kinetics. There are three 50-minute lectures and one recitation session per week. Weekly problem sets are assigned. (Spring). This course uses the Tues/Thurs 8:00 - 9:30 am Common Exam time.

Offered: Spring

CHM 262 BIOLOGICAL CHEMISTRY

An introduction to the chemical processes of life. Topics to be covered include proteins and nucleic acids, recombinant DNA technology, biological catalysis, and energy transduction. Structure and function of biological macromolecules will be emphasized. Cross listed with CHM 462. Students will not receive credit for BIO 250 AND CHM 262/462. (Spring).

Offered: Spring

CHM 275 THE CHEMISTRY OF POISONS

CHM 286 ENERGY, SCIENCE, TECH & SOC

Course Topics: Interdisciplinary course on contemporary energy issues, part of a “sustainability minor.” Historical development, present state and projected demands of US- American energy production and distribution within the boundary conditions of climate change and global competition. Scientific-technological knowledge of energy production and distribution technologies, energy efficiency. Strategic issues of production technologies: scalability, environmental and biological risks. Present energy

policies and prospects for sustainable energy strategies. Student research projects use published data and simulated model energy scenarios.

Offered: Spring

CHM 386V VISITING STUDENT IN CHEMISTRY

CHM 390 SUPERVISED TEACHING

Supervised teaching as prearranged with Chemistry Department faculty member. Special Application Required. Faculty rules restrict students to one four-credit Independent Studies course per semester.

Offered: Fall Spring

CHM 391 INDEPENDENT STUDY

Individual study of advanced topics arranged by students. The student and instructor determine what course title is most appropriate. The title, limited to 28 spaces, is listed on the Independent Studies Form. This title will appear on the transcript as the official title of the course. If students do not submit a title, the course title will be determined by the number of the course as listed above. Faculty rules restrict students to one four-credit Independent Studies course per semester. Special application required.

Offered: Fall Spring

CHM 393 SENIOR RESEARCH PROJECT

Independent research directed by faculty member to be arranged during semester preceding registration. Written report and participation in a department poster session required. For BS Chemistry majors, two semesters of CHM 393 are required (8 credits). Special application required.

Offered: Fall Spring

CHM 393W SENIOR RESEARCH PROJECT

Independent research directed by faculty member to be arranged during semester preceding registration. Written report and participation in a department poster session required. For BS Chemistry majors, two semesters of CHM 393 are required (8 credits). Special application required.

Offered: Fall Spring

CHM 394 INTERNSHIP

CHM 395 INDEPENDENT RESEARCH

A research course designed by individual arrangement with a faculty member. Plan on spending at least the equivalent of two afternoons (eight hours) a week in the lab. The basis for determining your grade for the research course is worked out between the student and the professor as part of registration for independent research. Special application required.

Offered: Fall Spring

CHM 395W INDEPENDENT RESEARCH

A research course designed by individual arrangement with a faculty member. Plan on spending at least the equivalent of two afternoons (eight hours) a week in the lab. The basis for determining your grade for the research course is worked out between the student and the professor as part of registration for independent research. Special application required.

Offered: Fall Spring

CHM 404 BIOPHYSICAL CHEMISTRY II

This course explores how fundamental interactions determine the structure, dynamics, and reactivity of proteins and nucleic acids. Examples are taken from the current literature with emphasis on thermodynamic, kinetic, theoretical, and site-directed mutagenesis studies. Paper and presentation. (Spring - odd years).

Offered: Spring

CHM 406 INTERFACE OF CHM & BIO

This course will provide an introduction to recent research at the interface of chemistry and biology by focusing on seminars given in various departments. Students will read and discuss selected papers from a speaker's lab during the week before the seminar, attend the seminar, and then meet with the speakers when they visit. (Spring)

Offered: Spring

CHM 411 INORGANIC CHEMISTRY I

This course covers descriptive chemistry of main group elements, bonding in inorganic systems, coordination chemistry and the properties and reactions of transition metal complexes. Two 75 minute lectures per week. Three 90 minute examinations plus group projects and problem sets. Cross listed with CHM 211.

Offered: Fall

CHM 414 BIOLOGICAL INORGANIC CHEMISTRY

Discussion of the role of metal ions in biological systems, especially enzymes. Uptake and regulation of metals, common spectroscopic techniques used for studying metals, and mechanisms through which they react. Other topics include metal ion toxicity, metal-based drugs, and interaction of metals with nucleic acids. Problem sets and proposal.

Offered: Spring

CHM 415 GROUP THEORY

2 credits - Development of symmetry and group theory concepts and scope of applications to chemical problems. Applications include molecular orbital theory, ligand field theory and spectroscopy. (Fall, 1st half of semester.)

Offered: Fall

CHM 416 X-RAY CRYSTALLOGRAPHY

2 Credits (formerly CHM 417) - Students will learn the basic principles of X-ray diffraction, symmetry, and space groups. Students will also experience the single crystal diffraction experiment, which includes crystal mounting, data collection, structure solution and refinement, and the reporting of crystallographic data. Weekly assignments: problem sets, simple lab work, or computer work. (Spring, 2nd half of semester.)

Offered: Spring

CHM 418 SMALL MOLECULE ACTIVATION

This course will cover recent developments in the field of homogeneous catalysis in inorganic chemistry as it relates to the multielectron functionalization of molecules. Topics will include water oxidation, nitrogen fixation, and carbon dioxide reduction.

Offered: Spring

CHM 421 BASIC ORGANOMETALLIC CHEMISTRY

2 credits - Examination of the concepts, systems, reactions and applications of organometallic chemistry. Structure and bonding of complexes having carbonyl, alkyl, carbene, olefin, CnHn and related pi ligands. Oxidative addition, insertion, elimination reactions, and other fundamental reactions of organometallic compounds. (Fall, 2nd half of semester)

Offered: Fall

CHM 422 ORGANOMETALLIC CHEMISTRY

2 credits (formerly CHM 423) - Mechanisms in organometallic reactions. Applications of organometallic compounds in homogeneous catalysis, polymerization, metathesis. (Spring, 1st half of semester).

Offered: Spring

CHM 423 NMR SPECTROSCOPY

2 credits (formerly CHM 422) - An introduction to NMR spectroscopy. Collection, processing, and interpretation of homonuclear and heteronuclear 1D and multidimensional spectra will be covered. Topics to be discussed include chemical shifts, relaxation, and exchange phenomena. Examples from organic, inorganic, and biological chemistry will be used. (Fall, 1st half of semester).

Offered: Fall

CHM 425 Physical Methods in Inorganic Chemistry

Molecular and electronic structure determination of inorganic compounds and metal complexes; spectroscopic and physical methods that are used in inorganic chemistry. The main focus will be practical rather than theoretical. The course will culminate in a project that combines techniques to answer questions about coordination complexes. (Spring semester, 4 credits)

Offered: Spring

CHM 427 ORGANIC STRUCTURE DETERMINATION

2 credits (formerly CHM 426). The modern methods and tools employed for the determination of the structure of complex organic molecules will be discussed. Among the areas discussed are basic NMR, IR, UV and mass spectroscopy. Problem solving techniques will be illustrated and problem solving skills developed by means of problem sets and class examples. (Fall, 2nd half of semester).

Offered: Fall

CHM 433 ADVANCED PHYSICAL ORGANIC CHEMISTRY I

An understanding of the structure and reactivity of organic compounds by using molecular orbital theory will be provided. Some perspectives on the relationships between structure, mechanism and reactivity will be discussed in the context of a number of fundamental concepts and principles, such as molecular orbital theory, frontier molecular orbital theory, stereochemistry, conformational analysis, stereoelectronic effects, thermodynamics and equilibria, kinetics, linear free-energy relationships, acids and bases catalysis, nonclassical ions, and concerted pericyclic reactions. Not open to freshmen and sophomores. (Fall).

Offered: Fall

CHM 434 ADVANCED PHYSICAL ORGANIC CHEMISTRY II

Structure and reactivity; kinetic, catalysis, medium effects,transition state theory, kinetic isotope effects, photochemistry, reactive intermediates, and mechanisms. Readings in text ("Determination of Organic Reaction Mechanisms," B.K. Carpenter); Problem sets (about four during the semester). Two 75 minutes lectures per week. (Spring).

Offered: Spring

CHM 435 ORGANIC REACTIONS

A survey of reactions of organic compounds with emphasis on those with practical synthetic utility will be provided. Mechanisms of reactions will be considered as well as their scope and limitations. Stereochemical and stereoelectronic issues will be discussed. Selected topics to be covered are conformational analysis, olefin addition reactions, oxidation and reduction methods, pericyclic reactions, chemistry of enolates and metalloenamines, organosilicon chemistry, chemistry of nitrogen- and sulfur-based functional groups, chemistry of reactive intermediates, such as carbocations and carbenes. A solid background of college organic chemistry, including a good knowledge of reaction mechanisms, will be assumed as a prerequisite. Two 75-minute lectures per week with extensive reading assignments from original literature. (Fall).

Offered: Fall

CHM 436 AP ORGANOMET CHM TO SYNTH I

Applications of Organometallic Chemistry to Synthesis I (2 credits)- The transition metal mediated organometallic reactions most commonly employed in organic synthesis will be discussed including their substrate scope, mechanism, and stereo- and/or regiochemical course. Emphasis will be placed on the practical aspects such as catalyst and reaction condition selection, and protocols for trouble shooting catalytic cycles. (Spring, 1st of half semester).

Offered: Spring

CHM 437 SYN DESIGN: STRATEG and TACTICS

(Now CHM 440) - An introduction to bioorganic chemistry and chemical biology. The course will present a survey of how the principles of organic chemistry have been applied to understand and exploit biological phenomena and address fundamental questions in life sciences. The course is primarily based upon the primary literature. Covered topics include the design and mechanism of enzyme mimics and small molecule catalysts (organocatalysts), synthesis and chemical modification of biomolecules (oligonucleotides, proteins, oligosaccharides), design and application of oligonucleotide and peptide mimetics, and chemical approaches to proteomic and genetic analyses. Not open to freshmen and sophomores.

CHM 438 AP ORGANOMET CHM TO SYNTH II

Applications of Organometallic Chemistry to Synthesis II (2 credits) - The second of two modules where transition metal mediated organometallic reactions employed in organic synthesis will be discussed including their substrate scope, mechanism, and stereo- and/or regiochemical course. The second module will cover a broad range of organometallic reactions. largely those mediated by titanium, zirconium, iron, cobalt, palladium, rhodium, ruthenium, silver, and gold (Spring, 2nd of half semester).

CHM 440 BIO ORGANIC CHEMISTRY

(Formerly CHM 437) - An introduction to bioorganic chemistry and chemical biology. The course will present a survey of how the principles of organic chemistry have been applied to understand and exploit biological phenomena and address fundamental questions in life sciences. The course is primarily based upon the primary literature. Covered topics include the design and mechanism of enzyme mimics and small molecule catalysts (organocatalysts), synthesis and chemical modification of biomolecules (oligonucleotides, proteins, oligosaccharides), design and application of oligonucleotide and peptide mimetics, and chemical approaches to proteomic and genetic analyses. Not open to freshmen and sophomores.

Offered: Spring

CHM 441 PHYSICAL CHEMISTRY I

This course is an introduction to quantum mechanics with applications to spectroscopy and to atomic and molecular structure. There are weekly problem sets. Students also participate in workshops each week. Cross listed with CHM 251. (Fall).

Offered: Fall

CHM 444 Advanced Nuclear Science Educational Laboratory (ANSEL)

Students enrolled in ANSEL will develop a sophisticated understanding of our terrestrial radiation environment and of some of the important applications of nuclear science and technology. They will acquire practical skills in the routine use of radiation detectors, monitors, and electronics, and develop the ability to assess radiation threats and prospects of their abatement. The four in-depth ANSEL experiments are designed to help recreate a type of well-rounded, competent experimental nuclear scientist who is able to analyze an experimental problem, to select, design, and set up appropriate nuclear instrumentation, and to conduct required measurements. Laboratory sessions will meet twice a week for 2 hours and 40 minutes. In addition to the laboratory component of ANSEL students will attend a weekly lecture (1 hour and 15 minutes per week) to discuss the scientific background of the experiments and to relate principles of radiation detection and measurement. (Formerly CHM 445W)

Offered: Spring

CHM 451 QUANTUM CHEMISTRY I

Basic quantum chemistry, Schroedinger equation, basic postulates of quantum mechanics, angular momentum, perturbation theory, and molecular structure. (Fall).

Offered: Fall

CHM 455 THERMODYNAMICS & STATISTICAL MECHANICS

The course draws connections between the orderly and chaotic behavior of simple and complex systems, laying the foundations of statistical equilibrium and equilibrium thermodynamics. The different phases of matter (gases, liquids, solid) assumed by bulk classical interacting particles and their transitions are discussed in this approximation. Properties of non-interacting quantal systems are expressed in terms of partition functions, for gases of simple and complex particles. Non-equilibrium statistical behavior of multi-particle systems leads to diffusion and other transport phenomena. Reading assignments and homework. Two weekly lectures of 75 minutes. Cross listed with CHE 455.

Offered: Fall

CHM 456 Chemical Bonds: From Molecules to Materials

An introduction to the electronic structure of extended materials systems from both a chemical bonding and a condensed matter physics perspective. The course will discuss materials of all length scales from individual molecules to macroscopic three-dimensional crystals, but will focus on zero, one, and two dimensional inorganic materials at the nanometer scale. Specific topics include semiconductor nanocrystals, quantum wires, carbon nanotubes, and conjugated polymers. Two weekly lectures of 75 minutes each. Cross listed with OPT 429. (Spring).

Offered: Spring

CHM 458 Spectroscopy and Kinetics

This course covers the basic theory and experimental practice of spectroscopy in molecules and condensed matter. A general review of electromagnetic waves is followed by classical and quantum mechanical descriptions of the interaction between light and matter. These basic principles are then applied to vibrational and electronic spectroscopy. This course will also cover the principles of kinetic analysis in the context of time-resolved spectroscopies used to quantify the dynamics of photoexcited species. We will refer to examples from the literature to illustrate the experimental implementation and interpretation of advanced spectroscopic techniques.

Offered: Fall

CHM 462 BIOLOGICAL CHEMISTRY

An introduction to the chemical processes of life. Topics to be covered include proteins and nucleic acids, recombinant DNA technology, biological catalysis, and energy transduction. Structure and function of biological macromolecules will be emphasized. Cross listed with CHM 262. Students will not receive credit for BIO 250 AND CHM 262/462. (Spring).

Offered: Spring

CHM 469 Computational Chemistry I: Classical Molecular Dynamics

In this course students will learn about a range of computational methods that is relevant to their research problems in chemistry. Emphasis will be placed both on the theory underlying computational techniques and on their practical applications. Topics will include molecular mechanics, molecular dynamics and Monte Carlo simulations, methods for free-energy calculations.

Offered: Fall

CHM 470 Computational Chemistry II: Electronic Structure Theory and Quantum Dynamics

In this course students will learn about a range of computational methods that is relevant to their research problems in chemistry. Emphasis will be placed both on the theory underlying computational techniques and on their practical applications. Topics will include ab-initio electronic structure theory, density functional theory, path-integral dynamics and non-adiabatic dynamics.

Offered: Fall

CHM 475 THE CHEMISTRY OF POISONS

CHM 476 POLYMER SYNTHESIS

CHM 477 ADVANCED NUMERICAL METHODS

CHM 486 ENERGY, SCIENCE, TECH & SOC

Course Topics: Interdisciplinary course on contemporary energy issues, part of a “sustainability minor.” Historical development, present state and projected demands of US- American energy production and distribution within the boundary conditions of climate change and global competition. Scientific-technological knowledge of energy production and distribution technologies, energy efficiency. Strategic issues of production technologies: scalability, environmental and biological risks. Present energy policies and prospects for sustainable energy strategies. Student research projects use published data and simulated model energy scenarios.

Offered: Spring

CHM 487 SURFACE ANALYSIS

CHM 489 BIOSENSORS

CHM 491 MASTER'S READINGS IN CHEM

CHM 493 MASTER'S ESSAY

CHM 495 MASTER'S RESEARCH

CHM 511 CHEMISTRY SEMINAR

Offered: Fall Spring

CHM 513 CHEMISTRY COLLOQUIUM

CHM 518 KINETICS IN ORGANOMETALLIC

This course will cover the use of kinetic techniques for the elucidation of the mechanisms of organometallic reactions. Each class will focus on an article from the literature where a specific kinetic technique has been employed to investigate a system. About 12 such articles will form the basis for the discussions. (2 credits, Spring, 2nd half of semester)

Offered: Spring

CHM 583 ADV CHEMISTRY SEM&COLLOQUIUM

CHM 585 1ST YR GRADUATE WORKSHOP

Offered: Fall Spring

CHM 591 PHD READINGS IN CHEMISTRY

CHM 593 SPECIAL TOPICS IN CHEMISTRY

CHM 594 INTERNSHIP

CHM 595 PHD RESEARCH IN CHEMISTRY

CHM 595A PHD RESEARCH IN ABSENTIA

CHM 895 CONT OF MASTER'S ENROLLMENT

CHM 897 MASTER'S DISSERTATION

CHM 899 MASTER'S DISSERTATION

CHM 985 LEAVE OF ABSENCE

CHM 986V FULL TIME VISITING STUDENT

CHM 995 CONT OF DOCTORAL ENROLLMENT

CHM 997 DOCTORAL DISSERTATION

CHM 997A DOCT DISSERTATN IN ABSENTIA

CHM 999 DOCTORAL DISSERTATION

CHM 999A DOCT DISSERTATN IN ABSENTIA

CLA 102 CULTURAL HISTORY OF ANCIENT GREECE

Survey the military, political, and social history of ancient Greece from the Bronze Age to the death of Alexander.

CLA 115 ROMAN WORLD

An examination of the history of Rome. Over the course of a few hundred years, Rome grew from a small village into the capital city of one of the world’s greatest empires. How did a small town in central Italy succeed in imposing its government and cultural values throughout the Mediterranean world and beyond? And why did the Roman political and cultural system ultimately fail? Why do ancient Roman values and accomplishments still resonate with us so much today? Throughout this class, these are some of the questions we will attempt to answer.

Offered: Fall

CLA 134 Alexander the Great

This course provides both a survey of the career of Alexander the Great and an introduction to the historiographical traditions (ancient and modern) that shape our understanding of his legacy. We will focus primarily on two clusters of problems. First, we will examine what Alexander's career can tell us about the dynamics of ancient empires. Second, we will grapple with the interpretative challenges generated by our sources, which consist largely of literary accounts produced by authors who wrote long after Alexander's own lifetime and who relied on earlier texts that no longer survive. All sources will be read in English translation.

CLA 135 CLASSICAL MYTHOLOGY

Introduction to the mythology of the classical world. We will examine the major myths about the gods, the origins and nature of the universe, and the heroic past, as they developed in the Greek world and as they were adapted in the Roman world. We will consider the nature and function of myth in society, some theoretical approaches to myth, and the way in which myths were adapted by Greek and Roman authors to fit a particular literary or historical context. This course will also devote time to comparing the classical system of myths to other mythological systems.

Offered: Spring

CLA 140 CLASSICAL & SCRIPTURAL BACKGROUND

The great tradition, from Homer, Greek drama, Plato, and Virgil to the Bible and Dante.

CLA 152 ATHENIAN DEMOCRACY

CLA 199 THE INFINITE

CLA 200 INTRODUCTION TO ARCHAEOLOGY

This course introduces the student to the field of archaeology through three units of study: 1) The history of excavation from ancient to modern times, 2) The techniques of excavation and the analysis of material remains, 3) Modern theories of cultural interpretation of archaeological sites.

CLA 204W BLDG ENG & SOCIETY CLSCLANT

Explores the relationship between, on the one hand, building practices, engineering and technological advances and, on the other hand, social practices in ancient Greece and Rome.

CLA 205 EARLY CIVILIZATION AFRICA

CLA 209 ANCIENT ROMAN RELIGION

This course explores the religion of the ancient Romans from the time of the founding of the city of Rome in the eighth century BC to the end of the Roman imperial period in the fifth century AD.

CLA 214 THE ANCIENT CITY

Urbanism in the ancient Mediterranean world. Survey of the rise of cities in the Near East and Egypt and detailed study of the cities and colonies of ancient Greece and the Roman Empire, using the evidence of archaeological remains.

CLA 215 GREEK DRAMA

A survey course in English of important works of ancient Greek drama, both tragedy and comedy, with particular attention paid to the historical, social, mythological, and performative contexts.

CLA 219 GREEK TRAGEDY

Students in this course will read the works of Aeschylus, Sophocles and Euripides in order to examine the religious practices, political intrigues, social lives and ethics of the ancient Athenians. No previous knowledge of Greek history or language is required.

CLA 220 CLASSICAL ARCHAEOLOGY: GREEK ART & ARCHAEOLOGY

This course examines the physical remains of ancient Greek civilization, with an emphasis on architecture, sculpture, painting, and other visual arts, in order to understand Greek culture and society.

Offered: Spring

CLA 220W CLASSICAL ARCHAEOLOGY: GREEK ART & ARCHAEOLOGY

CLA 221 CLASSICAL ARCHAEOLOGY: ROMAN ART & ARCHAEOLOGY

An examination of the physical remains of ancient Roman civilization, with an emphasis on architecture, sculpture, painting, and other visual arts, in order to understand Roman culture and society.

Offered: Fall

CLA 221W CLASSICAL ARCHAEOLOGY: ROMAN ART & ARCHAEOLOGY

CLA 223 (AREZZO) IT MONUMENTS

CLA 224 SACRED SPACES IN GREECE

CLA 228 BODY IN EARLY CHRISTIANITY

CLA 235 THEORIES OF MYTH

CLA 235W THEORIES OF MYTH

CLA 237 HERCULES: MYTH LEGACY

In this discussion-based class we will examine the myths surrounding Hercules, as well as his representation in literature, art, and film from the ancient world to modern times. Pertinent questions include how Hercules has been imagined, why his myths have persisted so strongly, and what his significance has been in various contexts over time. All readings will be in English.

CLA 251 GREEK HISTORIOGAPHY

This course examines the craft of ancient Greek historiography by looking at the method, style, and purpose of the ancient Greek historians. We will read selections from the major historians, including Herodotus, Thucydides, Xenophon, Polybius, Arrian, Appian, and Cassius Dio, as well discuss the more fragmentary and minor historians in the Greek historiographical tradition. Among the principal questions to be discussed in this course: What are the social and historical roots of the historiographical habit as practiced by the Greeks? How does ancient Greek history writing differ from the modern practice of history? How does the practice of writing history change in relation to the different social and historical contexts in which it is practiced? A significant amount of reading in both primary and secondary literature will be required (in translation) as well as occasional short papers, two exams, and a longer final term paper.

CLA 252 Athenian Democracy

Athenian democracy is often pointed to as one of the precursors of our own political system, but where did it come from, how did it function, and what did Athenians, and other Greeks, think of their system of government? This course will examine: 1) the development of radical democracy as practiced in ancient Athens both in its theoretical and practical aspects; 2) the impact this form of government had on both Greek culture and history and on later cultures; and 3) the proponents and opponents of this system of government, both ancient and modern. In addition to reading, discussing, and analyzing ancient sources, the course will include a series of debates on the merits of various forms of government, including our own, in which students will have to argue either for or against that form of government, and students will then vote, Athenian style, for the winner.

CLA 299 FIELD METHODS IN ARCHAEOLOGY

In this course, taught on site at an archaeological excavation, students receive instruction and hands-on training in archaeological field and laboratory work, including remote sensing in archaeology, on-site surveying, excavation techniques, field documentation, and artifact identification and processing.

Offered: Summer

CLA 302 ARCHAEOLOGY OF AFRICA

CLA 315 HEROIC HEART: MAHABHARATA

CLA 390 SUPERVISED TEACHING

CLA 391 INDEPENDENT STUDY

CLA 391W INDEPENDENT STUDY

CLA 392 HONORS RESEARCH

CLA 393 SENIOR PROJECT

CLA 393W SENIOR PROJECT

CLA 394 INTERNSHIP

CLA 491 MASTER'S READING COURSE

CLT 101C DISABILITY STUDIES: RETHINKING DIFFERENCE & DIVERSITY

People with disabilities constitute the world’s largest, most stigmatized, and most marginalized “minority,” and yet many of us don’t include this identity in our thinking when we speak of and celebrate human diversity and inclusion. The field of disability studies has, since the 1980s, examined and theorized the complex meanings of disability throughout history. Work by DS scholars offers insights into disability identities as both embodied realities, and social and cultural constructions. This course will provide an introduction to disability studies, and an exploration of the literary representations of physical, intellectual and psychosocial disability in works chosen from a variety of national traditions. Reading journal, short essays, research paper.

CLT 101D MEXICO, DF: GLOBAL METROPOLIS

Called by some “the capital of the 221st century,” Greater Mexico City is inhabited by close to 20 million people. The Distrito Federal (DF) and capital of Mexico is today the largest metroopolitan area in the western hemisphere and third largest city in the world by population. Established by the Spanish in 1524 on the ruins of the Aztec city Tenochtitlán they had destroyed, Mexico City is a global center of finance, culture, and industry. This course examines the development of this vibrant megalopolis over the 20th and 21st centuries using literature, film, politics, tourism, music and the arts, cultural geography, architectural space, and essays by urban wanderers to try and get a handle on a space that seems to contradict itself at every turn.

CLT 101E Censorship

This course will examine the concept of censorship as well as its application throughout history. Examples will be taken from the literature, film, art (among others) of different cultural traditions and from a variety of historical contexts. We will explore the logistics of controlling material that is considered unsuitable for public consumption as well as the implications of the desire and attempts to control knowledge and freedom of expression. Students will be exposed to some controversial materials throughout the semester.

CLT 110 JUSTICE AND EQUALITY

CLT 111 PRE-MODERN CHI LITERATURE

CLT 116 DANTE'S "DIVINE COMEDY": A JOURNEY FROM INFERNO TO PARADISE, PART I. "INFERNO" AND "PURGATORIO"

Offered: Fall

CLT 117 DANTE'S "DIVINE COMEDY": A JOURNEY FROM INFERNO TO PARADISE, PART II. "PURGATORIO" AND "PARADISO"

Offered: Spring

CLT 118 THE DIVINE COMEDY OF DANTE ALIGHIERI: DISCOVER THE WONDERS OF A MEDIEVAL MIND

CLT 151 MODERN LATIN AMERICA

CLT 160 THE NEW EUROPE: FORMATIONS & TRANSFORMATIONS

CLT 161 EUROPE TODAY

CLT 201A PRE-MODERN CHI LITERATURE

CLT 202B HOLOCAUST: AFFECT AND ABSENCE

CLT 204 MODERN JAPAN

CLT 205 LATIN-AMERICAN FILM

CLT 207C History—Italy from Napoleon to the First Republic (1796-1948): History & Historical Imagination

The Italian peninsula has a history that goes back at least 2500 years. But the state of Italy, founded in 1861, is younger than the United States. At the intersection of these two facts lies the main theme of our journey from the Napoleonic invasion of Italy to the approval of the constitution of the Republic of Italy: the difficulty faced by the political leaders of united Italy in getting its citizens to identify with the Italian state. Historical accounts and documents, integrated with a selection of literary, operatic, and cinematic materials, constitute the main sources of information and analysis.

CLT 208A TRADITIONAL JPN CULTURE

An overview of Japan¿s traditional culture through the most prominent examples of it visual, literary, and performing arts, with attention to the social contexts of aesthetic experience and to ideas of a ¿national culture.¿ Taught in English, additional work available in Japanese where appropriate.

CLT 209A RUSSIAN CIVILIZATION

CLT 209B RUSSIAN IDENTITY

CLT 210 HAYAO MIYAZAKI AND PLANET GHIBLI

A course on the work of the animated films of Hayao Miyazaki, the world view and visual sensibilities of his creation, Studio Ghibli, and anime as film form and cultural phenomenon. Focusing on Miyazaki’s films, we will examine the "nuts and bolts" of animated cinematic construction (use of narrative space, character design, etc.); methods of adaptation, influence, and genre variation; anime reception and fan culture; and issues of race, gender, landscape, identity and cultural conscience. Such detailed analysis reveals the range and possibilities of anime and its place in popular culture on a local and global scale.

CLT 210W MIYAZAKI & GHIBLI

CLT 211C HISTORY OF FRENCH CINEMA

CLT 211F CLASSICAL FILM THEORY

CLT 211M FRENCH IN FILM

CLT 212C NEW GERMAN CINEMA

In this course we will explore representations of women in post-World War II German cinema. Moving chronologically from the building of two German states to the post-unification period, we will consider the constantly shifting meaning of , woman in popular and avant-garde films, narrative and documentary films, films by both male and female directors. We will consider equally films from East and West Germany. How does woman function as a narrative device in these films? Do women behind the camera change, woman’s meaning within the film? Can woman consistently be reduced to one narrative trope (mother, comrade or whore), or does she resist? All readings and discussions are in English; all films are subtitled.

CLT 212M INTRO TO EAST GERMAN CINEMA

This course will explore major developments in the East German cinema, including issues such as coming to terms with the fascist past, popular film making and art cinema, cinema as a pedagogical tool, artistic dissent and state censorship, socialist ideologies of gender, and the politics of documentary. Each film will be explored in relation to its socio-historical context, providing students with an overview of East German film and culture.

CLT 213B MODERN ITALY THRU FILM

CLT 214 DREAM OF THE RED CHAMBER

CLT 214M ATOMIC CREATURES: GODZILLA

Origins and development of the Japanese kaiju eiga (monster film): nuclear imagery and the science fiction/horror/creature film genre.

CLT 214N TOURIST JAPAN

Offered: Spring

CLT 214W ATOMIC CREATURES: GODZILLA

CLT 215A RUSSIA GOES TO MOVIES

In Russia, the dawning of the age of movies coincided with the birth of the Soviet state. According to Lenin, the most revolutionary of the arts was also to be the art of the Revolution. Yet Soviet directors, from Eisenstein to Tarkovsky, were also among the world’s most influential filmmakers.This class looks at these artistically interesting and popular films while exploring the changing relationship between politics, experimentation, and entertainment in Russian cinema, always mindful of the backdrop of totalitarian society and the nature of mass culture in general. Topics include Innovation and Ideology; From Hollywood to High Stalinism; Popular Patriotism; The Thaw in Cinema after Stalin’s Death; From High Hopes to Stagnation (the sixties and seventies); The Last Days of Soviet Film and the New Russian Cinema. No knowledge of Russian required. Attendance at weekly screenings is mandatory.

CLT 217 Men of Marble, Women of Steel: An Introduction to East European Film

This course will provide a general introduction to the history, artistry and politics of East European film. We will begin by considering the place of East European film in the context of contemporary film studies and the industry structure of state socialist film making. We will then explore individual films from a regional (not national) perspective, considering how they confront issues such as the burden of history and ethics, the tensions between modernity and tradition, the struggle between creativity and censorship, as well as the reluctant feminism of state socialism and representations of gender and sexuality.

CLT 217B RACE & GENDER IN POP FILM

CLT 218 FILM HISTORY: 1929-1959

CLT 221 MUTILATED BODIES

'Transnational sisterhood' or cultural imperialism? Legitimate ritualized practice or outdated violent ritual? Genital cutting, female circumcision, female genital surgery? The controversy over this practice already begins with the act of its naming. If there seems to be a consensus about the physical violence imposed on the female body, why is it that western feminist discourse is suspected of perpetuating the mutilation African voices? This course seeks to provide an understanding of the context in which a fragmented 'transnational sisterhood' allows for a proliferation of mutilated discourses on mutilated postcolonial bodies. Readings and Films include Alice Walker (Warrior Marks), Florence Ayissi Fauziya Kassindja (Do They Hear You When You Cry), Maryse Conde and more critical and theoretical readings from African, French and North American authors. In English.

CLT 222B GENDER & SEXUALITY

This course will examine literary, artistic, and theoretical representations of gender and sexuality as they have changed in the course of the 20 Century. The focus will be on texts from Western Europe and the US, but we will also consider other perspectives. From the New Women to French Feminists and transnational feminism. from homophile societies to “queer nation

and gay marriage, from Sigmund Freud to Michel Foucault and Judith Butler, we will explore the contested and politically charged debates around gender and sexuality that have shaped our views of identity over the last century.

CLT 222C GENDER LOVE & FAMILIES

CLT 223 AND NOW... DEEP THOUGHTS WITH GERMAN-JEWISH THINKERS!

CLT 224B MODERN JPN WOMEN WRITERS

CLT 226D SPANISH AMERICAN WOMEN WRITERS

Through study of texts (mostly novels) written by women from Spanish America, we will ask broad questions concerning cultural contexts with respect to sexuality and gender, language, aesthetics, psychology, and social issues. The course will use materials from a variety of fields (literary and cultural theory, history, sociology, anthropology, feminist studies) in addition to the primary texts. Emphasis on collaborative research and progressive writing assignments. Campus visit by one of the authors planned. Class taught in English.

CLT 227 BODY POLITICS

CLT 230 FILM AS OBJECT

Offered: Spring

CLT 231E BLACK PARIS

This course is a study of Black Paris, as imagined by three generations of Black cultural producers from the United States, the Caribbean and Africa. Paris is as a space of freedom and artistic glory that African American writers, solders and artists were denied back home. For colonized fricans, and Antilleans, Paris was the birthace of the Negritude, the cultural renaissance informed by the dreams and teachings of the Harlem Renaissance. Black Paris, for the young generations caught in the marginal space of poor suburbs, calls to mind images of burning cars, riots, dilapidated schools that are rendered through rap music, hip-hop that are weaving the thread of a new youth-oriented transnational imagination.

CLT 231F FOUCAULT & ETHICS

CLT 232 JEWISH WRITER & REBEL

CLT 235 TEXTS BEYOND BORDERS

CLT 237 FLORENCE THE WONDEROUS

CLT 241A PERFORMANCE STUDIES

Study of major authors of the French Enlightenment, as well as their predecessors and contemporaries, including Marivaux, Montesquieu, Voltaire, Prevost, Rousseau, Diderot, Sade, and Laclos.

CLT 242A POE & HOFFMANN

This course explores the beginnings of the horror and detective genres in the 19th century. Particular attention is devoted to the narrative structure, tropes, and psychological content of the strange tales by Poe and Hoffmann. Theories of horror are also addressed to include discussions by lessing, Todorov, Huet, and Kristeva. NOTE: THIS COURSE IS TAUGHT IN ENGLISH

CLT 244A TOPICS IN ITALIAN CULTURE (4.0 CREDITS)

Offered: Spring

CLT 244B TOPICS IN ITALIAN CULTURE (2.0 CREDITS)

Offered: Spring

CLT 246C 1492 AND BEYOND

CLT 247 POLITICS AND CULTURE IN FASCIST ITALY

CLT 250 NABOKOV

CLT 252 BRIGHT LIGHTS, BIG CITY

The city in film and literature is never just a physical space - discourses of modernity and urban life are mapped onto real and imagines urban spaces. In this course we will explore how the relationship between the spaces of the city and the stories told about and through them shape our understanding of urban life. Some of the texts we will examine are: Fritz Lang's M, Arthur Schnitzler's Dream Story, and Lloyd Bacon's 42nd Street.

CLT 252A KAFKA & HIS WORLD

This course explores the weird, dreamlike, eerie, and inexplicable world of Kafka's writings. In Kafka's stories dogs conduct investigations, apes report to academies, men turn into bugs, the Statue of Liberty holds up a sword, and arrests occur without explanation as all expectations and assurances about the "rules" of existence, thought, and social order come into question. In this course we will read texts such as: The Trial, The Metamorphosis, Amerika, The Castle, Investigations of a Dog, A Report to an Academy, In the Penal Colony, and A Hunger Artist. This course is taught in English.

CLT 253C DANTE'S "DIVINE COMEDY": A JOURNEY FROM INFERNO TO PARADISE, PART I. "INFERNO" AND "PURGATORIO"

Offered: Fall

CLT 253D DANTE'S "DIVINE COMEDY": A JOURNEY FROM INFERNO TO PARADISE, PART II. "PURGATORIO" AND "PARADISO"

Offered: Spring

CLT 253F THE DIVINE COMEDY OF DANTE ALIGHIERI: DISCOVER THE WONDERS OF A MEDIEVAL MIND

CLT 254C JAPANESE SCIENCE FICTION

CLT 254D JPN MYSTERY FICTION

CLT 255A GREAT RUSSIAN WRITERS

CLT 255C CHEKHOV AND THE MODERN SHORT STORY

CLT 255D DOSTOEVSKY

CLT 256 GERMANY YEAR ZERO

CLT 256B DON QUIXOTE

This course entails a close reading of the novel in Engllish trtanslation, coupled with a focus on the ways in which both the novel and/or protagonist have been adapted, adopted, interpreted or incorporated by various cittical and popular traditions both inside and outside of Spain from the time of its original publication in 1605 through the 21st century. We will examine several filmic adaptations, illuatrations and paintings as well, withan eye toward critically examining the problemaatic employment of Don Quixote as an icon of Pan-Hispanic culture. However, we will continually return to the novel as our anchor throughout the course, while assessing the constantly changing ways in which comtemporary readers and scholars appoach the text. Course is taught in English. *Students taking the course for Spanish credit will do the bulk of the work in Spanish

CLT 257A THE ARABIAN NIGHTS

CLT 259 TOLSTOY'S WAR AND PEACE

CLT 260 TRUTH & POWER

CLT 261 PHILOSOPHY OF ART

CLT 264A THE CULTURE OF ZEN

CLT 264B MODERN JPN LIT

CLT 265B RUSSIA GOES TO MOVIES

CLT 267 TRADITIONAL JAPANESE LITERAT

CLT 269 CHINESE IN THE AMERICAS

CLT 276 20TH CENTURY THOUGHT

CLT 277 MODERN JPN LIT IN TRANS

CLT 278 HELLO KITTY MUST DIE: JAPANESE POPULAR CULTURE IN GLOBAL CONTEXTS

CLT 279 IMMIGRATION IN FRENCH LITERATURE AND FILM

CLT 280 AESTHETICS

CLT 282B NIETZSCHE & NIETZSCHEANS

Friedrich Nietzsche continues to be one of the most influential modern philosophers, yet controversy surrounds almost every aspect of his life and work. This course will help students go beyond the controversy in order to consider Nietzsche's texts discerningly and how he approached the problems of truth, power, and morality. Close examination of his most important writings will be complemented by inquiry into Nietzsche's effects on twentieth-century philosophy. Other thinkers include Martin Heidegger, Michel Foucault, Sarah Kofman, Jacques Derrida and Giles Deleuze.

CLT 282C FREUD AND PSYCHOANALYSIS

Freud is one of the most influential thinkers of the 20th century. His ground-breaking work on dreams, the Oedipus Complex, and psychoanalytic method have profoundly changed our understanding of the psyche and social interaction. This course provides a basic survey of Freud’s most important and often controversial writings/discoveries within their historcial context and with regards to significant criticisms of his work. “Freud: An Introduction” is part of a cluster which includes courses of Marx and Nietzsche (these courses need not be taken in any particular order) Additionally majors and minors can sign up for GER 211 where significant texts will be read and discussed in German.

CLT 282D STRANGERS

CLT 283 SARTRE & HEIDEGGER

This course studies two of the most influential works in twentieth-century philosophy: Martin Heidegger¿s Being and Time (1927) and Jean-Paul Sartre¿s Being and Nothingness (1943). Together these two books defined existential phenomenology and changed the course of philosophy, exerting a profound influence over later writers and thinkers. Since both philosophers sought to fundamentally redefine human subjectivity-its place in society, history, and the philosophical tradition--we will examine concepts such as freedom, reality, temporality, subjectivity, death, emotion, and the relation between self and other. We will also compare Sartre¿s insights with those of Heidegger, particularly in regard to the concept of humanism, juxtaposing Sartre¿s famous manifesto ¿Existentialism is a Humanism¿ (1946) with Heidegger¿s critique of Sartre and French existentialism in his ¿Letter on Humanism¿ (1947).

CLT 284 TRANSLATION AND WORLD LITERATURE

CLT 285 MODERN TURKISH

CLT 286 NEW AUSTRIAN CINEMA

CLT 287 STUDIES IN TRANSLATION

CLT 288 NEW GERMAN CINEMA

CLT 293 TOWARD A SOCIAL LITERATURE

CLT 295 CHI LIT IN 20TH CENTURY

CLT 296 RUSSIA'S SILVER AGE

CLT 298 JOURNEY TO THE FEAST

CLT 389 MAJOR SEMINAR

CLT 389 is an introduction to theories and critical approaches as strategies for reading and interpreting texts, films, and other cultural objects. Students in this course will read a variety of literature and theory with an eye toward understanding what criticism's roles are, why and how the study of literature and culture (still) matters, and how they can develop their own critical skills based on their personal interests and concerns. This course teaches reading strategies that will help students to get to the heart of what they are studying, and very significant amounts of course work will be devoted to the art of writing the literary essay. How do you choose a thesis, what methods of investigation do you employ, and how do you synthesize your analysis? Required of all Majors in MLC, this course is also open to students with a Minor in an MLC discipline, or by permission of the Instructor.

Offered: Fall Spring

CLT 390 SUPERVISED TEACHING

CLT 391 INDEPENDENT STUDY

CLT 393 SENIOR PROJECT

CLT 394 INTERNSHIP

CLT 395 HONORS SEMINAR

CLT 402B HOLOCAUST: AFFECT AND ABSENCE

CLT 405 LATIN-AMERICAN FILM

CLT 408A TRADITIONAL JPN CULTURE

An overview of Japan¿s traditional culture through the most prominent examples of it visual, literary, and performing arts, with attention to the social contexts of aesthetic experience and to ideas of a ¿national culture.¿ Taught in English, additional work available in Japanese where appropriate.

CLT 409B RUSSIAN IDENTITY

CLT 410 MIYAZAKI & GHIBLI

A course on the work of the animated films of Hayao Miyazaki, the world view and visual sensibilities of his creation, Studio Ghibli, and anime as film form and cultural phenomenon. Focusing on Miyazaki’s films, we will examine the "nuts and bolts" of animated cinematic construction (use of narrative space, character design, etc.); methods of adaptation, influence, and genre variation; anime reception and fan culture; and issues of race, gender, landscape, identity and cultural conscience. Such detailed analysis reveals the range and possibilities of anime and its place in popular culture on a local and global scale.

CLT 411C HISTORY OF FRENCH CINEMA

CLT 411F CLASSICAL FILM THEORY

CLT 411M FRENCH IN FILM

CLT 412C NEW GERMAN CINEMA

In this course we will explore representations of women in post-World War II German cinema. Moving chronologically from the building of two German states to the post-unification period, we will consider the constantly shifting meaning of , woman in popular and avant-garde films, narrative and documentary films, films by both male and female directors. We will consider equally films from East and West Germany. How does woman function as a narrative device in these films? Do women behind the camera change, woman's meaning within the film? Can woman consistently be reduced to one narrative trope (mother, comrade or whore), or does she resist? All readings and discussions are in English; all films are subtitled.

CLT 412M HOLLYWOOD BEHIND THE WALL: An Introduction to East German Cinema

This course will explore major developments in the East German cinema, including issues such as coming to terms with the fascist past, popular filmmaking and art cinema, cinema as a pedagogical tool, artistic dissent and state censorship, socialist ideologies of gender, and the politics of documentary. Each film will be explored in relation to its socio-historical context, providing students with an overview of East German film and culture.

CLT 414M ATOMIC CREATURES: GODZILLA

Origins and development of the Japanese kaiju eiga (monster film): nuclear imagery and the science fiction/horror/creature film genre.

CLT 414N TOURIST JAPAN

CLT 415A RUSSIA GOES TO MOVIES

CLT 417 Men of Marble, Women of Steel: An Introduction to East European Film

This course will provide a general introduction to the history, artistry and politics of East European film. We will begin by considering the place of East European film in the context of contemporary film studies and the industry structure of state socialist film making. We will then explore individual films from a regional (not national) perspective, considering how they confront issues such as the burden of history and ethics, the tensions between modernity and tradition, the struggle between creativity and censorship, as well as the reluctant feminism of state socialism and representations of gender and sexuality.

CLT 417B RACE & GENDER IN POP FILM

CLT 421 MUTILATED BODIES

'Transnational sisterhood' or cultural imperialism? Legitimate ritualized practice or outdated violent ritual? Genital cutting, female circumcision, female genital surgery? The controversy over this practice already begins with the act of its naming. If there seems to be a consensus about the physical violence imposed on the female body, why is it that western feminist discourse is suspected of perpetuating the mutilation African voices? This course seeks to provide an understanding of the context in which a fragmented 'transnational sisterhood' allows for a proliferation of mutilated discourses on mutilated postcolonial bodies. Readings and Films include Alice Walker (Warrior Marks), Florence Ayissi Fauziya Kassindja (Do They Hear You When You Cry), Maryse Conde and more critical and theoretical readings from African, French and North American authors. In English.

CLT 422B GENDER & SEXUALITY

This course will examine literary, artistic, and theoretical representations of gender and sexuality as they have changed in the course of the 20 Century. The focus will be on texts from Western Europe and the US, but we will also consider other perspectives. From the New Women to French Feminists and transnational feminism. from homophile societies to "queer nation and gay marriage, from Sigmund Freud to Michel Foucault and Judith Butler, we will explore the contested and politically charged debates around gender and sexuality that have shaped our views of identity over the last century.

CLT 422C GENDER LOVE & FAMILIES

CLT 423 AND NOW... DEEP THOUGHTS WITH GERMAN-JEWISH THINKERS!

CLT 424B MODERN JPN WOMEN WRITERS

CLT 426D GENDER IN SPANISH-AMER LIT

Through study of texts (mostly novels) written by women from Spanish America, we will ask broad questions concerning cultural contexts with respect to sexuality and gender, language, aesthetics, psychology, and social issues. The course will use materials from a variety of fields (literary and cultural theory, history, sociology, anthropology, feminist studies) in addition to the primary texts. Emphasis on collaborative research and progressive writing assignments. Campus visit by one of the authors planned. Class taught in English.

CLT 427 BODY POLITICS

CLT 430 FILM AS OBJECT

Offered: Spring

CLT 431F FOUCAULT & ETHICS

CLT 432 JEWISH WRITER & REBEL

CLT 435 TEXTS BEYOND BORDERS

CLT 441A PERFORMANCE STUDIES

Study of major authors of the French Enlightenment, as well as their predecessors and contemporaries, including Marivaux, Montesquieu, Voltaire, Prevost, Rousseau, Diderot, Sade, and Laclos.

CLT 442A POE & HOFFMANN

This course explores the beginnings of the horror and detective genres in the 19th century. Particular attention is devoted to the narrative structure, tropes, and psychological content of the strange tales by Poe and Hoffmann. Theories of horror are also addressed to include discussions by lessing, Todorov, Huet, and Kristeva. NOTE: THIS COURSE IS TAUGHT IN ENGLISH

CLT 450 NABOKOV

CLT 452 BRIGHT LIGHTS, BIG CITY

The city in film and literature is never just a physical space - discourses of modernity and urban life are mapped onto real and imagines urban spaces. In this course we will explore how the relationship between the spaces of the city and the stories told about and through them shape our understanding of urban life. Some of the texts we will examine are: Fritz Lang's M, Arthur Schnitzler's Dream Story, and Lloyd Bacon's 42nd Street.

CLT 452A KAFKA & HIS WORLD

This course explores the weird, dreamlike, eerie, and inexplicable world of Kafka's writings. In Kafka's stories dogs conduct investigations, apes report to academies, men turn into bugs, the Statue of Liberty holds up a sword, and arrests occur without explanation as all expectations and assurances about the "rules" of existence, thought, and social order come into question. In this course we will read texts such as: The Trial, The Metamorphosis, Amerika, The Castle, Investigations of a Dog, A Report to an Academy, In the Penal Colony, and A Hunger Artist. This course is taught in English.

CLT 454C JAPANESE SCIENCE FICTION

CLT 454D JPN MYSTERY FICTION

CLT 455A GREAT RUSSIAN WRITERS

CLT 455C CHEKHOV AND THE MODERN SHORT STORY

CLT 456 GERMANY YEAR ZERO

CLT 460 TRUTH & POWER

CLT 461 PHILOSOPHY OF ART

CLT 462 VISUAL & CULTURAL STUDIES

CLT 464A THE CULTURE OF ZEN

CLT 464B MODERN JPN LIT

CLT 465B RUSSIA GOES TO MOVIES

CLT 477 MODERN JPN LIT IN TRANS

CLT 478 HELLO KITTY MUST DIE: JAPANESE POPULAR CULTURE IN GLOBAL CONTEXTS

CLT 479 IMMIGRATION IN FRENCH LITERATURE AND FILM

CLT 480 AESTHETICS

CLT 482B NIETZSCHE & NIETZSCHEANS

Friedrich Nietzsche continues to be one of the most influential modern philosophers, yet controversy surrounds almost every aspect of his life and work. This course will help students go beyond the controversy in order to consider Nietzsche's texts discerningly and how he approached the problems of truth, power, and morality. Close examination of his most important writings will be complemented by inquiry into Nietzsche's effects on twentieth-century philosophy. Other thinkers include Martin Heidegger, Michel Foucault, Sarah Kofman, Jacques Derrida and Giles Deleuze.

CLT 482C FREUD AND PSYCHOANALYSIS

Freud is one of the most influential thinkers of the 20th century. His ground-breaking work on dreams, the Oedipus Complex, and psychoanalytic method have profoundly changed our understanding of the psyche and social interaction. This course provides a basic survey of Freud’s most important and often controversial writings/discoveries within their historcial context and with regards to significant criticisms of his work. “Freud: An Introduction” is part of a cluster which includes courses of Marx and Nietzsche (these courses need not be taken in any particular order) Additionally majors and minors can sign up for GER 211 where significant texts will be read and discussed in German.

CLT 482D STRANGERS

CLT 483 SARTRE & HEIDEGGER

This course studies two of the most influential works in twentieth-century philosophy: Martin Heidegger¿s Being and Time (1927) and Jean-Paul Sartre¿s Being and Nothingness (1943). Together these two books defined existential phenomenology and changed the course of philosophy, exerting a profound influence over later writers and thinkers. Since both philosophers sought to fundamentally redefine human subjectivity-its place in society, history, and the philosophical tradition--we will examine concepts such as freedom, reality, temporality, subjectivity, death, emotion, and the relation between self and other. We will also compare Sartre¿s insights with those of Heidegger, particularly in regard to the concept of humanism, juxtaposing Sartre¿s famous manifesto ¿Existentialism is a Humanism¿ (1946) with Heidegger¿s critique of Sartre and French existentialism in his ¿Letter on Humanism¿ (1947).

CLT 484 TRANSLATION AND WORLD LITERATURE

CLT 486 NEW AUSTRIAN CINEMA

CLT 487 STUDIES IN TRANSLATION

CLT 488 NEW GERMAN CINEMA

CLT 489 MAJOR SEMINAR

CLT 491 READING COURSE IN COMP LIT

CLT 495 MASTER'S RESEARCH IN COMP LI

CLT 496 NEW AUSTRIAN CINEMA

CLT 591 PHD READING COURSE

CLT 592 LANGUAGE LEARNING AND TEACHING I

The purpose of this six-week course is to prepare foreign language teaching assistants an understanding of second language learning and the current teaching methods used in foreign language classrooms. The course highlights the communicative approach to teaching language in which reading, speaking, listening and writing are integrated into the language learning process. Through experiential learning experiences, that included peer and instructor feedback, teaching assistants will learn to develop meaningful and culturally relevant lessons.

CLT 595 PHD RESEARCH

CLT 595A PHD RESEARCH IN ABSENTIA

CLT 895 CONT OF MASTER'S ENROLLMENT

CLT 899 MASTERS DISSERTATION

CLT 985 LEAVE OF ABSENCE

CLT 986V FULL TIME VISITING STUDENT

CLT 995 CONT OF DOCTORAL ENROLLMENT

CLT 997 DOCTORAL DISSERTATION

CLT 997A DOCT DISSERTATN IN ABSENTIA

CLT 999 DOCTORAL DISSERTATION

CLT 999A DOCT DISSERTATN IN ABSENTIA

CSC 108 TECHNICAL COMPUTING

An introduction to computer applications in business and graphic design. Students will begin by learning the basics and some advanced functions of Microsoft Word, Excel, and Powerpoint. The class then progresses through the Adobe graphic design applications Photoshop, After Effects, and Flash. In learning these applications, students are introduced to topics such as computer graphics, file compression, and animation. Not open to officially declared CSC majors.

CSC 131 RECREATIONAL GRAPHICS

A hands on introduction to 3D computer graphics and animation techniques taught from a user point of view. Topics include 3D modeling, animation, and simulation. Assessment based on projects. No written exams.

CSC 160 ENGINEERING COMPUTING

Introduction to programming and computational approaches to engineering problems and their solution. Matlab language illustrates principles such as data representation, mathematical operations, looping and decisions, functions and subroutines, display and user interaction. Projects from several different engineering domains have subjects like linear algebra, differential equations, fitting data to models, signal processing, and the practical use of analog-digital converters in an experimental setting.

CSC 161 INTRO TO PROGRAMMING

Hands-on introduction to programming using the Python programming language. Covers basic programming constructs including statements, expressions, variables, conditionals, iteration, and functions, as well as object-oriented programming and graphics. Recommended for non-majors and students with less math and science background. Lab and workshop required.

CSC 162 THE ART OF DATA STRUCTURES

Computers are universal tools to store and process information. The storage part is organized as data structures; the processing part is captured as algorithms. Together, these form the heart of every computer application (in science, government, business, and the arts), on every kind of information (pictures, numbers, sound, and text). We will study the most fundamental data structures and algorithms as a means of using computers more effectively, and as preparation for more advanced study in CS and related fields. Lab required.

CSC 166 COMPUTER GAME DEVELOPMENT

Do you like to play video games? Why not learn how to make one? This course is a hands-on lab based introduction to software engineering and computer programming using the development of computer/video games as the application area. The course is taught using the C# language with the UNREAL game development framework targeting applications for the XBOX360 game platform. Students will learn the basics of computer programming and the basics of the management and development processes of software engineering.

CSC 170 INTRO TO WEB PROGRAMMING

Students learn the technological components of programming for the worldwide web. They will also study the historical, aesthetic and social components of computer code.

CSC 171 INTRO TO COMPUTER SCIENCE

Hands-on introduction to programming using the Java programming language. Teaches fundamentals of programming and more advanced topics. Emphasizes algorithmic thinking and computational problem solving and provides an introduction to the concepts and methods used in Computer Science. Required for all CSC majors. Lab and workshop required

CSC 172 Data STructures and Algorithms

Abstract data types (e.g., sets, mappings, and graphs) and their implementation as concrete data structures in Java. Analysis of the running times of programs operating on such data structures, and basic techniques for program design, analysis, and proof of correctness (e.g., induction and recursion). Lab required.

CSC 173 COMPUTATION & FORMAL SYSTEMS

Investigation of several formal systems influential in computer science, and also some of their applications (e.g. inspiring and providing the foundation for a computer programming style, or providing the basis for solving important practical problems like communications protocols, compiling, systems analysis, graphics ...)

CSC 174 ADV FRONT END WEB DEVELOPMNT

"Front-end" is an industry term that refers to the focus on HTML, CSS and JavaScript, which differentiates this course from the formal programming courses. - Topics will include Information Architecture, visual design, use of client libraries (mostly JS), and asset management strategies; we will also cover Content Management Systems and introduce web databases using PHP and MySQL.

CSC 175 CREATIVE COMPUTING

Quick! How much would a tunnel under Lake Ontario cost? How many people probably touched that orange you just bought at Wegmans? Can the military's satellites really read your license plate from orbit? Explores the creative use computational mechanisms and information sources to obtain rough estimates and feasibility analyses for interesting questions practical problems, and looks at the technological basis of the art of measurement.

CSC 186 Video Game Development

This course is a hands-on lab based introduction to software engineering and computer programming using the development of computer/video games as the application area. Topics will include mesh modeling, level design, asset management, shading, texturing, lighting, event scripting, character rigging, and particle effects.

CSC 191 MACHINES & CONSCIOUSNESS

This course explores the possibility of consciousness in machines, both in the sense of perceptual awareness and self-awareness. Readings are from the AI literature as well as from philosophy and cognitive science. The course will begin with some general philosophical and cognitive science readings, and then shift emphasis to representational and computational aspects. Homework will include written answers to questions, essays, and -- for 291 students only -- a project that involves Lisp programming. The course will be suitable for writing credit. (4 hours, Spring) Not offered every year.

CSC 199 CREATIVE COMPUTING

Rotating topics in computer science that do not require prior computing experience. This course may be repeated for credit for different topics. See term for details.

CSC 200 UNDERGRAD PROBLEM SEMINAR

Intensive seminar on cooperative problem solving. Overview of the subdisciplines and the research of the University of Rochester's computer science faculty. 200H required for the Honors B.S. in Computer Science; 200 required for the B.S. Students taking CSC 200H may have additional reading, assignments or projects.

CSC 200H UNDERGRAD PROBLEM SEMINAR Honors

Intensive seminar on cooperative problem solving. Overview of the subdisciplines and the research of the University of Rochester's computer science faculty. 200H required for the Honors B.S. in Computer Science; 200 required for the B.S. Students taking CSC 200H may have additional reading, assignments or projects

CSC 209 ADV FRONT END WEB DEVELOPMNT

"Front-end" is an industry term that refers to the focus on HTML, CSS and JavaScript, which differentiates this course from the formal programming courses. - Topics in CSC 209 will include Information Architecture, visual design, use of client libraries (mostly JS), and asset management strategies; we will also cover Content Management Systems and introduce web databases using PHP and MySQL.

CSC 210 Principles of Web Application Development

The World Wide Web was born around 1990, so it is not much older than most of you. In this course, we will follow the growth of the Web from its toddler years, to early childhood, to its turbulent pre-teen and teenage years, and finally as it begins to mature as a young adult. Along this journey, you will learn influential Web technologies such as HTTP, HTML, JavaScript, CSS, the LAMP stack, XML, JSON, Ajax, WebSockets, and modern MVC frameworks. Even though you will be doing a lot of programming in this course, its purpose is not to teach you to become an expert in any particular language or framework. Web technologies change at a blistering pace, so specifics quickly get outdated. However, once you take this course and understand the fundamentals, you will be able to easily pick up new technologies on the fly.

CSC 212 HUMAN COMPUTER INTERACTION

This course will explore the design, implementation, and evaluation of user interfaces. Students will study the theoretical methods for interface design and evaluation, including requirements gathering, usability heuristics, user interface inspections, usability studies, information visualization, and prototyping. Case studies of interface successes and failures will augment theory with practical experiences. Students will apply this methodology to assignments in the design, implementation, and evaluation cycle. Students taking this course at the graduate level will have additional readings and assignments.

CSC 214 MOBILE APP DEVELOPMENT

Coursework covers user interface designs and functional algorithms for mobile devices (Android) and unique user interactions using multi-touch technologies. Object-oriented design using model-view-controller paradigm, memory management. Other topics include: object-oriented database API, animation, multi-threading and performance considerations

CSC 229 COMP MODELS OF PERC & COG

CSC 230 ROBOT CONSTRUCTION

CSC 231 ROBOT CONTROL

This course covers control and planning algorithms with applications in robotics. Topics include transfer function models, state-space models, root-locus analysis, frequency-response analysis, Bode diagrams, controllability, observability, PID control, linear quadratic optimal control, model-predictive control, stochastic control, forward and inverse kinematics, dynamics, joint space control, operational space control, and robot trajectory planning. Proficiency with Matlab/C++ is recommended.

CSC 232 AUTONOMOUS MOBILE ROBOTS

This course covers models and algorithms for autonomous mobile robots. Topics include sensors, perception, state estimation, mapping, planning, control, and human-robot interaction. Proficiency with Matlab/C++ is recommended. Lab required.

CSC 240 DATA MINING

Fundamental concepts and techniques of data mining, including data attributes, data visualization, data pre-processing, mining frequent patterns, association and correlation, classification methods, and cluster analysis. Advanced topics include outlier detection, stream mining, and social media data mining.

CSC 241 TOPICS COMPUTATIONAL NEURO

CSC 242 ARTIFICIAL INTELLIGENCE

Introduces fundamental principles of artificial intelligence, including heuristic search, automated reasoning, handling uncertainty, and machine learning. Presents applications of AI techniques to real-world problems such as understanding the web, computer games, biomedical research, and assistive systems. This course is a prerequisite for advanced AI courses.

CSC 242W ARTIFICIAL INTELLIGENCE

This is the upper level writing component attached to CSC 242.

CSC 244 LOGICAL FOUNDATIONS OF A.I.

The logical foundations of AI including first-order logic, reasoning, knowledge representation, planning, and probabilistic inference.

CSC 246 Machine Learning

Mathematical foundations of classification, regression, and decision making. Perceptron algorithm, logistic regression, and support vector machines. Numerical parameter optimization, including gradient descent and quasi-Newton methods. Expectation Maximization. Hidden Markov models and reinforcement learning. Principal Components Analysis. Learning theory including VC-dimension and PAC learning guarantees.

CSC 247 NATURAL LANGUAGE PROCESSING

An introduction to natural language processing: constructing computer programs that understand natural language. Topics include parsing, semantic analysis, and knowledge representation. CSC 447, a graduate-level course, requires additional readings and assignments.

CSC 248 STATISTICAL SPEECH & LANGUAGE PROCESSING

An introduction to statistical natural language processing and automatic speech recognition techniques. This course presents the theory and practice behind the recently developed language processing technologies that enable applications such as speech-driven dictation systems, document search engines (e.g., finding web pages) and automatic machine translation. Students taking this course at the 400 level will be required to complete additional readings and/or assignments.

Offered: Fall

CSC 249 MACHINE VISION

. Introduction to computer vision, including camera models, basic image processing, pattern and object recognition, and elements of human vision. Specific topics include geometric issues, statistical models, Hough transforms, color theory, texture, and optic flow. CSC 449, a graduate-level course, requires additional readings and assignments.

CSC 250 DATA SCI FOR LINGUISTICS

See LINGUISTICS course listing. This is a cross-listed course.

CSC 251 ADVNCD COMPUTER ARCHITECTURE

This course is cross-listed with ECE 201. Check the description there.

CSC 252 COMPUTER ORGANIZATION

Introduction to computer architecture and the layering of hardware/software systems. Topics include instruction set design; logical building blocks; computer arithmetic; processor organization; the memory hierarchy (registers, caches, main memory, and secondary storage); I/O—buses, devices, and interrupts; microcode and assembly language; virtual machines; the roles of the assembler, linker, compiler, and operating system; technological trends and the future of computing hardware. Several programming assignments required.

CSC 253 DYNAMIC LANGUAGE & SOFTWARE DEVELOPMENT

This course explores unique aspects of dynamically-typed programming languages, which are now pervasive in domains such as scientific research, Web application development, gaming, and user interface design. The lessons you will learn here complement those in traditional compilers and programming languages courses, which focus mainly on statically-typed languages. We will use the Python language as a case study. In the first half of this course, we will study the internals of the Python interpreter, which is implemented in C. In the second half, we will build analysis and debugging tools for Python, potentially extending open-source tools with large user bases.

CSC 254 PROGRAMMING LANGUAGE DESIGN & IMPLEMENTATION

Design and implementation of programming languages, with an emphasis on imperative languages and on implementation tradeoffs. In-depth examination of "how programming languages work." Topics include fundamental language concepts (names, values, types, abstraction, control flow); compilation and interpretation (syntactic and semantic analysis, code generation and optimization); major language paradigms (imperative, object-oriented, functional, logic-based, concurrent). Course projects include assignments in several different languages, with an emphasis on compilation issues.

CSC 255 Software Analysis and Improvement

Programming is the automation of information processing. Program analysis and transformation is the automation of programming itself---how much a program can understand and improve other programs. Because of the diversity and complexity of computer hardware, programmers increasingly depend on automation in compilers and other tools to deliver efficient and reliable software. This course combines fundamental principles and (hands-on) practical applications. Specific topics include data flow and dependence theories; static and dynamic program transformation including parallelization; memory and cache management; type checking and program verification; and performance analysis and modeling. The knowledge and practice will help students to become experts in software performance and correctness. Students taking the graduate level will have additional course requirements and a more difficult project.

CSC 256 OPERATING SYSTEMS

Principles of operating system design, explored within the practical context of traditional, embedded, distributed, and real-time operating systems. Topics include device management, process management, scheduling, synchronization principles, memory management and virtual memory, file management and remote files, protection and security, fault tolerance, networks, and distributed computing. CSC 456, a graduate-level course, requires additional readings and assignments.

CSC 257 COMPUTER NETWORKS

Introduction to computer networks and computer communication: Architecture and Protocols:. Design of protocols for error recovery, reliable delivery, routing and congestion control. Store-and-forward networks, satellite networks, local area networks and locally distributed systems. Case studies of networks, protocols and protocol families. Emphasis on software design issues in computer communication.

CSC 258 PARALLEL & DISTRIBUTED SYSTEMS

Principles of parallel and distributed systems, and the associated implementation and performance issues. Topics covered will include programming interfaces to parallel and distributed computing, interprocess communication, synchronization, and consistency models, fault tolerance and reliability, distributed process management, distributed file systems, multiprocessor architectures, parallel program optimization, and parallelizing compilers. Students taking this course at the 400 level will be required to complete additional readings and/or assignments.

CSC 261 DATABASE SYSTEMS

This course presents the fundamental concepts of database design and use. It provides a study of data models, data description languages, and query facilities including relational algebra and SQL, data normalization, transactions and their properties, physical data organization and indexing, security issues and object databases. It also looks at the new trends in databases. The knowledge of the above topics will be applied in the design and implementation of a database application using a target database management system as part of a semester-long group project.

CSC 262 COMP INTRO TO STATISTICS

This course is cross-listed with DSC 262. Please refer to the description of that course.

CSC 264 COMPUTER AUDITION

This course is cross-listed with ECE477. Please refer to ECE 477 for the course description.

CSC 265 INTERMED STATISTICAL METHODS

This course is cross-listed with DSC265. Please see DSC265 for the course description.

CSC 266 INTRO TO PARALLEL COMP GPUS

This course is cross-listed with ECE206. Please refer to that course description.

CSC 267 ADV GPU PROJECT DEV

This course is cross-listed with ECE. In this course, advanced GPU parallel programming techniques are taught that permit extremely compute-intensive applications to be run in real-time on a cloud-based GPU cluster. These applications demand 100x to 1000x more compute power than a single CPU (or even a GPU) can provide, making it necessary to utilize the cloud for computation. An additional layer of complexity is introduced into the computational model when real-time response is required. Students will be exposed not only to the most challenging GPU parallel programming methods, but also the intricacies of running such compute-intensive applications through high-latency (and potentially unpredictable) communications links.

CSC 275 CREATIVE COMPUTING

Quick! How much would a tunnel under Lake Ontario cost? How many people probably touched that orange you just bought at Wegmans? Can the military's satellites really read your license plate from orbit? Explores the creative use computational mechanisms and information sources to obtain rough estimates and feasibility analyses for interesting questions practical problems, and looks at the technological basis of the art of measurement.

CSC 280 COMPUTER MODELS & LIMITATIONS

his course studies fundamental computer models and their computational limitations. Finite-state machines and pumping lemmas, the context-free languages, Turing machines, decidable and Turing-recognizable languages, undecidability.

CSC 281 INTRO TO CRYPTOGRAPHY

The modern study of cryptography investigates techniques for facilitating interactions between distrustful entities. In this course we introduce some of the fundamental concepts of this study. Emphasis will be placed on the foundations of cryptography and in particular on precise definitions and proof techniques.

CSC 282 DESIGN & ANALYSIS OF EFFICIENT ALGORITHMS

How does one design programs and ascertain their efficiency? Divide-and-conquer techniques, string processing, graph algorithms, mathematical algorithms. Advanced data structures such as balanced tree schemes. Introduction to NP-completeness and intractable combinatorial search, optimization, and decision problems.

CSC 284 ADVANCED ALGORITHIMS

Advanced study of design and analysis of algorithms. Topics typically include: growth of functions; recurrences; probabilistic analysis and randomized algorithms; maximum flow; sorting networks; expander graphs; matrix operations; linear programming; discrete Fourier transform; number-theoretic algorithms; string matching; computational geometry; NP-completeness; approximation algorithms. Students taking this course at the 400 level may be required to complete additional tests, readings or assignments.

CSC 285 ALGORITHMS & ELECTIONS

The focus of this course is on using algorithms to manipulate elections and on using complexity to protect elections from such manipulative attacks. Among the attacks we will study are manipulation, bribery and control. Students taking this course at the 400 level may be required to complete additional tests, readings, or assignments.

CSC 286 COMPUTATIONAL COMPLEXITY

The difference between computable and uncomputable problems and between feasible and infeasible problems. Regarding the latter, what properties of a problem make it computationally simple? What properties of a problem may preclude its having efficient algorithms? How computationally hard are problems? Complete sets and low information content; P=NP?; unambiguous computation and one-way functions; reductions relating the complexity of problems; complexity classes and hierarchies.

CSC 291 Topics in Cognitive Science

This course covers special topics that are of current interest in the area of Cognitive Science. Topics vary by term. Check term detail for information regarding the particular semester.

Offered: Spring

CSC 292 Topics in Programming Languages

This course covers special topics that are of current interest in the area of Programming Languages. Topics vary by term. Check term detail for information regarding the particular semester.

CSC 293 TOPICS IN Programming Systems

This course covers special topics that are of current interest in the area of Programming Systems. Topics vary by term. Check term detail for information regarding the particular semester

CSC 295W JOURNALSTC WRTNG-VIDEO GAMES

CSC 296 Topics in Applications of Computer Science

This course covers special topics that are of current interest in the area of Applications of Computer Science. Topics vary by term. Check term detail for information regarding a particular semester.

CSC 297 Topics in Artificial Intelligence

This course covers special topics that are of current interest in the area of Artificial Intelligence. Topics vary by term. Check term detail for information regarding the particular semester.

CSC 298 Topics in Digital Media

This course covers special topics that are of current interest in the area of Digital Media. Topics vary by term. Check term detail for information regarding a particular semester.

CSC 298W VIDEO GAME STUDIES

CSC 299 Topics in Computer Science (other)

This course covers special topics that are of current interest in the area of Computer Science (other). Topics vary by term. Check term detail for information regarding a particular semester.

CSC 390 SUPERVISED TEACHING

CSC 391 INDEPENDENT STUDY

CSC 391H INDEPENDENT STUDY-HONORS

CSC 391W INDEPENDENT STUDY

CSC 392 PRACTICUM

CSC 393 SENIOR PROJECT

CSC 393H SENIOR PROJECT-HONORS

CSC 393W SENIOR PROJECT

CSC 394 INTERNSHIP

CSC 395 RESEARCH

CSC 395H HONORS SENIOR THESIS

CSC 395W RESEARCH

CSC 396 SPECIAL PROJECTS

CSC 396A BLACKOUT GAMES STUDIO

Group Independent Study

CSC 400 PROBLEM SEMINAR

An introduction to the technical, social, economic, and political aspects of graduate education in computer science at Rochester. Class meetings consist primarily of group discussions and presentations that focus on a broad range of topics, and are intended to improve the critical analysis, technical writing, presentation, and problem-solving skills of students. Both class discussions and written assignments are drawn from material presented in other first-year graduate courses offered within the department. The course also offers a forum for individual department faculty members to discuss their research interests and recent results. Satisfactory performance is required of all first-year graduate students.

CSC 410 WEB PROGRAMMING

This course is cross-listed with CSC 210. Please refer to that description.

CSC 412 HUMAN COMPUTER INTERACTION

See CSC 212 for description. Cross-listed course.

CSC 432 AUTONOMOUS MOBILE ROBOTS

CSC 440 DATA MINING

See CSC 240 for description. Cross-listed course.

CSC 443 TOPICS COMPUTATIONAL NEURO

This course is cross-listed with BCS 547. Please refer to that course description.

CSC 444 LOGICAL FOUNDATIONS OF A.I.

See CSC 244 for course description. Cross-listed course.

CSC 446 MACHINE LEARNING

This course presents the mathematical foundations of AI, including probability, decision theory and machine learning.

CSC 447 NATURAL LANGUAGE PROCESSING

See CSC 247 for description. Cross-listed course.

CSC 448 STATISTICAL SPEECH & LANGUAGE PROCESSING

See CSC248 for description. Cross-listed course.

CSC 449 MACHINE VISION

Introduction to computer vision, including camera models, basic image processing, pattern and object recognition, and elements of human vision. Specific topics include geometric issues, statistical models, Hough transforms, color theory, texture, and optic flow. CSC 449, a graduate-level course, requires additional readings and assignments.

CSC 450 DATA SCI FOR LINGUISTICS

See LIN250 for course description.

CSC 451 ADVNCD COMPUTER ARCHITECTURE

This course is cross-listed with ECE201. Please refer to that course description.

CSC 452 MULTIPROCESSOR ARCH

Please refer to ECE204

CSC 453 DYNAMIC LANG. & SOFT. DEV.

This course explores unique aspects of dynamically-typed programming languages, which are now pervasive in domains such as scientific research, Web application development, gaming, and user interface design. The lessons you will learn here complement those in traditional compilers and programming languages courses, which focus mainly on statically-typed languages. We will use the Python language as a case study. In the first half of this course, we will study the internals of the Python interpreter, which is implemented in C. In the second half, we will build analysis and debugging tools for Python, potentially extending open-source tools with large user bases.

CSC 454 PROGRAMMING LANGUAGE DESIGN & IMPLEMENTATION

See CSC 254 for description. Cross-listed course.

CSC 455 SOFTWARE PERFORMANCE AND CORRECTNESS

Programming is the automation of information processing. Program analysis and transformation is the automation of programming itself---how much a program can understand and improve other programs. Because of the diversity and complexity of computer hardware, programmers increasingly depend on automation in compilers and other tools to deliver efficient and reliable software. This course combines fundamental principles and (hands-on) practical applications. Specific topics include data flow and dependence theories; static and dynamic program transformation including parallelization; memory and cache management; type checking and program verification; and performance analysis and modeling. The knowledge and practice will help students to become experts in software performance and correctness. Students taking the graduate level will have additional course requirements and a more difficult project.

Offered: Spring

CSC 456 OPERATING SYSTEMS

Please refer to CSC256 course description.

CSC 457 COMPUTER NETWORKS

Please refer to CSC257 course description.

CSC 458 PARALLEL & DIST. SYSTEMS

Principles of parallel and distributed systems, and the associated implementation and performance issues. Topics covered will include programming interfaces to parallel and distributed computing, interprocess communication, synchronization, and consistency models, fault tolerance and reliability, distributed process management, distributed file systems, multiprocessor architectures, parallel program optimization, and parallelizing compilers. Students taking this course at the 400 level will be required to complete additional readings and/or assignments.

CSC 461 DATABASE SYSTEMS

Please refer to CSC261 course description.

CSC 462 COMP INTRO TO STATISTICS

Please refer to DSC262 course description.

CSC 464 COMPUTER AUDITION

Please refer to ECE 477 for course description.

CSC 465 INTERMED STATISTICAL METHODS

This course is a continuation of DSC/CSC262, covering intermediate statistical methodology and related computational methods, with an emphasis on the R statistical computing environment.

CSC 466 INTRO TO PARALLEL COMP GPUS

Please refer to ECE 206 for course description.

CSC 467 ADV GPU PROJECT DEV

Please refer to ECE 277 for course description.

CSC 481 CRYPTOGRAPHY

Please refer to CSC281 for course description.

CSC 484 ADVANCED ALGORITHIMS

Advanced study of design and analysis of algorithms. Topics typically include: growth of functions; recurrences; probabilistic analysis and randomized algorithms; maximum flow; sorting networks; expander graphs; matrix operations; linear programming; discrete Fourier transform; number-theoretic algorithms; string matching; computational geometry; NP-completeness; approximation algorithms. Students taking this course at the 400 level may be required to complete additional tests, readings or assignments.

CSC 485 ALGORITHMS & ELECTIONS

Please refer to CSC285 for course description.

CSC 486 COMPUTATIONAL COMPLEXITY

Please refer to CSC 286 for course description.

CSC 490 SUPERVISED TEACHING

CSC 491 INDEPENDENT STUDY

CSC 494 MASTERS INTERNSHIP

CSC 495 MS Research in CSC

CSC 512 COMP METHODS COG SCI

Please refer to BCS512 for course description.

CSC 530 DATA-ENABLED RESEARCH

CSC 531 PRACTICUM DATA-ENABLED

CSC 572 COMP. SECURITY FOUNDATIONS

CSC 573 MEMORY SYSTEMS

CSC 575 STRATEGIES FOR HEALTH APPS

CSC 576 ADVANCED MACHINE LEARNING & OPTIMIZATION

CSC 577 ADV. TOP. IN COMP VISION

CSC 578 DEEP LRNING & GRAPH. MODELS

CSC 579 CACHE MEMORY

CSC 591 INDEPENDENT STUDY

CSC 594 INTERNSHIP

CSC 595 PHD RESEARCH IN CSC

CSC 595A PHD RESEARCH IN ABSENTIA

CSC 595B PHD RSRCH IN ABSENTIA ABROAD

CSC 597 COMPUTER SCIENCE COLLOQUIUM

CSC 895 CONT OF MASTER'S ENROLLMENT

CSC 897 MASTERS DISSERTATION

CSC 897A MASTERS DISSRTTN IN ABSENTIA

CSC 899 MASTER'S DISSERTATION

CSC 985 LEAVE OF ABSENCE

CSC 986V FULL TIME VISITING STUDENT

CSC 995 CONT OF DOCTORAL ENROLLMENT

CSC 997 DOCTORAL DISSERTATION

CSC 997A DOCT DISSERTATN IN ABSENTIA

CSC 999 DOCTORAL DISSERTATION

CSC 999A DOCT DISSERTATN IN ABSENTIA

CSP 161 SOCIAL PSYCHOLOGY AND INDIVIDUAL DIFFERENCES

Introduction to field of social psychology and overview of research on individual differences in personality. Topics include: the self, attributions, social cognition, interpersonal attraction, relationships, helping, social influence, traits, and motive dispositions. Students complete and receive personal feedback on a number of personality measures.

Offered: Spring Summer

CSP 161W SOCIAL PSYCHOLOGY AND INDIVIDUAL DIFFERENCES

Fulfills upper-level writing requirement.

CSP 171 SOCIAL AND EMOTIONAL DEVELOPMENT

An examination of the interpersonal, emotional, cognitive, and environmental factors that influence children's social and emotional development from early infancy through late adolescence.

Offered: Fall Summer

CSP 171W SOCIAL AND EMOTIONAL DEVELOPMENT

Fulfills Upper-Level Writing Requirement

Offered: Fall

CSP 181 THEORIES OF PERSONALITY AND PSYCHOTHERAPY

A survey of personality, emphasizing modern theoretical approaches, basic methods of investigation, and the relations of these theories to psychotherapy and behavioral change.

Offered: Fall Summer

CSP 181W THEORIES OF PERSONALITY AND PSYCHOTHERAPY

Fulfills Upper-Level Requirement

CSP 209 PSYCHOLOGY OF HUMAN SEXUALITY

Survey course on understanding sexuality. Includes such topics as biological sexual differentiation, gender role, gender-linked social behaviors, reproduction issues, intimacy, and the role of social and personal factors in psychosexual development.

Offered: Spring Summer

CSP 209W PSYCH OF HUMAN SEXUALITY

CSP 210 SOCIAL COGNITION

Social cognition combines classic social psychology with methods and theories from cognitive psychology and neuroscience to study how people make sense of each other and the social world. We will examine how the social environment influences cognitive processes such as attention, heuristics, and appraisals, and how these processes in turn affect decisions, behaviors, and health. We will critically evaluate research on a variety of topics, such as emotion regulation, stereotyping and prejudice, and stress and decision making.

CSP 210W SOCIAL COGNITION

Fulfills Upper-Level Requirement

CSP 211 INTRODUCTION TO STATISTICAL METHODS IN PSYCHOLOGY

Introduction to the use of statistics in psychological research. Topics include descriptive statistics, correlation and regression, and inferential statistics. Examples are drawn from social and personality psychology. Logic of statistical inference and proper interpretation of research findings are emphasized. (Fall & Spring) Please note that, because of the significant overlap between them, students may earn degree credit for only one of these courses: CSP/PSY 211, STT 211 and STT 212.

Offered: Fall Spring Summer

CSP 219 RESEARCH METHODS IN PSYCHOLOGY

An introduction to the basic concepts, logic, and procedures needed to do psychological research. Hands-on experience with all major phases of the research process is provided, including: surveying the existing literature, developing research hypotheses, collecting and analyzing data, and reporting the results in manuscript form. Fulfills upper level writing requirement.

Offered: Fall Summer

CSP 219W RESEARCH METHODS IN PSYCHOLOGY

An introduction to the basic concepts, logic, and procedures needed to do psychological research. Hands-on experience with all major phases of the research process is provided, including: surveying the existing literature, developing research hypotheses, collecting and analyzing data, and reporting the results in manuscript form

Offered: Fall Spring

CSP 232 PSYCHOLOGY OF CONSUMERISM

CSP 232W PSYCHOLOGY OF CONSUMERISM

CSP 262 AN APPROACH TO HUMAN MOTIVATION

This course provides a review of the theoretical and empirical development of a contemporary approach to human motivation, namely, Self-Determination Theory, which originated at the University of Rochester and is currently researched by scholars around the world. Topics will also include applications of Self-Determination Theory to such domains as psychopathology and psychological health, work, education, sport, and culture

Offered: Spring Summer

CSP 262W AN APPROACH TO HUMAN MOTIVATION

Fulfills upper-level writing requirement.

Offered: Spring

CSP 263 RELATIONSHIP PROCESS & EMOTIONS

Relationships are among the most important endeavors of human activity. In the past three decades, extensive theory and research has been devoted to understanding the processes that regulate thoughts, feelings, and behavior in meaningful relationships with friends, family, and romantic partners. We will review scientific research on important topics such as attraction, attachment, emotion, intimacy, conflict resolution, relationship development and deterioration, and the impact of relationships on physical health and emotional well-being.

Offered: Fall Summer

CSP 263W RELATIONSHIP PROCESS AND EMOTIONS

Fulfills Upper-Level Requirement

Offered: Fall

CSP 264 INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY

Applications of psychological theory and research to work settings. Topics include personnel selection, training and appraisal; organizational structure and transformation; performance in work groups; motivation and satisfaction; leadership; work conditions; and cross-cultural issues.

Offered: Fall

CSP 264W INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY

Fulfills Upper-Level Writing Requirement

Offered: Fall

CSP 267 PSYCHOLOGY OF GENDER

Exploration of the ways males and females differ in interaction, theories of development of sex differences, consequences for social change.

Offered: Fall Summer

CSP 267W PSYCHOLOGY OF GENDER

Fulfills Upper-Level Writing Requirement

CSP 274W COMMNCTNG YOUR PROF IDENTITY

CSP 276 PSYCHOLOGY OF PARENTING

Parenting and family life are emphasized from developmental, ecological, and cross-cultural perspectives. Caregiving in diverse family forms and cultures is studied in relation to adult-child interactions, parent/school/community relations, family roles, laws, and parenting skills. Issues related to aspects of diversity in contemporary families are included.

CSP 278 ADOLESCENT DEVELOPMENT

This course surveys theory and research relating to normal development during adolescence. Adolescent development is examined in a variety of contexts, including families, peer groups, and schools, and issues pertaining to biological, social, and cognitive development are discussed.

Offered: Spring Summer

CSP 278W ADOLESCENT DEVELOPMENT

Fulfills upper-level writing requirement.

Offered: Spring

CSP 280 CLINICAL PSYCHOLOGY

An introduction to the field of clinical psychology. Students are exposed to prevalent theoretical and research models, as well as approaches and research findings to assessment and diagnosis, and treatment modalities.

Offered: Fall

CSP 280W CLINICAL PSYCHOLOGY

Fulfills upper-level writing requirement.

Offered: Fall

CSP 282 ABNORMAL PSYCHOLOGY

This course provides a conceptual overview to the field of psychopathology. We will discuss assessment and diagnosis, etiology, developmental course, treatment, and prognosis of the major psychological disorders. Current theory and research will be emphasized.

Offered: Spring Summer

CSP 282W ABNORMAL PSYCHOLOGY

Fulfills upper-level writing requirement.

Offered: Spring

CSP 283 BEHAVIORAL MEDICINE

An overview of the application of behavior/lifestyle change approaches to the treatment of medical disorders, and the examination of interfaces between behavior and physiology. Topics include diabetes, cardiovascular risk factors, chronic pain, and cancer.

CSP 283W BEHAVIORAL MEDICINE

Fulfills upper-level writing requirement.

Offered: Spring

CSP 289 DEVELOPMENTAL CHILD PSYCHOPATHOLOGY

Presents theory, research, assessment, and intervention in child and adolescent psychological disorder. Contributions of the normal developmental perspective to understanding psychopathology and risk, and vice versa, are emphasized.

Offered: Fall Summer

CSP 289W DEVELOPMENTAL CHILD PSYCHOPATHOLOGY

Fulfills Upper-Level Writing Requirement.

CSP 301W TEACHING PSYCHOLOGY

In-depth consideration of topics in psychology and their communication. PSY 101 is a lab for this course.

CSP 302 TEACHING PSY OF PERSONALITY

CSP 303 TEACHING PSYCH OF MOTIVATION

CSP 304 TEACHING OF PSYCHOLOGY

CSP 310W HONORS RESEARCH

Development and conduct of research leading to the Honors Thesis.

CSP 311 HONORS RESEARCH

Development and conduct of research leading to the Honors Thesis.

Offered: Spring

CSP 320 STEREOTYPING & PREJUDICE

CSP 321 PSYCHOLOGY OF RELIGION

CSP 321W PSYCHOLOGY OF RELIGION

CSP 323W POS YOUTH DVLPMNT:CHILD/ADOL

CSP 325W SUICIDE AND SELF-INJURY

CSP 340 DEPRESSION & ANXIETY SEMINAR

CSP 351 RESEARCH IN DEVELOPMENT NEUROPSYCHOLOGY

This course provides guided, direct research experiences in developmental neuropsychology, with a particular focus on autism and other developmental disabilities.

CSP 352 RESEARCH IN DEVELOPMENTAL NEUROPSYCHOLOGY

This course provides guided, direct research experiences in developmental neuropsychology, with a particular focus on autism and other developmental disabilities.

Offered: Spring

CSP 356 RESEARCH IN ADOLESCENT DEVELOPMENT

This course provides guided, direct experiences with research on adolescent development, with a particular focus on adolescence in the contest of family relationships.

Offered: Spring

CSP 357 CHILD & ADOLESC SOC DEV

CSP 365 COMPETENCE&MOT:DEV COUNTRIES

CSP 368W SEMINAR IN HUMANISTIC PSYCHOLOGY

An introduction to the theory and methods of humanistic psychology with particular emphasis on humanistic approaches to psychotherapy and growth. The approach is learning through experience. The class employs the methods of humanistic psychology, including demonstrations and experimentation. Assignments include regular reading and writing. Writings require the applications of theory to one’s own life experiences. This is an upper-level writing course for all participants.

Offered: Fall

CSP 369 RESEARCH IN HUMAN MOTIVATION

CSP 372 SOCIAL STRESS RESEARCH

CSP 373 EXPLORING RESEARCH IN SOCIAL PSYCHOLOGY I

First-hand team experience with ongoing research in social psychology areas.

Offered: Fall

CSP 373W EXPLORING RESEARCH IN SOCIAL PSYCHOLOGY I

Fulfills Upper-Level Writing Requirement

Offered: Fall

CSP 374 EXPLORING RESEARCH IN SOCIAL PSYCHOLOGY II

First-hand team experience with ongoing research in social psychology areas.

Offered: Spring

CSP 377 EXPLORING RESEARCH IN FAMILY PSYCHOLOGY

Provides guided, direct, research experiences in investigating the interplay between family relationships and children’s social and emotional development. Emphasis is placed on gaining knowledge in translating theories (e.g., family systems theory) into empirically testable hypotheses and designing research methods and techniques to test predictions.

Offered: Fall

CSP 378 EXPLORING RESEARCH IN FAMILY PSYCHOLOGY II

Provides guided, direct, research experiences in investigating the interplay between family relationships and children's social and emotional development. Emphasis is placed on gaining knowledge in translating theories (e.g., family systems theory) into empirically testable hypotheses and designing research methods and techniques to test predictions.

Offered: Spring

CSP 379 GERIATRIC MENTAL HEALTH PRAC

CSP 380 GERIATRIC MENTL HLTH PRAC II

CSP 383 MORAL DEVELOPMENT

This seminar focuses on the psychological study of moral development. Different theoretical approaches to morality and related empirical research are discussed. The primary focus is from a developmental psychology perspective, but philosophical and educational issues also are considered.

Offered: Fall

CSP 385 PRACTICUM IN DEVELOPMENTAL DISABILITIES

Explores educational, therapeutic, and social challenges in developmental disabilities. Students will spend approximately 8 hours per week in a supervised educational or treatment setting as well as participate in weekly meetings to review and discuss general issues in the field.

Offered: Spring

CSP 385W PRAC IN DEVELOP DISABILITIES

CSP 387 SOCIAL PSYCHOPHYSIOLOGY

CSP 388 RESEARCH PRACTICES IN DEVELOPMENTAL PSYCHOPATHOLOGY I

Experience in conducting research in the area of developmental psychopathology involving patterns of development in high-risk children.

Offered: Fall

CSP 390 SUPERVISED TEACHING

CSP 391 INDEPENDENT STUDY

CSP 391W INDEPENDENT STUDY

CSP 392 PRACTICUM

CSP 393 SENIOR PROJECT

CSP 394 INTERNSHIP

CSP 395 HONORS SEMINAR

CSP 396 RELATIONSHIPS RESEARCH

Consideration of recent experimental and theoretical contributions in several selected areas of psychology.

CSP 396W RESEARCH: SOCIAL STRESS LAB

CSP 398 RESEARCH IN MOTIVATION

Offered: Fall Spring

CSP 465 COMPETENCE&MOT:DEV COUNTRIES

CSP 491 MASTER'S READINGS

CSP 493 MASTER'S SPECIAL TOPICS

CSP 495 MASTER'S RESEARCH

CSP 501 ETHICAL ISSUES IN CLINICAL PSYCHOLOGY

Psychologists have multiple sets of responsibility with information, and these are defined in this course. Individuals' rights to privacy underlie ethical principles of confidentiality and the legal concept of privileged communication; informed consent requires that disclosure to a psychologist occur in circumstances that are regulated and mutually understood. Under specific situations, defined ethically or legally, information may or must be shared with others. Through readings and discussion the course examines the ethical, professional, and legal principles that govern the use of information in practice, teaching, and research in psychology.

Offered: Fall

CSP 502 COGNITIVE FNDTNS OF BEHAVIOR

Knowledge of cognitive science, theories of learning, memory, and factors that influence an individual's cognitive performance. Current theories and research in classical and operant conditioning, learning, memory and attention, psychophysics, masking, signal detection theory, language, issues, and emerging methodologies in cognitive science.

Offered: Fall

CSP 504 DATA ANALYSIS I

Issues of data analysis in experimental research. The course focuses on parametric techniques, specifically analysis of variance. Topics covered include simple and complex designs for between and within subjects factors, including mixed designs; analysis of covariance and trend and contrasts. The course includes a lab in which students are taught to use a popular statistical package for data analysis

Offered: Fall

CSP 510 RESEARCH METHODS IN SOCIAL-PERSONALITY PSYCHOLOGY

This course covers basic principles of research design, operation, and interpretation in social-personality psychology. Topics include experimentation, validity, research design, quantitative methods, and ethics, as well as specific kinds of research designs. The emphasis will be on proper interpretation of existing research and the design of new research.

CSP 515 HIERARCHICAL LINEAR MODELING

CSP 516 STRUCTURAL EQUATN MODELING I

CSP 517 STRUCTURAL EQUATION MODEL II

This course will build upon methods covered in Structural Equation Modeling I by covering advanced topics in SEM including advanced applications for growth modeling, categorical latent variable (mixture) modeling in cross-sectional and longitudinal modeling settings, and growth mixture-modeling.

CSP 519 DATA ANALYSIS:GEN LIN APP 11

CSP 520 PSYCHOLOGY OF RELIGION

CSP 523 POS YOUTH DVLPMNT:CHILD/ADOL

CSP 525 SECONDARY DATA ANALYSIS

CSP 551 SOCIAL COGNITION

CSP 552 HUMAN MOTIVATION & EMOTION

The course focuses on the current field of human motivation and emotion, reviewing various theories and research programs, and covering related work in personality, cognition, learning, and performance, including operant and drive theories.

CSP 553 SEMINAR IN SOCIAL PSYCHOLOGY

An advanced overview of the field. Attitudes, interpersonal influence, attraction, aggression, social comparison, leadership, prejudice, and methodology

CSP 555 CLOSE RELATIONSHIPS

CSP 556 DIVERSITY

CSP 557 AFFECTIVE BASES OF BEHAVIOR

CSP 560 DEV RESEARCH METHODS

CSP 561 TOP IN SOCIAL PSY RESEARCH

CSP 561 fulfills two objectives. The class is the venue for Social/Personality graduate students to fulfill the formal research project requirement outlined in the CSP Handbook (more commonly known as the Two-Year Project). The class is also a forum for graduate students to meet regularly to discuss research issues and professional matters.

CSP 562 DEV RESEARCH METHODS

CSP 565 EARLY CHILD DEVELOPMENT

CSP 566 Neurobiological Foundations of Behavior

CSP 568 PSYCHOLOGY OF HEALTH

The seminar will be a review of psychological factors related to health and well-being. Such factors might include social support, money, discrimination, stress, compassion and forgiving, self-esteem, etc. We will also discuss the nature of happiness and well-being.

CSP 569 DEVELOPMENTAL THEORY & RESEARCH

CSP 570 CLINICAL ASSESSMENT I

CSP 571 CLINICAL ASSESSMENT II

CSP 572 INTRODUCTION TO CLINICAL RESEARCH METHODS

CSP 573 CULTURE&DIVERSITY AWARENESS

CSP 574 HISTORY & SYSTEMS OF PSYCHOLOGY & PSYCHOTHERAPY

CSP 575 PSYCHOPATHOLOGY I

Examines psychopathology of childhood and adulthood from a developmental perspective that encompasses the study of both normal and abnormal development. Topics covered include: taxonomic, definitional, and epidemiological issues; mental retardation; autism; child maltreatment; affective disorders; schizophrenia; resilience; and ethical considerations in conducting research.

CSP 576 PSYCHOPATHOLOGY II

Offered: Spring

CSP 582 PRACTICUM IN DEVELOPMENTAL PSYCHPATHOLOGY

CSP 583 MORAL DEVELOPMENT

CSP 584 PSYCHOTHERAPY PRACTICUM I

CSP 585 PSYCHOTHERAPY PRACTICUM II

CSP 586 EVIDENCE-BASED CHILD PSYCHOPATHOLOGY

CSP 587 SOCIAL PSYCHOPHYSIOLOGY

CSP 588 CLINICAL PRECEPTORIAL

CSP 589 GESTALT THERAPY

CSP 591 PHD READINGS

CSP 592 INDEPENDENT READING COURSE

CSP 593 SPECIAL PROBLEMS

CSP 594 INTERNSHIP RESEARCH

CSP 595 PHD RESEARCH

CSP 595A PHD RESEARCH IN ABSENTIA

CSP 598 SEMINAR IN TEACHING

CSP 895 CONT OF MASTER'S ENROLLMENT

CSP 897 MASTER'S DISSERTATION

CSP 899 MASTER'S DISSERTATION

CSP 985 LEAVE OF ABSENCE

CSP 986V FULL TIME VISITING STUDENT

CSP 995 CONT OF DOCTORAL ENROLLMENT

CSP 997 DOCTORAL DISSERTATION

CSP 997A DOCT DISSERTATN IN ABSENTIA

CSP 999 DOCTORAL DISSERTATION

CSP 999A DOCTORAL DISSERTATION IN ABSENTIA

CSP 999B PHD IN-ABSENTIA ABROAD

CVS 110 NEURAL FOUNDATIONS OF BEHAVIOR

Introduces the structure and organization of the brain, and its role in perception, movement, thinking, and other behavior. Topics include the brain as a special kind of computer, localization of function, effects of brain damage and disorders, differences between human and animal brains, sex differences, perception and control of movement, sleep, regulation of body states and emotions, and development and aging.

Offered: Fall Spring Summer

CVS 151 PERCEPTION & ACTION

Explores how the biology of our senses shapes perceptual experiences of reality. Emphasizes sense of sight primarily and hearing secondarily. An important theme is that our sensory systems play a crucial role in the execution of coordinated movements of our bodies, as we navigate in, and interact with, the environment.

Offered: Fall

CVS 208 LAB IN PERCEPTION & COGNITION

Introduces behavioral and psychophysical studies of perceptual and cognitive phenomena. Students perform, analyze, interpret, and report results from experiments that move from reproducing classic phenomena to conducting new studies independently.

Offered: Spring

CVS 220 THE INTELLIGENT EYE

Provides an interdisciplinary view of modern research into how the human brain solves the problems involved in perception, including how we perceive the three-dimensional structure of the world, how we recognize objects and how visual information is used to control action in the world. Students read contemporary research and, through classroom discussion and critical essays, explore and analyze the questions and debates that define contemporary perceptual science.

Offered: Spring

CVS 245 SENSORY & MOTOR NEUROSCIENCE

Focuses on how single neurons and populations of neurons represent sensory information, how sensory signals are transformed and decoded to mediate perception, and how perceptual signals are converted into neural commands to initiate actions. Explores how simple behaviors (such as detection and discrimination) can be quantified and explained in terms of neural activity. Introduces students to quantitative approaches for linking neural activity to perception and decision-making. Emphasizes studies of the visual, oculomotor, and somatosensory systems, with some attention to the auditory and vestibular systems as well.

Offered: Spring

CVS 391 INDEPENDENT STUDY

CVS 395 RESEARCH IN VISUAL SCIENCE

CVS 491 MASTER'S READINGS

CVS 493 MASTER'S SPECIAL TOPICS

CVS 495 MASTER'S RESEARCH

CVS 504 SENSORY SYSTEMS

An introduction to the functioning of the senses and the physiological mechanisms underlying them. Topics include vision, audition, somatosensation, the vestibular system, guestation and olfaction, with an emphasis on the general principles that govern mammalian sensory systems.

CVS 528 SPECIAL TOPICS IN VISION

Advanced seminar on a chosen problem in vision sciences. In previous years topics have included motion perception, stereopsis, color vision and visuo-motor control. Readings for the course are drawn from the scientific literature in the topic being covered. Students are typically required to lead discussions on papers.

Offered: Fall Spring

CVS 591 PHD READINGS

CVS 595 PHD RESEARCH

DAN 101 WORLD DANCE:MOVEMENT AS CULTURE

Exploration of world cultures through dance. Dance literacy through movement and embodied dance history. Investigates historical and anthropological significance of dance as well as provides an experience of the movement qualities of different world cultures.

Offered: Fall

DAN 102 FUNDAMENTALS OF MOVEMENT

Movement through the use of technique and improvisation. Emphasizes spontaneity, joy in moving, self-awareness and is based on experiential anatomy and developmental movement patterns. Provides strong foundation for further study in dance, theater, or sports. No previous dance training required.

Offered: Fall Spring

DAN 104 CONTACT IMPROVISATION I

Rooted in dance, martial arts and studies of body development and awareness. A duet form where partners use weight, momentum, and inertia to move each other freely through space. Solo and duet skills, rolling, falling, balance, counter-balance, jumping, weight sharing, spirals explored. Skill work combined with more open dancing in a supportive and focused environment. No previous dance training required.

Offered: Fall

DAN 108 ECOLINGUISTICS: LANGUAGE & MOVEMENT

This new course is a combined investigation of linguistics and movement. In the context of sustainable living, the course will examine how verbal and non-verbal expression manifest and shape overall well being. Every year, a different theme will be addressed. The themes for this year is: memory and forgetting. We will explore the scale of emotional polarities from rage to serenity, in connection to well being. The course will address questions such as: What role does memory play in our physical being and outward expression? What distinguishes the range of mundane - ritualized movement and communication? How does context influence experience and expression? What role do patterns play in verbal and non-verbal communication and

memory? The course is cross-listed to bring students from each discipline together to deepen their study of human expression by offering additional perspective to the mutually fascinating subject of language. Clusters: Movement and Culture, Mind and Body Somatics

Offered: Fall

DAN 110 BEGINNING DANCE TECHNIQUES (JAZZ, BALLET AND MODERN)

Introduction to dance technique, specifically in Jazz, Ballet and Contemporary Modern Dance. Emphasis will be on the development of basic skills, energy, strength, control, breath, alignment, continuity and connectivity, and rhythmic and bodily awareness. No prior training is necessary or expected.

Offered: Spring

DAN 114 INTRODUCTION TO YOGA

Yoga is defined as “union”, the uniting together of ourselves in all aspects- body, mind, heart, spirit. This class introduces the student to a hatha yoga method which integrates a dynamic and engaging approach to living through practicing “on and off the mat.” The goal of this class is to learn how to create a deeper, more enlivened relationship to one’s self through honoring one’s abilities and limitations, while growing one’s skills and sensitivity in the supportive environment of the class community. Students will engage with principles of attitude, alignment and action in a full range of hatha yoga poses, breathing techniques, readings on yoga philosophy, reflection, journaling and discussion. Through this ongoing process, students of yoga are encouraged to cultivate a more expansive and clear perception of self and others. Attendance in selected workshops and performances are required.

Offered: Fall Spring

DAN 115 MOVING INTO STILLNESS

The aim of this course is to discover the benefits of slowing down amid the constant motion of daily life. Each class will be experiential in nature. In addition to class discussions, students will be guided in meditation techniques, relaxation and other mindfulness practices. Regular reading and writing assignments will give students exposure to contemporary thought, scientific research and ancient teachings to support their practice, gain insight and develop tools for personal growth.

Offered: Fall Spring

DAN 116 INTRODUCTION TO SOMATIC BALLET

Approach ballet technique through the lens of somatic practices, placing an emphasis on dynamic alignment, movement efficiency, connectivity, articulation, phrasing, and breath support. While the primary focus is on an embodied practice, students can expect to develop an appreciation for aspects of the ballet aesthetic while considering theoretical aspects related to historical and socio-cultural contexts.

Offered: Fall

DAN 130 CONDITIONING FOR DANCER & ATHLETE

Body conditioning aimed to develop and strengthen specific musculature as it pertains to physical demands of dancers, athletes, martial artists, as well as those who wish to explore a mindful, physical and anatomically sound practice. Will introduce fundamental strength training based in Pilates, hands-on bodywork and basic movement sequences designed to help prevent injury as well as build core strength, endurance, coordination and overall physical mobility and stability.

Offered: Spring

DAN 140 TAP DANCE:BEGINNING

Development of basic skills, energy, strength, control, continuity, and rhythmic and bodily awareness through the teaching of rhythm tap dance. No previous tap dance experience is expected.

Offered: Spring

DAN 145 BEGINNING JAZZ TECHNIQUE

Vernacular jazz movement as it relates to jazz music and its historical context. Stylistically eclectic courses will blend the challenges of full-bodied, culturally influenced dancing with a sense of one's own self. Development of basic skills, energy, strength, control, continuity, and rhythmic and bodily awareness.

Offered: Fall

DAN 150 BEGINNING CONTEMPORARY DANCE TECHNIQUE

Focus is on contemporary dance, a form that is an evolving exploration of expression through movement. It will blend the challenges of full-bodied, momentum-driven dancing with a sense of ones own self-awareness and discovery. Through rigorous dancing, move beyond not only physical, but also artistic boundaries and dimensions.

Offered: Spring

DAN 160 DANCE IMPROVISATION

This course is designed for those with some experience in dance who wish to explore mechanisms for generating movement and dance through improvisation. Through movement exploration, reading and discussions, students will become familiar with the process of spontaneous creation. We will explore various aspects of improvisation including Scores, Site Specific Work, Contact Improvisation and the work of chance. Through investigation, students will strive for full embodiment, presence, and intuitive awareness. The course works with theoretical concepts based in (but not limited to) Forsythe Improvisation Technologies, fundamentals of Laban Movement Analysis and other cultural forms of performing arts in the pursuit to understand improvisation as practice, technique, performance and composition. Supporting inspiration and freedom for the exploration of artistic expression and development is at the forefront of this class.

Offered: Spring

DAN 170 EMBODIED RESOURCING THROUGH SOMATIC PRACTICES

From subtle intrinsic movement to whole body integration, students will have the opportunity to experience several somatic modalities and discover what it means to be alive. Meditation and mindfulness practices provide the foundation for listening inwardly to one's immediate embodied experience. From this felt sense and the inherent wisdom of the body, students will be encouraged by various practitioners to explore Alexander Technique, Bartenieff Fundamentals, Body-Mind Centering, Continuum Movement, and other practices. This work can be powerful for dancers, and others who are inquisitive, in becoming more open and present. Experiential practice, reflective writing, readings, discussion, and a project will comprise the course. Participation in 3-4 labs throughout the semester will be required.

Offered: Fall

DAN 171 CAPOEIRA: BRAZILIAN ART MOVEMENT

An art form of self-defense with aerobic and dance elements that brings together a harmony of forces. Through history, movement and culture, students gain self-confidence, power, flexibility, endurance, and tools towards self-discovery. Open to all, Capoeira balances the body, mind, and soul and enables one to break through limits, revitalizing oneself for everyday life.

Offered: Fall Spring

DAN 181 WEST AFRICAN DANCE FORMS I

Dynamic dance traditions of Guinea, West Africa. Accompanied by live music, students learn footwork and movements for several rhythms and acquire familiarity with the physical stance common to many styles of West African dance. Learn to execute movements together with the rhythmic foundation provided by our drummers and become familiar with the origins and cultural significance of each dance, and the songs that accompany them.

Offered: Fall Spring

DAN 182 WEST AFRICAN DANCE FORMS 1A

A continuation of Dance 181.

Offered: Fall Spring

DAN 188 HIP HOP CULTURE & BREAKING

Originated in the boroughs of New York City, hip hop has grown to become a global phenomenon, influencing the lives of countless individuals with the core ideals of peace, unity, love and having fun. The class will provide a look into the historical origins and social importance of hip hop culture. The main focus will be on the original dance of hip hop culture - breaking, (also known as bboying). The class format is geared towards physical movement along with lectures, videos and opportunities to attend events in the community.

Offered: Fall

DAN 189 HIP HOP CULT & BREAKING IA

DAN 190 MIDDLE EASTERN DANCE: FOLKLORIC/BEDOUIN

Traditional Folkloric roots of Middle Eastern Dance, focusing on specific Bedouin dance styles of North Africa (Raks Shaabi). Discourse and research will address issues of gender and body image. Improving strength, flexibility and self-awareness of the body, the class work will include meditative movement, dance technique, choreography and improvisation. No prior dance experience necessary.

Offered: Spring

DAN 195 WORLD DANCE:MOVEMENT AS CULTURE

Exploration of world cultures through dance. Dance literacy through movement and embodied dance history. Investigates historical and anthropological significance of dance as well as provides an experience of the movement qualities of different world cultures.

Offered: Spring

DAN 200 ANATOMY AND KINESIOLOGY

This course will focus on the structure and function of the skeletal and muscular systems primarily in order to explore efficiency of movement, alignment, and body connectivity. Additionally, the class will explore topics that promote well-being such as: nutrition, hydration, rest, joint health, injury prevention, basic injury treatments, and fitness and strength practices that support the demands of dance. The class will include reading, discussion, research, creative approaches, writing, and kinesthetic practice.

Offered: Spring

DAN 203 CONTACT IMPROVISATION II

A continuation of DAN 104 that is taught concurrently with the introductory course. Students in DAN 203 will gain a deeper experiential and intellectual knowledge of contact by exploring issues further. Work includes both more advanced practice with other DAN 203 students, and the experience of helping teach the DAN 104 students the basic principles of contact.

Offered: Fall

DAN 204 CONTACT IMPROVISATION & CULTURE

Rooted in dance, the martial arts and studies of body development and awareness, students will use weight, momentum, and inertia to move each other freely through space. Solo and duet skills such as rolling, falling, balance, counter-balance, jumping, weight sharing, and spirals will be explored to facilitate open dancing. Reading and writing assignments will explore the history and practice of contact improvisation and how it deals with physical ability, gender, social connection, and the student's relationship to their own culture. Classes will primarily involve physical movement, but some time will be spent on discussion of the class exercises, readings, and personal experiences.

Offered: Spring

DAN 208 T'AI CHI: MOVEMENT ART & CULTURE

A study of Taijiquan, (also known as T'ai Chi Ch'uan or "Tai Chi"), a traditional Chinese martial art, and its intimate relationship to the cosmological, physiological, and philosophical conceptions found in the culture and thought from which it emerged. The course investigates both the traditional Chinese philosophy and movement aspects of Tai Chi in order to better understand the integration of human body, mind, and spirit. The Simplified 24-Step Taijiquan (Ershisi Shi Taijiquan) is learned, along with the foundation skills of the Eight Methods or Energies (Ba Fa), Reeling Silk (Chan Si Gong), Pushing Hands (Tui Shou), and Standing Pole meditation (Zhan Zhuang). Tai Chi is not only a valuable cross training exercise for the dancer, but also provides training for relaxed strength, whole body coordination, balance, centered alignment, timing, weight shifting and moving with fluid grace.

Offered: Fall

DAN 209 QIGONG WAY TO HEALTH

Qi Gong is a ancient Chinese internal art and an early forerunner of Tai Ji Quan. It is an Eastern Movement Discipline (EMD) which embodies a holism of Eastern martial arts and Eastern meditation. This course is a study of the philosophical roots, mindful practices and physical movements of Qi Gong in order to better understand and attain the integration of body, mind, and spirit. Topics will include traditional Chinese cultural concepts such as Yin-Yang theory, Five Element theory and Qi theory

and their potential inclusion in modern Western culture. Qi Gong provides the dancer and athlete with healthy lifestyle practices and fitness training for better breathing, body awareness, focus and concentration, mental presence, imagery, and cultivating and expressing energy flow.

Offered: Fall Spring

DAN 211 TAI CHI EXPLORATIONS

Dancers, musicians, actors, painters, philosophers, poets, warriors, healers, and artists of every discipline historically have utilized the Chinese internal arts of Tai Chi and Qi Gong as tools for the mobilization of qi, or energy, in order to achieve health, healing, and mind-body-spirit integration. This course combines movement, meditative, and breathing exercises and traditional forms with readings, video viewings, creative exercises, exploratory projects, and discussions of literature and philosophy to explore how the practice and philosophy of these transformative arts can lead to mental and physical balance, body-mind integration, self-discovery, creative expression, and peak athletic and enhanced artistic performance. (Four Credit Hours)

Offered: Spring

DAN 212 NGOMA:DRUM-DANCE&RIT S AFR

DAN 215 BEGINNING BALLET II/ADV BEGINNING BALLET

Designed as an extension of previous ballet training, offering the opportunity to continue the study of classical ballet at the beginning/intermediate level. Engage in an exploration of the physical and aesthetic elements of classical ballet within a contemporary framework. Current practices and concepts regarding dance training (anatomy, somatics, etc.) will be explored while maintaining several traditional aspects of the training process. Students can expect to learn in a supportive environment in which they can acquire a deeper appreciation of ballet as an art form, a greater understanding and command of ballet vocabulary in terms of function and expression, and an increased sense of self-awareness and the mind-body connection.

Offered: Spring

DAN 225 YOGA II:CONTINUING THE JOURNEY

In this course, students with prior yoga and/or dance experience will learn how to refine their skills through a continued exploration of asanas, pranayama, philosophy, and meditation. We will explore a more rigorous vinyasa flow practice, resulting in students developing more clarity regarding alignment, breath support, core aliveness, and, ultimately, body/self-awareness. While this is an individualized practice, the importance of community will be emphasized throughout as students share aspects of their practice with each other. Readings, discussion, and reflective writing are inherent to deepening one’s practice.

Offered: Fall

DAN 226 YOGA III:DEEPENING THE PRACTICE

This class is designed to meet the needs of students who already have an ongoing practice of hatha yoga and are interested in stepping more deeply into the refinements of asana and pranayama, as well as reflection, understanding and assimilation of the concepts and teachings of yoga philosophy. Students will continue to enhance and grow their technical skills using principles of alignment and engagement which are both scientific and artful. While building more physical strength and suppleness, students will also establish a more steady foundation of understanding in how to embody and practically apply the knowledge gained from what they are reading, learning and journaling about.

Offered: Fall

DAN 228 DANCE HISTORY:PHILOSOPHY, AESTHETICS & CULTURE

This course examines the origins and development of western concert dance during the 20th and 21st century. Through lecture, discussion, film/video viewing, reading/writing assignments and movement experiences, we explore a variety of dance artists and their work and acknowledge a broader global perspective in terms of aesthetics, socio-cultural context and continued evolution in the contemporary dance landscape in regards to form, trends, and style. This course will serve as an investigation of dance history from a critical and analytical perspective, interfacing with a variety of theoretical frameworks.

Offered: Spring

DAN 230 LIVING ANATOMY, LIVING YOGA

Freshly experience inhabiting a human body and its postural alignment through the deep work of noticing and embracing anatomical processes. A counter-pose to the pressures of college life, discover embodiment as a resource for self-awareness,

support, ease, and stress relief. Show up, slow down, pay attention, meditate, feel, sense, and relax. Explore form and the nature of mind through yogic practices. Color anatomical drawings, read about human structures, write responses, reflect on one's unique living anatomy, and adopt simple daily practices outside of class. Students will meet with the instructor to design a project based on their distinct interests and needs.

Offered: Spring Summer

DAN 240 TAP DANCE:INTERMEDIATE

Expand upon your tap dance foundation. Discover techniques essential for the study of Rhythm Tap Dance including subtle weight shifts, articulate footwork, and dynamics. Explore the physical interpretation of rhythm through the art of tap dance and the practice of improvisation.

Offered: Fall

DAN 242 DESIGN FOR DANCE

This is an introductory design course aimed at giving students exposure to light as a medium, lighting design, lighting equipment, and visual story telling for performance through class discussion, and practical work. This is a 2 credit course and only meets a few times throughout the semester from 12:30-3:30pm on 7 Fridays that are TBD. Students will be required to attend dance performances and will help install the light plot. The class is built around specific performance dates that will provide the students with an opportunity to light a dance piece.

Offered: Fall

DAN 243 DANCE ON CAMERA:CAMERA ON DANCE

Students will create and perform multi-media site-specific choreography and installations that will be captured and re-mixed. Geared for students of dance, film and photography, this course will explore creative collaboration, composition, lens based art and post-production. Students will be encouraged to curiously and playfully embody manipulations of movement material and play with technology to better understand different points of view and to explore the elements of site, space, shape, time and effort to see how they affect quality and content. Students will gain hands-on experience with digital photo and video equipment and editing software, and will serves roles both in front of and behind the camera. $50 Equipment Usage Fee.

Offered: Fall

DAN 245 DANCE THERAPY FOUNDATIONS

Foundations and Principles of Dance/Movement Therapy examines the ways dance/movement therapy in the west has integrated Asian concepts, natural movement, formal elements of dance, creative processes, music, verbal expression, and constructs drawn from psychology and counseling to treat a wide range of populations. Students will compare and contrast the treatment of individuals seeking help for a range of concerns (e.g., psychosis, autism, anxiety, eating disorders, histories of abuse). Experientials, creative dance, and videotapes of actual sessions with a variety of populations highlight these concepts. Dress comfortably and be prepared to move.

Offered: Fall

DAN 248 ARTS AND ACTIVISM

Dance is powerful. Art is a tool that inspires social change. This course examines the relationship between social activism and artistic practice, exploring this integration in dance, art, music, and film. Through a combination of lecture and experiential learning, students will be invited to explore creative social engagement practices to understand the impact of arts in activism while also investigating the creative perspective in successful social movements. Emphasis will be placed on socially engaged art as a practice and philosophy, creative composition within effective social movements, and the power that art can have in promoting social change.

Offered: Fall

DAN 250 INTERMEDIATE CONTEMPORARY DANCE: CONTEXT & PRACTICE

Dance appreciation and technical practice. Practice contemporary dance experientially through examining movement principles and exploring choreographic combinations. Investigate context, history, applications and societal impact of Modern and Contemporary dance. Hone skills of observation, movement analysis and interpretation of dance as an art from a personal perspective as well as within a larger cultural and historical framework.

Offered: Fall

DAN 251 JAZZ DANCE:CONTEXT & PRACTICE

This course is open to beginning & intermediate level jazz dancers and will include an in-depth exploration of vernacular jazz movement and its relationship to jazz music. Through inter-active discussion, movement, and research we will investigate the context, history, applications, and societal impact of jazz dance in America and throughout the world. Technique classes will blend full-bodied momentum-driven dancing with subtlety, rhythmic challenges, and self-expression. Emphasis will be on a working knowledge of the elements of jazz, embodiment of rhythm, accent, dynamics, and disciplining the body to move with clarity and sound anatomical principles. A range of styles of jazz music will be used for performing class sequences and improvisations. Reading, writing, video viewing, class discussions, and attendance at live concerts will hone skills of observation, movement analysis and interpretation of jazz dance.

Offered: Fall

DAN 252 INTERMEDIATE BALLET:CONTEXT AND PRACTICE

Dance appreciation and technical practice. Practice classical ballet technique and theory with a contemporary perspective and investigate context, history, applications and societal impact of Ballet. Phrasing, musicality and efficiency of movement will be emphasized.

Offered: Spring

DAN 253 WEST AFRICAN DANCE:CONTEXT & PRACTICE

Experience dancing African styles from traditional cultures of Guinea, West Africa, as well as studying cultural history and context from which and in which they are practiced and performed. Technical emphasis will focus on musicality and complex choreographic arrangement. Students will practice dances and drum songs. Required outside work includes performance attendance, video viewing, text and article analysis, research and written work.

Offered: Spring

DAN 254 TAP DANCE IN AMERICAN HISTORY: CONTEXT & PRACTICE

An examination of the origins and the evolution of the art of tap dancing in American History. “Tap dancing is a twentieth century term, but the practice it labels is much older, at least as old as the United States.” (What The Eye Hears: A History of Tap Dancing by Brian Seibert). “The branches of the jazz dance tree are many and varied…Another branch on the tree represents tap dance, which shares most of the rhythmic proclivities of jazz dance, but expresses them mainly through the feet.” (Jazz Dance: A History of the Roots and Branches edited by Lindsay Guarino and Wendy Oliver). Through lecture, video & practice we will examine the art of tap dancing.

Offered: Summer

DAN 260 SENIOR SEMINAR

DAN 267 INTERM/ADVANCED CONTEMPORARY DANCE

Continuing technical development and comprehension and integration of theory into practice is the focus in this course. Students will practice contemporary dance experientially through examining dance concepts influenced by Laban/Bartenieff theories and by exploring complex choreographic combinations. Classes will explore continuity and connectivity, patterns of total body organization, efficiency of movement, momentum, musculo-skeletal anatomy, strength, alignment, gravity and weight, rhythm and somatic practices to develop and improve technical skills. We will also investigate subtlety and individual expression in performance. Pre-requisite: DAN 250: Interm.Contemporary Dance: Context and Practice

Offered: Fall

DAN 268 INTERMEDIATE/ADV CONTEMPORARY BALLET

Practice and performance of classical and contemporary ballet with a contemporary approach in order to serve the dancer of any style of movement. Within the ballet form, classes will explore efficiency of movement, breath, anatomical mechanics, strength, alignment and through-line, weight, rhythmic accuracy, clarity of space, shape and effort, and somatic practices to develop and improve technical skills.

Offered: Spring

DAN 271 CAPOEIRA:MUSIC & MOVEMENT

Deeper study of Capoeira. This second level will find students continuing to build strength, coordination, rhythm, and balance. Students will also become further involved with the instrumentation of Capoeira. Readings and discussions will explore into historical events and look at Capoeira and it's Afro-Brazilian spirituality, liberation and cultural revolution throughout the ages. Each class involves daily physical and music training.

Offered: Spring

DAN 273 CAPOEIRA:STRATEGIES&IMPROV

Capoeira is an African-Brazilian art form of self-discovery bringing together a harmony of forces; including dance, music and combat in the form of a game of strategy. Provides students with a closer look into Capoeira's improvisation and strategic qualities. Designed for those with any previous experience in Capoeira. Through experiential practice & discussions explore Capoeira's Brazilian culture and several systems of flow and strategic practices to provide a context for improvisation within the Capoeira game. Two credit classes require students to complete 2-3 hours weekly of study outside of the class time. This might take the form of reading, writing, viewing and/or experiencing.

DAN 278 CHOREOGRAPHY

Experiments with various methods of making dances including improvisational structures. Elements of time, space, energy, shape effort are investigated, along with the concepts of abstraction, metaphor, and musicality. The class draws from diverse sources and disciplines to stimulate creativity, exploration, and craft.

Offered: Fall Spring

DAN 279 DANCE AS COLLABORATOR

DAN 280 GUINEA'S CULTURAL REVOLUTION

DAN 283 WEST AFRICAN DANCE & DUNDUN

Taught by a long-time member of Les Ballets Africains, the national ballet of Guinea, instructor Fana Bangoura will introduce students in this course to dynamic dance traditions of West Africa and will join with them the power of percussion. Students will also become familiar with the origins and cultural significance of each dance, and the songs that accompany them. By breaking down the drum parts alongside the traditional dance movements, students experience dancing and drumming in perfect unison. This opportunity is geared for both drummers and dancers and is highly recommended for all skill levels.

Offered: Spring

DAN 285 EXPERIENCE GUINEA

Kerfala Fana Bangoura will lead this exploration in Dance, Drumming and Historical Context in Guinea,West Africa. The instructor is a native of Guinea and has been a part of prestigious National companies Les Ballets Africains and Percussion de Guinee. The instruction will include rhythmic foundations for drummers and dancers and will build knowledge of the djembe, dundun, sangban, kenkeni, krins and bell and how they are used culturally for music and dance. Students will learn style, form, technique, and historical context of the dance right in the midst of the vibrant culture and landscape of Guinea.

DAN 288 MOVEMENT ANALYSIS & INTEGRATION

This course serves as an introduction to the basic principles of Laban Movement Analysis (LMA) and Bartenieff Fundamentals (BF) as systems for analyzing the complexity of human movement based on the theories of Rudolf Laban and Irmgard Bartenieff. Course includes an exploration of relevant historical and contextual information, the theoretical frameworks of Body, Shape, Space, and Effort, and patterns of total body connectivity. Course content will be examined through movement experiences, performance, observation, improvisation, film/video viewing, readings, group discussions, and written assignments. Descriptive analysis, contextual interpretation and creative collaborations are integral to the course. Additionally, the multidisciplinary applications of LMA and BF will be addressed.

Offered: Fall

DAN 290 MIDDLE EASTERN DANCE:ORIENTALE

Improve strength, flexibility and self-awareness of the body. Includes meditative movement, dance technique, improvisation and rhythm identification through music and drumming. Dance forms such as Egyptian, Turkish, and American Tribal will be taught. Traditional costuming will be addressed. History, art, and culture from these countries will be explored and experienced. Discourse and research topics will explore issues of gender, body image, historical perspectives and Orientalism.

Offered: Fall

DAN 296 ART OF TEACHING DANCE K-12

DAN 296 focuses on designing movement-based lessons for K-12 curriculum. Pedagogical areas of study includes: lesson and curriculum planning, teaching methods, assessment, alignment with state and national teaching standards, and formulating a teaching philosophy. Students will have the opportunity to work directly with K-12 students developing, teaching, and evaluating lessons of their own design. Includes pedagogical theories such as Muska Mosston's Spectrum of Teaching Styles, Bloom's Taxonomy, Arthur L. Costa and Bena Kallick's Habits of Mind, and Howard Gardner's Multiple Intelligences. This course is geared for both the student interested in arts in education and in teaching creative dance.

Offered: Fall

DAN 311 DANCE, ART, AND FILM

Offered: Spring

DAN 360W SENIOR SEMINAR

Students in this capstone course will write, choreograph, perform, implement and/or carry out research, performances and/or projects. All students, regardless of their trajectory (choreography, performance or interdisciplinary research) will write a senior thesis, develop and realize their projects under advisement, consider and discuss various career opportunities and develop curriculum vitae. Practice in grant-writing, budgeting, marketing and general arts management skills will be addressed when appropriate. Creative process and creative and critical thinking are a focus of this course and are carried through to a culminating event, paper, or project. Internships, other coursework as part of the major, co-curricular dance activity, service learning and/or other related activity is meant to support this capstone research both in advance of and in simultaneity with this Seminar.

Offered: Fall Spring

DAN 378 CHOREOGRAPHIC VOICE:DANCE & SOCIAL JUSTICE

Students will study various choreographic works that address issues of social justice as thematic material, political activism, and historical reflection. Dialogue and readings on social justice and the social role and responsibility of the artist will frame a creative process where students will also develop their own socially conscious choreography that will be presented and discussed.

Offered: Fall

DAN 380 REPERTORY & PERFORMANCE

Classes are conducted in the form of professional dance rehearsals. Students will perform repertory material for the university community, Rochester Fringe Festival, the American College Dance Association conference, and more during the 2015-16 academic year. Additionally, students will engage in other vital behind-the-scene production elements. A lab is attached to the classes to enable sufficient rehearsal time and preparation. This year’s repertory will feature work by the Program of Dance and Movement’s faculty member, Anne Harris Wilcox. Wilcox will set her phantasmagorical Halloween dance/theater piece, When the Souls Rise, as well as an additional work by Wilcox. Audition: Friday, March 27th 2:00pm-3:15pm Spurrier Dance Studio Intermediate – Advanced dancers are encouraged to audition. *Enrollment in the 1 credit DAN 397 Dance Ensemble course in the spring, though not required, is highly recommended and will complete this 4-credit bundle for Creative Expression.

Offered: Fall

DAN 385 DANCE PERFORMANCE WORKSHOP

Within a choreographic process, students take part in the creation of new work choreographed by Rose Pasquarello Beauchamp. The work in creation will be an interdisciplinary dance piece with a focus on storytelling. Students will be asked contribute movement and other creative elements in order to draw on the unique artistry of each individual. Experience a rehearsal process from beginning to end, addressing a variety of performance techniques and the unique and personal artistry that is yours alone. Students will also carry out various production aspects of performance as well as performance itself in various public settings, most likely including the American College Dance Association Conference in winter 2018. Pre-requisite: Permission of instructor or by Audition on the first day of classes.

Offered: Fall

DAN 386 DANCE PERFORMANCE WORKSHOP II

Within a choreographic process, students take part in the creation of new work choreographed by Rose Pasquarello Beauchamp. The work in creation will be an interdisciplinary dance piece with a focus on storytelling. Students will be asked contribute movement and other creative elements in order to draw on the unique artistry of each individual. Experience a rehearsal process from beginning to end, addressing a variety of performance techniques and the unique and personal artistry that is yours alone. Students will also carry out various production aspects of performance as well as performance itself in various public settings, most likely including the American College Dance Association Conference in winter 2018. Pre-requisite: DAN 385

Offered: Fall

DAN 387 DANCE PERFORMANCE WORKSHOP III

Within a choreographic process, students take part in the creation of new work choreographed by Rose Pasquarello Beauchamp. The work in creation will be an interdisciplinary dance piece with a focus on storytelling. Students will be asked contribute movement and other creative elements in order to draw on the unique artistry of each individual. Experience a rehearsal process from beginning to end, addressing a variety of performance techniques and the unique and personal artistry that is yours alone. Students will also carry out various production aspects of performance as well as performance itself in various public settings, most likely including the American College Dance Association Conference in winter 2018. Pre-requisite: DAN 385 & DAN 386

Offered: Fall

DAN 391 INDEPENDENT STUDY

DAN 397 DANCE ENSEMBLE

This course will provide the possibility for continuation of DAN385/386/387 with the experience of a creative process involving choreographic and improvisational play in professional-style dance rehearsals that are then carried through live performance. Working with the instructor and various collaborators, students will diversify their experiences as dancer collaborators and deepen their creative journey as artists.

Offered: Spring

DAN 398 DANCE ENSEMBLE II

As a follow-up to DAN 385/6 Dance Performance Workshop, this course will mainly be conducted in the form of a professional dance rehearsal, creating new work, learning and rehearsing repertory and performing in various public venues both on campus and off campus. Working with the instructor as Choreographer/Collaborative Director, students will diversify their own experiences as dancers and deepen their creative journeys as artists. Dance Ensemble II will require a commitment to all performance dates during the semester, including participation in the American College Dance Association's Northeast conference, and a greater time commitment in general.

DH 501 DIG HUMANITIES-MELLON GRANT

DMS 101 INTRO DIGITAL MEDIA STUDIES

This class explores the creation, production, distribution, consumption and reception of digital media.

Offered: Fall

DMS 102 INTRO COMPUTING MULTIMEDIA

This course introduces core concepts and techniques of computer programming to prepare students for more advanced topics in manipulation, storage and transmission of digital media. Students will develop an understanding of computer capabilities and the skills required of computer programmers. No previous programming experience is required.

Offered: Fall

DMS 103 ESSNTL DIGITAL MEDIA TOOLKIT

This project driven course introduces students to current industry-standard software for creating, editing, and producing core digital media objects.

Offered: Fall

DMS 104 DESIGN IN THE DIGITAL AGE

This course introduces students to a “Interaction Design” approach to producing digital products and prepares DMS students for the capstone project.

Offered: Spring

DMS 110 FROM PONG TO POKEMON GO

This course examines videogames as the newest digital medium. Video game evolution, proliferation, ecology, and culture are considered.

DMS 111 NEW MEDIA & EMERG PRACT1

This course engages artistic approaches to digital technologies with an emphasis on the history of new media art and contemporary networked art practices. Students will engage in studio assignments that use digital technologies as both tool and medium including digital imaging, sound, illustration, and 2D animation. Special emphasis will be placed on programming for visual artists using Processing, an open-source language and programming environment for the creation of generative and participatory artworks. Not open to seniors. $50 Studio Fee. If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

DMS 112 INTRODUCTION TO PHOTOGRAPHY

This class is an introduction to the basic elements of photography, SLR and DSLR camera, darkroom techniques and alternative digital processes with an emphasis on photography as an interpretive and hybrid medium. The student will be asked to develop series of images using various photographic techniques and formats such as photograms (photography without a camera), collages and digital negatives printed on silver photographic paper. The class will explore alternative modes of thinking about the photographic frame and ways of presenting images. In conjunction to their studio projects, students will be exposed to current issues in photography and related media through readings, screenings and group discussions. No prior experience in photography is needed to successfully complete this class. Not open to seniors. $50 Studio Fee. If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

DMS 120 VIDEO GAME DESIGN

DMS 121 ART AND TECH OF RECORDING

This course covers the acoustical and psychoacoustic fundamentals of audio recording including the nature of sound, sound pressure level, frequency and pitch, hearing and sound perception, reflection, absorption and diffusion of sound, sound diffraction, room acoustics, reverberation, and studio design principles. The course also provides practical experience in audio recording including an introduction to recording studio equipment, microphones and microphone placement techniques, signal flow, amplification, analog and digital recording, analog to digital conversion, digital processing of sound, multi-track recording and an introduction to mixing and mastering. Each student is required to complete a substantive recording project at the end of the course.

DMS 122 LISTENING AND AUDIO PROD

This course is a continuation of AME191. Emphasis is on the development of critical listening skills and proficiency in audio mixing and mastering. Fundamental topics covered include the human auditory system, theories of hearing and audio perception, perception of loudness and pitch, critical bands and auditory masking, beats and roughness, temporal and pitch acuity, binaural hearing. Listening skills development include hearing “width” and “depth” in audio, mixing techniques in various musical genres, recognition of various effects including reverb, delay, compression, phasing and distortion. Production skills development includes equalization and achieving spectral balance, the use of compression and dynamic range control, achieving depth and dimension in recordings, panning and auditory scene control.

DMS 123 SOUND DESIGN

The course is intended to provide students a basic understanding of sound design, and working with sound for picture. The emphasis is on demonstrations and hands-on experience to enable students to gain a practical knowledge of sound and music production using computers. Topics include synthesizers & samplers; recording and editing with Pro Tools; sound effect creation; foley & automatic dialog replacement; basic soundtrack composition; and working to picture. Many techniques are explored employing software and hardware based sound creation tools throughout the course. Students will complete a major project at the conclusion of the course.

DMS 140 INTRODUCTION TO SCULPTURE

A wide range of materials and techniques from metal and welding to assemblage, from wood to experimental methods and media is explored in the service of three dimensional art making. Investigations of the specific qualities of three dimensional media (i.e. space, form, scale, mass) and how they can convey ideas are made within a contemporary framework. Artworks synthesize a particular choice and use of materials and a concept or expression. It is the aim of this class to develop this synthesis, and in so doing, begin to develop the students' own working creative vocabulary. Not open to seniors. Studio art supplies fee: $50. If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

DMS 141 INTRODUCTION TO SCULPTURE

A wide range of materials and techniques from metal and welding to assemblage, from wood to experimental methods and media is explored in the service of three dimensional art making. Investigations of the specific qualities of three dimensional media (i.e. space, form, scale, mass) and how they can convey ideas are made within a contemporary framework. Artworks synthesize a particular choice and use of materials and a concept or expression. It is the aim of this class to develop this synthesis, and in so doing, begin to develop the students' own working creative vocabulary. Not open to seniors. Studio art supplies fee: $50. If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

DMS 142 INTRO TO STUDIO PRACTICE

Provides a broad framework for contemporary art practice through studio production, discussion, presentation, and critique. While many courses, including Photography, 3-D, Painting, and Digital Art, often start with the medium and work toward the concept, the projects in this class will immediately integrate conceptual challenges with material and technique. While some projects may include traditional media such as pencils and paper, others may invite nontraditional media such as hair, text, earth and sound. Presentations and discussions will address historical and theoretical approaches to art as a way of supporting expansive studio practice. Practice, critique, readings, and discussion combine to place emphasis on the visual investigation necessary to create educated and challenging art. Not open to seniors. Studio art supplies fee: $50.If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

DMS 200 DIGITAL PORTFOLIO

In this course, students will research audiences, industries, and opportunities to make effective choices as they design their own digital portfolios.

Offered: Spring

DMS 200W DIGITAL PORTFOLIO

DMS 210 DIGITAL IMAGING

This course introduces students to methods involved in turning real objects into virtual ones using digital imaging technology.

DMS 211 CLOCKS AND COMPUTERS

What does time look like? How can we use computers to visualize the experience of time produced by watching a movie or television series, reading a literary text such as a novel or poem, or simply being on our cell phone throughout the day? What kinds of interfaces and interpretations are possible once we visualize the rhythms of these? We will collaborate on answers to these questions through projects in which students gather “small data” that they then visualize with the aim of understanding how digital technologies provide new mediums of analysis for grappling with the meanings of temporality. Organized as much around student concerns as ongoing research, this interdisciplinary course will introduce students to important work in the humanistic study of time; innovative scholarship in the digital humanities; and experiments in using digital technology to pursue qualitative research. No technical knowledge needed, only a desire to play with the possibilities of contemporary media for the study of culture.

DMS 212 POETICS OF TELEVISION

This course introduces students to the poetics of television. We will explore the ways that television tells stories and how it constructs worlds; the significance of genre, style, and form to those stories and worlds; and the relationship between television and the horizons of social, historical, and aesthetic experience that television opens up as one of the most important culture industries of the last 100 years. Much of our class will be devoted to watching TV and discussing what we watch, from the

sitcom, news, reality TV, domestic melodrama, soap operas, and crime procedurals to advertising, animation, mini-series, sci-fi and fantasy, the Western, “art television,” and live drama. Students will also come to understand poetics as an approach useful to the study of any medium, especially when combined with the more speculative and conceptual projects of media and critical theory.

DMS 214 EXPANDED PHOTOGRAPHY

The class will examine and interrogate the multiple roles that contemporary photography and related media plays within our unique cultural moment with an emphasis on hybrid/multidisciplinary approaches to the medium. The class projects will explore site-specific photographic installation, time based imagery, large format printing, book and object making. Digital processes and studio lighting techniques will also be covered. In conjunction to their studio project, students will view and analyze a range of photographic practices, read contemporary criticism and engage in probing discussion and original writing. Upon completion of this course, students will have the capacity to more confidently engage the work they make within the broader discourse of art and will acquire an understanding of the concepts and vocabulary necessary for critical discussion of photographic work, their own and that of others. Minimal experience with digital photography is required. Permission of instructor. $50 studio fee.

DMS 215 ADVANCED DIGITAL ART

This course explores artistic approaches to the internet and emerging technologies with an emphasis on contemporary issues, artists, and theories of digital art. Students will engage in a studio practice using artist-centered techniques of hacking, programming, and imaginative re-use and re-purposing of digital software and hardware. Students’ experimental projects will individual areas of study and interests and will take the form of social networking actions, physical computing, circuit bending, net art works, and recombinant imaging. Open-source, interdisciplinary, and collaborative strategies will be encouraged. This course will culminate with an online exhibition of works using social media apps for a local/physical gallery space as well as global distribution via networked media. . Prerequisites SA 151. Permission of instructor. $50 studio fee.

DMS 221 ADVANCED VIDEO

This course explores video art processes with an emphasis on contemporary practice, emerging trends, and digital technologies. Students will consider time-based digital objects and sound from artistic perspectives questioning and “interrupting” conventional narrative forms while embracing experimental techniques to generate unexpected results. Original projects will involve installation, single channel, sound, and networked environments. Works will be examined within a critical framework of readings, critiques, and viewings. Permission of instructor. $50 studio fee.

DMS 232 ADVANCED DIGITAL ART

DMS 244 MARKINGS, METHODS&MATERIALS

This course explores of the boundaries of conventional studio production through experimentation with nontraditional materials and invented approaches. It investigates the act of making a mark and probes the motives and impulses inherent in that process. The projects demand formal consideration as well as thoughtful content; along with class participation, they act as documents of an engagement in creative thought, research, and problem-solving. Individual and group critiques occur throughout the course. Markings, Methods, and Materials can be viewed as an extension of any 100-level studio course and provides an opportunity to exercise and explore the techniques and cognitive processes that are utilized and applied in art production and adjacent fields of learning. Permission of instructor required. Studio art supplies fee: $50.

DMS 250 WRITING IN A DIGITAL WORLD

The purpose of writing in a digital world is to engage with a broader community around a topic of interest and contribute to public knowledge. In this course, students are invited to dig deeply into a question of interest, write for a public audience, and use the Internet as an archive of information waiting to be discovered, analyzed, and written about. Students can draw on pre-existing research interests from their majors or develop a line of inquiry stemming from class discussions, writing, and research. In order to gain experience writing to a range of readers, students will engage in a writing process informed by peer review, self-assessment, and revision. Shorter writing assignments will help students develop and refine ideas as they transform texts for different audiences. The final research project will be multimodal, published for a public audience, and should demonstrate your ability to think critically about a topic and effectively communicate that knowledge to a range of readers.

Offered: Fall

DMS 251 INTRO TO GEOGRAPHIC INFO SYS

> This course combines lectures and hands-on weekly labs, to introduce students to Geographic Information Systems (GIS) tools and concepts. > Using both commercial (ArcGIS) and open source software (QGIS, OpenLayers), we will cover: GIS data structures, map projections, collecting and creating GIS data, map-making, exploring spatial patterns and data visualization. Topics will be framed using examples across disciplines (e.g. physical sciences, humanities and social sciences). At the end of the semester, students will complete a final project, in which they can apply their learning to their own major area of study. Despite the technical nature of this course, no prerequisites are required and material is appropriate for all students. Student learning will be assessed throughout the semester via class participation, a mid-term exam and the final project.

DMS 371 CAPSTONE

First of a three course sequence in which students plan, design, construct, and deliver a digital media object of significant scope. Working as a team, they deploy their collective knowledge, skills, and expertise to devise a project of their own design.

Offered: Spring

DMS 372 CAPSTONE

Second of a three course sequence in which students plan, design, construct, and deliver a digital media object of significant scope. Working as a team, they deploy their collective knowledge, skills, and expertise to undertake an external client's proposal and/or devise a project of their own design.

Offered: Fall

DMS 373 CAPSTONE

Third of a three course sequence in which students plan, design, construct, and deliver a digital media object of significant scope. Working as a team, they deploy their collective knowledge, skills, and expertise to undertake an external client's proposal and/or devise a project of their own design.

Offered: Spring

DMS 373W CAPSTONE

Third of a three course sequence in which students plan, design, construct, and deliver a digital media object of significant scope. Working as a team, they deploy their collective knowledge, skills, and expertise to undertake an external client's proposal and/or devise a project of their own design.

Offered: Spring

DMS 390 SUPERVISED TEACHING

DMS 391 INDEPENDENT STUDY

DMS 394 INTERNSHIP

DMS 396A TEACHING ASSISTANT: DMS 101

DMS 396D TEACHING ASSISTANT: DMS 104

DMS 501 DIG HUMANITIES-MELLON GRANT

DSC 210 DIGITAL IMAGING

DSC 262 COMPUTATIONAL INTRODUCTION TO STATISTICS

This course will cover foundational concepts in probability and statistical inference, with an emphasis on topics of interest to computer scientists. Following an introduction to elementary probability theory, topics will include applications of combinatorics; Markov chains; principles of statistical classification (Bayes' rule, sensitivity and specificity, ROC curves) and random number generation. The theory of statistical estimation and hypothesis testing will be introduced, and applied to one and two sample inference for population means, proportions, variances and correlations. Nonparametric procedures will be discussed. Topics also include statistical modeling (ANOVA, simple and multiple regression), and computational methods. Students will be introduced to the R statistical computing environment.

Offered: Fall

DSC 265 INTERMEDIATE STATISTICAL & COMPUTATIONAL METHODS

This course is a continuation of CSC262, covering intermediate statistical methodology and related computational methods, with an emphasis on the R statistical computing environment.

Offered: Spring

DSC 267 IMAGE, TEXT, AND TECHNOLOGY

DSC 383W DATA SCIENCE CAPSTONE

DSC 391 INDEPENDENT STUDY

DSC 450 DATA SCIENCE PRACTICUM

Students are expected to work on a large scale data analysis and mining project. An existing large database is used. Project categories include medical data analysis & social media data analysis. Data mining algorithms are applied to data that is contained in these databases to predict health hazards or social behavior.

Offered: Spring

DSC 462 COMPUTATIONAL INTRODUCTION TO STATISTICS

This course will cover foundational concepts in probability and statistical inference, with an emphasis on topics of interest to computer scientists. Following an introduction to elementary probability theory, topics will include applications of combinatorics; Markov chains; principles of statistical classification (Bayes' rule, sensitivity and specificity, ROC curves) and random number generation. The theory of statistical estimation and hypothesis testing will be introduced, and applied to one and two sample inference for population means, proportions, variances and correlations. Nonparametric procedures will be discussed. Topics also include statistical modeling (ANOVA, simple and multiple regression), and computational methods. Students will be introduced to the R statistical computing environment.

Offered: Fall

DSC 465 INTERMEDIATE STATISTICAL & COMPUTATIONAL METHODS

This course is a continuation of CSC262, covering intermediate statistical methodology and related computational methods, with an emphasis on the R statistical computing environment.

Offered: Spring

DSC 491 MASTER'S READING COURSE

DSC 530 METHODS IN DATA-ENABLED RESEARCH INTO HUMAN BEHAVIOR AND ITS COGNITIVE AND NEURAL MECHANISMS

This course provides a hand-on introduction to experimental and analytical methods in cognitive science and artificial intelligence. Each year, it offers three modules from a rotating list, including topics such as brain imaging, computational linguistics, and computer vision. The course is open to graduate students in any discipline. The course is recommended for who intend to pursue research in the the intersection of cognitive science and computer science, but prior experience in those fields is not required. It is required for students supported by the BCS/CS NRT graduate training grant. For 2015, the modules are imaging and interpreting brain activity, large scale text corpus analysis, and sensing in the wild.

Offered: Fall

DSC 531 PRACTICUM IN DATA-EANABLED RESEARCH INTO HUMAN BEHAVIOR AND ITS COGNITIVE & NEURAL MECHANISMS

In this interdisciplinary project course, graduate students will work in mixed teams to develop an artifact that addresses a research question and/or infrastructure need in the intersection of cognitive science and artificial intelligence. Students will learn principles of design by participating in the stages of brainstorming, specification, initial design, prototyping, refinement, and evaluation. The artifacts created by this course could include online showcases, demonstrations, tutorials, blogs, scientific papers,

and software components to support further research. The course is required for students supported by the BCS/CS NRT graduate training grant, and should be taken the semester after the corresponding methods course.

Offered: Spring

DSC 895 CONT OF MASTER'S ENROLLMENT

DSC 897 MASTERS DISSERTATION

DSC 985 LEAVE OF ABSENCE

EAS 101 INTRO TO BIOMEDICAL ENGR

See BME 101

EAS 102 GREEN ENERGY

See CHE 150

EAS 103 INTRO TO AUDIO MUSIC & ENGIN

See AME 140

EAS 104 THE ENGINEERING OF BRIDGES

See ME 104

EAS 105 INTRO TO OPTICS

See OPT 101

EAS 106 THE SCIENCE OF PROGRAMMING

See CSC 171

EAS 108 INTRO TO ELECTRICAL AND COMPUTER ENGINEERING

See ECE 101

EAS 141 BASIC MECHANICAL FABRICATION

This course will teach students the safe and effective use of basic machine tools such as lathes, mills, band-saws and drill presses. Students will complete a number of projects that utilize these principles. Grades will be based on the successful completion of these projects. A course paper will be a written documentation of the procedures necessary to complete one of the projects done during the class. The paper will be graded on content, organization and clarity.

Offered: Fall Spring

EAS 300 INACTIVE STATUS-ENGINEERING

EAS 392 INDUSTRY PRACTICUM

EAS 398 INTERNSHIP

EAS 448 WIRELESS SENSOR NETWORKS

ECE 101 INTRODUCTION TO ELECTRICAL AND COMPUTER ENGINEERING

A general, high-level understanding of workings of modern computing systems from circuit, computing system architecture, to programming. ECE101 is not a required course. Lecture materials will eventually be covered in subsequent courses. It is intended to introduce you to (a subset of) principle topics in computer system designs. There is an emphasis on hands-on experience to give you a “feel” of the materials that will be discussed in more depth later on.

Offered: Fall

ECE 111 INTRODUCTION TO SIGNALS & CIRCUITS

Linear Algebra and Differential Equations, and Electricity and Magnetism, are co- or pre-requisites of this course. This course serves to reinforce the Basic Science and Mathematics learned in those courses, as well as give concrete, engineering, examples of how the techniques learned in those courses are applied to real problems. In addition, it serves to illustrate where and how many of the equations studied in the Mathematics courses are originally developed. Many examples, homework problems, and exam problems include the use of linear algebra and differential equations.

Offered: Fall

ECE 112 LOGIC DESIGN

Students are exposed to Combinational logic elements including all of the following: logic gates, Boolean algebra, Karnaugh Maps, conversion between number systems, binary, tertiary, octal, decimal, and hexadecimal number systems, and arithmetic on signed and unsigned binary numbers using 1's and 2's complement arithmetic. Also covered are programmable logic devices, synchronous finite state machines, State Diagrams, FPGA’s and coding logic in VHDL.

Offered: Spring

ECE 113 CIRCUITS & SIGNALS

The principal focus of ECE113 is frequency domain representation of time signals, starting with phasors and ending with elements of Fourier series and Fourier transforms. Mathematics is introduced as needed for the specific material being covered, including: complex numbers, initial value problems, Laplace transform pairs, matrices, Fourier series, and Fourier transforms, including convolution. In addition, some effort is devoted to non-linear circuit analysis using loadlines.

Offered: Spring

ECE 114 INTRO TO C/C++ PROGRAMMING

This course provides an introduction to the C and C++ programming languages and the key techniques of software programming in general. Students will learn C/C++ syntax and semantics, program design, debugging, and software engineering fundamentals, including object-oriented programming. In addition, students will develop skills in problem solving with algorithms and data structures. Programming assignments will be used as the primary means of strengthening and evaluating these skills.

Offered: Fall Spring

ECE 140 Introduction to Audio and Music Engineering

Provides an introduction to the science and technology of audio. Students will learn about the vibration of strings, musical tuning systems, overtones and timbre, modes of oscillation through the concept of a guitar. Fourier analysis, transducers and passive electrical components and circuits will be introduced when discussing amps and audio components. Hands on projects introduce the fundamental concepts of electronics, including voltage, current, resistance and impedance, basic circuit analysis, ac circuits, impedance matching, and analog signals. The course then introduces basic digital signal processing concepts, where they will use Arduinos and Pure Data to learn about conversion of sound to digital format, frequency analysis, digital filtering and signal processing and musical sound synthesis. AME140 is recommended as an introduction to the Audio and Music Engineering major but is accessible to students of music or other non-technical disciplines who wish to learn the fundamentals of music technology.

Offered: Fall

ECE 200 COMPUTER ORGANIZATION

Instruction set principles; processor design, pipelining, data and control hazards; datapath and computer arithmetic; memory systems; I/O and peripheral devices; internetworking. Students learn the challenges, opportunities, and tradeoffs involved in modern microprocessor design. Assignments and labs involve processor and memory subsystem design using hardware description languages (HDL).

Offered: Spring

ECE 201 ADVANCED COMPUTER ARCHITECTURE

Instruction set architectures. Advanced pipelining techniques Instruction level parallelism. Memory hierarchy design. Multiprocessing. Storage systems. Interconnection network.

Offered: Fall

ECE 204 MULTIPROCESSOR ARCH

This course provides in-depth discussions of the design and implementation issues of multiprocessor system architecture. Topics include cache coherence, memory consistency, interconnect, their interplay and impact on the design of high-performance micro-architectures.

Offered: Spring

ECE 205 Mixed-signal IC Design

Review of complex embedded project development with Xilinx Virtex FPGA eval board and Xilinx CAD tools using Verilog HDL and C programming language. Embedded development and introduction to ethernet, USB, SATA, VGA, DVI, PS2, RS232, GPIO, and soft processor cores.

ECE 206 GPU PARALLEL C/C++ PROGRAMMING

GPU micro-architecture, including global memory, constant memory, texture memory, SP, SM, scratchpad memory, L1 and L2 cache memory, multi-ported memory, register file, and task scheduler. Parallel programming applications to parallel sorting, reduction, numeric iterations, fundamental graphics operations such as ray tracing. Desktop GPU programming using Nvidia's CUDA (Compute-Unified Device Architecture). CPU/GPU cooperative scheduling of partially serial/partially parallel tasks. No midterms or written exams. Course consists of seven hands-on projects using CUDA.

Offered: Fall

ECE 207 Advanced GPU Programt Development

In this course, advanced GPU parallel programming techniques are taught that permit extremely compute-intensive applications to be run in real-time on a cloud-based GPU cluster. These applications demand 100x to 1000x more compute power than a single CPU (or even a GPU) can provide, making it necessary to utilize the cloud for computation. An additional layer of complexity is introduced into the computational model when real-time response is required. Students will be exposed not only to the most challenging GPU parallel programming methods, but also the intricacies of running such compute-intensive applications through high-latency (and potentially unpredictable) communications links.

Offered: Spring

ECE 210 CIRCUITS & MICROCONTROLLERS FOR ENGINEERS

4 credit hour course, with laboratory, intended for physical scientists and (non-electrical) engineers. Electrical concepts will be developed based on modern needs and techniques: Current, Voltage, Components, Sources, Operational Amplifiers, Analysis Techniques, First and Second Order Circuits, Sinusoids and AC. Technical elective for non-ECE majors.

Offered: Spring

ECE 216 MICROPROS & DATA CONVERSION

All elements of a data acquisition system are discussed including transducers, buffers, sample/hold devices, multiplexers, filters, and microprocessor system. Also, architecture of microprocessor and embedded micro-controller systems discussed including central processing unit, memory, bus structures (PCI, USB, CAN, IEEE488 Bus), I/O devices, and programmable peripheral interface controllers. As part of the course, students will learn to write assembly language programs and program controllers to demonstrate operation using Microchip development systems. Also described are controller components including timer/counters, analog-to-digital converters, digital-to-analog converters, multiplexers, and interrupt structures.

Offered: Fall

ECE 221 ELECTRONIC DEVICES & CIRCUITS

This course discusses the fundamentals of semiconductor devices – how they are formed; how they function in circuits; how they “integrate” to make the “IC’s” that drive all modern electronic technology. We will examine the basic properties of semiconductors, the design and analysis of basic electronic circuits, including PN junction diodes and diode circuits, bipolar junction transistors (BJT’s), field effect transistors (FET’s), single and multi-stage amplifiers, and differential amplifiers. We will study the small-signal characteristics of these circuits and their time and frequency responses.

Offered: Fall

ECE 222 INTEGRATED CIRCUITS: DESIGN & ANALYSIS

An introduction to the analysis and design of integrated circuits. IC process technologies (CMOS, bipolar, BiCMOS). SPICE simulation. High-frequency device models (diode, BJT, MOSFET). Frequency response of amplifiers. Cascode amplifiers.

Source degeneration. Differential amplifier. Feedback. Frequency compensation. Operational amplifiers. Inverters. Logic gates. Pass-transistor logic. HSPICE simulation labs. Hands-on final design project.

Offered: Spring

ECE 223 SEMICONDUCTOR DEVICES

Review of modern solid-state electronic devices, their principles of operation, and fabrication. Solid state physics fundamentals, free electrons, band structure, and transport properties of semiconductors. Nonequilibrium phenomena in semiconductors. P-N junctions, Schottky diodes, field-effect, and bipolar transistors. Modern,high-performance devices. Ultrafast devices.

Offered: Fall

ECE 224 INTRO CONDENSED MATTER PHY

SEE PHY 251

Offered: Fall

ECE 227 Electric Power: Conversion, Transmission, and Consumption

We will describe how the principal sources of energy - coal, natural gas, impounded water (hydroelectric), and fissile materials - are exploited to create electric power, how it is transmitted and distributed through the grid and finally the patterns of its consumption. To assure that students gain a proper appreciation for the factors that determine the real cost of electricity per kilowatt-hour, the subject will be treated in a highly quantitative way. The goal will be to provide students with the information and tools they need for informed analysis of the true prospects and technological challenges involved in integration of new energy sources, such as solar, wind, geothermal, and tidal power, with the existing grid. There will be weekly homework and a midterm. Two projects with oral presentations, including a major one at the end of the semester, are required. There is no final exam. Several required field trips to local power facilities occur during the semester.

Offered: Spring

ECE 230 ELECTROMAGNETIC WAVES

TEM waves in transmission line structures, transient and steady state solutions. Applications in digital circuits, RF equipment, and optical communication networks. Maxwell's equations and wave equation in homogeneous media. Plane waves in homogenous loss-less and low-loss media. Linear and circular polarization. Wave propagation in lossy/conducting media and skin effect. Dipole radiation, transceiver and receiver antennas, and antenna arrays. Satellite communications and fiber optical communications. Quantum communications.

Offered: Fall

ECE 231 ROBOT CONTROL

This course covers control and planning algorithms with applications in robotics. Topics include transfer function models, state-space models, root-locus analysis, frequency-response analysis, Bode diagrams, controllability, observability, PID control, linear quadratic optimal control, model-predictive control, stochastic control, forward and inverse kinematics, dynamics, joint space control, operational space control, and robot trajectory planning. Proficiency with Matlab/C++ is recommended.

Offered: Fall

ECE 232 AUTONOMOUS MOBILE ROBOTS

This course covers models and algorithms for autonomous mobile robots. Topics include sensors, perception, state estimation, mapping, planning, control, and human-robot interaction. Proficiency with Matlab/C++ is recommended.

Offered: Spring

ECE 233 MUSICAL ACOUSTICS

Aspects of acoustics. Review of oscillators, vibratory motion, the acoustic wave equation, reflection, transmission and absorption of sound, radiation and diffraction of acoustic waves. Resonators, hearing and speech, architectural and environmental acoustics.

Offered: Fall

ECE 235 INTRODUCTION TO OPTOELECTRONICS

Introduction to fundamentals of wave propagation in materials, waveguides and fibers, generation, modulation and detection of light using semiconductor devices, and elements of optocommunication systems.

Offered: Spring

ECE 241 SIGNALS

Introduction to continuous and discrete time signal theory and analysis of linear time-invariant systems. Signal representations, systems and their properties, LTI systems, convolution, linear constant coefficient differential and difference equations. Fourier analysis, continuous and discrete-time Fourier series and transforms, properties, inter-relations, and duality. Filtering of continuous and discrete time signals. Sampling of continuous time signals, signal reconstruction, discrete time processing of continuous time signals. Laplace transforms.

Offered: Fall

ECE 242 COMMUNICATIONS SYSTEMS

In this course we will study the following topics: Amplitude and frequency modulations – bandwidth, power, complexity trade-offs, spectral analysis. Random processes and random variables – statistical averages, autocorrelation, covariance, probability distribution functions, covariance, basic probability. Noise in communication systems – compare the signal-to-noise ratio of different communication systems, pre-emphasis and de-emphasis filtering in FM systems. Analog to digital conversion – reconstruction filters, sampling theorems, pulse code modulations, differential pulse code modulations, delta modulations, and adaptive delta modulations. Binary communication systems – pulse position modulation, pulse amplitude modulation, optimum receiver of binary modulation systems, M-ary modulations.

Offered: Spring

ECE 244 DIGITAL COMMUNICATIONS

Digital communication system elements, characterization and representation of communication signals and systems. Digital transmission, binary and M-ary modulation schemes, demodulation and detection, coherent and incoherent demodulators, error performance. Channel capacity, mutual information, simple discrete channels and the AWGN channel. Basics of channel coding and error correction codes.

Offered: Fall

ECE 245 WIRELESS COMMUNICATIONS

This course teaches the underlying concepts behind traditional cellular radio and wireless data networks as well as design trade-offs among RF bandwidth, transmitter and receiver power and cost, and system performance. Topics include channel modeling, digital modulation, channel coding, network architectures, medium access control, routing, cellular networks, WiFi/IEEE 802.11 networks, mobile ad hoc networks, sensor networks and smart grids. Issues such as quality of service (QoS), energy conservation, reliability and mobility management are discussed. Students are required to complete a semester-long research project in order to obtain in-depth experience with a specific area of wireless communication and networking.

Offered: Fall

ECE 246 DIGITAL SIGNAL PROCESSING

Analysis and design of discrete-time signals and systems, including: difference equations, discrete-time filtering, z-transforms, A/D and D/A conversions, mutli-rate signal processing, FIR and IIR filter design, the Discrete Fourier Transform (DFT), circular convolution, Fast Fourier Transform (FFT) algorithms, windowing, and classical spectral analysis.

Offered: Fall

ECE 247 DIGITAL IMAGING PROCESSING

This course will introduce the students to the basic concepts of digital image processing, and establish a good foundation for further study and research in this field. The theoretical components of this course will be presented at a level that seniors and first year graduate students who have taken introductory courses in vectors, matrices, probability, statistics, linear systems, and computer programming should be comfortable with. Topics cover in this course will include intensity transformation and spatial filtering, filtering in the frequency domain, image restoration, morphological image processing, image segmentation, image registration, and image compression. The course will also provide a brief introduction to python (ipython), the primary programming language that will be used for solving problems in class as well as take-home assignments.

Offered: Fall

ECE 251 ULTRASOUND IMAGING

Introduction to the principles and implementation of diagnostic ultrasound imaging. Topics include linear wave propagation and reflection, fields from pistons and arrays, beamforming, B-mode image formation, Doppler, and elastography. Project and final report

Offered: Fall

ECE 261 INTRODUCTION TO VLSI

Introduction to high performance integrated circuit design. Semiconductor technologies. CMOS inverter. General background on CMOS circuits, ranging from the inverter to more complex logical and sequential circuits. The focus is to provide background and insight into some of the most active high performance related issues in the field of high performance integrated circuit design methodologies, such as CMOS delay and modeling, timing and signal delay analysis, low power CMOS design and analysis, optimal transistor sizing and buffer tapering, pipelining and register allocation, synchronization and clock distribution, retiming, interconnect delay, dynamic CMOS design techniques, power delivery, on-chip regulators, 3-D technology and circuit design, asynchronous vs. synchronous tradeoffs, clock distribution networks, low power design, and CMOS power dissipation.

Offered: Fall

ECE 262 ADVANCED CMOS VLSI DESIGN

Senior design course for "Computer Design" or "Integrated Electronics" concentrations. Review of CMOS Subsystem design. Design focus on digital or mixed-signal systems, such as a simple microprocessor, a self-timed multiplier, a digital filter, data converter, or memory. Project design requirements include architectural design, logic and timing verification, layout design, and test pattern generation. Extensive use of CAD tools. The resulting VLSI chips may be fabricated.

Offered: Spring

ECE 266 RF AND MICROWAVE INTEGRATED CURCUITS

This course involves the analysis and design of radio-frequency (RF) and microwave integrated circuits at the transistor level. We begin with a review of electromagnetics and transmission line theory. Several design concepts and techniques are then introduced, including Smith chart, s-parameters, and EM simulation. After the discussion of RLC circuits, high-frequency narrow-band amplifiers are studied, followed by broadband amplifiers. Then we examine the important issue of noise with the design example of low-noise amplifiers (LNA). Nonlinear circuits are studied next with the examples of mixers. A study of oscillators and phase noise follows. Afterwards we introduce phase-locked loops (PLL) and frequency synthesizers. The course concludes with an overview of transceivers architectures. The course emphasizes the development of both circuit design intuition and analytical skills. There are bi-weekly design labs and a term project using industry-standard EDA tools (ADS, Asitic, etc.).

Offered: Spring

ECE 269 HIGH SPEED INTEGRATED ELECTRONICS

Integrated electronics in high speed and wideband applications, which spans the fields of wireless communications, computing, fiber optics, and instrumentation. High speed semiconductor technologies (CMOS, SiGe, SOI, GaAs, InP, etc) and devices (MOSFET, MESFET, HEMT, HBT, and tunneling diodes), design of high speed phase locked and delay-locked loops (PLL and DLL). VCO, frequency divider, phase detector, and loop filter.

Offered: Fall

ECE 270 Probability for Engineers

Logic, introduction to proofs, set operations, algorithms, introduction to number theory, recurrence relations, techniques of counting, graphs. Probability spaces, independence, discrete and continuous probability distributions, commonly used distributions (binomial, Poisson, and normal), random variables, expectation and moment generating functions, functions of random variables, laws of large numbers.

Offered: Fall

ECE 271 Introduction to Random Processes

Learn how to model, analyze and simulate stochastic systems, found at the core of a number of disciplines in engineering, for example communication systems, stock options pricing and machine learning. ECE 440 is divided into five thematic blocks: Introduction, Probability review, Markov chains, Continuous-time Markov chains, and Gaussian, Markov and stationary random processes.

Offered: Fall

ECE 272 AUDIO SIGNAL PROCESSING

This course is a survey of audio digital signal processing fundamentals and applications. Topics include sampling and quantization, analog to digital converters, time and frequency domains, spectral analysis, vocoding, digital filters, audio effects, music audio analysis and synthesis, and other advanced topics in audio signal processing. Implementation of algorithms using Matlab and on dedicated DSP platforms is emphasized.

Offered: Spring

ECE 274 BIOMED SENSORS,CIRCUITS&INTR

See BME 274

Offered: Spring

ECE 277 COMPUTER AUDITION

Computer audition is the study of how to design a computational system that can analyze and process auditory scenes. Problems in this field include source separation (splitting audio mixtures into individual source tracks), pitch estimation (estimating the pitches played by each instrument), streaming (finding which sounds belong to a single event/source), source localization (finding where the sound comes from) and source identification (labeling a sound source).

ECE 294 AUDIO DSP PORTFOLIO - LAB

This is a follow on course to AME272, Audio Digital Signal Processing. Students will complete a major design/build project in the area of audio digital signal processing in this course. Examples include a real-time audio effects processor, music synthesizer or sound analyzer or other projects of student interest. Weekly meetings and progress reports are required.

Offered: Fall

ECE 349 SENIOR DESIGN PROJECT

Senior design course. Prior faculty approval required or design project proposal.

Offered: Spring

ECE 386V VISITING STUDENT IN ECE

ECE 391 INDEPENDENT STUDY

ECE 391W INDEPENDENT STUDY

ECE 392 PRACTICUM

ECE 393 SENIOR PROJECT

ECE 394 INTERNSHIP

ECE 395 RESEARCH

ECE 396 SPECIAL PROJECTS

ECE 398 DESIGN SEMINAR

Students majoring in Electrical and Computer Engineering will take this course at the same time as their concentration elective and prepare a proposal for the Design Project to be started in the Fall semester and completed in the Spring semester. Students and Instructor will consult with design project supervisors in various areas to devise a project plan. Proposal might include presentations and documentation discussing the following: definition of project requirements and product specifications; clarification and verification of end user requirements; subsystem definition and interfaces; generation of project and testing plans including Gantt charts; reliability analysis, product safety, compliance issues, manufacturability, reverse engineering a comparable device, cost, and documentation.

Offered: Fall

ECE 399 JUNIOR SEMINAR

Case studies on ethical, social, economic and safety considerations that can arise in engineering practice, along with preliminary planning for Capstone Design Projects. Occasional presentations by outside speakers.

Offered: Spring

ECE 400 COMPUTER ORGANIZATION

SEE ECE 200

Offered: Spring

ECE 401 ADVANCED COMPUTER ARCHITECTURE

Instruction set architectures. Advanced pipelining techniques. Instruction level parallelism. Memory hierarchy design. Multiprocessing. Storage systems. Interconnection network

Offered: Fall

ECE 402 MEMORY SYSTEMS

Advanced topics in the organization, architecture, and implementation of modern memory subsystems. Power, performance, reliability, and QoS issues in DRAM memory systems and Flash-based SSDs; high-performance memory controllers and interfaces; memory system design for data centers and enterprise systems.

Offered: Fall

ECE 404 Multiprocessor Architecture

This course provides in-depth discussions of the design and implementation issues of multiprocessor system architecture. Topics include cache coherence, memory consistency, interconnect, their interplay and impact on the design of high-performance micro-architectures.

Offered: Spring

ECE 405 ADV DIGITAL DESIGN USING FPGA

Review of complex embedded project development with Xilinx Virtex FPGA eval board and Xilinx CAD tools using Verilog HDL and C programming language. Embedded development and introduction to ethernet, USB, SATA, VGA, DVI, PS2, RS232, GPIO, and soft processor cores.

Offered: Fall

ECE 406 GPU PARALLEL C/C++ PROGRAMMING

GPU micro-architecture, including global memory, constant memory, texture memory, SP, SM, scratchpad memory, L1 and L2 cache memory, multi-ported memory, register file, and task scheduler. Parallel programming applications to parallel sorting, reduction, numeric iterations, fundamental graphics operations such as ray tracing. Desktop GPU programming using Nvidia's CUDA (Compute-Unified Device Architecture). CPU/GPU cooperative scheduling of partially serial/partially parallel tasks. No midterms or written exams. Course consists of seven hands-on projects using CUDA.

ECE 407 Advanced GPU Project Development

Students develop an advanced project for the GPU platform. A GPU compute-cluster can be employed, as well as a single GPU computer. Students meet with the instructor twice a week to report the progress and the new direction is determined based on the results and the ongoing progress. Project options include: Protein folding (BLAST algorithm), Face recognition (using Open CV), 3D Image reconstruction of biomedical images, and other sophisticated image processing algorithms.

Offered: Spring

ECE 409 MACHINE LEARNING

This course presents the mathematical foundations of AI, including probability, decision theory and machine learning.

Offered: Spring

ECE 421 OPT PROPERTIES OF MATERIALS

ECE 423 SEMICONDUCTOR DEVICES

Modern solid state devices, their physics and principles of operation. Solid state physics fundamentals, free electrons, band theory, transport properties of semiconductors, tunneling. Semiconductor junctions and transistors. Compund and semi-magnetic semiconductors. Optoelectronic and ultrafast devices.

Offered: Fall

ECE 424 INTRO CONDENSED MATTER PHY

An emphasis on the wide variety of phenomena that form the basis for modern solid state devices. Topics include crystals; lattice vibrations; quantum mechanics of electrons in solids; energy band structure; semiconductors; superconductors; dielectrics; and magnets

Offered: Spring

ECE 426 Integrated Photonics

See OPT 468

Offered: Fall

ECE 427 Electric Power: Conversion, Transmission, and Consumption

We will describe how the principal sources of energy - coal, natural gas, impounded water (hydroelectric), and fissile materials - are exploited to create electric power, how it is transmitted and distributed through the grid and finally the patterns of its consumption. To assure that students gain a proper appreciation for the factors that determine the real cost of electricity per kilowatt-hour, the subject will be treated in a highly quantitative way. The goal will be to provide students with the information and tools they need for informed analysis of the true prospects and technological challenges involved in integration of new energy sources, such as solar, wind, geothermal, and tidal power, with the existing grid. There will be weekly homework and a midterm. Two projects with oral presentations, including a major one at the end of the semester, are required. There is no final exam. Several required field trips to local power facilities occur during the semester.

ECE 428 RADIATION & DETECTORS

See OPT 425

ECE 429 AUDIO ELECTRONICS

The devices, circuits, and techniques of audio electronics are covered in this course. Included is a survey of small signal amplifier designs and small-signal analysis and characterization, operational amplifiers and audio applications of opamps, large-signal design and analysis methods including an overview of linear and switching power amplifiers. The course also covers the design of vacuum tube circuits, nonlinearity and distortion. Other important audio devices are also covered including microphones, loudspeakers, analog to digital and digital to analog converters, and low-noise audio equipment design principles.

Offered: Spring

ECE 432 ACOUSTICAL WAVES

Acoustic wave equation; plane, spherical, and cylindrical wave propagation; reflection and transmission at boundaries; normal modes; absorption and dispersion; radiation from points, spheres, cylinders, pistons, and arrays; diffraction; nonlinear acoustics.

Offered: Summer

ECE 433 MUSICAL ACOUSTICS

Aspects of acoustics. Review of oscillators, vibratory motion, the acoustic wave equation, reflection, transmission and absorption of sound, radiation and diffraction of acoustic waves. Resonators, hearing and speech, architectural and environmental acoustics.

Offered: Fall

ECE 435 INTRODUCTION TO OPTOELECTRONICS

Introduction to fundamentals of wave propagation in materials, waveguides and fibers, generation, modulation and detection of light using semiconductor devices, and elements of optocommunication systems.

Offered: Spring

ECE 436 Nanophotonic and Nanomechanical devices

Various types of typical nanophotonic structures and nanomechanical structures, fundamental optical and mechanical properties: micro/nano-resonators, photonic crystals, plasmonic structures, metamaterials, nano-optomechanical structures. Cavity nonlinearoptics, cavity quantum optics, and cavity optomechanics. Fundamental physics and applications, state-of-art devices and current research trends. This class is designed primarily for graduate students. It may be suitable for senior undergraduates if they have required basic knowledge.

Offered: Fall

ECE 437 AUTONOMOUS MOBILE ROBOTS

ECE 440 INTRODUCTION TO RANDOM PROCESSES

The goal of this course is to learn how to model, analyze and simulate stochastic systems, found at the core of a number of disciplines in engineering, for example communication systems, stock options pricing and machine learning. This course is divided into five thematic blocks: Introduction, Probability review, Markov chains, Continuous-time Markov chains, and Gaussian, Markov and stationary random processes.

Offered: Fall

ECE 441 DETECTION & ESTIMATION THEORY

Loss and utility; Bayesian inference; risk functions, randomized decisions, admissible decisions; empirical Bayes for unknown prior; Neyman-Pearson hypothesis testing, receiver operating characteristic; sufficient and minimal sufficient statistics and Rao-Blackwellization; unbiased estimation; minimum variance unbiased estimation and Cramer-Rao inequality, maximum likelihood estimation; nonparametric estimation of cdfs.

Offered: Spring

ECE 442 NETWORK SCIENCE ANALYTICS

The science of networks is an emerging discipline of great importance that combines graph theory, probability and statistics, and facets of engineering and the social sciences. This course will provide students with the mathematical tools and computational training to understand large-scale networks in the current era of Big Data. It will introduce basic network models and structural descriptors, network dynamics and prediction of processes evolving on graphs, modern algorithms for topology inference, community and anomaly detection, as well as fundamentals of social network analysis. All concepts and theories will be illustrated with numerous applications and case studies from technological, social, biological, and information networks.

Offered: Spring

ECE 443 Probabilistic Models for Inference and Estimation

Probability and stochastic processes, IID and Markov processes, basics of inference and estimation, MAP and ML estimates, modeling with latent variables, expectation maximization, hidden Markov Models, stochastic context free grammars, Markov and conditional random fields, energy models. Select applications in computer vision, machine learning, image processing, communications, and bioinformatics.

Offered: Fall

ECE 444 DIGITAL COMMUNICATIONS

Digital communication system elements, characterization and representation of communication signals and systems. Digital transmission, binary and M-ary modulation schemes, demodulation and detection, coherent and incoherent demodulators, error performance. Channel capacity, mutual information, simple discrete channels and the AWGN channel. Basics of channel coding and error correction codes.

Offered: Fall

ECE 445 WIRELESS COMMUNICATIONS

This course teaches the underlying concepts behind traditional cellular radio and wireless data networks as well as design trade-offs among RF bandwidth, transmitter and receiver power and cost, and system performance. Topics include channel modeling, digital modulation, channel coding, network architectures, medium access control, routing, cellular networks, WiFi/IEEE 802.11

networks, mobile ad hoc networks, sensor networks and smart grids. Issues such as quality of service (QoS), energy conservation, reliability and mobility management are discussed. Students are required to complete a semester-long research project in order to obtain in-depth experience with a specific area of wireless communication and networking.

Offered: Spring

ECE 446 DIGITAL SIGNAL PROCESSING

Analysis and design of discrete-time signals and systems, including: difference equations, discrete-time filtering, z-transforms, A/D and D/A conversions, mutli-rate signal processing, FIR and IIR filter design, the Discrete Fourier Transform (DFT), circular convolution, Fast Fourier Transform (FFT) algorithms, windowing, and classical spectral analysis.

Offered: Fall

ECE 447 DIGITAL IMAGE PROCCESSING

This course will introduce the students to the basic concepts of digital image processing, and establish a good foundation for further study and research in this field. The theoretical components of this course will be presented at a level that seniors and first year graduate students who have taken introductory courses in vectors, matrices, probability, statistics, linear systems, and computer programming should be comfortable with. Topics cover in this course will include intensity transformation and spatial filtering, filtering in the frequency domain, image restoration, morphological image processing, image segmentation, image registration, and image compression. The course will also provide a brief introduction to python (ipython), the primary programming language that will be used for solving problems in class as well as take-home assignments.

Offered: Fall

ECE 448 WIRELESS SENSOR NETWORKS

This course will cover the latest research in the area of Wireless Sensor Networks. We will cover all aspects of these unique and important systems, from the hardware and radio architecture through protocols and software to applications. Topics will include sensor network architectures, hardware platforms, physical layer techniques, medium access control, routing, topology control, quality of service (QoS) management, localization, time synchronization, security, storage, and other advanced topics. Each student must complete a semester-long course project related to wireless sensor networks.

Offered: Spring

ECE 449 MACHINE VISION

Fundamentals of computer vision, including image formation, elements of human vision, low-level image processing, and pattern recognition techniques. Advanced topics include modern visual features, graphical models, model-based and data-driven approaches, and contextual inference, as well as examples of successes and challenges in applications. CSC 449, a graduate-level course, requires additional readings and assignments (including a course project).

Offered: Spring

ECE 450 INFORMATION THEORY

Entropy, Relative Entropy, mutual information, asymptotic equipartition property, data compression, channel capacity, joint source channel coding theorem, Gaussian channels, rate distortion theory, selected applications.

Offered: Spring

ECE 451 BIOMEDICAL ULTRASOUND

SEE BME 253

Offered: Spring

ECE 452 MEDICAL IMAGING-THEORY & IMPLEMENTATION

Physics and implementation of X-ray, ultrasonic, and MR imaging systems. Fourier transform relations and reconstruction algorithms of X-ray and ultrasonic-computed tomography, and MRI.

Offered: Fall

ECE 453 Ultrasound Imaging

Introduction to the principles and implementation of diagnostic ultrasound imaging. Topics include linear wave propagation and reflection, fields from pistons and arrays, beamforming, B-mode image formation, Doppler, and elastography. Project and final report

Offered: Spring

ECE 455 SOFTWARE ANALYSIS & IMPROV

Programming is the automation of information processing. Program analysis and transformation is the automation of programming itself---how much a program can understand and improve other programs. Because of the diversity and complexity of computer hardware, programmers increasingly depend on automation in compilers and other tools to deliver efficient and reliable software. This course combines fundamental principles and (hands-on) practical applications. Specific topics include data flow and dependence theories; static and dynamic program transformation including parallelization; memory and cache management; type checking and program verification; and performance analysis and modeling. The knowledge and practice will help students to become experts in software performance and correctness. Students taking the graduate level will have additional course requirements and a more difficult project.

Offered: Spring

ECE 457 Digital Video Processing

Basics of digital video, digital video filtering, and video-based object recognition and tracking. Core topics to include: algorithms for 2-D motion estimation, compression, video segmentation, image enhancement, transform and sub-band/wavelet coding, compression, feature extraction from video, and 3-D video processing. Projects will apply video-based techniques for solving a wide variety of problems in areas such as person and object tracking, human motion analysis, biometrics, and scene understanding.

Offered: Spring

ECE 461 INTRODUCTION TO VLSI

Introduction to high performance integrated circuit design. Semiconductor technologies. CMOS inverter. General background on CMOS circuits, ranging from the inverter to more complex logical and sequential circuits. The focus is to provide background and insight into some of the most active high performance related issues in the field of high performance integrated circuit design methodologies, such as CMOS delay and modeling, timing and signal delay analysis, low power CMOS design and analysis, optimal transistor sizing and buffer tapering, pipelining and register allocation, synchronization and clock distribution, retiming, interconnect delay, dynamic CMOS design techniques, power delivery, on-chip regulators, 3-D technology and circuit design, asynchronous vs. synchronous tradeoffs, clock distribution networks, low power design, and CMOS power dissipation.

Offered: Fall

ECE 462 ADVANCED CMOS VLSI DESIGN

Senior design course for "Computer Design" or "Integrated Electronics" concentrations. Review of CMOS Subsystem design. Design focus on digital or mixed-signal systems, such as a simple microprocessor, a self-timed multiplier, a digital filter, data converter, or memory. Project design requirements include architectural design, logic and timing verification, layout design, and test pattern generation. Extensive use of CAD tools. The resulting VLSI chips may be fabricated.

Offered: Spring

ECE 463 VLSI ERROR CONTROL SYSTEMS

This course reviews the reliability challenges introduced by the multi-core billion-transistor integration era, and discusses circuit, architectural, and algorithm level solutions to address these challenges. After a brief review of IC design and layout concepts, students are introduced to the tradeoffs in continued CMOS scaling. Lectures, assigned readings, discussions, student presentations, review reports of the research literature, computer simulations and modeling, design projects of varying complexity.

Offered: Spring

ECE 466 RF AND MICROWAVE INTEGRATED CIRCUITS

This course involves the analysis and design of radio-frequency (RF) and microwave integrated circuits at the transistor level. We begin with a review of electromagnetics and transmission line theory. Several design concepts and techniques are then introduced, including Smith chart, s-parameters, and EM simulation. After the discussion of RLC circuits, high-frequency

narrow-band amplifiers are studied, followed by broadband amplifiers. Then we examine the important issue of noise with the design example of low-noise amplifiers (LNA). Nonlinear circuits are studied next with the examples of mixers. A study of oscillators and phase noise follows. Afterwards we introduce phase-locked loops (PLL) and frequency synthesizers. The course concludes with an overview of transceivers architectures. The course emphasizes the development of both circuit design intuition and analytical skills. There are bi-weekly design labs and a term project using industry-standard EDA tools (ADS, Asitic, etc.).

Offered: Spring

ECE 468 ADVANCED ANALOG CMOS CIRCUITS AND SYSTEMS

Circuitry, algorithms, and architectures used in analog and mixed-mode CMOS integrated circuits. Switched-capacitor (SC) elements, amplifier stages, and filters. Other SC circuits: S/H stages, comparators, PGAs, oscillators, modulators, voltage boosters, and dividers, Non-ideal effects in SC circuits, and correction techniques. Low-voltage SC design. Nyquist-rate data converter fundamentals; SC implementations of DACs and ADCs. Oversampling (delta-sigma) data converters: fundamentals and implementations.

Offered: Spring

ECE 469 HIGH SPEED INTEGRATED ELECTRONICS

We begin with an overview of high speed semiconductor technologies (CMOS, SiGe, SOI, GaAs, InP, etc) and devices (MOSFET, MESFET, HEMT, HBT, and tunneling diodes), followed by discussion of device characterization and technology optimization for circuit performance. We focus on the design of wideband and high power amplifiers, which includes discussions on feedback, impedance matching, distributed amplifiers, power combining, and switching power amplifiers. The third part of the course involves the design of high speed phase locked and delay-locked loops (PLL and DLL). After a review of PLL basics, we discuss its building blocks: VCO, frequency divider, phase detector, and loop filter. We also analyze its performance, in particular phase noise, jitter, and dynamic performance, and how to improve them. Two important applications, frequency synthesis and clock recovery, serve as the examples in our discussion. Each part of the course also includes related simulation methods and measurement techniques.

ECE 472 AUDIO SIGNAL PROCESSING

This course is a survey of audio digital signal processing fundamentals and applications. Topics include sampling and quantization, analog to digital converters, time and frequency domains, spectral analysis, vocoding, digital filters, audio effects, music audio analysis and synthesis, and other advanced topics in audio signal processing. Implementation of algorithms using Matlab and on dedicated DSP platforms is emphasized.

Offered: Spring

ECE 474 BIOMED SENSORS,CIRCUITS&INTR

Circuits and sensors used to measure physiological systems at an advanced level. Measurement of strain, pressure, flow, temperature, biopotentials, and physical circuit construction.

ECE 475 AUDIO SOFTWARE DESIGN

This course aims to give students the ability to develop their own audio/music programs in C and a few major open-source audio programming languages. It begins with an introduction to computer music and audio programming, and a comparative survey of audio programming languages. After an overview of the C language, we then explore the topics of programming for sound synthesis. The second half of this course introduces the primary techniques of sound design using the audio programming environments of Pure Data and CSound. Students will practice their programming techniques through a series of programming assignments and a final project.

Offered: Fall

ECE 476 AUDIO SOFTWARE DESIGN II

This course is a sequel to AME262/ECE475/TEE475 Audio Software Design I. The first part of the course will explore designing audio plug-ins with Faust (Function AUdio STream), which is a high-level functional programming language designed for real-time audio digital signal processing (DSP) and sound synthesis. Students will learn how to design plug-ins for Pro Tools, Logic and other digital audio workstations (DAWs). The second part of the course will focus on audio programming for iOS apps in Swift, which is the new programming language for iOS and OS X. Students will learn how to make musical apps with the sound engine libpd, which turns Pure Data (Pd) into an embeddable library. A special topic will introduce audio programming for video games with Wwise and FMod.

Offered: Spring

ECE 477 COMPUTER AUDITION

Computer audition is the study of how to design a computational system that can analyze and process auditory scenes. Problems in this field include source separation (splitting audio mixtures into individual source tracks), pitch estimation (estimating the pitches played by each instrument), streaming (finding which sounds belong to a single event/source), source localization (finding where the sound comes from) and source identification (labeling a sound source).

Offered: Fall

ECE 478 Revolutions in Sound: Artistic and Technical Evolution of Sound Recording

This course will provide a multifaceted account of the evolution of sound technologies, starting with Edison's invention of the phonograph in 1877 through the development of microphones, radio, magnetic tape recording, vinyl records, multitrack recording, digital audio, compact discs, the MP3 format, and online music streaming. We will discuss how technology has shaped the musical experience, and, conversely, how the performance of various genres of music, including classical, rock, jazz, hip-hop, and country, has influenced the development of audio technologies. We will also investigate, drawing from a variety of primary and secondary sources, how certain legendary recordings were produced, including those of Enrico Caruso, Bessie Smith, Les Paul, Louis Armstrong, Elvis Presley, The Beatles, Michael Jackson, and Madonna. A special topic will focus on the digital preservation and restoration of historic audio recordings.

Offered: Spring

ECE 479 Audio Recording - Technology and Fundamentals

This course covers the acoustical and psychoacoustic fundamentals of audio recording including the nature of sound, sound pressure level, frequency and pitch, hearing and sound perception, reflection, absorption and diffusion of sound, sound diffraction, room acoustics, reverberation, and studio design principles. The course also provides practical experience in audio recording including an introduction to recording studio equipment, microphones and microphone placement techniques, signal flow, amplification, analog and digital recording, analog to digital conversion, digital processing of sound, multi-track recording and an introduction to mixing and mastering. Each student is required to complete a substantive recording project at the end of the course.

Offered: Fall Spring

ECE 491 MASTER'S READING COURSE ECE

ECE 492 Special Topics: Future Electronic Devices from Condensed Matter Physics Topics

Course will cover basic topics in semiconductor device physics, electronic band structure, materials science, and magnetism with a focus on applications to new and emerging electronic device technologies. Base level knowledge will be provided to both understand existing devices and design improvements using new physics and materials. This background will serve as a jumping off point to discuss potential future electronic devices with novel properties beyond the current status quo. Topics covered: 2D electronic materials/devices, magnetic memory, spintronics, multiferroic memory, topological matter/devices.

Offered: Spring

ECE 493 MASTER'S ESSAY

ECE 494 RESEARCH INTERNSHIP

ECE 495 MASTER'S RESEARCH IN ECE

ECE 495A MASTERS RESEARCH IN ABSENTIA

ECE 496 SPECIAL PROJECTS IN ECE

ECE 520 SPIN BASED ELECTRONICS

Up until now CMOS scaling has given us a remarkable ride with little concern for fundamental limits. It has scaled multiple generations in feature size and in speed while keeping the same power densities. However,CMOS finally encounters fundamental

limits. The course is intended for students interested in research frontiers of future electronics technologies. The course begins with introduction to the basic physics of magnetism and of quantum mechanical spin. Then it covers aspects of spin transport with emphasis on spin-diffusion in semiconductors. The second part of the course is comprised of student and lecturer presentations of selected spintronics topics which may include: spin transistors, magnetic random access memories, spin-based logic paradigms, spin-based lasers and light emitting diodes, magnetic semiconductors, spin-torque devices for memory applications and the spin Hall effect.

Offered: Spring

ECE 565 PERF ISSUES VLS/IC

Primary and recent research in the fields of high performance digital and analog VLSI design and analysis. Provides background and insight into some of the more active performance related research topics of the field such as CMOS deisign techniques, speed/area/power tradeoffs in CMOS circuits, low power design, RLC interconnect, synchronization and clock distribution, pipelining/retiming, and many other areas.

Offered: Spring

ECE 591 PHD READING COURSE IN ECE

ECE 594 PHD RESEARCH INTERNSHIP

ECE 594P PHD RESEARCH INTERNSHP PT

ECE 595 PHD RESEARCH IN ECE

ECE 595A PHD RESEARCH IN ABSENTIA

ECE 597 ECE COLLOQUIUM

ECE 890 SUMMER IN RESIDENCE - MA

ECE 895 CONT OF MASTER'S ENROLLMENT

ECE 897 MASTER'S DISSERTATION

ECE 897A MASTER'S DISS IN ABSENTIA

ECE 897B MASTER'S IN ABSENTIA

ECE 899 MASTER'S DISSERTATION

ECE 899A MASTER'S DISSERTATION

ECE 899B MASTER'S IN-ABSENTIA ABROAD

ECE 985 LEAVE OF ABSENCE

ECE 986V FULL-TIME VISITING STUDENT

ECE 987V PART TIME VISITING STUDENT

ECE 990 SUMMER IN RESIDENCE

ECE 995 CONT OF DOCTORAL ENROLLMENT

ECE 997 DOCTORAL DISSERTATION

ECE 997A DOCT DISSERTATN IN ABSENTIA

ECE 999 DOCTORAL DISSERTATION

ECE 999A DOCT DISSERTATN IN ABSENTIA

ECO 108 PRINCIPLES OF ECONOMICS

The fundamentals of microeconomic and macroeconomic theory, with applications; preparation for subsequent economics courses.

ECO 207 INTERMEDIATE MICROECONOMICS

The economics of consumer choice and the demand for goods; producer choice, including the supply of goods and the demand for labor and other inputs; the effects of competition and monopoly power on prices and production.

ECO 207H INTERMEDIATE MICROECONOMICS-HONORS

This course shows how the choices of consumers and firms interact through markets to determine all the factors related to economic well being. In comparison to other sections of ECO 207, this section develops these choices more formally and mathematically.

ECO 208W TOPICS IN MICROECONOMIC THEORY

This course is a sequel to ECO 207. It covers a variety of topics in microeconomics. The precise content varies, but usually includes a more detailed look at alternative normative criteria, applied game theory, auction theory, the problem of social cost, and a little voting theory.

Offered: Spring

ECO 209 INTERMEDIATE MACROECONOMICS

Economic growth, fluctuations, and other topics concerning the aggregate economy

Offered: Fall Spring

ECO 209H INTERMEDIATE MACROECONOMICS-HONORS

National income accounting concepts, their changes and fluctuations as explained by theories of income determination. In comparison to other sections of ECO 209, this section develops those concepts more formally and mathematically.

ECO 211 MONEY, CREDIT & BANKING

This course is about financial markets, banks, and monetary policy. We will study their institutions and empirics, and describe the theory of how they work and affect the overall economy. The theory will utilize models of pricing of financial assets, incentive problems, and aggregate supply/demand. We will pay considerable attention to ongoing current developments in financial markets, monetary policy, and the macro-economy.

ECO 211W MONEY, CREDIT & BANKING

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ECO 214 ECON THEORY OF ORGANIZATIONS

ECO 214W ECON THEORY OF ORGANIZATIONS

ECO 217 Contract Theory

This course examines how markets can engineer trades that maintain incentives in the face of transactions costs and information problems--problems of moral hazard and adverse selection. Emphasis will be placed on applications to insurance and employment markets, but with extensions to firm pricing, corporate finance, and public policies.

Offered: Fall

ECO 217W Contract Theory

This course examines how markets can engineer trades that maintain incentives in the face of transactions costs and information problems--problems of moral hazard and adverse selection. Emphasis will be placed on applications to insurance and employment markets, but with extensions to firm pricing, corporate finance, and public policies.

Offered: Fall

ECO 218W UNEQUALDEVSTATE POL BRAUSNIG

ECO 220W FAIR ALLOCATION

The course is an introduction to the mathematical modeling of problems of fairness in resource allocation. Among the types of problems we will seek to analyze are: - How should the Red Cross distribute supplies among refugees in a refugee camp. - How should housemates split the rent when the rooms in the house they share have different features that each housemate values differently. - How should students in a dance class be organized in male-female pairs when each male student has preferences over female partners and each female student has preferences over male partners? - When a firm goes bankrupt, how should it liquidation value be divided among its creditors?

Offered: Spring

ECO 223 LABOR MARKETS

Economics is used to understand the determination of wages, employment, workweeks; the acquisition of skills; unions, discrimination, and unemployment.

ECO 223W LABOR MARKETS

Economics is used to understand the determination of wages, employment, workweeks; the acquisition of skills; unions, discrimination, and unemployment.

ECO 224 SPORTS ECONOMICS

Should we expect American League batters to be beaned by more pitches than their National League counterparts? Are investments in sports stadiums good for economic development? How prevalent is discrimination in sports and can it be measured? Should college athletes be paid? Is there any justification for professional sports leagues' exemption from anti-trust statutes? What do players' unions do? What does and does not promote competitive balance in college football and the major sports? What can golf teach us about the Executive Pay crisis? Should gambling on sports be legal? Is there such a thing as the hot hand? Why do alcohol and sports(seem to)go together? Is the NFL on the decline? These and many other exciting questions related to sports, media and entertainment(though mostly sports)will be covered. Like its popular consideration as a metaphor for life, sports economics is a popular examination ground for more traditional theoretical economics in particular for topics in Labor Economics and Industry.

ECO 224W SPORTS ECONOMICS

Should we expect American League batters to be beaned by more pitches than their National League counterparts? Are investments in sports stadiums good for economic development? How prevalent is discrimination in sports and can it be measured? Should college athletes be paid? Is there any justification for professional sports leagues' exemption from anti-trust statutes? What do players' unions do? What does and does not promote competitive balance in college football and the major sports? What can golf teach us about the Executive Pay crisis? Should gambling on sports be legal? Is there such a thing as the hot hand? Why do alcohol and sports(seem to)go together? Is the NFL on the decline? These and many other exciting questions related to sports, media and entertainment(though mostly sports)will be covered. Like its popular consideration as a metaphor for life, sports economics is a popular examination ground for more traditional theoretical economics in particular for topics in Labor Economics and Industry.

ECO 228W BIG BUSINESS IN BRAZIL

ECO 230 ECONOMIC STATISTICS

This course is an introduction to the probability and statistical theory underlying the estimation of parameters and testing of hypotheses in economics. Linear correlation and simple regression analysis are also introduced. Students will use computers to analyze economic data.

ECO 231W ECONOMETRICS

The course is an introduction to the application of econometric methods. It covers the basic tools of estimation and inference of cross-section models.

Offered: Fall Spring

ECO 233W APPLIED ECONOMETRICS

The course is an introduction to the application of econometric methods. It covers the basic tools of estimation, inference and forecast of cross-section, time-series and panel data models. The course emphasizes the intuitive understanding and practical application of these basic tools of econometric analysis.

ECO 236 HEALTH ECONOMICS

Analysis of factors that affect supply and demand in the market for medical care: risk, insurance, externalities, ethics, regulation.

ECO 236W HEALTH ECONOMICS

Analysis of factors that affect supply and demand in the market for medical care: risk, insurance, externalities, ethics, regulation.

ECO 238 ENVIRONMENTAL ECONOMICS

The course will demonstrate that environmental problems are economic problems and examine the past, present and future visions of resource use, production and sustainability.

ECO 238W ENVIRONMENTAL ECONOMICS

The course will demonstrate that environmental problems are economic problems and examine the past, present and future visions of resource use, production and sustainability.

ECO 241 PRICING STRATEGY

ECO 241W PRICING STRATEGY

ECO 251 INDUSTRIAL ORGANIZATION

This course examines the determinants of market structure and market performance. Questions discussed are pricing, product and quality choice, collusion, mergers, vertical restrictions, antitrust policy and related welfare analysis. Additional topics (depending on time) that are covered are networks, auctions, advertisement, and research and development. The course puts a special emphasis on studying strategic situations and using the tools of game theory. We use examples from US and international markets to illustrate the main theoretical ideas.

Offered: Spring

ECO 251W INDUSTRIAL ORGANIZATION

This course examines the determinants of market structure and market performance. Questions discussed are pricing, product and quality choice, collusion, mergers, vertical restrictions, antitrust policy and related welfare analysis. Additional topics (depending on time) that are covered are networks, auctions, advertisement, and research and development. The course puts a special emphasis on studying strategic situations and using the tools of game theory. We use examples from US and international markets to illustrate the main theoretical ideas.

ECO 252 ECONOMIES & SOCITIES OF LATIN AMERICA

Provides historical explanation for the general problem of material poverty and the sociopolitical crises that characterize contemporary Latin America and the Caribbean. Same as AAS 252 and HIS 203.

ECO 253W Economics of Discrimination

Economic development of African Americans during the twentieth century, with an examination of the economics of discrimination. Same as HIS 253 and AAS 253.

ECO 255 NIGERIA SINCE ISLAM REV 1804

This course is taught in the context of the world economic order, its evolution from the sixteenth century and the location of different parts of the world within it. The course focuses on the historical development of socioeconomic and political structures over time to explain why the giant of Africa has continued to slumber. Same as HIS 272 and AAS 260.

ECO 257 CORRUPTION GLOBAL ECONOMY

ECO 263 PUBLIC FINANCE

This course is intended to be an introduction to the study of the role of government in the economy, with an emphasis on the microeconomic aspects of this role. Both the taxation and the expenditure sides of government activity will be studied. The first part of the course will be devoted to the theory of public finance in order to build a foundation for the remainder of the course, which involved the application of this theory to particular programs and institutions (policy analysis). Typical topic include: public goods, social security, income taxation, tax reform, fiscal federalism, ect.

ECO 263W PUBLIC FINANCE

This course is intended to be an introduction to the study of the role of government in the economy, with an emphasis on the microeconomic aspects of this role. Both the taxation and the expenditure sides of government activity will be studied. The first part of the course will be devoted to the theory of public finance in order to build a foundation for the remainder of the course, which involved the application of this theory to particular programs and institutions (policy analysis). Typical topic include: public goods, social security, income taxation, tax reform, fiscal federalism, ect.

ECO 267 Multinationals and the Globalization of Production

Multinational enterprises (MNEs) - firms active in multiple countries - dominate modern economies. We will study how and why firms become MNEs, their aggregate impact, and the role of trade/tax policy.

ECO 267W Multinationals and the Globalization of Production

Multinational enterprises (MNEs) - firms active in multiple countries - dominate modern economies. We will study how and why firms become MNEs, their aggregate impact, and the role of trade/tax policy.

ECO 268 ECONOMICS OF GLOBALIZATION

This course studies the economics of world integration. We will explore the arguments for and against opening an economy to international trade in goods and financial capital. We will specifically focus on the implications of openness for welfare, growth, volatility, and inequality. The course will include economic theory as well as several applications. Applications include the growth miracles of East Asia, India’s recent transformation, emerging market crises of the 1900s, aid and development in Africa, and the impact of trade on wages in the United States.

ECO 268W ECONOMICS OF GLOBALIZATION

This course studies the economics of world integration. We will explore the arguments for and against opening an economy to international trade in goods and financial capital. We will specifically focus on the implications of openness for welfare, growth, volatility, and inequality. The course will include economic theory as well as several applications. Applications include the growth miracles of East Asia, India’s recent transformation, emerging market crises of the 1900s, aid and development in Africa, and the impact of trade on wages in the United States.

ECO 269 INTERNATIONAL TRADE

Trade patterns and comparative advantage; commercial policy and the distribution of gains from trade; balance of payments problems.

ECO 269W INTERNATIONAL TRADE

Trade patterns and comparative advantage; commercial policy and the distribution of gains from trade; balance of payments problems.

ECO 270 INTERNATIONAL Economics

This course introduces students to the most recent work in international trade: the behavior of individual firms in international markets. We will try to understand the determinants of exporting behavior for heterogenous firms, how individual decision shape aggregate trade patterns and how they react to trade policy differently. We will explore the impacts of globalization and government policy. We will also introduce students to the new empirical work on outsourcing, FDI and multinationals, exchange rate and national account.

ECO 270W International Economics

This course introduces students to the most recent work in international trade: the behavior of individual firms in international markets. We will try to understand the determinants of exporting behavior for heterogenous firms, how individual decision shape aggregate trade patterns and how they react to trade policy differently. We will explore the impacts of globalization and government policy. We will also introduce students to the new empirical work on outsourcing, FDI and multinationals, exchange rate and national account.

ECO 271 Behavioral Economics

Incorporates insights from psychology into the standard economic model of consumer choice; asks if institutions can be designed to help people make better decisions.

Offered: Fall

ECO 271W Behavioral Economics

Incorporates insights from psychology into the standard economic model of consumer choice; asks if institutions can be designed to help people make better decisions.

Offered: Fall

ECO 275 DEVELOPMENT ECONOMICS

This course is an introduction to development economics. Why are some countries poor and others rich? We will explore various topics in development from classics to current ‘hot’ issues, and learn the causes of poverty and inequality between and within countries. The course will cover standard theories in development economics as well as new topics in political economy and historical development

ECO 275W DEVELOPMENT ECONOMICS

ECO 277 FINANCIAL CRISIS:THRY&EVID

The course will first examine the role of banks in the economy. In particular we will show how banks can facilitate the provision of liquidity and risk sharing. Another main question we will address is whether a financial crisis, such a bank run, can arise on its own and then spread to the non-financial sector. We will show that this is indeed theoretically possible. Subsequently, we will examine historical evidence trying to determine which of the crises in the 1930's arose on their own, as a bank run, and which arose as a consequence of a change in the real economy. Finally, we will discuss regulation and specifically how policy recommendations have changed over the years in response to economists' understanding of what causes financial crises.

ECO 277W FINALCIAL CRISES:THRY&EVID

The course will first examine the role of banks in the economy. In particular we will show how banks can facilitate the provision of liquidity and risk sharing. Another main question we will address is whether a financial crisis, such a bank run, can arise on its own and then spread to the non-financial sector. We will show that this is indeed theoretically possible. Subsequently, we will examine historical evidence trying to determine which of the crises in the 1930's arose on their own, as a bank run, and which arose as a consequence of a change in the real economy. Finally, we will discuss regulation and specifically how policy recommendations have changed over the years in response to economists' understanding of what causes financial crises.

ECO 281 STATE ROLE GLOBAL PERSP

ECO 288 GAME THEORY

Game theory is a systematic study of strategic situations. It is a theory that helps us analyze economic and political strategic issues, such as behavior of individuals in a group, competition among firms in a market, platform choices of political candidates,

and so on. We will develop the basic concepts and results of game theory, including simultaneous and sequential move games, repeated games and games with incomplete information. The objective of the course is to enable the student to analyze strategic situations on his or her own. The emphasis of the course is on theoretical aspects of strategic behavior, so familiarity with mathematical formalism is required.

Offered: Fall Spring

ECO 288W GAME THEORY

Game theory is a systematic study of strategic situations. It is a theory that helps us analyze economic and political strategic issues, such as behavior of individuals in a group, competition among firms in a market, platform choices of political candidates, and so on. We will develop the basic concepts and results of game theory, including simultaneous and sequential move games, repeated games and games with incomplete information. The objective of the course is to enable the student to analyze strategic situations on his or her own. The emphasis of the course is on theoretical aspects of strategic behavior, so familiarity with mathematical formalism is required.

Offered: Fall Spring

ECO 389W SENIOR SEMINAR

The senior seminar is a student driven independent project that culminates in the writing and presentation of a substantial piece of original economic research by each participant in the seminar. The project is approved and supervised by the instructor of the course. Interested students are encouraged to discuss potential research topics with the instructor prior to the start of the semester.

ECO 390 SUPERVISED TEACHING

Responsibility for one recitation section and/or for holding office hours under the instructor’s supervision. Departmental approval required.

ECO 391 INDEPENDENT STUDY

Designed for advanced students seeking to do research beyond what is contained in the regular course offerings. Requires faculty supervisor in the economics department.

ECO 391W INDEPENDENT STUDY

ECO 393 SENIOR PROJECT

ECO 394 INTERNSHIP

Not for concentration credit. Requires faculty supervisor in the economics department.

ECO 394W INTERNSHIP

ECO 395 HONORS SEMINAR

ECO 395W INDEPENDENT RESEARCH

ECO 396 TEACHING ASSISTANTS

ECO 471 MODERN VALUE THEORY I

The foundation of modern microeconomic analysis, including consideration of consumer behavior, the theory of the firm, equilibrium under alternative market structures, and welfare implications.

ECO 472 MODERN VALUE THEORY

Introduction to non-cooperative game theory, asymmetric information models, and social choice theory

ECO 475 MACROECONOMICS

Reviews the main empirical regularities that characterize economic growth and business fluctuations in market economies. Discusses various theoretical models of the business cycle, as well as the macroeconomic impact of fiscal and monetary policy.

ECO 476 MACROECONOMICS II

This course continues on with the theme developed in 475: understanding modern macroeconomics based on dynamic optimization in a general equilibrium environment. The emphasis is placed on understanding business cycles, economic growth, fiscal and monetary policies.

Offered: Spring

ECO 481 INTRODUCTION TO MATH ECONOMICS

This course covers the use of optimization theory in economic analysis. The topics covered include finite-dimensional optimization (unconstrained optimization, Lagrange's Theorem, the Kuhn-Tucker Theorem), the role of convexity in optimization, parametric continuity of solutions to optimization problems, and finite- and infinite-horizon dynamic programming.

ECO 482 MATH ECONOMICS

ECO 483 INTRODUCTION TO MATH STATISTICS

Elements of probability theory and statistics, as employed in the econometrics sequence ECO. Two credit hour class.

ECO 484 INTRODUCTION TO MATHEMATICAL STATISTICS AND ECONOMETRICS

Elements of probability theory and statistics as employed in econometrics. Estimation and inference in the standard linear model.

Offered: Fall

ECO 485 INTRODUCTION TO ECONOMETRICS

(Same as APS 515) Extensions of the general linear model to handle serial correlation, heteroskedasticity, simultaneity. Maximum likelihood estimation and testing. Diagnostic checking of estimated models. Problems in the analysis of individual unit data-qualitative dependent variables and sample self-selectivity.

ECO 491 MASTER'S READINGS IN ECON

ECO 493 MASTER'S ESSAY

ECO 495 MASTER'S RESEARCH IN ECON

ECO 501 SEMINAR LABOR ECONOMICS

Selected topics in labor economics are discussed. The topics vary from year to year. In recent years, topics have included human capital, models of wage growth , inequality, and labor policy.

ECO 503 TOPICS IN LABOR ECONOMICS

The course is a mix between methods and topics. The first half of the course focuses on estimating dynamic discrete choice (DDC) models, a common tool used in structural labor, education, and industrial organization. The second half of the course then examines topics related to the development of human capital, often through the lens of DDC models. The topics typically include human capital related issues in K-12 education, higher education, early childhood investments, and understanding the returns to human capital in the labor market.

ECO 507 ECONOMIC THEORY WORKSHOP

ECO 508 ECONOMIC THEORY WORKSHOP

ECO 509 INTERNATIONAL TRADE

Theory of specialization according to comparative advantage. Effects of tariffs on the gains from trade and the distribution of income. Standard and new trade theories.

ECO 510 International Economics

Topics in exchange rates, the balance of payments, asset-pricing and international capital flows, macroeconomics of open economies, and monetary systems.

ECO 511 INTERNATIONAL WORKSHOP

ECO 512 INTERNATIONAL WORKSHOP

ECO 519 TOPICS IN MICROECONOMETRICS

Course content varies from year to year. Panel data, cross-section time series, qualitative dependent variables and duration analysis are possible topics discussed.

ECO 520 TOP IN MACROECONOMETRICS

The course is an introduction to the econometric analysis of time series. ARMA models and nonlinear models for conditional mean dynamics, models for volatility, spectral analysis, linear regression, VAR, unit root processes and co-integration are possible topics discussed.

ECO 521 ADVANCED ECONOMIC THEORY

ECO 523 CONT TOPICS IN ECONOMETRICS

ECO 524 TOPICS IN GAME THEORY

Cooperative games: axiomatic bargaining theory, games in coalitional function form, Core, Shapley value. Noncooperative games: Nash equilibria, dominance equilibria, Bayesian equilibria. Application to economics.

ECO 525 ECONOMIC MECHANISM

Existence and construction of mechanisms with desirable properties, elicitation schemes, implementation of social choice, planning procedures, matching procedures, fair mechanisms, manipulation of mechanisms.

ECO 526 SEMINAR IN GAME THEORY

Topics in dynamic games

ECO 529 MACRO-LABOR

This course covers topics of current research interest in macroeconomics and labor market dynamics.

ECO 530 ADV TOP IN MONETARY&FIN ECO

Graduate seminar covering recent research in monetary and financial economics.

ECO 531 MACROECONOMIC WORKSHOP

ECO 532 MONETARY WORKSHOP

ECO 534 TOPICS IN MACROECONOMICS

This is a doctoral level course in macroeconomics. Topics covered in the course are aggregate implications of financial imperfections. We will review recent papers on the implications of financial imperfections on business cycles, asset prices, government policies, firms and open economy issues.

Offered: Fall

ECO 535 QUANTITATIVE MACROEONOMICS

The focus of this course is on studying macroeconomic models with many types of households and firms. Models of capital, labor, financial, and marriage markets are presented. Issues such as adoption of new technologies, the determination of asset prices, marriage and divorce, and unemployment are studied. The development of the mathematical and computational skills required to do state-of-the-research in macroeconomics is stressed.

ECO 536 APPLIED MACROECONOMICS

The course considers theories of aggregate fluctuations and unemployment in light of a broad set of empirical regularities.

Offered: Fall

ECO 547 ECONOMETRICS WORKSHOP

ECO 548 ECONOMETRICS WORKSHOP

ECO 551 APPLIED ECONOMICS WORKSHOP

ECO 552 APPLIED Economics WORKSHOP

ECO 571 READINGS IN MACROECONOMICS

Faculty and Students will go through a series of recent working papers in macroeconomics with emphasis on quantitative and empirical topics.

ECO 575 POLITICAL ECONOMY I

This course will focus on several foundational topics in theoretical political economy. Within the paradigm of social choice theory, we cover Arrow's impossibility theorem, the limitations of rational collective decisionmaking, and the consequences for political stability vs. instability. We then take the perspective of noncooperative game theory and cover (among other things) the theory of implementation, strategic voting and the design of nonmanipulable voting rules, and the power of agenda setters.

ECO 582 POLITICAL ECONOMY II

The course develops and uses theoretical models with economic and political elements. A range of issues are studied with specific applications varying from year to year.

ECO 591 PHD READINGS IN ECONOMICS

ECO 594 RESEARCH INTERNSHIP

ECO 595 PHD RESEARCH IN ECONOMICS

ECO 595A PHD RESEARCH IN ABSENTIA

ECO 895 CONT OF MASTER'S ENROLLMENT

ECO 897 MASTER'S DISSERTATION

ECO 899 MASTER'S DISSERTATION

ECO 985 LEAVE OF ABSENCE

ECO 986V FULL TIME VISITING STUDENT

ECO 990 SUMMER IN RESIDENCE

ECO 995 CONT OF DOCTORAL ENROLLMENT

ECO 997 DOCTORIAL DISSERTATION

ECO 997A DOCT DISSERTATN IN ABSENTIA

ECO 999 DOCTORAL DISSERTATION

ECO 999A DOCT DISSERTATN IN ABSENTIA

ECO 999B PHD IN-ABSENTIA ABROAD

EES 100 INTRO TO OCEANOGRAPHY

EES 101 INTRODUCTION TO GEOLOGICAL SCIENCES

This introductory geology class provides a broad overview of the earth sciences, from planetary evolution to the interplay of geology and climate. The course is a prerequisite for all undergraduate majors who are considering careers in the earth and environmental sciences, while also satisfying science requirements for other undergraduate majors. We will introduce the class with the unifying framework for Earth Science: plate tectonics. Throughout the semester we will look at the physical interactions between different realms on Earth, including the interior (core and mantle), the outer shell (termed lithosphere), oceans and atmosphere. We will explore the dynamic processes operating on Earth and how these processes have been recorded and have varied over the geologic history. During the last third of the semester, we will discuss geologic problems that have a particular relevance to humans, such as energy and mineral resources, water resources, climate and global change.

Offered: Fall

EES 103 INTRODUCTION TO ENVIRONMENTAL SCIENCE

Introduction to environmental science topics through case studies of two local issues. Lake Ontario investigatiaon will include topics of hydrology, ecology, air and water pollution, and domestic and international governance. Study of the Marcellus Shale will address energy consumption and production, risk assessment and public health, economics, and policy. Course concludes with critical analysis of technological "solutions" such as ethanol and nuclear power.

Offered: Spring

EES 105 INTRODUCTION TO CLIMATE CHANGE

This course will explore the Earth's dynamic climate system through lectures, discussions and computer-based modeling of climate processes. The course is designed to be accessible to all students. We will work toward an understanding of several fundamental and important questions. What are the main factors that determine the Earth's climate? What forces can drive climate to change? What can we learn from climate change in the Earth's distant past, when our planet experienced periods of both extreme cold and warmth? How do we know that our climate is now changing? What can we expect from the Earth's climate in the near future and how would it affect us?

Offered: Spring

EES 119 ENERGY AND SOCIETY

National and worldwide patterns of production and consumption of renewable and non-renewable energy sources and the connection of those patterns to socioeconomic conditions. For each resource, we consider the environmental effects of extraction, distribution, and consumption; how efficiently the resource is used and for what end uses; current reserves and projections for the future; socioeconomic and political factors affecting the resource's utilization. The course addresses interactions between energy use and climate change, food and water resources. NOTE: Juniors and Seniors in the natural sciences and engineering are required to enroll in EES 219.

Offered: Fall Spring

EES 121 SUSTAINABLE FOOD SYSTEMS

This course will provide students with a foundational understanding of the environmental, economic and societal impacts of American food systems and sustainable agriculture. Through assigned reading, lectures, class discussion and field trips, students will learn about the American farming and food system through examination of one particular crop or product at a time. We will consider environmental inputs and outputs, economic profitability, and farm stewardship. We will also look at the food distribution system and our role as consumers.

Offered: Summer

EES 201 EVOLUTION OF THE EARTH

Historical geology encompasses the (1) dynamic history of the physical earth: the development of land forms, rise and fall of ancient seas, movements of continents, etc., and (2) the evolution of historical geology such as paleontology, sedimentology,

stratigraphy, geochronology, and plate tectonics, and a chronological survey of earth and life history, emphasizing the evolution of North America.

Offered: Spring

EES 203 SEDIMENTOLOGY & STRATIGRAPHY

Sediments and sedimentary rocks cover or underlie much of the Earth's surface. In them are recorded both evidence of the processes responsible for shaping the planetary surface and the record of life. Sedimentary rocks contain enormous volumes of water; solid and fluid hydrocarbons, as well as other natural resources. Sediments and sedimentary rocks are very important to our way of life, and they are fascinating in and of themselves. This course describes and classifies sedimentary rocks towards understanding the processes that shape them and the environments in which they form.

Offered: Spring

EES 203W SEDIMENTOLOGY & STRATIGRAPHY

EES 204W EARTH MATERIALS

The goal of this course is to provide an overview of the chemical and physical properties of the material constituents of the Earth and terrestrial planets, including minerals, rocks and lavas. The class will explore the relationship between the atomic structure and the properties of naturally-occurring solids, and the basic principles that govern the composition and occurrence of these materials. Laboratories are devoted to exercises in crystallography, X-ray diffraction, optical mineralogy and hand-specimen mineral identification. This is a writing requirement section

EES 205 SOLID EARTH GEOPHYSICS

This course is intended for motivated students that are interested in an introduction to geophysics. Material covered will focus on deep Earth processes: an introduction to potential fields, gravity, heat flow, magnetic fields, propagation of seismic waves, and a bottom-up approach to core processes, mantle flow and plate tectonics.

Offered: Fall

EES 206 PETROLOGY

Distribution, description, classification, and origin of igneous and metamorphic rocks in the light of theoretical-experimental multicomponent phase equilibria studies; use of trace elements and isotopes as tracers in rock genesis; hand specimen and microscopic examinations of the major rock types in the laboratory.

Offered: Fall

EES 207 PRINCIPLES OF PALEONTOLOGY

This course is designed to introduce the basic principles of paleontology- the study of fossil organisms in the geological record. Topics to be covered include: taphonomy and the processes of fossilization, principles of evolution as evidenced by the fossil record, taxonomy and the recognition and naming of fossil species, biostratigraphy as a means of dating a rock and/or learning about ancient environments, geochemistry of fossils as a means to understand ancient habitats and behaviors. This course will include an overview of important fossil groups with hands-on experience and a field trip.

Offered: Spring

EES 207W PRINCIPLES OF PALEONTOLOGY

See EES 207 and EES department writing plan. This section fulfills the upper level writing requirement.

Offered: Spring

EES 208 STRUCTURAL GEOLOGY

Geometric analysis of faults, folds, joints, foliation and lineation developed in deformed rocks. Mechanical properties of rock, theories of experimental rock deformation. Labs focus on analysis of structural data using geologic maps, and orthographic and stereographic projections. One-day weekend field trip.

Offered: Fall

EES 209 INTRO GEOCHEMISTRY

The purpose of this course is to introduce the aspects of chemistry that are especially applicable to the study of geologic processes. Students will learn about the chemical interactions between the atmosphere, oceans and rocks to develop an appreciation of the complexity, breadth, and scales of Earth-systems chemistry, and a general knowledge of relevant kinetic and thermodynamic (equilibrium)phenomena. Specifically, this course will explore the chemistry of crust- and mantle-derived rocks, but also the chemistry of low temperature fluids (aqueous geochemistry), and moderate-temperature fluid-rock interactions that occur during metamorphism in the crust. Students are expected to have completed university-level general chemistry and Mineralogy/Earth Materials prior to taking this course.

Offered: Fall

EES 211 GEOHAZARDS AND THEIR MITIGATION: LIVING ON AN ACTIVE PLANET

Earthquakes and volcanic eruptions are violent manifestations of plate tectonics, the movement of the relatively rigid plates forming the Earth's outer shell. Ground movements and shaking from these events may generate tsunamis, slumping and mass wasting, and increase risk in other areas. Global and regional sealevel rise changes forces on the plates, motivating reconsideration of hazard assessments. Large volumes of aerosols and greenhouse gases are emitted during the volcanic eruptions, with implications for global climate change. The first third of the class focuses on the causative mechanisms of earthquakes, volcanoes, tsunamis, volcanic-eruption induced climate change. The second third outlines the consequent hazards and forecasting efforts, and feedbacks between these processes. The final third of the course examines mitigation programs, with numerous case studies.

Offered: Spring

EES 211W GEOHAZ AND THEIR MITIGATION

Earthquakes and volcanic eruptions are violent manifestations of plate tectonics, the movement of the relatively rigid plates forming Earth's outer shell. Ground movements and shaking from these events may generate tsunamis, slumping and mass wasting , and increase risk in other areas. Global and regional sealevel rise changes forces on the plates, motivating reconsideration of hazard assessments. Large volumes of aerosols and greenhouse gases are emitted during volcanic eruptions, with implications for global climate change. The first third of the class focuses on the causative mechanisms of earthquakes, volcanoes, tsunamics and volcanic eruption induced climate change. The second third outlines the consequent hazards and forecasting efforts, and feedbacks between these processes. The final third of the course examines mitigation programs, with numerous case studies.

Offered: Spring

EES 212 CLIM CHNG PERS CHEM. OCEAN.

Most introductory courses to chemical oceanography cover a variety of topics that are only related because they are under the broad umbrella of chemical oceanography. Some of these topics include the carbon dioxide and inorganic carbon chemistry, salinity, marine nutrients, dissolved gases and organic constituents. Similarly, most discussions of climate change and chemical oceanography only touch on ocean acidification. This course seeks to provide the same broad prospective to conventional chemical oceanography courses but will interweave the unifying theme of climate change into these numerous and diverse topics.

Offered: Fall

EES 213 HYDROLOGY AND WATER RESOURCES

Physical flow of water through the natural environment and use as a resource for human consumption. Physical and chemical properties, global water balance, basics of hydrology. Understanding and calculating water flows: precipitation, evaporation and evapotranspiration, surface and subsurface runoff, and atmospheric transport. Human uses: storage in dams, hydropower, municipal usage, agriculture, floods and water conservation.

Offered: Fall

EES 213W HYDROLOGY & WATER RESOURCES

See description for EES 213. This is the writing requirement section.

Offered: Fall

EES 214 GEOSPATIAL DATA ANALYSES

This advanced GIS and numerical methods course introduces basic data manipulation and evaluation tools for vector, raster, and 3D data. It serves as a foundation for statistical and spectral data analyses methods, and introduces forward and inverse modeling

methods. Topics include review of geographical projections and spectral methods, gridding and kriging, filters, curve fitting and interpolation, least squares, matrix inversion, and numerical integration and differentiation. Assessment is through computer-based problem-solving and a small data analysis project.

Offered: Fall

EES 215 ENVIRONMENTAL AND APPLIED GEOPHYSICS

This course aims to image the internal structure of the oceans and continents using geophysical methods. Topics include physical processes occurring within Earth's plates, including solar and internal energy sources, movement of fluids in the oceans and plates. Geophysical methods used to detect these processes and to constrain physical properties, including seismic, electro-magnetic, gravity as measured from surface, subsurface and satellites. Laboratory examples include environmental site remediation, hydrocarbon and mineral exploration, archeological remote sensing, tsunami detection, and groundwater exploration.

Offered: Fall

EES 216 ENVIRONMENTAL GEOCHEMISTRY

A course in the chemical and physical processes that shape our environment. These include groundwater flow and contaminant mitigation, chemistry of lakes, streams and the ocean, ocean-atmosphere interactions (ozone depletion) global warming and the greenhouse effect.

Offered: Spring

EES 216W ENVIRONMENTAL GEOCHEMISTRY

EES 218 ATMOSPHERIC GEOCHEMISTRY

The atmosphere helps to maintain habitable temperatures on our planet's surface, shields life from destructive cosmic and ultraviolet radiation and contains gases such as oxygen and carbon dioxide, which are essential for life. In this course we will work toward an understanding of several important questions. What is in the Earth's atmosphere? What are the sources and sinks of the most important gases in the atmosphere? How does the atmosphere affect the Earth's surface climate? What is the role of photochemistry in atmospheric composition? How does the atmosphere interact with the land and oceans? How has human activity affected the atmosphere?

Offered: Fall

EES 219 ENERGY AND SOCIETY

National and worldwide patterns of production and consumption of renewable and non-renewable energy sources and the connection of those patterns to socioeconomic conditions. For each resource, we consider the environmental effects of extraction, distribution, and consumption; how efficiently the resource is used and for what end uses; current reserves and projections for the future; socioeconomic and political factors affecting the resource's utilization. The course addresses interactions between energy use and climate change, food and water resources. The science background will be more emphasized in additional readings and a separate discussion section. Students enrolling in EES 219 will be required to attend a weekly recitation section. NOTE: Juniors and Seniors in the natural sciences and engineering are required to enroll in EES 219.

Offered: Fall

EES 220 INTRODUCTION TO GEOBIOLOGY

Geobiology is the study of the interactions between the biosphere (living organisms and their products) and the geosphere (atmosphere, hydrosphere, lithosphere, cryosphere). This class will explore how the chemical and physical processes of the geosphere have influenced life and evolution and how life has influenced the Earth system during the roughly 4 billion years since life first appeared. Several topics will be particularly emphasized, such as the microbial weathering of minerals, bacterial and skeletal biomineralization, the roles of autotrophic and heterotrophic metabolisms in elemental cycling, the redox history in the oceans and its relationship to evolution and the origin of life itself.

Offered: Fall

EES 222 ENERGY RESOURCES

Examines the mechanisms of oil and natural gas formation: The time, temperature and pressure conditions. Explores the geochemical and isotopic fingerprints that lead to successful exploitation of hydrocarbon resources.

Offered: Spring

EES 231 ICE SHTS,GLACIERS,CLIM CHNG

The flow of glacier ice and climate-ice interactions affect the state of the cryosphere and impact critical aspects of the Earth system. Our understanding of present and past behavior of glaciers and ice sheets is key to anticipating likely future change in global sea level. We will explore fundamental glaciological processes and work to understand the current state of mountain glaciers, ice caps, and the polar ice sheets through a mix of lectures, current and classic readings from the literature, and in-class discussions. This seminar course is appropriate for advanced undergraduates (EES 231) as well as graduate students (EES 431).

Offered: Fall

EES 232 SEMINAR IN MARINE BIOGEOCHM

The "biological pump" is the suite of biogeochemical processes that lead to carbon sequestration in the deep ocean, out of contact with the atmosphere, and is an important regulator of global climate. This seminar will review the seminal works that have sought to understand and quantify the component processes: 1) the production of organic carbon by photosynthetic plankton in the sunlit surface ocean; 2) aggregation of organic matter into sinking particles; 3) degradation of those particles over depth. We will then review evidence for the changing strength of the biological pump over Earth's history, and the attempts to predict its response to current climate warming.

Offered: Fall

EES 233 MARINE ECOSYS&CARBN CYC MOD

Over the last few decades, numerical biogeochemical models have provided new insights into the marine carbon cycle, its contribution to past climate change, and its potential responses to future climate warming. In this practical class, students will build simple biogeochemical models-ranging from "box" models of marine microbial ecosystems to three-dimensional nutrient cycling models-and design experiments to address climate change hypotheses. They will also be taught to analyze output from state-of-the-art climate models used by the Intergovernmental Panel on Climate Change. Students will not only learn invaluable programming skills, but also gain a deeper intuition of the ocean carbon cycling and its role in the global climate system.

Offered: Spring

EES 234 FUND. ATMOSPHERIC MODELING

Global atmospheric models are critical research and policy tools used to understand and predict the weather, climate change, and air pollution. This course provides an applied introduction to the physics, chemistry, and numerical methods underlying simulations of the spatial and temporal evolution of mass, energy, and momentum in planetary atmospheres. Topics include: finite-differencing the equations of atmospheric dynamics, radiative transfer models, numerical methods for solving systems of chemical ordinary differential equations, parameterization of small-scale processes, surface exchanges, inverse modeling, and model evaluation techniques. Assignments focus on the implementation and application of simple models by students; no prior experience with scientific programming will be assumed. Students will also gain experience using state-of-the-science models of atmospheric chemistry and/or climate in a final project of their choosing.

Offered: Spring

EES 235 PHYSICAL OCEANOGRAPHY

The physical circulation of the ocean controls the uptake and redistribution of heat and carbon dioxide from the atmosphere, so is a critical regulator of global climate. This course will provide a comprehensive and quantitative treatment of the physics that underlie ocean circulation. The dynamical equations that govern circulation will be introduced early in the course, then applied and simplified to understand the force balances that explain the major circulation regimes of the ocean: surface wind-driven circulation, gyres and western boundary currents, and the deep thermohaline circulation. The course will then explore how these circulation regimes also shape the biology of the ocean, and interact with atmospheric circulation and the global climate system. The course will involve solving and manipulating differential equations, and a background understanding of these methods is required. However, no previous oceanography experience will be assumed.

Offered: Fall

EES 236 PHYSICS OF CLIMATE

A broad and quantitative overview of the basic features of Earth’s climate system and the underlying physical processes. Topics include the global energy balance, atmospheric thermodynamics, radiative transfer, cloud microphysics, atmospheric dynamics, general circulation, weather systems, surface processes, ocean circulation, and climate variability and forecasting. Students will

understand what drives present-day temperature, precipitation, and wind patterns, as well as major modes of natural climate variability including the El Niño-Southern Oscillation phenomenon and Ice Age cycles, and extreme weather. We will learn how the rise of human civilization has influenced the climate system, and how this legacy and our future actions can influence climate in the coming century.

EES 247W CHEM. EVOLUTION OF THE EARTH

EES 251 INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS

This course combines lectures and hands-on weekly labs, to introduce students to Geographic Information Systems (GIS) tools and concepts. Using both commercial (ArcGIS) and open source software (QGIS, OpenLayers), we will cover: GIS data structures, map projections, collecting and creating GIS data, map making, exploring spatial patterns and data visualization. Topics will be framed using examples across disciplines (e.g. physical sciences, humanities and social sciences). At the end of the semester, students will complete a final project, in which they can apply their learning to their own major area of study. Despite the technical nature of this course, no prerequisites are required and material is appropriate for all students. Student learning will be assessed throughout the semester via class participation, a mid-term exam and the final project.

Offered: Fall

EES 252 MARINE GEOLOGY

This course will provide a comprehensive review of modern marine geology with an emphasis on the deep sea. Areas identified by the international ocean drilling community as of high research priority will be discussed, including new techniques used to study such problems. Four subject areas will be addressed: lithosphere, tectonics, ocean history and sedimentary geochemistry and physical processes.

Offered: Spring

EES 253 GEODYNAMICS

Processes that create and modify Earth and the terrestrial planets are examined using an "earth engineering" approach. Emphasis is placed on plate tectonics, with discussion of current research in mantle convection. The final third of the course focuses on active plate tectonic boundaries, and evidence for plate tectonics on Mars and Venus.

Offered: Spring

EES 255 PLANETARY SCIENCE: GEOLOGIC EVOLUTION

This course will focus on geologic and geophysical studies of planets (interiors and surfaces), and the conditions that led to the origin of life. We will start with initial conditions, defined here as the formation of Earth and the Moon-forming event, and trace development of the planet from cooling of the magma ocean onwards. We next consider how our planetary neighbors (Venus and Mars) evolved, as well as key satellites in the solar system that may harbor life, or provide insight into early conditions on Earth.

Offered: Fall

EES 255W PLANETARY SCI-GEOL EVOLUTN

EES 257 SEISMIC REFLECTION ANALYSES AND INTERPRETATION

Geothermal, groundwater and petroleum exploration and extraction rely on subsurface information. 2D and 3D seismic reflection methods are a foundation in many basin regions, as well as crustal studies. Students will review data acquisition and processing methods to understand limitations and potential artifacts in seismic reflection data sets. A major component of the class is a problem-solving project involving seismic reflection data and calibrations with well, rock outcrop and other data. Students will work independently and in teams.

Offered: Spring

EES 258 HOTSPOTS & PLATE MOTIONS SEMINAR

This course will provide a basic understanding of hotspot models, hotspot fixity and the relationships between hotspots, mantle plumes, true polar wander and plate motions. Hypothesis development and testing will be discussed, as will the basic elements of grantsmanship

Offered: Fall

EES 259 SEMINAR IN PALEOMAGNETISM

Current topics in paleomagnetism and rock magnetism are explored through literature reviews and modeling studies. Topics range from the history of plate tectonics to biogenic magnetism. An introduction to basic concepts in paleomagnetism and rock magnetism is included.

Offered: Spring

EES 261 STABLE ISOTOPE GEOCHEMISTRY

Most courses in stable isotopes highlight the analytical techniques and classic examples of applications of stable isotopes. However, the stable isotope investigations in this course will stress the fundamentals of stable isotope models, along with their underlying assumptions, guided by several classic applications. Not only will we learn the equations used in these pioneering applications, but we will set-up and derive these equations. The goal of this course is to equip students with the knowledge needed to both dissect as well as manipulate traditional stable isotope models so that they can analyze their data in the most appropriate and intelligent fashion.

Offered: Spring

EES 264 PALEOENVIRONMENTAL RECONTRUCTIONS USING LIGHT STABLE ISOTOPES

This class will focus on techniques used in environmental reconstruction to address questions related to paleoclimate, paleotemperature, paleovegetation and paleoelevation. We will examine the use of stable isotopes in paleoenvironmental reconstruction with particular emphasis on O,C, and to a lesser extent H and N isotopes. The class will start with a thorough introduction of the geological framework of the environments of interest and the processes of light isotope fractionation. This will be followed by "emphasis areas" that highlight the basics and latest developments in a variety of environmental systesm, including the oceans, rivers, ice, lakes, soils and fossils.

Offered: Spring

EES 265 PALEOCLIMATE

The Earth's climate is changing in a potentially fundamental way because of human activity. In this course we will look into Earth's climate history in order to gain a better understanding of how the climate system works and what we can expect from Earth's climate in the future. During its history, the Earth has gone through periods that were much warmer as well as periods that were much colder than today. By examining the geological record of the environmental conditions, we can gain insights into how key parameters such as greenhouse gas concentrations, insolation and postions of the continents influence the climate system.

Offered: Fall

EES 267 ISOTOPE GEOCHEMISTRY

Causes for differences in the isotopic composition of elements. Nucleosynthesis, fractionation, radioactive decay and cosmogenic production. Evolution of crust and mantle, formation of ore deposits, tracing of fluid movements, history of cosmic ray flux and other applications of stable and unstable isotopic systems to geologic problems.

Offered: Fall

EES 270 VERTEBRATE PALEONTOLOGY

This course will cover the fossil record of vertebrate animals. Topics to be covered include: The origin of vertebrates, phylogenetic relationships among modern vertebrates, introductory osteology and comparative anatomy of vertebrates, the advent of bone, the transition to land, the origin of flight in vertebrates, the warm-blooded vs cold-blooded controversy in dinosaurs, the relationship between birds and dinosaurs, hominid evolution and the origin of man. Readings from the current scientific literature will be used.

Offered: Spring

EES 270W VERTEBRATE PALEONTOLOGY-UPPER LEVEL WRITING REQUIREMENT

See EES 270 and EES Departmental Writing Plan. This section fulfills the upper level writing requirement.

Offered: Spring

EES 274 SEMINAR IN PALEOCEANOGRAPHY

This class will explore the changes in oceanic circulation through geological time and the tools available to scientists to reconstruct these changes. A general overview of the modern ocean circulation, sediment distribution, and stratigraphy will be given. Paleoceanographic proxies and analytical techniques will be discussed in great detail, with particular emphasis on proxy calibration and technique limitations. Several case studies in the evolution of ocean circulation during the Mesozoic and Cenozoic will be covered, in particular, through the reading and discussion of scientific journal articles.

Offered: Spring

EES 285 STRUCTURE AND TECTONICS OF MOUNTAIN BELTS

Orogeny and its relationship to plate tectonics. Structural style and tectonic history of mountain belts with special reference to the Appalachians and Cordilleras. Homework assignments involve drawings and interpreting cross-sections through mountain belts. Field trip to the Appalachians to look at typical structures of mountain belts.

Offered: Spring

EES 285W STRC&TECTONICS OF MONT BELTS

See EES 285 and EES department writing program. This section fulfills the upper level writing requirement.

Offered: Spring

EES 288 GEOMETRY & MECHANICS OF THRUST FAULTS

Geometry of thrust faults and thrust belts. Mechanics of thrust motion and thrust emplacement. Homework assignments and readings on current literature. Requires one major term paper that will require revision after initial review. Field trip to the Appalachians to look at typical structures of fold-thrust belts

Offered: Spring

EES 288W GEO & MECH OF THRUST FAULTS

See EES 288 and EES Departmental Writing Plan. This section fulfills the upper level writing requirement

Offered: Spring

EES 298 INTRODUCTION TO RESEARCH METHODS

A basic introduction to research in the Earth and Environmental Sciences will be provided in one of the laboratories that comprise the Departments Center for Analytical Geosciences.

Offered: Spring

EES 299 FIELD GEOLOGY

This course covers the essential geologic and geophysical approaches to field stratigraphy, mapping, and structural interpretation. The coursework is based on observations made during a substantial field excursion (usually six weeks long). Additional credit may be earned by laboratory analysis of samples collected during the field excursion.

EES 299W FIELD GEOLOGY

This course covers the essential geologic and geophysical approaches to field stratigraphy, mapping, and structural interpretation. The coursework is based on observations made during a substantial field excursion (usually six weeks long). Additional credit may be earned by laboratory analysis of samples collected during the field excursion.

EES 307 ADV SEM CLIMATE & ENV CHNG

This seminar will focus on the IPCC 2013 Working Group I report (Physical Science Basis). The IPCC stands for Intergovernmental Panel on Climate Change and is the main international organization for assessing the current state of scientific knowledge for global climate change. The IPCC reports are a result of contributions from thousands of scientists from all over the world, and are a comprehensive summary of the current state of climate change research. The course will be conducted in a reading-and-discussion format. Students will be expected to lead some of the discussions as well as actively participate in all of the discussions

Offered: Fall

EES 310 MULTIDIS.TOPICS SUSTAINABIL

The goal of this course is to acquaint students with a range of topics in the natural and social sciences that relate to environmental change. Studens will attend weekly lectures in the Sustainability Speakers Series, to be given by faculty from around the University of Rochester and neighboring institutions. In addition to attending lectures, students will read material relevant to each week's lecture topics, and will participate in discussions that will follow the lectures. Grading will be based on attendance and active participation in lectures and discussios, as well as periodic written assignments.

Offered: Spring

EES 310W SCIENCE & SUSTAINABILITY

EES 312W RESEARCH OCEAN BIOGEOCHEM I

This course will follow the scientific process conducting oceanographic research in the laboratory and at sea.This course will begin during the Spring semester and extend into summer with a reserarch expedition at sea lasting approximately 2 weeks and will conclude during the Fall semester (EES 313W). During the Spring (EES 312W) this course will meet for 2 credit hours.Students work together and with instructor to develop scientific hypotheses related to modern oceanographic biogeochemical processes. Students develop experimental plans to test hypotheses, formulate written research proposal and begin their experiments. During the summer students will enact their scientific plan at sea collecting samples and making measurements with the instructor, other scientists and graduate students. During the Fall semester (EES 313W) students reconvene for additional 2 credits to analyze data and create formal presentations of their scientific work in both written and oral formats.

Offered: Spring

EES 313 RESEARCH BIOGEOCHEM II

EES 319W ENERGY DECISIONS

EES 320 SUSTAINABLE SYSTEMS

Definitions and metrics of sustainability. Properties of systems. Relevant issues at different scales, from building to campus to community. Resource use, waste production, procurement policies, transportation, and social dimensions. This is a closure course for EVS and ESP majors

Offered: Spring

EES 320W SUSTAINABLE SYSTEMS

See EES 320 and EES Department Writing Plan. This section fulfills the upper level writing requirement.

Offered: Spring

EES 352 EES ISS IN GROUP LEADERSHIP

Designed for Workshop leaders. This course offers training in group dynamics, learning theory and science pedagogy. The larger goals for this course are to develop leadership skills, to foster ongoing communication among faculty members and Workshop leaders, and to provide an environment for focused review of Workshop modules. This section of CAS/EES 352 will train undergraduate Workshop leaders for Introduction to Geological Sciences (EES 101)

Offered: Fall

EES 390 SUPERVISED COLLEGE TEACHING

Attendance of all primary class lectures. Assist in at least one laboratory session per week and general preparation for answering student questions. Preparation and delivery of at least one laboratory lecture and summary discussion following the lab. Assistance with setup and dismantling of extensive lab displays of rocks, fossils and maps. Assistance with grading of lab quizzes and homework assignments and in proctoring exams.

Offered: Fall Spring

EES 391 INDEPENDENT STUDY

Students must have permission. Interested students should meet with their advisor regarding course content.

Offered: Fall Spring

EES 391W INDEPENDENT STUDY IN EARTH AND ENVIRONMENTAL SCIENCES-UPPER LEVEL WRITING REQUIREMENT

Permission of instructor required.See EES 391 and EES Departmental Writing Plan. This section fulfills the upper level writing requirement.

Offered: Fall Spring

EES 393 SENIOR THESIS

Students should seek out the faculty member he/she wishes to do a senior thesis with. Students should pick up independent course forms from Lattimore 312. Course is suited to each students abilities. Questions should be directed to your major advisor

Offered: Fall Spring

EES 393W SENIOR THESIS-UPPER LEVEL WRITING REQUIRMENT

See EES 393 and EES Departmental Writing Plan. This section fulfills the upper level writing requirement. Students should seek out the faculty member he/she wishes to do a senior thesis with. Students should pick up independent course forms from Lattimore 312. Course is suited to each students abilities. Questions should be directed to your major advisor.

Offered: Fall Spring

EES 394 INTERNSHIP IN EARTH AND ENVIRONMENTAL SCIENCES

Students should contact their major advisor for details. Closure course for Environmental Studies majors (ESP) and Environmental Science majors (EVS)

Offered: Fall Spring

EES 395 INDEPENDENT RESEARCH

EES 396 SPECIAL TOPICS IN EES

EES 405 SOLID EARTH GEOPHYSICS

EES 407 ADV SEM CLIMATE & ENV CHNG

This seminar will focus on the IPCC 2013 Working Group I report (Physical Science Basis). The IPCC stands for Intergovernmental Panel on Climate Change and is the main international organization for assessing the current state of scientific knowledge for global climate change. The IPCC reports are a result of contributions from thousands of scientists from all over the world, and are a comprehensive summary of the current state of climate change research. The course will be conducted in a reading-and-discussion format. Students will be expected to lead some of the discussions as well as actively participate in all of the discussions

Offered: Fall

EES 411 GEOHAZ AND THEIR MITIGATION

Earthquakes and volcanic eruptions are violent manifestations of plate tectonics, the movement of the relatively rigid plates forming Earth's outer shell. Ground movements and shaking from these events may generate tsunamis, slumping and mass wasting , and increase risk in other areas. Global and regional sealevel rise changes forces on the plates, motivating reconsideration of hazard assessments. Large volumes of aerosols and greenhouse gases are emitted during volcanic eruptions, with implications for global climate change. The first third of the class focuses on the causative mechanisms of earthquakes, volcanoes, tsunamics and volcanic eruption induced climate change. The second third outlines the consequent hazards and forecasting efforts, and feedbacks between these processes. The final third of the course examines mitigation programs, with numerous case studies.

Offered: Spring

EES 412 CLIM CHNG PERS CHEM. OCEAN.

Most introductory courses to chemical oceanography cover a variety of topics that are only related because they are under the broad umbrella of chemical oceanography. Some of these topics include the carbon dioxide and inorganic carbon chemistry, salinity, marine nutrients, dissolved gases and organic constituents. Similarly, most discussions of climate change and chemical

oceanography only touch on ocean acidification. This course seeks to provide the same broad prospective to conventional chemical oceanography courses but will interweave the unifying theme of climate change into these numerous and diverse topics.

Offered: Fall

EES 413 RESEARCH BIOGEOCHEM II

EES 414 GEOSPATIAL DATA ANALYSES

EES 415 ENV & APPLIED GEOPHYSICS

EES 416 ENVIRONMENTAL GEOCHEMISTRY

EES 418 ATMOSPHERIC GEOCHEMISTRY

The atmosphere helps to maintain habitable temperatures on our planet's surface, shields life from destructive cosmic and ultraviolet radiation and contains gases such as oxygen and carbon dioxide, which are essential for life. In this course we will use lectures, discussions and hands-on activities to work toward an understanding of several important questions. How did the Earth acquire and atmosphere? What is in the Earth's atmosphere? What are the sources and sinks of the most important gases in the atmosphere? What is the role of photochemistry in atmospheric composition? How does the atmosphere interact with the land and oceans? How has human activity affected the atmosphere?

Offered: Spring

EES 420 INTRODUCTION TO GEOBIOLOGY

Geobiology is the study of the interactions between the biosphere (living organisms and their products) and the geosphere (atmosphere, hydrosphere, lithosphere, cryosphere). This class will explore how the chemical and physical processes of the geosphere have influenced life and evolution and how life has influenced the Earth system during the roughly 4 billion years since life first appeared. Several topics will be particularly emphasized, such as the microbial weathering of minerals, bacterial and skeletal biomineralization, the roles of autotrophic and heterotrophic metabolisms in elemental cycling, the redox history in the oceans and its relationship to evolution and the origin of life itself.

Offered: Fall

EES 422 ENERGY RESOURCES

EES 431 ICE SHTS,GLACIERS,CLIM CHNG

The flow of glacier ice and climate-ice interactions affect the state of the cryosphere and impact critical aspects of the Earth system. Our understanding of present and past behavior of glaciers and ice sheets is key to anticipating likely future change in global sea level. We will explore fundamental glaciological processes and work to understand the current state of mountain glaciers, ice caps, and the polar ice sheets through a mix of lectures, current and classic readings from the literature, and in-class discussions. This seminar course is appropriate for advanced undergraduates (EES 231) as well as graduate students (EES 431).

Offered: Fall

EES 432 SEMINAR IN MARINE BIOGEOCHM

The "biological pump" is the suite of biogeochemical processes that lead to carbon sequestration in the deep ocean, out of contact with the atmosphere, and is an important regulator of global climate. This seminar will review the seminal works that have sought to understand and quantify the component processes: 1) the production of organic carbon by photosynthetic plankton in the sunlit surface ocean; 2) aggregation of organic matter into sinking particles; 3) degradation of those particles over depth. We will then review evidence for the changing strength of the biological pump over Earth's history, and the attempts to predict its response to current climate warming.

Offered: Fall

EES 433 MARINE ECOSYS&CARBN CYC MOD

Over the last few decades, numerical biogeochemical models have provided new insights into the marine carbon cycle, its contribution to past climate change, and its potential responses to future climate warming. In this practical class, students will build simple biogeochemical models-ranging from "box" models of marine microbial ecosystems to three-dimensional nutrient

cycling models-and design experiments to address climate change hypotheses. They will also be taught to analyze output from state-of-the-art climate models used by the Intergovernmental Panel on Climate Change. Students will not only learn invaluable programming skills, but also gain a deeper intuition of the ocean carbon cycling and its role in the global climate system.

Offered: Spring

EES 434 FUND. ATMOSPHERIC MODELING

Global atmospheric models are critical research and policy tools used to understand and predict the weather, climate change, and air pollution. This course provides an applied introduction to the physics, chemistry, and numerical methods underlying simulations of the spatial and temporal evolution of mass, energy, and momentum in planetary atmospheres. Topics include: finite-differencing the equations of atmospheric dynamics, radiative transfer models, numerical methods for solving systems of chemical ordinary differential equations, parameterization of small-scale processes, surface exchanges, inverse modeling, and model evaluation techniques. Assignments focus on the implementation and application of simple models by students; no prior experience with scientific programming will be assumed. Students will also gain experience using state-of-the-science models of atmospheric chemistry and/or climate in a final project of their choosing.

Offered: Spring

EES 435 PHYSICAL OCEANOGRAPHY

EES 436 PHYSICS OF CLIMATE

EES 447 CHEM. EVOLUTION OF THE EARTH

We will discuss the main geochemical characteristics of the major reservoirs that comprise the solid Earth, the processes by which they formed and evolved, and the analytical tools used for their study. We will cover topics of high-temperature geochemistry, extinct radionuclides, and radiogenic and stable isotope geochemistry. Emphasis will be placed on the formation of Earth's continental crust. This course is cross-listed with EES 447.

Offered: Spring

EES 452 MARINE GEOLOGY

EES 453 GEODYNAMICS

EES 455 PLANETARY SCI-GEOL EVOLUTN

EES 457 SEISMIC REFLECTION ANALYSES AND INTERPRETATION

Geothermal, groundwater and petroleum exploration and extraction rely on subsurface information. 2D and 3D seismic reflection methods are a foundation in many basin regions, as well as crustal studies. Students will review data acquisition and processing methods to understand limitations and potential artifacts in seismic reflection data sets. A major component of the class is a problem-solving project involving seismic reflection data and calibrations with well, rock outcrop and other data. Students will work independently and in teams.

Offered: Spring

EES 458 HOTSPOTS & PLATE MOTIONS

This course will provide a basic understanding of hotspot models, hotspot fixity and the relationships between hotspots, mantle plumes, true polar wander and plate motions. Hypothesis development and testing will be discussed, as will the basic elements of grantsmantship.

Offered: Fall

EES 459 SEMINAR IN PALEOMAGNETISM

Current topics in paleomagnetism and rock magnetism are explored through literature reviews and modeling studies. Topics range from the history of plate tectonics to biogenic magnetism. An introduction to basic concepts in paleomagnetism and rock magnetism is included.

Offered: Spring

EES 460 SEMINAR-EARLY EARTH GEOCHEM

This course is about the geochemical and geophysical processes of the earliest Earth. It will explore topics such as the formation of the Moon, the early accretionary history, the origin(s) of life, the nature of the earliest igneous and sedimentary crust, the composition of the atmosphere, and the timing of core formation. Students will learn how to effectively leverage extremely limited geochemical and geophysical constraints in order to support useful conclusions. Before enrolling in this course, students should be comfortable with the basic principles of geochemistry

Offered: Spring

EES 461 STABLE ISOTOPE GEOCHEMISTRY

Most courses in stable isotopes highlight the analytical techniques and classic examples of applications of stable isotopes. However, the stable isotope investigations in this course will stress the fundamentals of stable isotope models, along with their underlying assumptions, guided by several classic applications. Not only will we learn the equations used in these pioneering applications, but we will set-up and derive these equations. The goal of this course is to equip students with the knowledge needed to both dissect as well as manipulate traditional stable isotope models so that they can analyze their data in the most appropriate and intelligent fashion.

Offered: Spring

EES 463 INTRO THERMODYNAMICS AND KINETICS

The goal of this course is to provide an overview of the equilibrium and kinetic processes that govern the elemental and isotopic composition of rocks and minerals. The course will be divided into two broadly equal components. In the first part, the fundamentals of thermodynamics, phase diagrams, and selected examples in earth systems will be explored. The second half of the course is devoted to understanding the non-equilibrium case for earth materials; diffusion in minerals and melts is emphasized. Students are expected to have a general knowledge of mineralogy, petrology, and very basic thermodynamics prior to taking the course.

Offered: Fall

EES 464 PALEOENV.RECONSTRUCTIONS USING LIGHT STABLE ISOTOPES

This class will focus on techniques used in environmental reconstruction to address questions related to paleoclimate, paleotemperature, paleovegetation and paleoelevation. We will examine the use of stable isotopes in paleoenvironmental reconstructions with particular emphasis on O,C, and to a lesser extent H and N isotopes. The class will start with a thorough introduction of the geological framework of the environments of interest and the processes of light isotope fractionation. This will be followed by "emphasis areas" that highlight the basics and latest developments in a variety of environmental systems, including the oceans, rivers, ice, lakes, soils and fossils.

Offered: Spring

EES 465 PALEOCLIMATE

The Earth's climate is changing in a potentially fundamental way because of human activity. In this course we will look into Earth's climate history in order to gain a better understanding of how the climate system works and what we can expect from Earth's climate in the future. During its history, the Earth has gone through periods that were much warmer as well as periods that were much colder than today. By examining the geological record of the environmental conditions, we can gain insights into how key parameters such as greenhouse gas concentrations, insolation and postions of the continents influence the climate system.

Offered: Fall

EES 467 ISOTOPE GEOCHEMISTRY

Causes for differences in the isotopic composition of elements. Nucleosynthesis, fractionation, radioactive decay and cosmogenic production. Evolution of crust and mantle, formation of ore deposits, tracing of fluid movements, history of cosmic ray flux and other applications of stable and unstable isotopic systems to geologic problems.

Offered: Fall

EES 468 PRIN.EXPERIMENTAL GEOCHEM

EES 469 SEM EARTHQU&VOLC DEFORM

EES 470 VERTEBRATE PALEONTOLOGY

EES 474 SEMINAR IN PALEOCEANOGRAPHY

EES 480 MAT PROP OF DEFORMED ROCKS

Elastic, linear and nonlinear viscons and perfectly plastic behavior of rocks. Effect of dislocation and diffusional creep, grain boundary sliding, microfracturing and recrystallization on rocks. Study of microstructures to determine macroscoptic flow laws.

Offered: Fall

EES 481 MICROTECTONICS

Study of microstructures, fabric and textures in rocks to define deformation patterns, deformation mechanics and flow laws.

Offered: Fall

EES 485 STRC&TECTONICS OF MONT BELTS

EES 486 SEM IN SEDIMENTOLOGY&TECTNCS

EES 488 GEOMETRY AND MECHANICS OF THRUST FAULTS

Geometry of thrust faults and thrust belts. Mechanics of thrust motion and thrust emplacement. Homework assignments and readings on current literature.Field trip to the Appalachians to look at typical structures of fold-thrust belts.

Offered: Spring

EES 490 SUPERVISED COLLEGE TEACHING

Offered: Fall Spring

EES 491 MASTER'S READINGS IN GEOLOGY

Offered: Fall Spring

EES 492 GRADUATE FIELD SEMINAR

EES 493 MASTER'S ESSAY

Offered: Fall Spring

EES 495 MASTER'S RESEARCH IN GEOLOGY

Offered: Fall Spring

EES 499 RESEARCH FRONTIERS IN EARTH SCIENCES

Offered: Fall Spring

EES 591 PHD READINGS IN GEOLOGY

Offered: Fall Spring

EES 594 PHD RESEARCH INTERNSHIP

EES 595 PHD RESEARCH IN GEOLOGY

Offered: Fall Spring

EES 595A PHD RESEARCH IN ABSENTIA

EES 595B PHD RSRCH IN ABSENTIA ABROAD

EES 895 CONT OF MASTER'S ENROLLMENT

EES 897 MASTERS DISSERTATION

EES 899 MASTER'S DISSERTATION
Offered: Fall Spring

EES 985 LEAVE OF ABSENCE

EES 986V FULL TIME VISITING STUDENT

EES 990 SUMMER IN RESIDENCE

EES 995 CONT OF DOCTORAL ENROLLMENT

EES 997 DOCTORAL DISSERTATION

EES 999 DOCTORAL DISSERTATION
Offered: Fall Spring

EES 999A DOCT DISSERTATN IN ABSENTIA

EHU 240 ANTHROPOCENE AND APOCALYPSE

EHU 245 LIT & ENVIRON IMAGINATION

ENG 100 GREAT BOOKS
Provides a close reading of a selection of literary masterpieces. Readings vary from year to year.
Offered: Fall Spring

ENG 101 MAXIMUM ENGLISH
A gateway course introducing students to basic concepts and skills, and to the particular features of the English department and its faculty.
Offered: Fall Spring

ENG 102 MUSIC, POETRY & SONG

ENG 112 CLASSICAL & SCRIPTURAL BACKGROUNDS
The great tradition, from Homer, Greek drama, Plato, and Virgil to the Bible and Dante. Same as REL and CLA 140.
Offered: Fall

ENG 113 BRITISH LITERATURE I
An introductory study of early British literature, its forms and themes, and the development of our literary tradition.
Offered: Fall

ENG 114 BRITISH LITERATURE II
Major themes and central ideas in British literature of the eighteenth, nineteenth, and twentieth centuries.
Offered: Fall Spring

ENG 115 SURVEY OF AMERICAN LITERATURE
Significant achievements by American writers of poetry, fiction, and other prose in the nineteenth and twentieth centuries.

Offered: Fall Spring

ENG 116 INTRODUCTION TO AFRICAN-AMERICAN LITERATURE

A survey of African-American literature, fiction, and nonfiction, beginning with the late eighteenth century.

Offered: Fall Spring

ENG 117 INTRODUCTION TO THE ART OF FILM

This course will present the concepts of film form, film aesthetics, and film style, while remaining attentive to the various ways in which cinema also involves an interaction with audiences and larger social structures. Same as AH 112 and FMS 132.

Offered: Fall Spring

ENG 118 INTRODUCTION TO MEDIA STUDIES

The cultural, aeshetic, and economic history of visual media. Same as FMS 131.

Offered: Fall Spring

ENG 121 CREATIVE WRITING: FICTION

Short story workshop.

Offered: Fall Spring

ENG 122 CREATIVE WRITING: POETRY

Poetry writing workshop.

Offered: Fall Spring Summer

ENG 123 PLAYWRITING: Fall 2017

Not unlike the essay or laboratory experiment, a play is a tool that allows the curious mind to develop, test, and rethink ideas, and to grapple with significant issues (both public and private) in live, three-dimensional space. Playwriting introduces the beginning writer interested in exploring the discipline of live performance (and the seasoned writer wishing to develop his/her craft) to the exciting world of writing for the stage. Each semester, students in this course get the chance to study with a different, award-winning guest playwright. In so doing, they get to experience instruction and guidance under the tutelage of some of the most exciting voices working professionally in the American theatre.to the theater.

Offered: Fall Spring

ENG 125 SPECULATIVE FICTION

A creative writing course dedicated to commercial and/or literary fiction with an emphasis on science fiction, fantasy, and magic realism.

Offered: Fall Spring

ENG 126 WRITING WOMEN'S LIVES

The writing and study of such nonfictional forms as memoir and autobiographical narrative.

Offered: Fall Spring

ENG 131 REPORTING & WRITING THE NEWS

A laboratory course (requiring typing) on the fundamentals of gathering, assessing, and writing news.

Offered: Fall

ENG 132 FEATURE WRITING

A workshop administered by the Department of English and the Gannett Newspapers.

Offered: Fall Spring

ENG 133 EDITING

Practicum seminar on editing a newspaper, with special attention to the Campus Times.

Offered: Fall Spring

ENG 134 PUBLIC SPEAKING

Practice in effective small-group communication and the presentation of expository and persuasive speeches.

Offered: Fall Spring

ENG 135 INTRODUCTION TO DEBATE

Critical thinking and reasoned decision making through argumentation.

Offered: Fall Spring

ENG 138 JOURNALISM CASE STUDIES

Working in groups, students investigate a specific topic with the goal of producing a comprehensive, readable and visually compelling news report for a variety of media. Involves research, interviews of experts and ordinary people with personal knowledge of the topic. Past projects have examined hunger in Rochester, children's health issues and the impact of the recession upon resident.

Offered: Fall Spring

ENG 161 INTRODUCTORY VIDEO & SOUND

The basic aesthetic and technical elements of video production. Emphasis on the creative use and understanding of the video medium while learning to use the video camera, video editing processes, and the fundamental procedures of planning video projects. Video techniques will be studied through screenings, group discussions, readings, practice sessions and presentations of original video projects.

Offered: Fall Spring

ENG 170 TECHNICAL THEATER

Introductory course to the theories, methods, and practice of set construction, power tools, rigging, stage lighting, drafting, sound, and scene painting. Lab participation in theater program productions required.

Offered: Fall

ENG 171 TECHNICAL THEATER

Introductory course to the theories, methods, and practice of set construction, power tools, rigging, stage lighting, drafting, sound, and scene painting. Lab participation in theater program productions required.

Offered: Spring

ENG 172 INTRODUCTION TO STAGE LIGHTING & SOUND

This course introduces students to the mechanics and aesthetics of lighting and sound design for the theatre. Students gain a thorough understanding of lighting and sound equipment, procedures, safety, and how these fascinating elements contribute to creating theatrical storytelling. Students work actively with these technologies on productions, getting valuable practical experience.

Offered: Fall

ENG 173 INTRO TO STAGE LIGHTNG&SOUND

ENG 174 ACTING TECHNIQUES: Fall Lab

This course serves as an introduction to, and exploration of the acting process for the stage, developing the fundamental skills students need to approach a text from a performer’s standpoint and to create character. The course takes as its basic premise that the actor’s instrument is the self—with all of the physical, psychological, intellectual, social, moral and spiritual implications of that term. Students will be encouraged in both the expression and the expansion of the self and of the imagination. The class will also help the student develop an overall appreciation for the role of the theatre in today’s society.

Offered: Fall

ENG 175 ACTING TECHNIQUES II

Training in the techniques by which individual actors set forth the characters recorded in dramatic texts.

Offered: Spring

ENG 176 VOICE & MOVEMENT FOR ACTOR

This course aims to help students explore the full range and expressiveness of their speaking voice; to help them understand and master the relationship between text, movement, and vocal expression; to encourage and give them the skills to expand their movement ranges while learning a descriptive system for understanding movement and meaning. The course allows students to analyze their own movement profiles as actors, to create characters through clear movement and vocal choices, and to embody these characters fully.

ENG 177 VOICE & MOVEMENT FOR THE ACTOR

This is an introductory course on voice and movement for the actor.

ENG 178 DESIGN FOR STAGE: Costumes

Design for Stage: Costumes addresses both conceptual and practical aspects of the creation of costumes for live performance. Students will acquire an understanding of the history and theory of costume design, with emphasis placed on the creative association of costumes and image; the process of developing a well-crafted, professional design from script to technical rehearsal to performance; and hands-on experience with tools and techniques used to build a costume design and execute it on stage.

ENG 179 DESIGN FOR THE STAGE:LIGHTNG

ENG 180 DIRECTING & DIRECTING LAB

Introductory directing techniques for aspiring directors. Exploring the nature of the theatrical events, investigate the nature of conceptualization, visualization, text analysis, action and design as they pertain to the director's craft. In conjunction with a weekly scheduled lab.

Offered: Fall

ENG 200 HISTORY OF THE ENGLISH LANGUAGE

The development of the English language from the Anglo Saxon period on up, focusing on texts from representative periods.

Offered: Fall Spring

ENG 201 OLD ENGLISH LANGUAGE & LITERATURE

Literature written in England before the Norman Conquest. Latin works are read in translation; vernacular works, in the original.

Offered: Fall Spring

ENG 202 MIDDLE ENGLISH LITERATURE

Poetry, prose, and drama of the thirteenth, fourteenth, and fifteenth centuries, exclusive of Chaucer. Readings in Middle English.

Offered: Fall Spring

ENG 203 MEDIEVAL DRAMA

English drama from its beginnings until 1580, including material from the mystery cycles, moralities, and early Tudor drama.

Offered: Fall Spring

ENG 204 CHAUCER

The principal works of Chaucer, in their historical and intellectual context. Readings in Middle English. Same as REL 208.

Offered: Fall Spring

ENG 205 MYSTICAL LITERATURE

ENG 206 STUDIES IN MEDIEVAL LITERATURE
Varying topics relating to the literature and culture of the Middle Ages.
Offered: Fall Spring

ENG 206A REWRITING OLD ENG PARCHMENT

ENG 207 ENGLISH RENAISSANCE LITERATURE
Sixteenth-century literature from Sir Thomas More to Spenser, with some attention to the continental background.
Offered: Fall Spring

ENG 208 ELIZABETH AND JACOBEAN DRAMA
English Renaissance drama through 1642, exclusive of Shakespeare.
Offered: Fall Spring

ENG 209 CINEMATIC SHAKESPEARES

ENG 210 SHAKESPEARE
Readings of a selection of Shakespeare's plays.
Offered: Fall Spring

ENG 211 MILTON
The works of Milton in their historical and intellectual context.
Offered: Fall Spring

ENG 213 STUDIES IN RENAISSANCE LITERATURE
Varying topics relating to the literature and culture of the Renaissance and Early Modern periods.
Offered: Fall Spring

ENG 217 STUDIES IN EIGHTEENTH-CENTURY LITERATURE
Varying topics relating to the literature and culture of England in the period from roughly 1660 to 1800.
Offered: Fall Spring

ENG 220 ROMANTIC LITERATURE
Major writers, other than novelists, of the early nineteenth century, with particular emphasis on poets from Blake through Keats.
Offered: Fall Spring Summer

ENG 221 VICTORIAN LITERATURE
The major intellectual, cultural, and artistic developments of the Victorian period (1830–1900), in prose, drama, verse, and related arts.
Offered: Fall Spring Summer

ENG 222 NINETEENTH-CENTURY BRITISH NOVEL
Emphasizing such novelists as Dickens, Thackeray, Eliot, and Hardy.
Offered: Fall Spring

ENG 223 STUDIES IN NINETEENTH-CENTURY LITERATURE
Varying topics relating to the literature and culture of England in the nineteenth century.
Offered: Fall Spring

ENG 225 AMERICAN RENAISSANCE

From 1830 to 1865, including Emerson and the transcendental movement, abolitionist writing and slave narrative, representative fiction, and poetry by Poe, Whitman, Melville, Stowe, and others.

Offered: Fall Spring

ENG 226 AMERICAN REALISTS

From 1886 to 1912, including poetry by Dickinson and Frost; realist and naturalist fiction by Twain, Wharton, James, Dreiser; representative nonfiction and philosophy.

Offered: Fall Spring

ENG 227 AMERICAN MODERNS

From 1913 to 1941, including Eliot, Stevens, Cather, Faulkner, Hemingway, Fitzgerald, O'Neill, W. C. Williams, and others.

Offered: Fall Spring

ENG 228 AFRICAN-AMERICAN DRAMA

Study of dramatic works by African-American playwrights during the twentieth and twenty-first century.

Offered: Fall Spring

ENG 230 STUDIES IN AMERICAN LITERATURE

Varying topics relating to the literature and culture of the Americas.

Offered: Fall Spring

ENG 231 TWENTIETH-CENTURY BRITISH NOVEL

The novel from 1900 to the present, emphasizing such novelists as Conrad, Joyce, Woolf, and Lawrence.

Offered: Fall Spring

ENG 232 POE & HOFFMANN: UNCANNY STORIES

A study of English, Irish, and American literature of the early and mid twentieth century, with a focus on the exploratory work of writers such as W. B. Yeats, James Joyce, Ezra Pound, T. S. Eliot, and Virginia Woolf.

Offered: Fall Spring

ENG 233 MODERN POETRY

An introduction to representative twentieth-century poetry.

Offered: Fall Spring

ENG 234 MODERN FICTION, INT'L PERSP.

Studies in the principle writers of novels and short fiction in the early and mid twentieth century.

Offered: Fall Spring Summer

ENG 235 MODERN DRAMA

Great modern dramas from Ibsen to Ionesco as reflectors of the main currents in modern thought and feeling.

Offered: Fall Spring

ENG 236 CONTEMPORARY POETRY

Readings in American, British, and Anglophone fiction from second half of the 20th-Century and the beginning of the 21st-Century.

Offered: Fall Spring Summer

ENG 238 STUDIES IN MODERN AND CONTEMPORARY LITERATURE

Varying topics relating to the literature – prose, poetry, and drama – of the later twentieth and twenty-first centuries.

Offered: Fall Spring Summer

ENG 240 LITERARY CRITICISM AND THEORY

Study of the methods and conceptual backgrounds of the theoretical study of literature and literary analysis.

Offered: Fall Spring

ENG 241 LYRIC POETRY

A study of the ways of reading shorter poems in English.

Offered: Fall Spring

ENG 242 TOPICS IN LITERATURE

Readings vary according to subject.

Offered: Fall Spring

ENG 243 STUDIES IN A MAJOR AUTHOR

Intensive study of the writings of a single author or small group of authors from British or American literary traditions.

Offered: Fall Spring

ENG 244 STUDIES IN A LITERARY TRADITION

A study of a body of works of literature seen through their particular links to a tradition or historical genre.

Offered: Fall Spring

ENG 245 STUDIES IN LITERARY MODE

Readings vary according to subject.

Offered: Fall Spring

ENG 247 SCIENCE FICTION

Examines a range of science fiction texts and issues, including works by Mary Shelley, H. G. Wells, Isaac Asimov, Robert Heinlein, Samuel R. Delany, and more.

Offered: Fall Spring

ENG 248 STUDY IN WOMEN'S LITERATURE

Writings by women – both literary and non-literary – from a variety of periods and cultures.

Offered: Fall Spring

ENG 249 GENDER,WRITING & REPRESENTATION

The interrelation among the gendered dimensions of writing and representation.

Offered: Fall Spring

ENG 250 LITERATURE AND ETHNICITY

A review of the interrelated concepts.

Offered: Fall Spring

ENG 251 STUDIES IN POPULAR LITERATURE

Students will study and discuss popular literature.

Offered: Fall Spring Summer

ENG 252 THEATER IN ENGLAND

This 4-credit intersession course will be conducted in London, UK, from December–January TBA. Attending two plays per day with a seminar discussion each morning, students in this course are exposed to a full range of theatre experiences, from intimate theatre-in-the-round to monumental productions at the National Theatre, and from West End spectaculars to cutting-edge

works mounted in post-industrial spaces. See the link on the English Department homepage to find the course's website, which describes the program in greater detail and contains syllabi from the past 25+ years. Need-based financial aid is available.

Offered: Fall

ENG 253 THE LITERATURE OF THE BIBLE

Narrative and poetic art of selected Biblical texts.

Offered: Fall Spring

ENG 254 ARTHURIAN TRADITIONS

The origins and later developments of the chivalric romance tradition centering on the legends of King Arthur and his knights.

Offered: Fall Spring Summer

ENG 255 FILM HISTORY: EARLY CINEMA

Intro to history, technology, cultural significance of motion pictures of the "pre-sound" era, screenings of 35mm prints accompanied by live music in the Dryden Theatre. Special attention to major pioneers, Dickson, Porter, Lumière, Méliès, and Griffith, including a variety of internationally produced films selected from the world-famous archival film collection of the George Eastman House. Same as FMS 247

Offered: Fall

ENG 256 FILM HISTORY: 1929-1959

A transnational survey of film history, examining the technical and formal aspects of the medium in its production and exhibition. Same as FMS 248

Offered: Fall Spring

ENG 257 FILM HISTORY: 1959-PRESENT

This course will explore the developments in world cinema—industrial, technological, social, and political—in the second half of the sound period (1959 to the present). Same as FMS 249.

Offered: Fall Spring

ENG 258 FILM ANALYSIS

Not offered anymore.

ENG 259 POPULAR FILM GENRES

An intensive study of selected types of popular films in their larger cultural context. Same as FMS 251.

Offered: Fall Spring Summer

ENG 260 STUDIES IN FILM HISTORY

Special topics in the history of film, including specific periods, movements, or comparative topics.

Offered: Fall Spring

ENG 261 FILM THEORY

An introduction to the history, the theory, and especially the practice of criticism. Same as FMS 255.

Offered: Fall Spring

ENG 263 MEDIA STUDIES

This course addresses the history and theory of a range of communications media and visual technologies in science, industry, and popular culture.

Offered: Fall Spring

ENG 264 STUDIES IN A DIRECTOR

Intensive study of the body of work of a single film director.

Offered: Fall Spring Summer

ENG 265 ISSUES IN FILM

The course takes up particular concepts, ideas, and ideology in film, often spanning periods, nations, and genres.

Offered: Fall Spring

ENG 267 TOPICS IN MEDIA STUDIES

Same as FMS 259.

Offered: Fall Spring

ENG 268 DIGITAL IMAGING

Instruction in curatorial and preservation standards for motion picture, video, digital and audio materials with a contextual focus on museum, library and archive institutions.

Offered: Fall Spring Summer

ENG 269 MUSEUM PRACTICE

Restricted to Selznick Students

Offered: Fall Spring Summer

ENG 270 ADVANCED TECHNICAL THEATER

Investigate technical theater beyond the realms of ENG 170/171 (Technical Theater). Focus on work related to the scenic design and technical production of the semester's Theatre Program productions. Working in small seminars and one-on-one tutorials. Instructor will assist students in learning more in the chosen technical areas and about problem-solving scenic and technical questions raised by the set/s being built.

Offered: Fall

ENG 271 ADVANCED TECHNICAL THEATER

Investigate technical theater beyond the realms of Eng 170/171 (Technical Theater). Focus on work related to the scenic design and technical production of the semester's Theatre Program productions. Working in small seminars and one-on-one tutorials. Instructor will assist students in learning more in the chosen technical areas and about problem-solving scenic and technical questions raised by the set/s being built.

Offered: Spring

ENG 273 MVMT MASTERCLASS FOR ACTOR

ENG 275 ADVANCED CREATIVE WRITING: FICTION

Seminar in fiction writing. Emphasis on individual development of style.

Offered: Fall Spring

ENG 276 Advanced Creative Writing: Poetry

Advanced creative writing workshop in poetry. Work by various contemporary poets will provide the framework for explorations into technique and poetic narrative.

Offered: Fall Spring

ENG 277 SCREENWRITING

The primary text for this course is students' own scripts in progress. The course also examines various professional scripts, both film and television.

Offered: Fall Spring

ENG 278 ADVANCED PLAYWRITING

ENG 280 POWER CLASHING: ADV DEBATE

ENG 281 ADVANCED FEATURE WRITING

Literary Journalism

Offered: Fall

ENG 282 EDITING AND DESKTOP PUBLISHING

Students study works as selected by instructor and write their own pieces in this genre.

Offered: Fall Spring

ENG 283 MEDIA ABC

Provides a historical and critical introduction to the idea of medium and media, including books, paint, electronic files, music, photography, etc.

Offered: Fall Spring

ENG 284 ORALITY, LANGUAGE & LITERACY

An inquiry into how literacy capability at different historical moments has affected the uses of texts, performances, and speech genres. Attention is given to literary, sacred, and secular texts.

Offered: Fall Spring

ENG 285 ADVANCED WRITING & PEER TUTORING

This course prepares selected undergraduates for work as writing advisors.

Offered: Fall Spring

ENG 286 PRESIDENTIAL RHETORIC

Critical examination of the public rhetoric and political themes of the modern American presidency.

Offered: Fall Spring

ENG 287 STUDIES IN TRANSLATION

A study of the theoretical backgrounds, practical challenges, and creative activity of literary translation.

Offered: Fall Spring

ENG 288 WRITING IN A DIGITAL WORLD

ENG 289 TRANSLATION:INTERP & ADAPT

ENG 290 PLAYS IN PRODUCTION: CURRENT SEMESTER

This course allows students to comprehensively and actively understand the entire theatrical production process from the page to the stage. Students will study and gain insight into an actual text being produced in Todd Theatre; work with the artist directing the production to understand and explore the creative and artistic process; and gain first-hand, practical experience working on the production in one of many labs associated with the production process (scenery, lighting, costume, sound, etc.). A unique class melding the theoretical and practical.

Offered: Fall

ENG 291 PLAYS IN PRODUCTION: CURRENT SEMESTER

Set building, prop and costume development, and publicity for current production.

Offered: Spring

ENG 292 PLAYS IN PERFORMANCE: CHANGES/SEMESTER

For actors and stage managers working on the current production

Offered: Fall

ENG 293 PLAYS IN PERFORMANCE: CURRENT SEMESTER

For actors and stage managers working on the current production.

Offered: Spring

ENG 294 PLAYS IN PERFORMANCE: CHANGES/SEMESTER

For actors and stage managers working on the current production.

Offered: Fall

ENG 295 PLAYS IN PERFORMANCE: CHANGES/SEMESTER

For actors and stage managers working on the current production.

Offered: Spring

ENG 296 STAGE MANAGEMENT: FALL TERM

Students in Stage Management (fall/spring) will get an in-depth introduction to and immersion in stage managing a theatrical production. In addition, cover all areas of management skills, safety procedures, technical knowledge, and paperwork, students will be expected to serve as an assistant stage manager or production stage manager on one (or both) Theater Program productions in their registered semester.

Offered: Fall

ENG 297 STAGE MANAGEMENT: SPRING SEMESTER

In Stage Management I and/or II (fall/spring) will get an in-depth introduction to and immersion in stage managing a theatrical production. In addition,cover all areas of management skills, safety procedures, technical knowledge, and paperwork, students will be expected to serve as an assistant stage manager or production stage manager on one (or both) Theater Program productions in their registered semester

Offered: Spring

ENG 298 PERFORMANCE LAB: TBA

1 CREDIT PASS/FALL - PERFORMANCE LAB FOR STUDENTS IN ENG 292.

Offered: Fall

ENG 299 PERFORMANCE LAB: TBA

1 CREDIT PASS/FALL - PERFORMANCE LAB FOR STUDENTS IN ENG 294.

Offered: Spring

ENG 360 SPECIAL PROJECTS: THEATER

Can be offered either semester

Offered: Fall Spring

ENG 375 SEMINAR IN WRITING: FICTION

Read short stories by contemporary writers along with fiction by the students in the workshop, and discuss ways writers can sharpen the conversation between text and reader. Also consider editing and reviewing techniques. Students expected to write and revise at least three original stories or three sections of a longer work of fiction.

Offered: Fall Spring

ENG 376 SEMINAR IN WRITING: POETRY

An advanced workshop in poetry. Students' poems are discussed weekly. Creative writing assignments are combined with brief essay responses to a selection of contemporary poetry books.

Offered: Fall Spring

ENG 380 ADVANCED SEMINARS

Advanced seminars focus on a particular body of works (literary or cinematic), a special research topic, or a particular critical or theoretical issue. One or more extended critical essays will be required. Open to junior and senior English majors. Others may be admitted by permission of instructor.

Offered: Fall Spring

ENG 385 HUMANITIES RESEARCH LAB

Offered: Fall Spring

ENG 390 SUPERVISED TEACHING

Offered: Fall Spring

ENG 391 INDEPENDENT STUDY

A course of reading, research, and writing on topics not covered by the existing curriculum, developed between the student and a faculty advisor.

Offered: Fall Spring

ENG 391W INDEPENDENT STUDY

A course of reading, research, and writing on topics not covered by the existing curriculum, developed between the student and a faculty advisor.

Offered: Fall Spring

ENG 392 PRACTICUM

Offered: Fall Spring

ENG 393 SENIOR PROJECT

Offered: Fall Spring

ENG 394 INTERNSHIPS IN ENGLISH

Offered: Fall Spring

ENG 395 HONORS SEMINAR

ENG 396 HONORS SEMINAR

Special seminar for senior majors accepted into the English Honors Program. Topics vary each year.

Offered: Fall

ENG 398 THEATER INTERNSHIP: PUBLIC RELATIONS & MARKETING

Qualified undergraduates may enroll in advanced seminars at the 400 level by permission of the Director of Undergraduate Studies and the Director of Graduate Studies in English and the instructor.Limited to students completing the English Honors Program.

Offered: Fall Spring

ENG 400 HISTORY OF THE ENGLISH LANG

The development of the English language from the Anglo Saxon period on up, focusing on texts from representative periods.

Offered: Fall Spring

ENG 400M HISTORY OF ENGLISH LANGUAGE

ENG 401 OLD ENGLISH LANGUAGE & LITERATURE

Literature written in England before the Norman Conquest. Latin works are read in translation; vernacular works, in the original.

Offered: Fall Spring

ENG 401M OLD ENGLISH LITERATURE

ENG 402 MIDDLE ENGLISH LITERATURE
Poetry, prose, and drama of the thirteenth, fourteenth, and fifteenth centuries, exclusive of Chaucer. Readings in Middle English.
Offered: Fall Spring

ENG 402M BEOWULF'S STEPCHILDREN

ENG 403 MEDIEVAL DRAMA
English drama from its beginnings until 1580, including material from the mystery cycles, moralities, and early Tudor drama.
Offered: Fall Spring

ENG 403M MEDIEVAL DRAMA

ENG 404 CHAUCER
The principal works of Chaucer, in their historical and intellectual context. Readings in Middle English.
Offered: Fall Spring

ENG 404M CHAUCER

ENG 405 MYSTICAL LITERATURE

ENG 405M MYSTICAL LITERATURE

ENG 406 STUDIES IN MEDIEVAL LITERATURE
Varying topics relating to the literature and culture of the Middle Ages.
Offered: Fall Spring

ENG 406M MEDIEVAL IDEA OF THE BOOK

ENG 407 ENGLISH RENAISSANCE LITERATURE
Sixteenth-century literature from Sir Thomas More to Spenser, with some attention to the continental background.
Offered: Fall Spring

ENG 407M MEDIEVAL OTHERWORLDS

ENG 408 RENAISSANCE DRAMA
English Renaissance drama through 1642, exclusive of Shakespeare.
Offered: Fall Spring

ENG 408M WHAT IS TRAGEDY?

ENG 410 SHAKESPEARE
Readings of a selection of Shakespeare's plays.
Offered: Fall Spring

ENG 410M SHAKESPEARE

ENG 411M DANCE, ART, AND FILM

ENG 413 STUDIES IN RENAISSANCE LITERATURE

Varying topics relating to the literature and culture of the Renaissance and Early Modern periods.

Offered: Fall Spring

ENG 413M METAPHYSICAL POETRY

ENG 419M TOURIST JAPAN

ENG 420 ROMANTIC LITERATURE

Major writers, other than novelists, of the early nineteenth century, with particular emphasis on poets from Blake through Keats.

Offered: Fall Spring

ENG 420M ROMANTIC LITERATURE

ENG 421 VICTORIAN LITERATURE

The major intellectual, cultural, and artistic developments of the Victorian period, in prose, drama, verse, and related arts.

Offered: Fall Spring

ENG 421M VICTORIAN LITERATURE

ENG 422 NINETEENTH-CENTURY BRITISH NOVEL

Emphasizing such novelists as Dickens, Thackeray, Eliot, and Hardy.

Offered: Fall Spring

ENG 422M 19TH-CENTURY BRITISH NOVEL

ENG 423 STUDIES IN NINETEENTH-CENTURY LITERATURE

Varying topics relating to the literature and culture of England in the nineteenth century.

Offered: Fall Spring

ENG 423M MURDER, SEX, AND DRUGS

ENG 425 AMERICAN RENAISSANCE

From 1830 to 1865, including Emerson and the transcendental movement, abolitionist writing and slave narrative, representative fiction, and poetry by Poe, Whitman, Melville, Stowe, and others.

Offered: Fall Spring

ENG 425M AMERICAN RENAISSANCE

ENG 426 AMERICAN REALISTS

From 1886 to 1912, including poetry by Dickinson and Frost; realist and naturalist fiction by Twain, Wharton, James, Dreiser; representative nonfiction and philosophy.

Offered: Fall Spring

ENG 426M AMERICAN REALISTS

ENG 427 AMERICAN MODERNS

From 1913 to 1941, including Eliot, Stevens, Cather, Faulkner, Hemingway, Fitzgerald, O'Neill, W. C. Williams, and others.

Offered: Fall Spring

ENG 427M AMERICAN MODERNS

ENG 428 AFRICAN-AMERICAN DRAMA
Study of dramatic works by African-American playwrights during the twentieth and twenty-first century.
Offered: Fall Spring

ENG 428M HARLEM RENAISSANCE

ENG 430 STUDIES IN AMERICAN LITERATURE
Varying topics relating to the literature and culture of the Americas.
Offered: Fall Spring

ENG 430M AFRICAN AMERICAN AUTOBIOGRAP

ENG 431 TWENTIETH-CENTURY BRITISH NOVEL
The novel from 1900 to the present, emphasizing such novelists as Conrad, Joyce, Woolf, and Lawrence.
Offered: Fall Spring

ENG 431M 20TH CENTURY BRITISH NOVEL

ENG 433 MODERN POETRY
An introduction to representative twentieth-century poetry.
Offered: Fall Spring

ENG 433M MODERN POETRY

ENG 435 MODERN DRAMA
Great modern dramas from Ibsen to Ionesco as reflectors of the main currents in modern thought and feeling.
Offered: Fall Spring

ENG 435M 20TH CENTURY DRAMA

ENG 436 CONTEMPORARY FICTION
Examines novels and short fiction by contemporary English and American writers.
Offered: Fall Spring Summer

ENG 436M CONTEMPORARY POETRY

ENG 438 STUDIES IN MODERN & CONTEMPORARY LITERATURE
Varying topics relating to the literature – prose, poetry, and drama – of the later twentieth and twenty-first centuries.
Offered: Fall Spring Summer

ENG 438M MAKING MODERNISM NEW AGAIN

ENG 440 LITERARY CRITICISM AND THEORY
Study of the methods and conceptual backgrounds of the theoretical study of literature and literary analysis.
Offered: Fall Spring

ENG 440M PERFORMANCE STUDIES

ENG 442 TOPICS IN LITERATURE
Readings vary according to subject.

Offered: Fall Spring

ENG 442M BLACK INTELLECTUALS

ENG 443 STUDIES IN A MAJOR AUTHOR

Intensive study of the writings of a single author or small group of authors from British or American literary traditions.

Offered: Fall Spring

ENG 443M MAJOR AUTHOR:CHARLES DICKENS

ENG 444 STUDIES IN A LITERARY TRADITION

A study of a body of works of literature seen through their particular links to a tradition or historical genre.

Offered: Fall Spring

ENG 444M POETRY AND MEMORY

ENG 445 STUDIES IN LITERARY MODE

Readings vary according to subject.

Offered: Fall Spring

ENG 445M SATIRE

ENG 447 SCIENCE FICTION

Examines a range of science fiction texts and issues, including works by Mary Shelley, H. G. Wells, Isaac Asimov, Robert Heinlein, Samuel R. Delany, and more.

Offered: Fall Spring

ENG 447M HOLOCAUST: AFFECT & ABSENCE

ENG 449 GENDER, WRITING, AND REPRESENTATION

Offered: Fall Spring Summer

ENG 449M GENDER AND LANGUAGE

ENG 451 STUDIES IN POPULAR LITERATURE

Offered: Fall Spring

ENG 451M ROBIN HOOD IN POP CULTURE

ENG 452 THEATER IN ENGLAND

This four-credit intersession course is conducted in London, UK, from late December through early January. We will see, discuss, and write on 16 to 18 plays. The itinerary this year will include world premieres of plays by Alan Bennett, John Logan, Lee Hall, and David Hare; Shakespeare's Twelfth Night, Tennessee Williams's Cat on a Hot Tin Roof, John Guarre's Six Degrees of Separation, Tom Stoppard and Andre Previn's Every Good Boy Deserves a Favour, several musicals, and splendid extravaganzas from the National Theatre such as War Horse and Nation, to name a few. The fee for the course is $2550.

Offered: Fall Spring

ENG 452M THEATER IN ENGLAND

ENG 453 THE LITERATURE OF THE BIBLE

Narrative and poetic art of selected biblical texts.

Offered: Fall Spring

ENG 453M THE BIBLE IN ENGLISH

ENG 454 ARTHURIAN LITERATURE

The origins and later developments of the chivalric romance tradition centering on the legends of King Arthur and his knights.

Offered: Fall Spring

ENG 454M ARTHURIAN TRADITIONS

ENG 455 INTRODUCTION TO FILM HISTORY: SILENT CINEMA

Intro to history, technology, cultural significance of motion pictures of the "pre-sound" era, screenings of 35mm prints accompanied by live music in the Dryden Theatre. Special attention to major pioneers, Dickson, Porter, Lumière, Méliès, and Griffith, including a variety of internationally produced films selected from the world-famous archival film collection of the George Eastman House. Discussions of origins, development of the motion picture industry and its leading genres up to the general introduction of movies with pre-recorded music, sound and dialog, beginning in 1927. Broad issues relating to the transformation of American and world popular entertainment forms and traditions, in relation to the established performing arts of the period. Relevant connections to preserving the world's film heritage will be highlighted and the film restoration facilities of the Motion Picture Department will be visited.

Offered: Fall Spring

ENG 455M FILM HISTORY: EARLY CINEMA

ENG 456 FILM HISTORY: 1929-1959

A transnational survey of film history, examining the technical and formal aspects of the medium in its production and exhibition. As we explore the development of cinema, we will address aesthetic and technological issues. i.e. how did the development of sound technology affect film form? How did it affect Cross-cultural cinematic exchange? What is the significance of genre across various film traditions? What did the studio system contribute to Hollywood's success in the international market? How did immigrant and exiled film personnel shape the industries they joined? Weekly screenings and film journals required.

Offered: Fall Spring

ENG 456M FILM HISTORY: 1929-1959

ENG 457 FILM HISTORY: 1959-1989

This course will explore the developments in world cinema—industrial, technological, social, and political—in the second half of the sound period (1959 to the present).

Offered: Fall Spring

ENG 457M FILM HISTORY: 1959-1989

ENG 458 FILM ANALYSIS

not taught anymore.

ENG 458M MIYAZAKI & GHIBLI

ENG 459 POPULAR FILM GENRES

An intensive study of selected types of popular films in their larger cultural context. Same as FMS 251.

Offered: Fall Spring

ENG 460 STUDIES IN FILM HISTORY

This course may approach a national cinema, a director, a movement, or a genre with an emphasis on period or historical context.

Offered: Fall Spring

ENG 460M FILM HISTORY: 1989-PRESENT

ENG 461 FILM THEORY

An introduction to the history, the theory, and especially the practice of criticism. Same as FMS 255.

Offered: Fall Spring

ENG 461M CLASSICAL FILM THEORY

ENG 462 STUDIES IN A INTERNATIONAL CINEMA

Films from a particular international cinema—British, Japanese, German, French, Italian, and others from various periods. Same as FMS 256.

Offered: Fall Spring

ENG 462M MODERN ITALY THROUGH FILM

ENG 463 MEDIA STUDIES

Addresses the history and theory of a range of communications media and visual technologies in science, industry, and popular culture.

Offered: Fall Spring

ENG 463M POETICS OF TELEVISION

ENG 464 FILMS OF THE 1930S

A course in the works and career of an outstanding and identifiable film director: Hitchcock, Warhol, Huston, Buñuel, Renoir, etc.

Offered: Fall Spring Summer

ENG 464M FILMS OF

ENG 465 ISSUES IN FILM

The course takes up particular concepts, ideas, and ideology in film, often spanning periods, nations, and genres. Same as FMS 252.

Offered: Fall Spring

ENG 465M RACE & GENDER IN POP FILM

ENG 467 TOPICS IN MEDIA STUDIES

Same as FMS 259.

Offered: Fall Spring

ENG 467M THE MATTER WITH MEN FILM/SOC

ENG 468 DIGITAL IMAGING

Same as FMS 254.

Offered: Fall Spring

ENG 468M FILM: THE MATTER WITH MEN

ENG 469 MUSEUM PRACTICE

Restricted to Selznick Students
Offered: Fall Spring

ENG 469M ADDITIONAL MUSEUM PRACTICE

ENG 470 CURATORIAL THEORY & PRACTICE
Restricted to Selznick Students
Offered: Fall Spring

ENG 471 FILM CONSERVATION & RESTORATION
Restricted to Selznick Students
Offered: Fall Spring

ENG 472 MOVING IMAGE ARCHIVE MANAGEMENT
Restricted to Selznick Students
Offered: Fall Spring

ENG 473 LABORATORY WORK
Restricted to Selznick Students
Offered: Fall Spring

ENG 474 PERSONAL PROJECT
Restricted to Selznick Students
Offered: Fall Spring

ENG 474M ADDITIONAL PERSONAL PROJECT

ENG 475 ADV CREATIVE WRITING:FICTION
Seminar in fiction writing. Emphasis on individual development of style.
Offered: Fall Spring

ENG 475M ADV CREATIVE WRITING:FICTION

ENG 476 SEMINAR IN WRITING: POETRY
After reading a wide variety of poems in different forms, students will write metered poems, rhymed poems, free-verse poems, and several more elaborately patterned poems (sestinas, villanelles, pantoums). They will also be asked to revise these poems substantially. The goal of the course is simply to become a better writer by recognizing that the beauty and power of all linguistic utterance is driven by its form.
Offered: Fall Spring

ENG 476M SEMINAR IN WRITING POETRY

ENG 477 SCREENWRITING
The primary text for this course is students' own scripts in progress. The course also examines various professional scripts, both film and television.
Offered: Fall Spring

ENG 477M SCREENWRITING

ENG 480 ADVANCED SEMINAR

Advanced seminars focus on a particular body of works (literary or cinematic), a special research topic, or a particular critical or theoretical issue. One or more extended critical essays will be required. Open to junior and senior English majors. Others may be admitted by permission of instructor.

Offered: Fall Spring

ENG 480M SLAVERY&20THC AFRCN-AM NOVEL

ENG 483 MEDIA ABC

Provides a historical and critical introduction to the idea of medium and media, including books, paint, electronic files, music, photography, etc.

Offered: Fall Spring

ENG 483M MEDIA ABC

ENG 484 ORALITY, LANGUAGE&LITERACY

An inquiry into how literacy capability at different historical moments has affected the uses of texts, performances, and speech genres. Attention is given to literary, sacred, and secular texts.

Offered: Fall Spring

ENG 484M ORALITY, LANGUAGE & LITERACY

ENG 485 HUMANITIES RESEARCH LAB

Offered: Fall Spring

ENG 487 STUDIES IN TRANSLATION

A study of the theoretical backgrounds, practical challenges, and creative activity of literary translation.

Offered: Fall Spring

ENG 487M STUDIES IN TRANSLATION

ENG 488 LANG IN SCIENCE & RELIGION

ENG 488M LANG IN SCIENCE & RELIGION

ENG 491 MASTER'S READING COURSE

Credit to be arranged.

Offered: Fall Spring

ENG 492M THE MODERN CITY

ENG 495 MASTER'S RESEARCH

Offered: Fall Spring

ENG 500 GRADUATE COLLOQUIUM

Introduction to Graduate Studies in English is a semester-long introduction to doctoral study in English.

Offered: Fall Spring

ENG 504 CHAUCER: MAJOR WORKS

The principal works of Chaucer, in their historical and intellectual context. Readings in Middle English.

Offered: Fall Spring

ENG 508 MEDIEVAL LITERARY MODES

Readings vary according to subject.

Offered: Fall Spring

ENG 509 "HISTORIES" OF LIT CRITCISM

Expore the full range of Shakespeare's theater, including history plays, comedy, tragedy, and romance.

Offered: Fall Spring Summer

ENG 510 SHAKESPEARE

Expore the full range of Shakespeare's theater, including history plays, comedy, tragedy, and romance.

Offered: Fall Spring Summer

ENG 516 ELIZABETHAN AND JACOBEAN DRAMA

This course may focus on drama written by Shakespeare's contemporaries. Become familiar with descriptions of 16th-& early 17th-C theatrical spaces. Sort through the plays' depiction of the proper relations between ruler and subject, husband and wife, parents and children, and European and non- European characters. Applicable English Cluster: Plays, Playwrights, and Theater.

Offered: Fall Spring

ENG 519M MATERIAL CULTURE

ENG 524 RESTORATION & EIGHTEENTH-CENTURY LITERATURE

Offered: Fall Spring

ENG 525 THE EARLY ENGLISH NOVEL

ENG 529 ENGLISH ROMANTICISM

Major writers, other than novelists, of the early nineteenth century, with particular emphasis on poets from Blake through Keats.

Offered: Fall Spring

ENG 539 STUDIES IN NINETEENTH-CENTURY AMERICAN LIT I

Offered: Fall Spring Summer

ENG 541 RHETORIC OF THE FRAME

Offered: Fall Spring

ENG 543 STUDIES IN AMERICAN CULTURE

Offered: Fall Spring

ENG 549 WWI & THE CULTURE OF MEMORY

The novel from 1900 to the present, emphasizing such novelists as Conrad, Joyce, Woolf, and Lawrence.

Offered: Fall Spring Summer

ENG 550 MODERN POETRY

Examine the rise of the poetic series (as opposed to the poetic sequence) in modernist writing.

Offered: Fall Spring

ENG 551 CRITICISM

This seminar studies the developments in literary theory over the past eighty years. Early in the twentieth century criticism and theory followed the success of science, trying to bring order and method to the subject.

Offered: Fall Spring

ENG 554 CULTURAL STUDIES

In recent decades, many scholars of literature and other humanists have refocused their attention on a set of connections once consigned to the past: the historical and theoretical links between religion, science, and literary representation. This course introduces several important contexts and critical conversations stemming from these intersections. Areas of focus will include the history of ideas, political theology, post-colonial theory, and science and literature. We will read a number of primary sources, including key texts by Hobbes, Leibniz, Locke, and Spinoza, as well as important recent work by Talal Asad, Saba Mahmood, Charles Taylor, and others.

Offered: Fall Spring

ENG 555 ISSSUES IN FILM HISTORY & THEORY

Offered: Fall Spring

ENG 557 SPECIAL LITERARY PROBLEMS

Offered: Fall Spring

ENG 561 LANG&LIT UNIVERSTY 1155-PRES

ENG 571 WRITING PEDAGOGY

Issues on rhetoric, composition, literacy, and cultural studies that focus on the teaching of writing. We examine a significant range of theory and research on teaching and academic writing.

Offered: Fall Spring

ENG 572 PRACTICUM IN TEACHING OF WRITING

Credit—two hours

Offered: Fall Spring

ENG 580 PEDAGOGICAL TRAINING

ENG 583M VISUAL & CULTURAL STUDIES

ENG 585 HUMANITIES RESEARCH LAB

Offered: Fall Spring

ENG 591 PHD READINGS

Credit to be arranged.

Offered: Fall Spring

ENG 592 HISTORICAL&CONCEPTUAL FIELDS

Offered: Fall Spring

ENG 595 PHD RESEARCH

Credit to be arranged The following courses may be taken for four hours of graduate credit.

Offered: Fall Spring

ENG 595A PHD RESEARCH IN ABSENTIA

Offered: Fall Spring

ENG 895 CONT OF MASTER'S ENROLLMENT

Offered: Fall Spring

ENG 897 MASTERS DISSERTATION

Offered: Fall Spring

ENG 899 MASTER'S DISSERTATION
Offered: Fall Spring

ENG 899A MASTERS DISSERTATON ABSENTIA
Offered: Fall Spring

ENG 985 LEAVE OF ABSENCE
Offered: Fall Spring Summer Winter

ENG 986V FULL TIME VISITING STUDENT

ENG 995 CONT OF DOCTORAL ENROLLMENT
Offered: Fall Spring

ENG 997 DOCTORAL DISSERTATION
Offered: Fall Spring

ENG 997A DOCT DISSERTATN IN ABSENTIA
Offered: Fall Spring

ENG 999 DOCTORAL DISSERTATION
Offered: Fall Spring

ENG 999A DOCT DISSERTATN IN ABSENTIA
Offered: Fall Spring

ENG 999B PHD IN-ABSENTIA ABROAD

ERG 413 ENGINEERING OF SOFT MATTER

ERG 441 ADV TRANSPORT PHENOMENON
This course will acquaint the student with important topics in advanced transport phenomena (momentum, heat and mass transport). Topics include laminar and turbulent flow, thermal conductivity and the energy equation, molecular mass transport and diffusion with heterogeneous and homogeneous chemical reactions. Focus will be to develop physical understanding of principles discussed and with emphasis on chemical engineering applications. In addition to the text, the student will be exposed to classic and current literature in the field.
Offered: Fall

ERG 454 INTERFACIAL ENGINEERING

ERG 458 ELECTROCHEM&ENGG & FUEL CELL
The course will concentrate on presenting the principles of electrochemistry and electrochemical engineering, and the design considerations for the development of fuel cells capable of satisfying the projected performance of an electric car. The course is expected to prepare you for the challenges of energy conversion and storage and the environment in the 21st century. Course is offered October 24 - December 12.
Offered: Fall

ERG 460 SOLAR CELLS
This course will introduce students to the basics of photovoltaic devices: physics of semiconductors; pn junctions; Schottky barriers; processes governing carrier generation, transport and recombination; analysis of solar cell efficiency; crystalline and

thin-film solar cells, tandem structures, dye-sensitized and organic solar cells. Students will learn about current photovoltaic technologies including manufacturing processes, and also the economics of solar cells as an alternative energy source. Critical analysis of recent advances and key publications will be a part of the course work.

Offered: Fall

ERG 464 BIOFUELS

This course will provide the student with a grounding in the fundamental principles of biofuels, including their sources, properties, and the biological and chemical processes by which they are made.

Offered: Fall

ERG 465 SUSTAINABLE CHEM PROCESSES

Elements of sustainable chemical processes. Generation of transportation fuels and chemical platforms from renewable resources-- e.g. lignocellulose, algae, and carbon dioxide-- for production of bulk and fine chemicals traditionally derived from petroleum. Use of environmentally benign solvents-- e.g. ionic liquids, supercritical carbon dioxide, fluorous solvents, and liquid polymer-- for reactions and separations. Chemical reactions activated by unconventional means-- e.g. ball milling, microwave heating, and ultrasound irradiation-- requiring minimum energy, catalyst, and solvent. Chemical and enzymatic catalysis enhanced by process integration to minimize the need for product separation and purification. “Click reactions” applied to the synthesis of peptides and advanced materials. Microreactor technologies to maximize heat & mass transfer, reaction rate, product yield and selectivity, in addition to facilitating process control, optimization, and scale-up.

Offered: Spring

ERG 469 BIOTECHNOLOGY&BIOENGINEERING

ERG 472 ENERGY SYSTEM ECON&MODELING

ERG 482 PROC MICROELEC DEVICE

ERG 485 THERMODYNAMICS & STAT MECH

ERG 488 INTRO TO ENERGY SYSTEMS

ERG 491 MASTER'S READING IN ERG

ERG 494 MASTERS INTERNSHIP

ERG 495 MASTER'S RESEARCH

ERG 496 RESEARCH SEMINAR

ERG 497 TEACHING ALT ENERGY

ERG 890 SUMMER IN RESIDENCE - MA

ERG 895 CONT OF MASTER'S ENROLLMENT

ERG 897 MASTER'S DISSERTATION

ERG 897A MASTERS DISSERTATON ABSENTIA

ERG 899 MASTER'S DISSERTATION

ERG 899A MSTRS DISSERTATN IN ABSENTIA

FMS 102 FEMINIST BODY IN PERFORMANCE

FMS 104 FILM'S ODYSSY:TRK CIN/SP EFF

FMS 105 WOMEN'S PERSONAL CINEMA

FMS 124 INTRO TO MUSIC DOCUMENTARIES

FMS 131 INTRODUCTION TO MEDIA STUDIES

This course provides a broad overview and introduction to media. We will cover histories of different types of media (internet, radio, audio recordings, television, cable, film, journalism, magazines, advertising, public relations, etc.) as well as various theories and approaches to studying media. No prior knowledge is necessary, but a real interest and willingness to explore a variety of media will come in handy. Occasional outside screenings will be required (but if you cannot attend the scheduled screenings, you may watch the films on your own time through the Multimedia Center reserves.) Students will be evaluated based on assigned writing, classroom discussion leading, participation, short quizzes, midterm exam and final exam.

Offered: Fall

FMS 132 INTRODUCTION TO THE ART OF FILM

As an introduction to the art of film, this course will present the concepts of film form, film aesthetics, and film style, while remaining attentive to the various ways in which cinema also involves an interaction with audiences and larger social structures.

Offered: Spring

FMS 140 ESSNTL DIGITAL MEDIA TOOLKIT

FMS 161 INTRODUCTION TO VIDEO ART

This course introduces the basic aesthetic and technical elements of video production. Emphasis is on the creative use and understanding of the video medium while learning to use the video camera, video editing processes and the fundamental procedures of planning video projects. Strategies for the use of video as an art-making tool will be explored. Works by artists and directors critically exploring media of film and video will be viewed and discussed. Video techniques will be studied through screenings, group discussions, readings, practice sessions and presentations of original video projects made during the course. Officially declared FMS, SA, and DMS majors are given priority registration; followed by officially declared FMS, SA, and DMS minors. Studio arts supplies fee: $50. For questions on registration for this course, contact Juliet Carello at juliet.carello@rochester.edu

Offered: Fall Spring

FMS 202 LANGUAGE & ADVERTISING

The course examines the use advertisers make of language in selling their products and how it affects our perceptions of the product and ourselves. The emphasis in the course is on learning about the structure of language and how we can use it as a guide to observing and understanding the effectiveness of commercial messages.

Offered: Spring

FMS 203 BROADCASTNG IN THE DIGITAL AGE

A descriptive and critical analysis of the nature of electronic mass media, broadcast practices and impact. Historical development of mass media institutions and role of media in society, including evaluation of news, government regulation, economics, emerging technologies, and audience dynamics, as well as decision-making and organizational aspects of the broadcast industry. Designed to provide a broad, rigorous orientation for understanding basic elements of media production as well as skills training in reporting, writing, editing, delivery and production of broadcast media. Enrollment limited to 20.

Offered: Spring

FMS 205 NEW MEDIA & EMERG PRACT1

For the purpose of this course, the computer and software will be a medium of artistic production. Students will use writings, and readings on contemporary art practice and theory to create work within the framework of contemporary digital art. Software,

namely Adobe PhotoShop and Macromedia Dreamweaver, will be the medium for materializing conceptual ideas. Prior experience with the software used in this course is not required. Studio Art supplies fee: $50. Enrollment limited at 10.

Offered: Fall Spring

FMS 206 CLIMATE FUTURES

FMS 207 MIYAZAKI & GHIBLI

FMS 208 JAPANESE POPULAR CULTURE

FMS 209 HOLOCAUST AFFECT ABSENCE

How does one represent the unrepresentable? This is the key question we will explore as we look at films and literature about the Holocaust. As we look at fictional films, novels, documentaries and memoirs, we will discuss topics including memory, trauma, truth and representation. This course offers a look at the ways in which artists and their audiences negotiate the themes of loss, horror and redemption within the context of the Holocaust and its aftermath.

Offered: Spring

FMS 210 ANIMATION AND THE ARTS

FMS 211 ADVANCED DIGITAL ART

FMS 213 RACE & GENDER IN POPULAR FILM

This course explores Hollywood's fascination with race and gender as social issues and as spectacles. In particular, we will focus on the ways that social difference have become the sites of conflicted narrative and visual interactions in our films. To examine competing representations of racial difference and sexual difference in US culture, we analyze popular films from the 1950’s to the present.

Offered: Fall

FMS 219 BAD DEVICES

FMS 222 ART & THE CITY: NY IN THE 70S

The recession & fiscal crisis of the 1970s was paradoxically a highly productive period of artistic experimentation in New York City. In the wake of the transforming art movements of the 1960s--Pop, Minimalism, and Conceptual Art--the 1970s saw the invention of new and hybrid media: video art, performance art, & site-specific installation works. By the end of the decade a new group of artists that came to be known as the Pictures Generation began showing in alternative spaces such as Artists Space. In this seminar we will study how the de-industrialization of New York contributed to new kinds of art making & examine how art works take the city as their subject. Among the artists we will consider are Bernd & Hilla Becher, Gordon Matta-Clark, Joan Jonas, Peter Hujar, Danny Lyon, Cindy Sherman, and Thomas Struth. Avant-garde film also took the city as its subject; the course will include the work such film & video-makers as Dara Birnbaum, Ernie Gehr, Peter Hutton, Babette Mangotle, and Charles Simonds.

Offered: Fall

FMS 223 DANCE ON CAMERA:CAM ON DANCE

This course introduces students to the study of media from an anthropological perspective. We will examine constructions of media as objects of social scientific analysis, as both textual artifacts and social practice. Questions that guide the course are, What is "the media"? How have recent transformations in global capital and communications technology altered how we consume, analyze and produce media? What can the study of media tell us about social life & the imagination? We will seek to understand the medias role in producing national and transnational public spheres, focusing on a range of media formations, from multinational corporate structures to indigenous & diasporic productions, to question media's power to shape subjectivities & conceptions of cultural difference. We will examine print journalism, television, film, radio, advertising, and visual art in both local & global contexts. Students will be encouraged to incorporate media analysis and media production in their own ethnographic projects.

Offered: Fall

FMS 225 MEDIA ABC

Media ABC is an introduction to the very idea of medium and media-as in "the medium of print." The goal is to come to a basic understanding of that concept. The perspective of the course is historical and critical. The key assumption is that media-the human voice, film, electronic files--shape their "content"--words, pictures, sound- and their authors and their audiences. There have always been media because life cannot be lived without them.

Offered: Spring

FMS 226 DOCUMENTARY FILM AND MEDIA: THEORY AND PRACTICE

This course examines major historical movements and styles in the documentary film tradition, and explores the migration of documentary across a range of (multi-)media platforms. We will study the expository documentary, ethnographic film, the direct cinema and cinéma vérité movements, documentary's intersections with avant-garde film, mock documentary and hoax films, personal and autobiographical film and video, animated documentary, and digital interactive documentary media. We will engage with these film and media forms through a variety of approaches: critical and theoretical readings and class discussion, written responses and longer analytical and research-based papers, and hands-on media work including video essays and found-footage editing projects. No previous experience with nonlinear editing systems such as Final Cut Pro is required, but students must be willing to critically and creatively explore nonfiction media as both scholars and makers.

Offered: Spring

FMS 227 POETICS OF TELEVISION

FMS 229 THE MATTER WITH MEN FILM/SOC

FMS 231 CHANGING GENRES OF EROTICA

FMS 232 POPULAR FILM GENRE: THE HORROR FILM

This course examines major critical issues surrounding the horror genre, through close study of Classical Hollywood, post-Classical, and international horror films, and readings in critical theory. Issues to be explored include boundary transgression and bodily abjection in the construction of the horror monster; gender, pregnancy, and the monstrous feminine; social Otherness (race, class, sexuality) as monstrosity; the figure of the serial killer and the shift from classic to modern horror; the grotesque and the blending of comedy and horror in the zombie film; international horror (especially Japan) and cross-cultural influences with Hollywood. As a research seminar, the course will involve the development of a substantial research project.

Offered: Fall

FMS 242 ALL IS FAIR IN LOVE AND WAR

This course contests its title. There is language and literature/film that records how language has failed as a means of (human) species adaptation toward conflict resolution in domestic and international contexts. This course, following the observations of Virginia Woolf in Three Guineas (1939), tries to document the language/literary connections between domestic violence and war making. In domestic situations, violence is protected by traditions of privacy and male governance of households; in public situations, there has been an inertia throughout recorded history in enacting the ideal announced in Isaiah: "[nations] shall not learn war any more". In our own society genres of popular and elite culture teach the necessity and glory of war through literature, film, toys, sports, and ideals of heroic behavior. Our normal ways of speaking still presuppose violence and war as a "last resort" in solving domestic and international antagonisms.

Offered: Spring

FMS 243 FILM AS OBJECT

Film Studies involves the critical analysis of the pictorial and narrative qualities of motion pictures, film theory, and film history, understanding film as both industry and creative art. This course unconventionally focuses on the tangible object at the origin of the onscreen image, and what we can learn about the social, cultural and historical value of motion pictures and national film cinemas through an understanding of Film as an organic element with a finite life cycle. Focus is on the photographical element, but includes a consideration of alternative capture media. Enrollment limited to 15.

Offered: Spring

FMS 245 AMERICAN MOVIES: GOLDEN AGE

FMS 246 BRIGHT LIGHTS, BIG CITY

In the early twentieth century, our conceptualization of the city had a significant impact on how we understood our interactions with others and the notion of the individual. In this will look at a wide variety of texts including newspaper articles, essays, films and fiction to explore the following questions. What is the relationship between technology and man? How does the individual navigate the space of the city? What role do class and gender play in our ability to move through the city? What is the relationship between modernity and urban life?

Offered: Spring

FMS 247 FILM HISTORY: EARLY CINEMA

Introduction to the history, technology, and cultural significance of motion pictures of the "pre-sound" era, with screenings of 35mm prints accompanied by live music in the Dryden Theatre. Special attention will be paid to the major pioneers, Dickson, Porter, Lumière, Méliès, and Griffith, but the course will include a variety of internationally produced films selected from the world-famous archival film collection of the GEH. Discussion sessions will cover the origins and development of the motion picture industry and its leading genres up to the general introduction of movies with pre-recorded music, sound and dialog, beginning in 1927. Broad issues relating to the transformation of American and world popular entertainment forms and traditions, in relation to the established performing arts of the period, will also be covered. Relevant connections to preserving the world's film heritage will be highlighted and the film restoration facilities of the Motion Picture Department will be visited this course.

Offered: Fall

FMS 248 FILM HISTORY: 1929-1959

This course provides a transnational survey of film history, examining the technical and formal aspects of the medium in its production and exhibition. As we explore the development of cinema during this period, we will address a number of aesthetic and technological issues. For example, how did the development of sound technology affect film form? How did it affect cross-cultural cinematic exchange? What is the significance of genre across various film traditions? What did the studio system contribute to Hollywood's success in the international market? How did immigrant and exiled film personnel shape the industries they joined? Weekly screenings and film journals required.

Offered: Fall

FMS 249 FILM HISTORY: 1959-PRESENT

This course will explore developments in world cinema—industrial, technological, social, and political—from 1959 to the present. It will consider aesthetic and technical issues, including questions like the following. What brought about the collapse of the Hollywood studio system? What’s new about the French New Wave? What do we mean by “Third Cinema”? How do different national cinemas influence each other? Weekly screenings and film journals required.

Offered: Fall

FMS 250 FILM HISTORY: 1989-PRESENT

FMS 251 FILMS OF THE 1930S

FMS 252 MEDIA ART ENVIRONMENT ACTION

FMS 253 GLOBAL VIDEO GAMES:CULTURES

FMS 256A ADVANCED DIGITAL ART

FMS 256B ADVANCED DIGITAL ART

FMS 256C ADVANCED DIGITAL ART

FMS 257 ADVANCED VIDEO ART

In this advanced production course, video and sound will be considered as independent art forms as well as part of video installations. Students will produce experimental videos and sound pieces. They will also explore the use of these mediums when

combined with two- and three-dimensional materials in real time. This course will cover both analogue and digital formats. Must have taken FMS 161/SA 161/ENG 161. Permission of instructor required. Studio arts supplies fee: $50.

Offered: Fall

FMS 257A ADVANCED VIDEO

FMS 257B ADVANCED VIDEO

FMS 257C ADVANCED VIDEO

FMS 259 THE DETECTIVE FILM

FMS 260 SCREENWRITING

An introduction to the three-act film structure. Students will read and view numerous screenplays and films, and develop their own film treatment into a full-length script.

Offered: Spring

FMS 261 FILM ADAPTATIONS & LIT TEXTS

FMS 262 NEW AUSTRIAN CINEMA

FMS 263 AVATAR: DIGITAL ARTISTRY IN VIRTUAL WORLDS AND THEIR DEVELOPMENT

This course will examine the uses of Second Life and other virtual worlds to produce not just 3D artistic environments, but "machinima," film-clips using "avatars" as actors, with an emphasis on narrative and ultimately educational uses. Special attention given to the perceived pathos of the mechanical, the notions of the puppet and the android.

Offered: Fall

FMS 263A TOPICS IN ITALIAN CULTURE

FMS 266 FLORENCE THE WONDEROUS

FMS 267 TOPICS IN ITALIAN CULTURE

FMS 268 POST-1989 POLISH CULTURE

The course will deal with a selection of films directed (and some also written) by the highly regarded contemporary director, Martin Scorcese. We will proceed in roughly chronological order, examining the growth and development of his career, his characteristic manner and matter, his successes and failures. We will also discuss the concept of the auteur as it applies to his work.

Offered: Fall

FMS 269 THE FILMS OF BRIAN DE PALMA

We will study the career of a highly regarded contemporary American director whose work, most of it of the more or less violent genres of horror, crime, and suspense, displays both a highly self conscious experimentalism and an acknowledgement of film tradition. In the course we will attempt to discover those particular attributes that define a De Palma film. We will also discuss those directors who most influence his work, especially Alfred Hitchcock, and touch on some of the individual motion pictures that lie behind certain De Palma films. In this course we will screen a large selection of the director's films, in roughly chronological order, concentrating especially on the best known and most successful titles, including Carrie, Dressed to Kill, Blow Out, and Body Double. The syllabus will include some of the literary texts that provide the sources for some of his films and at least one critical study of the De Palma canon. Assignments will include critical papers and a final examination.

Offered: Spring

FMS 272 MEDIA SPACE

FMS 274 LIT, MEDIA & MODERN ENVIRON

FMS 274B ANTHROPOCENE AND APOCALYPSE

FMS 275 FOOD, MEDIA, LITERATURE

FMS 276 LATIN-AMERICAN FILM

FMS 277 TOURIST JAPAN

In seminar format, students will read and discuss books and articles on women's history in Japan, China, and Korea. Differences in their responses to the modern world and their role in the history of the modern East Asian society will be emphasized. The study of women in modern East Asian history will be used as a vehicle to improve student's critical reading, speaking, and writing skills.

Offered: Spring

FMS 284 HISTORY OF FRENCH CINEMA

The dawn of the age of movies coincided with the Russian Revolution, and film was Lenin’s favorite art form. The course surveys Russian film from the beginnings to the present. The course investigates the major role that cinema played in shaping the national and political identity of the Soviet Union, and looks at what was artistically interesting and popular about these films, some of whose directors, like Eisenstein and Tarkovsky, are among the world’s most influential filmmakers.

FMS 285 TOPICS IN ITALIAN CULTURE/ITALIAN CINEMA

This course provides a compendium of Italian cinema from the post-war period to the 1960s through the work of a few directors who have made Italian cinematography famous all over the world and have often been a source of inspiration for important foreign directors. By looking at these artists as primary contributors to the narrative and interpretation of the years following Mussolini's dictatorship and the tragedy of World War II, the course aims at an understanding of the historical and social development of Italian society of the time and its quest for a definition of national identity. Themes addressed include: 1. From the Resistance to the new neorealist cinema. Definition of Neorealism; 2. Reconstruction and the restoration of the cinema system in the 1950s. Auteur cinema; 3. The modernity of the 1960's. New cinema and commedia all'italiana. Filmmakers include: De Sica, Rossellini, Visconti, Fellini, Germi and others.

Offered: Spring

FMS 286 FRENCH IN FILM

FMS 289 INTRO TO EAST EURO FILM

FMS 290 INTRO TO EAST GERMAN CINEMA

This course uses the films of the Third Reich to examine the parameters of Nazi culture. It examines such diverse aspects as the Leader Principle, gender roles, racial hygiene, anti-Semitism, mass culture, propaganda, and visions of history. Films are analyzed both in terms of their aesthetics as well as the social and historical context of their production.

FMS 293 FRENCH CINEMA: THE NEW WAVE

A study of French film from its beginnings through the New Wave.

FMS 295 MOTHERS, COMRADES & WHORES

In this course we will explore representations of women in post-World War II German cinema. Moving chronologically from the building of two German states to the post-unification period, we will consider the constantly shifting meaning of 'woman' in popular and avant-garde films, narrative and documentary films, films by both male and female directors. We will consider equally films from East and West Germany. How does 'woman' function as a narrative device in these films? Do women behind the camera change 'woman's' meaning within the film? Can 'woman' consistently be reduced to one narrative trope (mother, comrade or whore), or does she resist? All readings and discussions are in English; all films are subtitled.

Offered: Spring

FMS 296 CHINESE FILM

FMS 298 TOURIST JAPAN

"The Samurai" will examine the emergence of the warrior class in the 10th and 11th centuries, its evolution from rustic warriors to medieval military power holders, and military bureaucratic administrators. The class will include readings on the history, literature, philosophy, and religion of the samurai class. Films treating the popular imagery of the samurai will be projected in class. Various representations of the samurai will be compared and contrasted.

Offered: Fall

FMS 299 ATOMIC CREATURES: GODZILLA

A study of the phenomenon that generated and helped define the Japanese kaiju eiga (monster film) genre: the Godzilla series that began with the original film by Inoshiro Honda (Gojira, 1954), and its better- known US remake (Godzilla, King of the Monsters, 1956). The larger context of the course is a critical investigation of the science-fiction/horror/creature feature film generated in the late 1940's by the dawn of the nuclear age. The course will begin with a sampling of seminal non-Japanese titles that created a paradigm for the Godzilla film, and will address the historical and social contexts for the series erratic trajectory since 1954. Students are responsible for assigned readings and are required to attend screenings.

Offered: Fall

FMS 302 TOPICS IN CONTEMPORARY ART &CRITICISM: WARHOL

As the most famous artist of the second half of the twentieth century, Warhol has been the subject of a growing literature that expands upon art history and criticism to encompass queer theory and cultural studies. But the most important shift in Warhol's reception has been brought about by the restoration and return to circulation of his prolific film output from the years 1963-69. The films will be the main focus of this course, but we will also consider Warhol's early work as a fashion illustrator, his entrepreneurship at the Factory, his voracious collecting, and of course, his paintings. We will read Warhol's writings, including A a Novel, The Philosophy of Andy Warhol, and Popism; and we will examine new approaches to Warhol and ask how they illuminate not only the art but also such issues as consumption, publicity, visibility, celebrity, sexuality, identity, and selfhood.

Offered: Fall

FMS 308 DANCE, ART, AND FILM

This course explores relations among dance, art, and film at significant moments in the 20th and 21st centuries. We will study instances in which the forms are particularly closely aligned, including the famous productions by artists such as Gontcharova, Picasso, and Matisse, for Diaghilev's Ballets Russes; Martha Graham's partnership with Isamu Noguchi; and Merce Cunningham's work with Robert Rauschenberg. We will also look simply at how dance is filmed or how dance uses film. The course will concentrate on two figures of the postwar American avant-garde: Merce Cunningham and Yvonne Rainer. Cunningham's dances choreographed for film in collaboration with film- and video-makers and Rainer's move from choreography to filmmaking and eventually to hybrids of the two will constitute the core of the course.

Offered: Fall

FMS 348 DIG MEDIA & PART. CULTURES

FMS 356 CLASSICAL FILM THEORY

This course examines the philosophical, aesthetic, and social issues that are central to classical film theory. It traces the historical development of film theory from 1900 to the 1950s. We will begin with thinkers in the period of early cinema, including Germaine Dulac, Jean and Marie Epstein, and then we will examine the development of film theory in the work of later theorists, such as Jean Mitry, Sergei Eisenstein, Dziga Vertov, Siegfried Kracauer, Walter Benjamin, Andre Bazin, and Christian Metz. Weekly screenings of historically contemporary films will allow us to examine the ongoing dialogue between the evolving medium and the developing theoretical discussion.

Offered: Spring

FMS 390 SUPERVISED TEACHING

Offered: Fall Spring

FMS 391 INDEPENDENT STUDY

Offered: Fall Spring

FMS 391W INDEPENDENT STUDY

FMS 392 SPECIAL TOPICS

Offered: Fall Spring

FMS 393 SENIOR PROJECT

Offered: Fall Spring

FMS 394 INTERNSHIP

Offered: Fall Spring

FMS 407 MIYAZAKI & GHIBLI

FMS 413 RACE & GENDER IN POPULAR FILM

This course explores Hollywood's fascination with race and gender as social issues and as spectacles. In particular, we will focus on the ways that social difference have become the sites of conflicted narrative and visual interactions in our films. To examine competing representations of racial difference and sexual difference in US culture, we analyze popular films from the 1950’s to the present.

Offered: Fall

FMS 422 ART & THE CITY: NY IN THE 70S

The recession & fiscal crisis of the 1970s was paradoxically a highly productive period of artistic experimentation in New York City. In the wake of the transforming art movements of the 1960s--Pop, Minimalism, and Conceptual Art--the 1970s saw the invention of new and hybrid media: video art, performance art, & site-specific installation works. By the end of the decade a new group of artists that came to be known as the Pictures Generation began showing in alternative spaces such as Artists Space. In this seminar we will study how the de-industrialization of New York contributed to new kinds of art making & examine how art works take the city as their subject. Among the artists we will consider are Bernd & Hilla Becher, Gordon Matta-Clark, Joan Jonas, Peter Hujar, Danny Lyon, Cindy Sherman, and Thomas Struth. Avant-garde film also took the city as its subject; the course will include the work such film & video-makers as Dara Birnbaum, Ernie Gehr, Peter Hutton, Babette Mangotle, and Charles Simonds.

Offered: Fall

FMS 427 POETICS OF TELEVISION

FMS 443 FILM AS OBJECT

FMS 446 BRIGHT LIGHTS, BIG CITY

In the early twentieth century, our conceptualization of the city had a significant impact on how we understood our interactions with others and the notion of the individual. In this will look at a wide variety of texts including newspaper articles, essays, films and fiction to explore the following questions. What is the relationship between technology and man? How does the individual navigate the space of the city? What role do class and gender play in our ability to move through the city? What is the relationship between modernity and urban life?

Offered: Spring

FMS 460 SCREENWRITING

FMS 463 CLOCKS AND COMPUTERS

FMS 491 MASTER'S READING COURSE

FMS 493 RUSSIA GOES TO MOVIES

FMS 495 NEW GERMAN CINEMA

FMS 499 ATOMIC CREATURES: GODZILLA

A study of the phenomenon that generated and helped define the Japanese kaiju eiga (monster film) genre: the Godzilla series that began with the original film by Inoshiro Honda (Gojira, 1954), and its better- known US remake (Godzilla, King of the Monsters, 1956). The larger context of the course is a critical investigation of the science-fiction/horror/creature feature film generated in the late 1940's by the dawn of the nuclear age. The course will begin with a sampling of seminal non-Japanese titles that created a paradigm for the Godzilla film, and will address the historical and social contexts for the series erratic trajectory since 1954. Students are responsible for assigned readings and are required to attend screenings.

Offered: Fall

FMS 502 ANDY WARHOL: TOPICS IN CONT

FMS 508 DANCE, ART, AND FILM

This course explores relations among dance, art, and film at significant moments in the 20th and 21st centuries. We will study instances in which the forms are particularly closely aligned, including the famous productions by artists such as Gontcharova, Picasso, and Matisse, for Diaghilev's Ballets Russes; Martha Graham's partnership with Isamu Noguchi; and Merce Cunningham's work with Robert Rauschenberg. We will also look simply at how dance is filmed or how dance uses film. The course will concentrate on two figures of the postwar American avant-garde: Merce Cunningham and Yvonne Rainer. Cunningham's dances choreographed for film in collaboration with film- and video-makers and Rainer's move from choreography to filmmaking and eventually to hybrids of the two will constitute the core of the course.

Offered: Fall

FMS 556 CLASSICAL FILM THEORY

This course examines the philosophical, aesthetic, and social issues that are central to classical film theory. It traces the historical development of film theory from 1900 to the 1950s. We will begin with thinkers in the period of early cinema, including Germaine Dulac, Jean and Marie Epstein, and then we will examine the development of film theory in the work of later theorists, such as Jean Mitry, Sergei Eisenstein, Dziga Vertov, Siegfried Kracauer, Walter Benjamin, Andre Bazin, and Christian Metz. Weekly screenings of historically contemporary films will allow us to examine the ongoing dialogue between the evolving medium and the developing theoretical discussion.

Offered: Spring

FR 101 ELEMENTARY FRENCH I

French 101 is an introductory language course. Students learn fundamentals of grammar, and pronunciation in the context of French culture. Emphasis is on developing communicating skills, principally speaking but also including listening, reading and writing. There is an obligatory recitation section twice a week in addition to the main class and the work in the multimedia center.

Offered: Fall

FR 102 ELEMENTARY FRENCH II

French 102 continues the work of the beginning course. There is an additional emphasis on reading comprehension and vocabulary building.

Offered: Spring

FR 111 FRENCH IN FOCUS: INTENSIVE ELEMENTARY FRENCH

The aim of this six-week course is to introduce students to French language and culture, as well as the Francophone World through interactive audiovisual material and activities. Students will extensively work with visual material in the classroom to work on their speaking, listening, reading, and writing skills in French in communicative situations. This summer course is recommended for beginners with limited or no previous instruction in French.

Offered: Summer

FR 153 INTERMEDIATE FRENCH

Intermediate French. Development of oral and written skills through the exploration of specific topics and themes. Emphasis on grammatical forms and idioms.

Offered: Fall Spring

FR 154 SCREENING FRENCH SHORTS: INTENSIVE INTERMEDIATE FRENCH

This course is designed for students who wish to expand and sharpen their listening, speaking, and writing skills in French at the intermediate level. Students will work on major grammatical points and idioms, as well as cultural themes through intensive classwork based on a selection of approximately ten French short films. This summer course is recommended for students who have prior knowledge of French at post-elementary level, or have completed FR 111.

Offered: Summer

FR 155 FRENCH CONVERSATION & COMPOSITION

The most advanced conversation and composition course aims to bring students to a level of proficiency with the spoken language, including its idimatic forms, and to refine composition skills. Course materials include extensive use of popular French culture, including film.

Offered: Fall Spring

FR 157 FRENCH IN FRANCE

French in France is a month-long conversation and culture course held in Rochester's Breton sister city, Rennes. Students meet in Paris for several days of orientation by University of Rochester program director and travel together to Rennes. Students are hosted by families who provide housing, meals, and opportunities for language and culture encounters. Excursions include the medieval abbey of Mont St. Michel, the old port of St. Malo, and the landing beaches of Normandy. The program fee includes language instruction, family stay, and excursions. Special application required.

Offered: Summer

FR 160 THE NEW EUROPE

FR 161 EUROPE TODAY

FR 200 ADVANCED FRENCH

Intensive practice in reading, writing, and speaking French, based on rigorous grammar review and on close readings of literary and cultural texts. Classroom work emphasizes grammar, speaking, reading and writing French.

Offered: Fall Spring

FR 202 INTRODUCTION TO LITERATURE IN FRENCH

This course is designed to provide students with intensive practice in reading French from a wide variety of sources. Texts drawn from literature, popular culture, journalism and other specialized fields will be read and discussed with an eye toward improving students' comprehension, developing their vocabulary, and expanding their interpretive and analytic capabilities.

Offered: Spring

FR 204 CONTEMPORARY FRENCH CULTURE

This course is designed to provide students with a comprehensive view of French Contemporary culture through major trends of French cultural, political, and intellectual life in the recent years. While we cannot study factual representations of French culture, we will attempt to establish a conceptual framework that would help us in the understanding of complex questions such as What does it mean to be French?, What is France? What is French culture?, etc.

FR 207 FRENCH IN FRANCE

French in France is a month-long conversation and culture course held in Rochester’s Breton sister city, Rennes. Students meet in Paris for several days of orientation by University of Rochester program director and travel together to Rennes. Students are hosted by families who provide housing, meals, and opportunities for language and culture encounters. Excursions include the medieval abbey of Mont St. Michel, the old port of St. Malo, and the landing beaches of Normandy. The program fee includes language instruction, family stay, and excursions. Special application required.

FR 211 ASPECTS OF FRENCH GRAMMAR

Close analysis of selected texts, not so much for their content as for their grammatical interest. Discussion and practice of advanced topics; some attention to practical phonetics.

FR 212 FRENCH LITERATURE IN TRANSLATION

The aim of this course is to offer extensive practice in textual analysis and translation of selected literary texts from French to English. Mainly contemporary, all selected texts have originally been written in French, come from various cultural backgrounds, and address different stylistic levels. A number of French theoretical approaches to translation with focus on literature will be discussed, and oral exercises, grammar and syntax review will also be introduced. It is recommended that students have completed FR 200 prior to taking this class.

FR 232 HUGO'S "LES MISERABLES"

Examines one of the world's most celebrated and influential novels, Victor Hugo's "Les Misérables" (1862). Interprets Hugo's work as a modern epic that assimilates the genres of the historical novel, the realist novel, and the popular novel. The vast and multifaceted canvas of Hugo's masterwork will allow us to discuss issues of social justice, moral philosophy, religion, politics, history, the city of Paris, and love. We will also study some of the many screen adaptations that have been made of the book. Conducted in French.

FR 233 REALISTS & ROMANTICS

Nineteenth-century French literature witnessed two competing literary currents; romanticism and realism. Romanticism, heir to the logic and reason of the French Enlightenment, sought to rescue from scientific systematization the wonder and awe of nature; realism attempted to describe the world exactly as it was. This course examines the confrontation of these two movements, and attempts to discern what made each distinct, as well as what features they may unwillingly have shared. Do realistic novels romanticize their subjects? What's true to life in romantic descriptions of nature? How do aesthetic concerns become social or political ones? Readings include Constant, Chateaubriand, Flaubert, Rimbaud, Baudelaire, and Maupassant.

FR 235 TEXTS BEYOND BORDERS

This course examines the recent French literary production--from the turn of the century up-to-date--through the prisms of language and translation, intertextuality, identity and migration, notions that cross the borders of national literature. We will analyze the theoretical conditions that address questions of postcolonial and postmodern literature, World Literature, and cosmopolitan identity in literature and translation. Knowledge of French is strongly recommended but not absolutely necessary. Literary texts will be available in both French and English. The course will be conducted in English.

FR 237 PERFORMANCE STUDIES

Shakespeare tells us that "All the world's a stage, and all the men and women merely players." But what kind of stage is our world? And what sort of players are we? This class will take up such questions through the interdisciplinary field of performance studies. We will examine topics ranging from self expression and gender performance to forms of ritual and collective action. This course will be taught in English.

FR 241 LE NOUVEAU ROMAN

This course will focus on the experimental style of the French novel, labelled as the "nouveau roman" in the 1950s and 1960s. We will examine the literary tendencies that attempted to define anew the purpose of the novel, and will discuss and analyze novels and theoretical work by writers such as Marguerite Duras, Alain Robbe-Grillet, Nathalie Sarraute, and Michel Butor. The literary style of the nouveau roman emerged in dialogue with the film movement known as the French New Wave, and a number of films, such as Alain Resnais' "Hiroshima, Mon amour" (1958), and "Last Year in Marienbad" (1961) will be included in class discussion and analysis. All readings and class discussions will be in French.

FR 242 THÉÂTRE FRANÇAIS

This course focuses on 17th-century French Theater and the study of the three predominant playwrights of the classical period: Molière ("Tartuffe,:" "L'Ecole des Femmes," "Le Misanthrope"), Racine ("Phèdre"), and Corneille ("Le Cid"). We will explore the affinities and disjunctions of classical French playwriting with classical antiquity, and will make connections with literature and the arts to investigate the political and intellectual climate of the Age of Reason. The course will be conducted in French.

FR 243 MUTILATED BODIES: FROM TRADITIONS TO CUTTING-EDGE TECHNOLOGIES

Female genital cutting encounters vaginal cosmetic surgeries at the intersection of poverty and wealth, race and class, barbaric practices and the pleasure principle. Bodies of poor, African, and mostly black women and children embody a fateful condition that can be redeemed by technologies of progress and humanitarian discourses. This course invites students to challenge assumptions related to agency, race, class, the representation of the body, and the fragmented transnational sisterhood. The discussion expands to bodies caught in domestic violence, rape, lynching, and skin whitening. Readings and films: Alice Walker's "Warrior's Marks" and "Possessing the Secret of Joy"; "Manya Mabika"; "Fantacola"; "Sarabah"; "Women with Open Eyes"; "Black Sisters, Speak Up"; "The Suns of Independence"; "Desert Flower"; and Maryse Condé's "Who Slashed Célanire Throat?"

FR 244 CRIMES OF PASSION: LOVE AND DEATH ON THE CLASSICAL FRENCH STAGE

Love. Hate. Fear. Disgust. Seventeenth-century tragedies are filled with passion. In this class we will explore what happens when passion goes too far. What happens when lovers cannot contain themselves, or when kings are overcome with rage? How does the problem of excess passion raise questions about freedom and responsibility? In addition to examining how tragedies were performed during the seventeenth century, we will imagine how they might be performed today. We will also consider how concerns raised by seventeenth-century tragedy help us to navigate the political and social issues of our time. The class will be taught in French.

FR 246 DUMAS'S THE COUNT OF MONTE CRISTO

Course studies Alexandre Dumas's "The Count of Monte Cristo" (1844), one of the most well-known and popular novels ever written. We will explore the epic work in its historical and political context (it is set at the end of Napoleon's reign) as well as in terms of the genres of the historical novel, the serial novel, and the adventure novel. Themes examined include revenge, justice, and forgiveness. Course also analyzes some of the many film adaptations. Conducted in French.

FR 247 BLACK PARIS

This course is a study of Black Paris, as imagined by three generations of Black cultural producers from the United States, the Caribbean and Africa. Paris is as a space of freedom and artistic glory that African American writers, solders and artists were denied back home. For colonized fricans, and Antilleans, Paris was the birthace of the Negritude, the cultural renaissance informed by the dreams and teachings of the Harlem Renaissance. Black Paris, for the young generations caught in the marginal space of poor suburbs, calls to mind images of burning cars, riots, dilapidated schools that are rendered through rap music, hip-hop that are weaving the thread of a new youth-oriented transnational imagination.

FR 252 MODERN FRANCE

FR 255 SARTRE & HEIDEGGER

This course studies two of the most influential works of twentieth-century philosophy: Martin Heidegger's "Being and Time" (1927) and Jean-Paul Sartre's "Being and Nothingness" (1943). Together these two treatises defined existential phenomenology and changed the course of philosophy, exerting a profound influence over later writers and thinkers. Since both philosophers sought to fundamentally redefine human reality, we will examine concepts such as freedom, bad faith, temporality, history, subjectivity, death, emotion, and the relation between self and other. We will also compare Sartre's insights with those of Heidegger, particularly in regard to the concept of authenticity. Conducted in English.

FR 257 SEX, LIES, AND SECRETS

FR 265 AESTHETICS

Studies the history of “aesthetic” thought—namely the philosophical reflection on the concepts of beauty, taste, and sublimity, on our affective response to art and nature, and on the role of art and the artist in society—from Plato to the 19th century, with particular emphasis on how aesthetics relates to questions of poetics, epistemology, anthropology, ethics, and politics. Readings from Plato, Aristotle, Longinus, Boileau, Du Bos, Burke, Rousseau, Kant, Diderot, Hegel, Lyotard, Derrida. Conducted in English.

FR 267 BAUDELAIRE: POETRY AND MODERNITY

Course examines the most famous and influential modern lyric sequence ever written: Charles Baudelaire's "The Flowers of Evil" ("Les Fleurs du Mal," 1857). Explores how Baudelaire's groundbreaking work—in particular, its focus on urban reality—changed the nature of poetic experience. Walter Benjamin's writings on Baudelaire will also be studied. Conducted in French.

FR 268 JEAN RENOIR AND CINEMA

Course analyzes and contextualizes the cinematic oeuvre of France's greatest filmmaker and one of the greatest filmmakers of all time, Jean Renoir. Particular attention will be paid to Renoir's innovative use of filmic techniques such as depth of focus, long take, and mis-en-scène. We will also examine the French political and cultural backdrop of the 1930s (i.e., Renoir's engagement with the Popular Front) as well as the influence of cinematic genres such as film noir, poetic realism, and literary adaptation. Readings from Bazin, Renoir, and Deleuze. Conducted in French.

FR 269 FOUCAULT AND THE ETHICS OF THEORY

Course explores the crucial role played by French philosopher Michel Foucault in the ethical and political transformations of "Theory" or "Critical Theory," an intellectual movement that has had a profound effect on literary studies, art history, cultural studies, cultural anthropology, gender studies, historical theory, musicology, and visual/film studies. Readings include Badiou, Barthes, Butler, Derrida, Foucault, Habermas, Jameson, Rabaté, Rancière, Rorty, Said, Spivak, White. Conducted in English.

FR 270 WOMEN WRITE WOMEN: AFRICA AND CARIBBEAN

In this course, we will examine the literary production in French from African and Caribbean women writers. A close reading of texts will help us investigate how women writers in the respective areas treat their cultures and societies from the feminine point of view to illustrate, confront, and negotiate patriarchy, tradition, exile, migration, and resist the stereotypical categorization of woman either as a wife and mother, or outcast. Authors include Mariama Bâ, Maryse Condé, Fatou Diome, Assia Djebar, Aminata Sow Fall, Werewere Liking, Calixthe Beyala. A number of films may provide complimentary material to the written texts. Readings, films, and discussions are in French.

FR 279 IMMIGRATION IN FRENCH LITERATURE AND FILM

The aim of this course is to investigate the interactions and relationships between French culture and the immigrant "other" from a critical and theoretical point of view. We will examine notions of emigration and immigration, national identity, belonging, exile, cultural integration and assimilation in the literary activity that has emerged in France, and particularly in Paris, by writers emigrating to France mainly from Africa, and will explore what pertinent traits allow the definition of this literature as French, Francophone or otherwise. A number of recent French films that have touched on questions of immigration will provide additional material to supplement study and discussions. Literary and visual texts will be available in both French and English. Knowledge of French is strongly encouraged but not necessary. The course will be taught in English.

FR 285 CLASSICAL FILM THEORY

FR 288 FRENCH IN FILM: AFRICA, CARIBBEAN, QUÉBEC

This course examines the polyvalent character of Francophone cinema by exploring the aesthetic, theoretical, and socio-political questions that African, Caribbean, and Québecois French-speaking films have raised in the development of a cinematic discourse relevant to geopolitical issues of each region, as well as issues of production, distribution, and exhibition. Films by Sembène, Mambety, Bekolo, Teno, Sissako, Nacro, Palcy, Monpierre, Peck, Brault, Jutra, Arcand will be discussed among others. Weekly film screenings. Knowledge of French is encouraged but not necessary. Readings, written responses/film analyses, and class discussions will be in English.

FR 289 PHILOSOPHY OF ART

Course examines the major philosophical approaches to art, both Continental and Analytic, focusing mainly on the 20th century. Topics studied include beauty, the sublime, mimesis, the nature of art, the end of art, the ontology of art, the meaning of art, art and truth, high and low art, committed versus autonomous art, fascism and art, art and value, art and mass media. Conducted in English.

FR 290 HISTORY OF FRENCH CINEMA

FR 390 SUPERVISED TEACHING

FR 391 INDEPENDENT STUDY

FR 392 PRACTICUM

FR 393 SENIOR PROJECT

FR 394 INTERNSHIP

FR 404 CONTEMPORARY FRENCH CULTURE

This course is designed to provide students with a comprehensive view of French Contemporary culture through major trends of French cultural, political, and intellectual life in the recent years. While we cannot study factual representations of French culture, we will attempt to establish a conceptual framework that would help us in the understanding of complex questions such as What does it mean to be French?, What is France? What is French culture?, etc.

FR 412 FRENCH LITERATURE IN TRANSLATION

FR 432 HUGO'S LES MISERABLES

This course examines one of the world¿s greatest and most influential novels, Victor Hugo¿s Les Miserables (1862). We will interpret Hugo¿s novel as a modern epic that incorporates the genres of the historical novel, the realist novel, and the popular novel. The vast and multifaceted canvas of Hugos novel will allow us to discuss issues of social justice, moral philosophy, religion, politics, history, the city of Paris, and love. We will also study some of the many screen adaptations that have been made of the book. Conducted in French.

FR 433 REALISTS & ROMANTICS

FR 435 TEXTS BEYOND BORDERS

FR 437 PERFORMANCE STUDIES

FR 441 LE NOUVEAU ROMAN

FR 442 THEATRE FRANCAIS

FR 443 MUTILATED BODIES

Transnational sisterhood' or cultural imperialism? Legitimate ritualized practice or outdated violent ritual? Genital cutting, female circumcision, female genital surgery? The controversy over this practice already begins with the act of its naming. If there seems to be a consensus about the physical violence imposed on the female body, why is it that western feminist discourse is suspected of perpetuating the mutilation African voices? This course seeks to provide an understanding of the context in which a fragmented 'transnational sisterhood' allows for a proliferation of mutilated discourses on mutilated postcolonial bodies. Readings and Films include Alice Walker (Warrior Marks), Florence Ayissi Fauziya Kassindja (Do They Hear You When You Cry), Maryse Conde and more critical and theoretical readings from African, French and North American authors. In English.

FR 444 CLASSICAL FRENCH STAGE

FR 446 COUNT OF MONTE CRISTO

FR 455 SARTRE & HEIDEGGER

This course studies two of the most influential works in twentieth-century philosophy: Martin Heidegger¿s Being and Time (1927) and Jean-Paul Sartre¿s Being and Nothingness (1943). Together these two books defined existential phenomenology and changed the course of philosophy, exerting a profound influence over later writers and thinkers. Since both philosophers sought to fundamentally redefine human subjectivity-its place in society, history, and the philosophical tradition--we will examine concepts such as freedom, reality, temporality, subjectivity, death, emotion, and the relation between self and other. We will also compare Sartre¿s insights with those of Heidegger, particularly in regard to the concept of humanism, juxtaposing Sartre¿s famous manifesto ¿Existentialism is a Humanism¿ (1946) with Heidegger¿s critique of Sartre and French existentialism in his ¿Letter on Humanism¿ (1947).

FR 465 AESTHETICS

FR 467 BAUDELAIRE: FLEURS DU MAL

FR 468 JEAN RENOIR AND CINEMA

FR 469 FOUCAULT AND THE ETHICS OF THEORY

FR 488 FRENCH IN FILM

FR 489 PHILOSOPHY OF ART

FR 490 HISTORY OF FRENCH CINEMA

FR 491 MASTER'S READINGS IN FRENCH

FR 895 CONT OF MASTER'S ENROLLMENT

FR 899 MASTER'S DISSERTATION

FR 985 LEAVE OF ABSENCE

GER 101 ELEMENTARY GERMAN I

This is the first semester of a two-semester sequence using an exciting new interactive approach to language learning. Students are encouraged, right from the start, to communicate in German utilizing basic vocabulary and authentic expressions in their spoken and written work. Listening comprehension is honed using audio taped material featuring a variety of native speakers, while a series of video tapes provide a basic introduction to the cultures of German speaking countries.

Offered: Fall

GER 102 ELEMENTARY GERMAN II

This is the second semester of a two-semester sequence using an exciting new interactive approach to language learning. Students are encouraged, right from the start, to communicate in German utilizing basic vocabulary and authentic expressions in their spoken and written work . Listening comprehension is honed using audio taped material featuring a variety of native speakers, while a series of video tapes provide a basic introduction to the cultures of German speaking countries.

Offered: Spring

GER 110 JUSTICE AND EQUALITY

GER 132 INTRODUCTION TO THE ART OF FILM

As an introduction to the art of film, this course will present the concepts of film form, film aesthetics, and film style, while remaining attentive to the various ways in which cinema also involves an interaction with audiences and larger social structures.

GER 151 INTERMEDIATE GERMAN I

Process writing, reading, and listening exercises provide the context in this course for a thorough review of German grammatical structures. Students are expected to write short, weekly essays; complete weekly assignments in listening, reading and/or grammar; and hone their speaking skills through active class participation. Goal of this two-semester sequence is communicative proficiency.

Offered: Fall

GER 152 INTERMEDIATE GERMAN II

Process writing, reading, and listening exercises provide the context in this course for a thorough review of German grammatical structures. Students are expected to write short, weekly essays, complete weekly assignments in listening, and hone their speaking skills through active class participation. In GER 152, the focus is shifted slightly toward reading authentic material; short pieces of fiction and newspaper articles. Goal of this two-semester sequence is communicative proficiency.

Offered: Spring

GER 157 GERMAN IN GERMANY

Students experience the excitement of Berlin, historic center of Germany and capital of the re-unified state. Students stay in the international center of the European Academy located in picturesque Grunewald. Mornings are devoted to intermediate or advanced German language classes and individual work; afternoons and weekends are free for exploring and for excursions to nearby Dresden, Potsdam, and Baltic seashore. Program fee includes ground transportation in Germany, lodging and breakfasts, and main meals at the European Academy in Berlin, German language instruction, and some excursions. Special application required.

GER 160 THE NEW EUROPE

GER 161 EUROPE TODAY

GER 200 ADVANCED CONVERSATION & COMPOSITION

This class assumes enough knowledge of the languge for reading somewhat longer fictional and nonfictional texts and viewing German films in the original. The class is organized around general topics and themes. Students will write weekly essays in German on select topics. Class taught in German.

Offered: Fall

GER 200W ADVANCED CONVERSATION & COMPOSITION

This class assumes enough knowledge of the languge for reading somewhat longer fictional and nonfictional texts and viewing German films in the original. The class is organized around general topics and themes. Students will write weekly essays in German on select topics. Class taught in German.

GER 202 INTRODUCTION TO CULTURAL STUDIES

This is one of several core classes required for the major. Students should have completed at least 152 and preferably 200. This course will introduce students to basic principles of cultural analysis at the heart of the discipline of German Studies. Emphasis will focus on how the media act to form and facilitate various aspects of issues in contemporary German culture.

Offered: Spring

GER 202W INTRODUCTION TO CULTURAL STUDIES

This is one of several core classes required for the major. Students should have completed at least 152 and preferably 200. This course will introduce students to basic principles of cultural analysis at the heart of the discipline of German Studies. Emphasis will focus on how the media act to form and facilitate various aspects of issues in contemporary German culture.

GER 203 INTRODUCTION TO GERMAN LITERATURE

Everything you ever wanted to know about German literature but were afraid to ask. This course looks at German poems, plays and novellas from various historical periods and within the context of several techniques of interpretation. It is designed to prepare students for sophisticated analysis of literary texts.

Offered: Fall

GER 203W INTRODUCTION TO GERMAN LITERATURE

Everything you ever wanted to know about German literature but were afraid to ask. This course looks at German poems, plays and novellas from various historical periods and within the context of several techniques of interpretation. It is designed to prepare students for sophisticated analysis of literary texts.

GER 205 NIETZSCHE AND THE NIETZSCHEANS: NIETZSCHE AND THE JEWISH QUESTION

Friedrich Nietzsche continues to be one of the most influential modern philosophers, yet controversy surrounds almost every aspect of his life and work, specifically his relationship to both the Jewish people and Judaism. In this course we will read the most relevant texts on Nietzsche's view of the "Judeo-Christian" tradition as well as his remarks on the Jewish nation. From there, we will read a number of Jewish writers who both avow and disavow Nietzsche's influence on their work. Authors include: Franz Kafka, Sigmund Freud, Sara Kaufman, Jacob Taubes, Jacques Derrida.

GER 207 GERMAN IN GERMANY

An intensive program offered in German at all levels in Berlin, Germany, for one month in summer. Instruction by native Germans with University of Rochester faculty member in residence. Includes side trips and excursions in this historic area.

GER 211 Schlemiels, Pariahs and Parvenus: The Jewish Writer and Rebel

In February 2011, the website Jewcy published a list of the 50 most essential works of Jewish fiction of the last 100 years. The featured books come from many different languages, cultures, and time periods and are written in a myriad of literary styles. Although few would argue with the names on the list (Kafka, Bellow, Singer), the diversity of the authors involved raises the question: what makes Jewish literature Jewish? This course will attempt to answer that question by looking at an international group of writers (some of whom identify as Jewish and some of whom do not) who often challenge their (religious and cultural) upbringing as well as the dominant politics of the countries in which they live. The authors we will read include: Franz Kafka, Jakov Lind, Bruno Schulz, Edmund Jabès, Georges Perec and Clarice Lispector.

GER 218 AND NOW... DEEP THOUGHTS WITH GERMAN-JEWISH THINKERS!

Now more than ever, a full account of German-Jewish intellectual history is needed. The central themes of the class will be: assimilation, acculturation, tolerance, radicalization, liberation, totalitarianism, and neoliberalism—all of which have been brought up by the people whose work we will read in the class. For example, Mendelssohn was publicly asked to renounce Judaism in the 1770s; "Jerusalem" was his philosophical response. Heine wrote "Germany: A Winter's Tale" in exile, because he was no longer allowed to live in his beloved German speaking homeland without fear of state reprisal. Benjamin wrote his most important work in exile. Arendt spent her life after World War II investigating the history of totalitarianism. Adorno spent time after World War II investigating the sociological and psychological origins of the authoritarian personality. We will be reading all of these authors and many more, and attempting to understand their reflections in the context of our current situation.

GER 221 GENDER LOVE & FAMILIES

This course explores the same-sex desires, love, non-exclusive relationships, and adoptive families with two fathers, two mothers, etc. that were represented as ideal relationships in 18th century German literature. In contrast to traditional views of the 18th century obsession with bourgeois and aristocratic families determined by fathers interested only in economic endeavors and preserving heritage, this course will explore the counter discourses that arose in the 18th century that highlighted the fundamental need for love as the foundation of all families. This course is taught in English.

GER 229 KAFKA & HIS WORLD

This course explores the weird, dreamlike, eerie, and inexplicable world of Kafkas writings. In Kafkas stories dogs conduct investigations, apes report to academies, men turn into bugs, the Statue of Liberty holds up a sword, and arrests occur without explanation as all expectations and assurances about the 'rules' of existence, thought, and social order come into question. In this course we will read texts such as: The Trial, The Metamorphosis, Amerika, The Castle, Investigations of a Dog, A Report to an Academy, In the Penal Colony, and A Hunger Artist. This course is taught in English.

GER 230 POE AND HOFFMANN: UNCANNY STORIES

This course explores the beginnings of the horror and detective genres in the 19th century. Particular attention is devoted to the narrative structure, tropes, and psychological content of the strange tales by Poe and Hoffmann. Theories of horror are also addressed to include discussions by lessing, Todorov, Huet, and Kristeva.

GER 247 HOLOCAUST: AFFECT AND ABSENCE

How does one represent the unrepresentable? This is the key question we will explore as we look at films and literature about the Holocaust. As we look at fictional films, novels, documentaries and memoirs, we will discuss topics including memory, trauma, truth and representation. This course offers a look at the ways in which artists and their audiences negotiate the themes of loss, horror and redemption within the context of the Holocaust and its aftermath.

GER 252 BRIGHT LIGHTS, BIG CITY: THE URBAN IMAGINATION

The city in film and literature is never just a physical space - discourses of modernity and urban life are mapped onto real and imagines urban spaces. In this course we will explore how the relationship between the spaces of the city and the stories told about and through them shape our understanding of urban life. Some of the texts we will examine are: Fritz Lang's M, Arthur Schnitzler's Dream Story, and Lloyd Bacon's 42nd Street.

GER 256 GERMANY YEAR ZERO: POST-WAR GERMAN LITERATURE, 1945-89

Franz Kafka is one of Austria's most famous and influential writers. His short prose works have had a tremendous impact on contemporary literature and cultural studies. In this course you will learn what "kafkaesque" means in its complexity. Heinrich von Kleist is less well-known in the US, but he, like Kafka, provides representations of modern bureaucratic nightmares, of blurred boundaries between reality and fantasy, ailing artists, and non-existent or idolized women. This course is taught in German.

GER 260 Truth and Power

GER 261 WEIMAR FILM & FILM THEORY

GER 262 STRANGERS

GER 272 GENDER & SEXUALITY IN THE 20TH CENTURY

This course will examine literary, artistic, and theoretical representations of gender and sexuality as they have changed in the course of the 20 Century. The focus will be on texts from Western Europe and the US, but we will also consider other perspectives. From the New Women to French Feminists and transnational feminism. from homophile societies to “queer nation and gay marriage, from Sigmund Freud to Michel Foucault and Judith Butler, we will explore the contested and politically charged debates around gender and sexuality that have shaped our views of identity over the last century.

GER 284 HOLLYWOOD BEHIND THE WALL: INTRODUCTION TO EAST GERMAN CINEMA

This course will explore major developments in the East German cinema, including issues such as coming to terms with the fascist past, popular filmmaking and art cinema, cinema as a pedagogical tool, artistic dissent and state censorship, socialist ideologies of gender, and the politics of documentary. Each film will be explored in relation to its socio-historical context, providing students with an overview of East German film and culture.

GER 285 MEN OF MARBLE, WOMEN OF STEEL: AN INTRODUCTION TO EAST EUROPEAN FILM

This course will provide a general introduction to the history, artistry and politics of East European film. We will begin by considering the place of East European film in the context of contemporary film studies and the industry structure of state socialist film making. We will then explore individual films from a regional (not national) perspective, considering how they confront issues such as the burden of history and ethics, the tensions between modernity and tradition, the struggle between creativity and censorship, as well as the reluctant feminism of state socialism and representations of gender and sexuality.

GER 286 NEW AUSTRIAN CINEMA

In this course, we will focus on recent developments in Austrian cinema. Not unlike other cinematic “new waves,” Austria’s artists politically and aesthetically resist the petit-bourgeois mindset of their fellow citizens. Considered within the national/ European context of “official” Austria and its long avoidance of dealing with its fascist past, and within a global context of the post-modern “state of exception,” new Austrian film offers viewers a spectatorial position from which to consider the “society of control” (Foucault/Deleuze/Hardt). Beginning with the avant-garde works of VALIE EXPORT, this course will emphasize works by Barbara Albert, Florian Flicker, Michael Glawogger, Michael Haneke, Stefan Ruzowitzky, Ulrich Seidl, Peter Tscherkassky, and Valeska Grisebach.

GER 288 MOTHERS, COMRADES & WHORES

In this course we will explore representations of women in post-World War II German cinema. Moving chronologically from the building of two German states to the post-unification period, we will consider the constantly shifting meaning of 'woman' in popular and avant-garde films, narrative and documentary films, films by both male and female directors. We will consider equally films from East and West Germany. How does 'woman' function as a narrative device in these films? Do women behind the camera change 'woman's' meaning within the film? Can 'woman' consistently be reduced to one narrative trope (mother, comrade or whore), or does she resist? All readings and discussions are in English; all films are subtitled.

GER 391 INDEPENDENT STUDY

GER 392 PRACTICUM

GER 393 SENIOR PROJECT

GER 394 INTERNSHIP

GER 395 HONORS RESEARCH

GER 405 NIETZSCHE & NIETZSCHEANS

Friedrich Nietzsche continues to be one of the most influential modern philosophers, yet controversy surrounds almost every aspect of his life and work. This course will help students go beyond the controversy in order to consider Nietzsche's texts discerningly and how he approached the problems of truth, power, and morality. Close examination of his most important writings will be complemented by inquiry into Nietzsche's effects on twentieth-century philosophy. Other thinkers include Martin Heidegger, Michel Foucault, Sarah Kofman, Jacques Derrida and Giles Deleuze.

GER 411 JEWISH WRITER & REBEL

GER 418 AND NOW... DEEP THOUGHTS WITH GERMAN-JEWISH THINKERS!

GER 421 GENDER, LOVE, AND FAMILIES

GER 429 KAFKA & HIS WORLD

This course explores the weird, dreamlike, eerie, and inexplicable world of Kafka’s writings. In Kafka’s stories dogs conduct investigations, apes report to academies, men turn into bugs, the Statue of Liberty holds up a sword, and arrests occur without explanation as all expectations and assurances about the “rules” of existence, thought, and social order come into question. In this course we will read texts such as: The Trial, The Metamorphosis, Amerika, The Castle, Investigations of a Dog, A Report to an Academy, In the Penal Colony, and A Hunger Artist. This course is taught in English.

GER 430 POE AND HOFFMANN: UNCANNY STORIES

This course explores the beginnings of the horror and detective genres in the 19th century. Particular attention is devoted to the narrative structure, tropes, and psychological content of the strange tales by Poe and Hoffmann. Theories of horror are also addressed to include discussions by lessing, Todorov, Huet, and Kristeva. NOTE: THIS COURSE IS TAUGHT IN ENGLISH

GER 447 HOLOCAUST: AFFECT AND ABSENCE

GER 452 BRIGHT LIGHTS, BIG CITY

The city in film and literature is never just a physical space - discourses of modernity and urban life are mapped onto real and imagines urban spaces. In this course we will explore how the relationship between the spaces of the city and the stories told about and through them shape our understanding of urban life. Some of the texts we will examine are: Fritz Lang’s M, Arthur Schnitzler’s Dream Story, and Lloyd Bacon’s 42nd Street.

GER 456 GERMANY YEAR ZERO

GER 460 TRUTH & POWER

GER 461 WEIMAR FILM & FILM THEORY

GER 462 STRANGERS

GER 472 GENDER & SEXUALITY

This course will examine literary, artistic, and theoretical representations of gender and sexuality as they have changed in the course of the 20 Century. The focus will be on texts from Western Europe and the US, but we will also consider other perspectives. From the New Women to French Feminists and transnational feminism. from homophile societies to “queer nation and gay marriage, from Sigmund Freud to Michel Foucault and Judith Butler, we will explore the contested and politically charged debates around gender and sexuality that have shaped our views of identity over the last century.

GER 484 HOLLYWOOD BEHIND THE WALL: An Introduction to East German Cinema

This course will explore major developments in the East German cinema, including issues such as coming to terms with the fascist past, popular filmmaking and art cinema, cinema as a pedagogical tool, artistic dissent and state censorship, socialist ideologies of gender, and the politics of documentary. Each film will be explored in relation to its socio-historical context, providing students with an overview of East German film and culture.

GER 485 Men of Marble, Women of Steel: An Introduction to East European Film

This course will provide a general introduction to the history, artistry and politics of East European film. We will begin by considering the place of East European film in the context of contemporary film studies and the industry structure of state socialist film making. We will then explore individual films from a regional (not national) perspective, considering how they confront issues such as the burden of history and ethics, the tensions between modernity and tradition, the struggle between creativity and censorship, as well as the reluctant feminism of state socialism and representations of gender and sexuality.

GER 486 NEW AUSTRIAN CINEMA

GER 488 NEW GERMAN CINEMA

It is common now to hear that we live in a transnational age, but what does this really mean? How do we imagine our transnational community? In this course we will examine contemporary transformations from national to trans-national culture by focusing precisely on film production. This course will examine how film provides one of the central sources of transnational images. Germany will provide us with a case study and we will view a wide variety of German and European, national and transnational films. Through this case study we will address larger questions of globalization. Through hot new cult films like "Run, Lola Run," or big budget epics like "House of the Spirits," we will examine the aesthetic and technical transformations that have given rise to these new ways of imagining our community. PLEASE NOTE: Attendance at weekly film screening is mandatory -- alternative time will be set up.

GER 491 MASTER'S READING IN GERMAN

GER 492 PRACTICUM

GER 495 MASTER'S RESEARCH IN GERMAN

GER 895 CONT OF MASTER'S ENROLLMENT

GER 899 MASTER'S DISSERTATION

GER 985 LEAVE OF ABSENCE

GRK 391 INDEPENDENT STUDY

GSW 100 What does a feminist look like?

GSW 103 LANGUAGE & SEXUALITY

GSW 105 SEX AND POWER

GSW 114 CONTEMPORARY ISSUES & ANTHRO

GSW 115 INTRO TO MED ANTHROPOLOGY

GSW 123 INTRO TO VISUAL&CULTURL STDS

GSW 130 CRITICALLY QUEER

GSW 155 INTRO AFRICAN-AMERICAN LIT

GSW 189 SEXUALITY IN WORLD RELIGION

GSW 190 MDL EASTERN DANCE FOLKLORIC

GSW 193 MID EASTERN DANCE:ORIENTALE

GSW 200 HOSTORY OF FEMINISM: COLLOQ

GSW 200W HOSTORY OF FEMINISM: COLLOQ

GSW 205 PHIL FOUNDATION OF FEMINISM

GSW 206 FEMINISM GENDER AND HEALTH

GSW 208 SHERLOCK:RACE, GEND, CRIME

GSW 208W SHERLOCK:RACE, GEND, CRIME

GSW 209 PSYCH OF HUMAN SEXUALITY

GSW 210 LGBTQ EXPER IN US HISTORY

GSW 212 QUEER THEORY

GSW 213 POLITICS OF NATURE

GSW 213W POLITICS OF NATURE

GSW 214 IMAGINING THE JEW

GSW 220 BODY POLITICS

GSW 226 HISTORY OF FRIENDSHIP

GSW 234 THE BLACK BODY

GSW 235 HISTORY OF MASCULINITY

GSW 235W HISTORY OF MASCULINITY

GSW 242 DANCE/MOV'T THERAPY FOUNDATNS

GSW 243 MAJOR AUTHOR: THE BRONTES

GSW 244 MUTILATED BODIES

GSW 246 ANT APP GENDER/SEXUALITY

GSW 249 GENDER AND LANGUAGE

GSW 254 MONSTROUS FEMININE MIDL AGES

GSW 258 WOMEN LIVES AND LETTERS

GSW 266 PSYCHOLOGY OF GENDER

GSW 269 THE MATTER WITH MEN FILM/SOC

GSW 271 GENDER LOVE & FAMILIES

GSW 272 GENDER & SEXUALITY

GSW 284 ORALITY, LANGUAGE&LITERACY

GSW 351 ANDY WARHOL: TOPICS IN CONT

GSW 379 ASSIMILATING LIT LANGUAGE

GSW 382 DIDO & FEMININE IDENTITIES

GSW 390 SUPERVISED TEACHING

GSW 391 INDEPENDENT STUDY

GSW 392 PRACTICUM IN WOMEN'S STUDIES

GSW 393 SENIOR PROJECT

GSW 393H HONORS-INDEPENDENT RESEARCH

GSW 393W SENIOR PROJECT

GSW 394 INTERNSHIP

GSW 395 INDEPENDENT RESEARCH

GSW 396 SEMINAR IN WOMEN'S STUDIES

GSW 397 INDEPENDENT HONORS THESIS

GSW 426 HISTORY OF FRIENDSHIP

GSW 443 MAJOR AUTHOR: THE BRONTES

GSW 444 MUTILATED BODIES

GSW 449 GENDER AND LANGUAGE

GSW 454 MONSTROUS FEMININE MIDL AGES

GSW 458 WOMEN LIVES AND LETTERS

GSW 472 GENDER & SEXUALITY

GSW 484 ORALITY, LANGUAGE&LITERACY

GSW 591 INDEPENDENT STUDY

HEB 101 ELEMENTARY HEBREW I

Introduction to the structure of standard modern Hebrew. This class is intended for students with no previous instruction in the language or for those who have had some unsystematic exposure to it. Practice in reading, writing, basic use and grammar. In addition to texts, relevant cultural materials are provided through the use of video and technology based materials.

Offered: Fall

HEB 102 ELEMENTARY MODERN HEBREW II

Direct continuation of Hebrew 101 with emphasis on enhancing basic reading, writing, and speaking skills in standard modern Hebrew. In addition to reading texts, relevant cultural materials are provided through the use of audio, video and technology based materials.

Offered: Spring

HEB 103 INTERMEDIATE HEBREW I

Direct continuation of Hebrew 102 with emphasis on enhancing reading comprehension and writing and speaking skills in standard modern Hebrew. Students enrolling are expected to have a good understanding of basic Hebrew grammar structures, including familiarity with common verb forms. In addition to texts, relevant cultural materials are provided through the use of video and technology based materials.

Offered: Fall

HEB 104 INTERMEDIATE MODRN HEBREW II

This is a fourth semester course in the Hebrew language series designed as a direct continuation of HEB 103. The focus of instruction is on the enhancement of language skills through the acquisition of complex morphological and syntactical structures and the expansion of vocabulary and idioms. The course has an emphasis on oral and written communication in both standard and colloquial modern Hebrew. In addition to reading texts, relevant cultural materials are provided through the use of audio, video and technology based materials.

HEB 110 INTRO TO BIBLICAL HEBREW

A one-semester introduction to classical Hebrew for beginners. The course will cover the Hebrew writing system (alphabet and pointing/vocalization rules), basic grammatical structures and vocabulary, and the guided reading and translation of selected simple biblical narratives.

HEB 204 HEBREW THROUGH MEDIA AND LIT

Designed to develop advanced reading and conversational skills using various materials including Israeli newspapers, Hebrew movies and songs, and texts from modern Hebrew literature (fiction and poetry). Writing skills are enhanced through a series of related home-assignments. Review of Hebrew verbal system and syntactical structures and enrichment of vocabulary are also among the objectives of this course.

Offered: Spring

HEB 390 SUPERVISED TEACHING

HEB 391 INDEPENDENT STUDY

HEB 393 SENIOR PROJECT

HEB 394 INTERNSHIP

HIS 100 Gateway to History: Topics course

History 200 is an introduction to historical practice – what professional historians actually do. It is a requirement for history majors, but we encourage all interested undergraduates to enroll. The class is a small seminar, devoted largely to discussion of primary texts. A final research paper of about ten pages length is required. Juniors and seniors can only register with instructor's permission. Each section of this course will be organized around a particular theme - please see term description for details.

Offered: Fall Spring

HIS 102 The West and the World to 1500

While exploring the history of Europe and its neighbors from the ancient to the medieval period, this course focuses on how people borrowed from, adapted, and reconciled various ideas to suit their own needs to form, over time, a coherent set of cultural values. To this end, we will consider several themes throughout the semester, including changing models of political organization, ideas of individual rights and responsibilities, attitudes towards women and 'outsiders', and understandings of nature and of divine power.

HIS 103 The West and the World since 1492

A thematic survey of European history during the period of Europe's rise to and fall from global dominance. It follows roughly on History 101 but does not assume that you have taken it. The reading consists of important philosophical, political, and literary works and documents, supplemented by a textbook.

HIS 106 Witchcraft and Witch Hunts, 1400-1800

During the Renaissance and Reformation, many people throughout Europe became convinced that society was threatened by conspiracies of witches. The resulting panics led to the execution of thousands of people, mostly lower-class women. The course delves into intellectual, cultural and social history to explain how and why this happened, with discussion of both broad trends and local factors. As we will see, responses to witchcraft reflected major changes in European society, culture, and politics that lent new meanings to traditional ideas about witches, possession, and malefice and enabled the systematic condemnation of certain groups of people. The ways in which these ideas were mobilized in individual communities and the reasons for doing so varied widely, however, and we will therefore closely examine several specific examples of witch hunts in order to better understand why they were appealing to so many, why they flourished for a time, and why they ultimately faded.

HIS 107 The City: Contested Spaces

What does it mean to live in a city? Can you reshape people's lives by redesigning city spaces? How do city dwellers, architects, politicians, and others interact with and appropriate their own urban past? This interdisciplinary course will introduce students to different ways of looking at cities, framing them as the contested products of a range of human actions. Through an in-depth examination of four complex urban environments – Chicago, Istanbul, Delhi, and Rome – we will learn about the interplay between space, aesthetics, time, memory, and power. Weekly lectures by an anthropologist, an architect, and a historian will complement discussions of film, historical documents, fiction, and relevant case studies. In addition to writing four short papers, students will hone their analytical skills by observing urban life and form with a series of field studies in the city of Rochester.

HIS 108 History of Mortality

HIS 109 Introduction to Archaeology

This course introduces the student to the field of archaeology through three units of study: 1) The history of excavation from ancient to modern times, 2) The techniques of excavation and the analysis of material remains, 3) Modern theories of cultural interpretation of archaeological sites. We will discuss the value of archaeological approaches to the fields of anthropology, history, architectural and art history, religious and classical studies. Much of the instruction will be illustrated by case studies of sites; although the view will be global, there will be a concentration in Old World material from prehistory to the early modern period. Students will be required to write three essays, with subjects selected from each of the three course units.

HIS 110 The Making of Modern Africa

This course uses film, novel, and historical studies to examine the following themes in the making of modern Africa: the forging of new national identities, creation of wage laborers, and the restructuring of agricultural work, gender, and social age. Students will also explore how African women and men, from their homes and workplaces, and as part of nationalist or national liberation movements during and after the Cold War, have sought to redefine their place in the global economy against the backdrop of new opportunities and challenges presented by the HIV/AIDS pandemic, hunger, international debt, and engagement with China.

HIS 112 Introduction to African Religions of the Diaspora

This course introduces students to the development of African religions in the Americas, Caribbean, and Canada. Religious traditions such as Africanized Christianity, Santería, Candomblé, Vodun, and Spiritual Baptists will be explored. The course not only provides students with a historical overview of each tradition, but it also explores theological frameworks, doctrinal principles, and ritual activities related to each tradition. Class format includes lectures, discussions, and films.

Offered: Summer

HIS 116 N/A

HIS 118 CITIES & URBANISM IN PRE-COLUMBIAN MESOAMERICAN AND THE ANDES

The discipline of archaeology can make unique contributions to our understanding of urbanism and daily life given its ability to examine long-term processes of development and change. The goal of this course is to provide an introduction and overview of urbanism as exemplified by the indigenous cities of the New World (e.g. Mesoamerica and South America). While regional differences will be discussed, we will focus mainly on identifying the theoretical issues that intersect all of the regions we will be studying.

HIS 120 Cultural History of Ancient Greece

In this course we will survey the unique military, political, and economic history of ancient Greece from the Bronze Age to the death of Alexander the Great. In addition, and more unusually, we will look at ancient Greece's rich cultural and social history.

HIS 121 The Roman World

The course offers a comprehensive account of the history of Rome. It first deals with her humble beginnings as a small city-state in central Italy, continuing with the process of Roman hegemony in the Italian peninsula and the Mediterranean world, and ending with the times that led to the fall of the Roman Empire in the west in AD 476. Students will be introduced to the analysis of written and archaeological sources in order to answer the basic question, How do we know about the Romans? Thus, the analysis of the evidence will be the foundation to discuss major topics of Roman civilization. For example, an examination of the city of Pompeii will allow us to reconstruct the daily life of a wealthy Roman city, and the first Roman emperor Augustus' written statement of his own political and military achievements provides us with evidence for the transition from a republican to an imperial form of government.

Offered: Summer

HIS 122 Medieval Europe

This course introduces students to the world of medieval Europe, roughly 500-1500 C.E. The role of religion will be a central theme in this study of the so-called “Christian Middle Ages,” as well as the ordering structures borrowed and adapted from Roman and so-called barbarian cultures. We will examine how medieval Europeans dealt with social, cultural, and economic change and will study reactions to the “Others” on the margins and in their midst: heretics, Muslims, and Jews. Students will be exposed to some of the principal historical debates about the period, as well as the major types of primary sources available in English translation, and will develop facility in reading, analyzing, and interpreting both primary and secondary sources.

HIS 125 Vikings

The Viking age lasted a few short centuries and ended a long time ago, approximately in 1100. Who were the Vikings? How did they live? What made them travel such vast distances? In this course we will explore the world of the Vikings, their religious beliefs, family life, technology, law, and literature. We will read their sagas and myths, listen to their music, and watch documentaries that bring to life their ships and villages.

HIS 126 Hitler's Germany, 1914-1945

This course revolves around the most essential question in modern German history: was Hitler's regime particular to Germany, German culture, and German society, or was merely the manifestation of an immanent quality in all modern nation states? What does it mean to compare any political figure to Hitler? Was his kind of "evil" suis generis or dangerously banal? This course places the rise and fall of the Nazi Party and Hitler in the longer duree of German history, from the Second Empire and WWI, to Weimar, the Nazi State, and the Two Germanys of the Cold War.

HIS 127 Foundations of Medieval France

HIS 128 Postwar Europe

Until the fall of the Berlin Wall in 1989, the past, present, and future of postwar Europe appeared permanently divided, dominated by an inevitable ideological clash. Collapse of the Iron Curtain, however, required a dramatic re-examination, as the once immutable Cold War now appeared more as a post-war parenthesis. This course examines Europe since Zero Hour 1945 as a singular space—one dominated by superpowers, riven by cultural and economic competition, yet also struggling with its past and reimagining its future.

HIS 130 Russian Civilization

Russian Civilization from its beginnings a thousand years ago to the present day. Each unit will cover historical and cultural background as well as literary texts. We will examine important national "myths" (narratives with a variable connection to the historical record) that govern the Russians' understanding of their history and culture, including: the Golden Age of Kiev, Moscow as the Third Rome, and the myths surrounding the city of Petersburg. We will analyze traditional tensions in Russian civilization which prevail today, such as those between: chaos and order, foreign influence and a strong national identity, innovation and tradition, and between radical skepticism and faith. Readings will include: Russian fairy tales and saints' lives, excerpts from the autobiography of the 17th century heretic Avvakum, tales by Pushkin and Gogol, one of Dostoevsky's most powerful and influential novels ("The Devils/Possessed"), and a wide range of materials from the twentieth century. In English.

HIS 132 Imperial Russia

This course examines the history of the Russian Empire from the reign of Peter the Great (1692-1725) to the revolutions of 1917. Students will read primary sources in translation, academic articles, and a survey text. About one-half of class time will be devoted to discussion of the readings. Topics will include Peter's westernization of Russian elites and the costs thereof, the Pugachev rebellion of 1773-1775, the spread of Enlightenment ideals to Russia during the Napoleonic Wars, the abolition of serfdom, Sergei Witte’s industrialization drive, socialist movements in Russia, World War I, and the causes of the revolutions of 1917.

HIS 133 The Russian Revolutions from Lenin to Putin

This class examines the history of the Soviet Union from foundation (1917) to collapse (1991), focusing on internal developments in the Russian part of the Union. We will begin with a discussion of the background to the collapse of the imperial Russian state in 1917, including changes in Russian society and World War I. Later, the class will look at questions such as: Did the New Economic Policy of the 1920s create a stable socioeconomic order? How did Stalin defeat his political rivals and create a personal dictatorship? What were the motivations for the Great Terror of 1937-1938? How did the Soviet Union defeat Nazi Germany in World War II? We will also devote some time to the Soviet role in the Cold War and the appeal of Leninism in colonized and post-colonial societies. The course will conclude with a discussion of the collapse of the USSR and the emergence of a soft authoritarian order in post-Soviet Russia. The syllabus will emphasize primary-source readings and class discussion.

HIS 134 Russia Now

In this expanded 4-credit version of the 2-credit "Russia Now" course, students will follow current events in Russia through print and electronic sources, and write two short essays and one longer research paper.

HIS 135 DANTE'S "DIVINE COMEDY": A JOURNEY FROM INFERNO TO PARADISE, PART I. "INFERNO" AND "PURGATORIO"

The first of a sequence of two, the course approaches "The Divine Comedy" both as a poetic masterpiece and as an encyclopedia of medieval culture. Through a close textual analysis of "Inferno," and the first half of "Purgatorio," students learn how to approach Dante’s poetry as a vehicle for thought, an instrument of self-discovery, and a way to understand and affect the historical reality. They also gain a perspective on the Biblical, Christian, and Classical traditions as they intersect with the multiple levels of Dante’s concern, ranging from literature to history, from politics to government, from philosophy to theology. A visual component, including illustrations of the "Comedy" and multiple artworks pertinent to the narrative, complements the course. Class format includes lectures, discussion, and a weekly recitation session. Intensive class participation is encouraged. Dante I can be taken independently from Dante II. No prerequisites. Freshmen are welcome. Part of the Dante Humanities Cluster.

HIS 137A History of Poland (study abroad)

A survey of Polish history from the Piast dynasty through the period of Jagiellonian rule, the time of the elected kings, 123 years of partitioned Poland, the 1920's and 1930's, World War II, the creation and functioning of the People's Republic, the collapse of the communist system.

HIS 139 History of India

An introductory survey of the history of India from ancient times to the present, with a special emphasis on the British colonial era and the making of the Indian nation. Course readings will emphasize India's remarkable religious, cultural, and environmental diversity and the challenges and promises that such diversity presents to national identity in the world's most populous democracy. Course format will be an informal mix of lectures, discussions, student presentations, and films.

HIS 142 Traditional China

This course focuses on the history of traditional China from antiquity to the 18th century. Two thousand years of civilization, six thousand miles of the Great Wall, a silk road linking China to Rome, and seven maritime voyages sailing across the Pacific and Indian oceans. How have the notions of "China" and "Chinese" civilization transformed over time through cultural diffusion, commercial exchange, and military expansion? How does increased knowledge of Chinese history change our conceptions of Western civilization and the currents of world history? No prior knowledge of Chinese history or language is required for this course. Besides a standard textbook, one academic monograph (Mountain of Fame) and one Chinese classics (Dream of the Red Chamber) will anchor our readings throughout the course.

HIS 143 Modern China, 1600-Present

This class covers the search for modern China in the twentieth century. We will trace how China, between invasion, war, and revolution, transformed from an empire to a republic, from republic to Communist state, and from Communist state to the economic powerhouse that it is today.

HIS 145 Modern Japan

This course covers Japanese history from the 1800s to the present. During these two hundred years, Japan went through a rollercoaster of events: the Meiji Restoration, industrialization, fascism, wars, atomic bombs, an economic miracle, a "lost" decade, and recently a devastating tsunami. The Japanese paradox of Chrysanthemum and Sword still awaits explanation. Come join me in this journey of books, archives, films, and anime in search of modern Japan.

HIS 146 Traditional Japanese Culture

Traces the development of the Japanese cultural tradition through the most prominent examples of its visual, literary, and performing arts. These include the poetry, courtly romances, and scroll painting of the ancient courtiers; the poetry, Noh drama, and ink painting of the medieval samurai and Zen monks; the haiku poetry and art of early modern literati groups; and the poetry, kabuki theater, and print art of the new urban classes. Also examined are architecture, flower arranging, and the artistic complex of the tea ceremony. Emphasis is given to the social contexts of artistic expression.

HIS 148 Religion and Chinese Society

This course examines the complicated relationship between religion and society in China. It takes a sociological approach, emphasizing that religion should be studied as a social phenomena that closely interacts with the development of society at large. The focus is on contemporary times from the end of the 19th century through present. During this period of time, China experienced tremendous change. This course introduces how such change impacted on and was expressed through religion, religiosity, and religious politics.

HIS 150 Colonial Latin America

This introductory survey focuses on the Spanish and Portuguese conquests and colonization of the region that we now know as Latin America. Contrary to popular belief, "the Conquest" was constantly negotiated. Indigenous and African rebels, French and Dutch pirates and religious minorities eroded the Iberian hold on this vast territory. Primary source readings are an important component to this class and will introduce you to the writings of Inca nobles, Spanish conquistadors, and free African merchants. As a result, our course focuses on the vibrant societies defined as much by their cultural mixture as by their inherent political, social and economic inequality. The course ends with a brief glimpse at the Latin American independence movements. No prior knowledge of Latin American history or Spanish/Portuguese language is necessary for this course.

HIS 151 Modern Latin America

This introductory survey course will cover the difficult process of nation-building that twenty-odd societies south of the Rio Grande experienced during the nineteenth and twentieth centuries.

HIS 153 History of Brazil, 1500-2009

This introductory course will highlight major institutions, events and trends as Brazil transitioned from a rural, slave society to a highly urbanized society with one of the world's most promising economies. Divided into three periods, the course first considers how Portuguese, African and indigenous institutions and traditions molded the colonial period, where sugar and then gold dominated Brazil's economy. The second part begins with Brazil's independence from Portugal in 1822 and covers the persistence of slavery, the introduction of railroads, European immigration and the importance of coffee during the Brazilian

Empire. The third part of the course shows how samba, Carnaval, industrialization, and futebol as well as underdevelopment, dictatorships, and favelas define modern Brazilian history.

HIS 154 History of Latin America through Soccer

In this course, we will use soccer as a lens to study the development of modern Latin American history, culture and politics. British immigrants first introduced “the beautiful game” to Argentina in 1867, yet at the time soccer was viewed as a bizarre, violent, and foreign fad. This course will trace the trajectory of both the sport and the Latin American societies that received and molded soccer into the cultural force that it is today. Soccer has been used to fabricate national identities, promote multi-racial societies, and, of course, entertain the masses. We will explore these facets of its impact on twentieth-century Latin American history, while acknowledging the more odious use of the sport in upholding dictatorships, drug trafficking and misogyny. No prior knowledge of soccer or Latin American history is required.

HIS 155 Film as History: Modern Latin America

This introductory course uses film to understand several trends and elements central to Latin American society and culture in the twentieth century. Specifically, the class will be structured around five main themes: Latin America and the United States; Class, Race and Gender; Revolution and Repression; Underdevelopment and Informality; and Religion. By the end of the course, students will have a strong introduction to Latin American modern history and understand the role films, as well as other sources, play in our perception of history.

HIS 156 A Communist Country on America's Doorsteps: Cuba from Columbus to the Present

While the socioeconomic and political situation in Cuba has changed considerably since the collapse of the Soviet Union, and the process of normalizing relations with the United States is in progress, Cuba has been for many decades a communist country just 90 miles away from American shores. This course traces the complex historical developments which gave rise to this situation and discusses the grave repercussions. The course examines the evolution of socioeconomic and political interest groups in colonial Spanish Cuba and the subsequent American entanglement in the internal historical processes in Cuba, with far-reaching unintended consequences, particularly, the ultimate involvement of the Soviet Union, which brought Cuba to the center of the Cold War between the supper powers.

HIS 157 N/A

Offered: Spring

HIS 160 United States History to 1865

A survey of the history of the North American continent from its peopling and colonial rivalry to the founding of the United States, its development, and eventual Civil War. Topics include international competition, economic growth, the role of slavery, and political conflict.

HIS 161 American Political History, 1865 - 1990

A study of the changing use of power from the end of the Civil War until the election of Bill Clinton. Among the topics under investigation is the role of changing nature of the party system, the role of race and gender in voting and governing, and the efforts to alter the basis of American political life.

HIS 162 Early America to 1783

A study of the discovery, settlement, and development of America, 1580-1783.

HIS 166 Liberal America, 1929-1973

This course is an examination of the development of American politics, society, and culture between the onset of the Great Depression and the Watergate scandal. It focuses on the creation and consolidation of the "New Deal order"—a liberal political economy centered on a constrained corporate capitalism, a modest welfare state, and a national security apparatus designed to wage the Cold War and extend American power abroad.

HIS 167 Postindustrial America, 1973-Present

Examines American politics, society, and culture since 1973. Focus is on the deindustrialization of the economy, the revitalization of conservatism, the "culture wars," the end of the Cold War and post-Cold War foreign affairs--including the wars in Afghanistan and Iraq--, and the collapse of bipartisan policy-making.

HIS 168 Introduction to American Politics

When did some states turn blue--and others red--in presidential elections? What are the origins of the modern Congress, including the filibuster-prone Senate and a House run by its majority party? Why did politicians begin to campaign for the presidency, rather than waiting on their front porches for voters to appear? How did voting rights--and other rights of citizenship--expand, then narrow, then expand again, over time? Drawing broadly on historical as well as contemporary evidence, this course will introduce students to the foundations of American government. We will examine political institutions as well as the linkages that connect institutions, political leaders, and ordinary citizens. This course is appropriate for majors and non-majors with an interest in understanding how and why the American political system works as it does.

HIS 170 African-American History I to 1900

After a brief review of the primary features of pre-European African society, we will examine the affect of the "Middle Passage" -- the transportation of enslaved Africans to the Western Hemisphere. We will then focus on the process of "Americanization" as the Africans became African-Americans. The struggle for freedom and citizenship will conclude our survey. The main course readings will be a representative sample of African-American autobiographies, and short selections from a secondary text. Using the autobiographies as historical source material, we will produce a brief history of the values and cultural practices of Africans in America, and the ways in which African-Americans adapted to and shaped American life and society.

HIS 172 History of Jazz

This study of Jazz, as an American musical art form, will be structured around the lives and music of jazz musicians, across a range of instrumental, vocal, and ensemble genres. Course focuses on jazz titans, those individuals and musical groups distinguished by their seminal and permanent influences, such as Louis Armstrong, Miles Davis, or Coleman Hawkins or shorter intense careers, such as Charlie Parker. Blues, ragtime, swing, bebop, cool, progressive, and free jazz are landmark terms. And finally, study of the musical history will be enhanced by considerations from sociological, linguistic, and philosophical perspectives. The instructional format includes lectures, discussion and intense emphasis on listening. This course is designed for students with little or no musical training; simple technical, musical vocabulary and concepts will be provided. Reading, listening assignments, brief written assignments and two exams. No prerequisites.

Offered: Spring

HIS 173 The Blues

The blues from its earliest forms to recent developments. It is both a history and a cultural studies course, and the Monday class and the Wednesday class will have different focuses on this account. The primary focus of the Monday class will be historical, examining the music and its development in chronological terms. The primary focus of the Wednesday class will be cultural topics, continuing themes in the music and the lyrics, its reception in American society, and we will trace these by moving back and forth in time. Among the important topics and themes will be race, religion and sexuality; the economic effects of the music industry on the blues and the people who played them, the reception of the blues in African-American culture, and later among white Americans. The goal of the course is to explore the great influence of the blues on American culture. Musical aspects of the blues will also be covered: its peculiar structure and characteristic scales, but no musical knowledge is presumed or needed.

Offered: Fall

HIS 174 American Military History

American history has been largely shaped by wars. This course will survey the history of American wars; the military, naval, and civil institutions that have been created to serve the changing needs of national defense; and the citizen-soldiers who have preserved the liberty of the Republic.

HIS 175 Religion in America

Leaning heavily on primary sources, this course surveys the history and ethnography of religion in the United States. Special attention will be given to personal experiences of the divine, political strife and social reform, tensions between sectarianism and pluralism, and the extraordinary religious history of western New York.

HIS 177 AFRICAN AMERICAN RELIGIOUS HISTORY

Historical survey of religions as practiced by people of African descent living in North America. Christianity, Islam, and African-derived religions will be examined. Through its canvassing of doctrinal and ritual frameworks, students are afforded an opportunity to view the diverse and complex terrain of African American religion. Class format includes lectures, discussions, and film/music.

Offered: Summer

HIS 178 The Sixties

HIS 179 History of New York

Offered: Fall

HIS 180 History of Technology

This course surveys the history of technology and its impacts on agriculture, communication, transportation, housing, health, war and society. Technology has been used to build empires and improve human societies, but also to destroy, enslave, and censor. Today we face limits on technology as well as new and seemingly boundless opportunities for the future. The unifying theme of the course is exploring and understanding the impact of technology on individuals.

HIS 181 History of Eating and Food

The class is not a narrative of eating or a study of food over time. Instead, it asks students to weave together two stories—the human component of nature and the ways in which we were, are, and will be what we eat and what is eaten. Discussions, films, fiction and non-fiction reading assignments, and discussions of where we go next. Non-traditional writing assignments and few lectures—more Socratic than pedantic.

HIS 182 Speaking Stones

This course will examine grave stones and funerary architecture in Rochester's historic Mt. Hope Cemetery. Students will be introduced to western funeral ritual and practice, with a particular focus on funerary architecture and cemeteries in the United States, and the place of graves and graveyards in popular fiction and culture. Then they will examine the iconography and epigraphy of graves and funerary monuments in terms of their function of forging symbolic connections among the living and the dead. Case studies will be drawn from Mt. Hope Cemetery, which will further serve to illuminate both Rochester's history, and American religious belief and practice.

HIS 183 History of Christianity I

The purpose of this course is to explore the general development of Christianity throughout its twenty centuries of existence, paying special attention to the religious presuppositions behind Christianity and its complex relationship to its socio-cultural matrix. The course will focus on important moments in Christian history, including its inception as a Jewish religious movement set in motion by Jesus, its dissemination in the Greco-Roman world by Paul of Tarsus, its growth and triumph in the Roman Empire, the split between the Greek- and Latin-speaking churches, medieval Catholicism, the Reformation and rise of Protestantism, Christianity and the modern world, and contemporary movements and tendencies within the Christian churches.

HIS 184 History of Islam

This course will trace the development of the religion of Islam from its origins in the Qur'an and Muhammad's teachings, through the codification of the classical tradition in its various forms, and finally to the living Islam of the contemporary world.

HIS 185 A History of the Future: Millennial Visions in Film and Literature

Through literature and film, this course examines how people at various points in the past have imagined our future--and the ways in which those "millennial visions" were conditioned by specific historical contexts. The course looks at both positive and negative views of the future, and at secular as well as religious predictions for humankind's fate, asking always how our visions of the future, like a fun-house mirror, reflect in sometimes monstrous or exaggerated terms the concerns of the present.

HIS 186 History of Energy Resources and Utilization

This course will explore the many types of energy resources that have been used to provide heat, light, and power for residential, commercial, industrial, and transportation uses. The major energy resources in the ancient world were renewables (wind, solar, wood) along with muscle power, and this changed very little until the end of the 18th Century when coal came into widespread use. In the late 19th Century petroleum began its rise to become the most widely used energy resource, with natural gas and nuclear energy securing significant market share in the 20th Century. Despite widespread recognition of the environmental consequences of widespread use of fossil fuels, the transition back to renewable resources continues at a very slow pace. This course will explore the history of these various energy resources and how they were utilized, and offer students an opportunity to project various paths to a sustainable energy future.

HIS 187 Science, Magic, and the Occult from Antiquity to Newton

This course explores the early history of humans' attempts to explain and control the cosmos, taking into account the real contributions made to early science by areas of inquiry now dismissed as magic or superstition, such as astrology, alchemy, and "natural magic." One major theme of the course will be the continuing way in which societies have policed the boundary between what they define as "magic" and what they dub legitimate "science." What is legitimate knowledge about nature, and who gets to define what counts as legitimate? The course will end around 1700, with Newton and the so-called "Scientific Revolution," and the marginalization of astrology, alchemy and similar fields of inquiry as "pseudo-sciences" or popular error.

HIS 188 SEX AND POWER

This course is an introduction to the interdisciplinary scholarship of Gender, Sexuality and Women's studies. As a survey course, this class is designed to give students from diverse backgrounds and disciplines a basic understanding of debates and perspectives discussed in the field. We will use gender as a critical lens to examine some of the social, cultural, economic, scientific, and political practices that organize our lives. We will explore a multitude of feminist perspective on the intersections of sex, gender, sexuality, race, ethnicity, class, religion, and other categories of identity. In this course, we will interrogate these categories as socially constructed while acknowledging that these constructions have real effects in subordinating groups, marking bodies, and creating structural, intersectional inequalities.

HIS 189 Wives. Witches, and Wenches: Women in American History

This course surveys American history through the words and work of women. Well-known historical events and developments--including but not limited to the Revolutionary War, the abolition of slavery, the Great Depression, and the protest movements of the 1960s—look different when considered from the perspective of women. The course will further examine how social categories such as race, class, sexuality, and religion have shaped women’s historical experiences. Broad in chronological scope, this course is not intended to be comprehensive. Rather, we will utilize primary and secondary sources to delve into important historical moments and to explore questions about the practice and politics of studying women’s history.

HIS 190 Darwin and Science in America

This course explores the development and reception of Darwin’s theory of evolution from the publication of On the Origin of Species (1859) to present debates about scientific determinism. We will cover familiar topics such as social Darwinism and creationism, but the course focuses on developments in the history of science and philosophy. Darwin posed hard questions for many Americans. If chance variation determined the survival value of an organism, what did this say about human consciousness and free will? Could humans determine their own fate, or was it predetermined by the laws of science? Does evolutionary theory necessarily entail a reductive understanding of consciousness, suggesting the complexities of mind, human behavior, and cultural values are explainable in terms of brain chemistry and neurological processes?

HIS 191 N/A

HIS 192 N/A

HIS 193 N/A

HIS 194 N/A

HIS 195 VIRT&VIRILE:HIS OF MANLINESS

HIS 196 N/A

HIS 197 IMAG THE FUTURE:HIS OF SCIFI

HIS 198 STALIN AND HIS LEGACY 39-91

HIS 199 ALEXANDER THE GREAT

HIS 200 Gateway to History: Topics course

History 200 is an introduction to historical practice – what professional historians actually do. It is a requirement for history majors, but we encourage all interested undergraduates to enroll. The class is a small seminar, devoted largely to discussion of primary texts. A final research paper of about ten pages length is required. Juniors and seniors can only register with instructor's permission. Each section of this course will be organized around a particular theme - please see term description for details.

HIS 200W THE POLITICS OF SPORT

HIS 201 New Perspectives in Global History

Part I examines the origins of colonialism and "underdevelopment" in the global South as an outcome of the crisis in European feudalism, the rise of capitalism, and the Industrial Revolution in the global North. Progress in the North and not in the South were but two sides of the same process; a view of the North-South that remains largely unchallenged in the recent past, notwithstanding dramatic shifts in the world system during the same period. The dissolution of the Soviet Union, which has profoundly shaped international politics in the past two decades, has not by itself generated an alternative to this understanding of global history. Part II shows how the emergence of China, Brazil, India, and several other countries as economic power houses, competing for world resources and markets with the US-led global North, has not only altered the world's living standards; it has also inspired new interpretations, rivaling the view that privileges social revolution in the fight for economic independence.

HIS 202 Health, Medicine, and Social Reform

Examination of the interconnected histories of medical science, public health, and political action promoting social and health reform, from the Scientific Revolution of the seventeenth century to the present. Attention will also be directed to improvements in health status, variations in the distribution of disease and risk, and changes in the social role of medicine and medical institutions. The material includes major primary sources: Frank, Engels,Virchow, Riis, Hamilton, Sigerist, Geiger. Secondary readings will include Rosen's A HISTORY OF PUBLIC HEALTH, and Jones' BAD BLOOD.

HIS 202W Health, Medicine, and Social Reform

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HIS 203 Changing Concepts of Health and Illness

The long-term intellectual history of essential ideas in the Western medical tradition: illness, health, and mind/body interaction. The time span ranges from Greek antiquity to the present day, with emphasis on the last 250 years and on the relationship between emotional and biological factors in the onset and experience of disease. Primary sources include Hippocrates, Galen, Maimonides, Descartes, Gaub, Charcot, Freud, Alexander, Cannon, Engel. Secondary sources include Porter's THE GREATEST BENEFIT TO MANKIND: A MEDICAL HISTORY OF HUMANITY.

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HIS 204 History of International and Global Health

Examines the initiation, evolution, and transformation of international and global health activities/policies focusing on developments in the 19th-early 21st centuries. It also considers events such as pandemic plague, exchange of diseases between the Old World and the New, and the role of health concerns in early European and American colonialism and imperialism. The major focus is the evolution of cooperative efforts in international health under governmental, non-governmental, and trans-governmental auspices with attention given to the role of international conferences/conventions, the work of the International Red Cross and the Rockefeller Foundations International Health Division, and the creation/functioning of the Pan American Health Organization, the Office International d'Hygiene Publique, the League of Nations Health Organization, and the World Health Organization. For the later 20th century, we will focus on the World Bank, the Gates Foundation, UNAIDS, and other current players in global health.

Offered: Fall

HIS 204W History of International and Global Health

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HIS 205 Islam and the Third World

This course will study some of the important and often dramatic changes occurring in modern Islam by examining the effects on it of Third World political, social, and economic factors. Case studies will be drawn from contemporary Muslim societies but placed in context of similar situations involving other religious traditions in South America, Africa, and South Asia.

HIS 206 Dangerous Texts: Literature and Politics in Russia

The course examines "dangerous texts" from the 17th c. to the present to see how texts and authors were seen as threats to the state and explores ways in which writers perceived themselves as a "second government" and how this affected their writing. Readings include Avvakum, Radishchev, Pushkin, Turgenev, Dostoevsky, Mandelstam, Solzhenitsyn, Voinovich, and Sinyavsky/Tertz.

HIS 206W Dangerous Texts: Literature and Politics in Russia

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HIS 207 Gender and Representation in Native American Art

In this examination of gender-based artistic practices in several Native North American societies (including Northwest Coast, Plains, Pueblo, Navajo, and Inuit), we will examine how gendered social and artistic roles have altered in response to colonialism in the last two centuries. We will critique some of the entrenched notions in the literature about Native men and women and their art--among them, notions of sacred male "art" vs. secular female "craft," and authentic vs. touristic products. We will also examine the work of some noteworthy individual artists of the last 100 years in Native North American societies, including some contemporary artists who critique gender roles in their art.

HIS 208 Comparative Modern Revolutions: France, Japan, Mexico, Russia

In this class we will compare the French Revolution (1789-1815), the Japanese Meiji Revolution (usually called in English "the Restoration") of 1868-1890, the Mexican Revolution (1910-1924), and the Russian Revolution (1917-1937). We will examine such questions as: To what extent did particular social groups drive each of these revolutions? To what extent did each of these revolutions begin with a simple collapse of the state? Were new ideologies/ideas important in bringing on each revolution? How important were efforts "from below" and "from above" (i.e. by established elites and/or new state apparatuses) in determining the outcome of each revolution? Do modern revolutions tend to follow a common course, as Crane Brinton has argued, or are they 'sui generis'?

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HIS 209 Corruption and the Global Economy in Historical Perspective

This junior seminar offers students the opportunity to research and discuss the operation and consequences of widespread corruption in the global economy and the complex historical processes – economic, social, and political – which help to explain the phenomenon. To make the seminar a well-focused course, discussion will focus on country-case studies (with about three selected individuals in each country) that help to demonstrate the general pattern of causes and effects. A major issue to consider, among other things, is the role of cut-throat competition among global corporations and the effects of their corrupt activities on the quality of governance.

HIS 210 Africa Welcomes China in a New Global Economy

Part I surveys major areas of interaction between Africans and the Chinese from the end of WWII to the present. Initially, Africans found in China an ally in their struggles for liberation from European colonialism and Western imperialism. Beginning in the late 1980s, the ties broadened to include educational and cultural exchanges, economic aid, and especially trade and investment. Part II places the above connections in historical and global contexts. A global perspective invites students to see that from the perspective of China, the central features of its ties with Africa today are not structurally different from its dealings with other regions of the world. China has, for example, fueled its rapid economic growth with raw materials from every corner of the globe, including coal from the United States. Research also shows that Africans are acutely aware of the historical significance of China's appearance on the global scene; the rise has given Africans a world of options they had never enjoyed before.

Offered: Fall

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HIS 211 Guns, War, and Revolution in Southern Africa

The peoples of southern Africa's fifteen states (about 290 million in 2010) freed themselves from European colonialism in two different ways. In some countries, Africans pursued, from the time of World War II, a nationalist agenda whose principal aim was to gain political independence. In other colonies, however, frustrated nationalists became revolutionaries, determined to achieve both political and economic autonomy. With the support of peasants and workers, the radicalized leadership launched "people's wars" that had by the 1970s turned portions of southern Africa into bloody battlefields as guerrillas clashed with government forces in the jungle and air.

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HIS 212 Africa's Sleeping Giant: Nigeria since the Islamic Revolution of 1804

In the context of the global economy, Nigeria, the most populous country in Africa, is blessed with vast mineral resources and agricultural lands able to produce a wide variety of tropical products and foods. The country's large population is made up of talented and highly resourceful individuals, who are quick to respond to economic incentives. Thus, it is hard to understand why the country has one of the lowest per capita incomes in the world and why the country's economy occupies such a lowly position within the global economy. We focus on the historical development of socio-economic/political structures over time to explain why the giant of Africa continues to slumber. Some of the country's central problems, such as ethnic and religious contradictions, are similar in some way to those in the U.S. The solutions attempted by the governments of both countries, such as affirmative action, are also somewhat similar. We will conduct a comparative analysis of contemporary historical issues in the two countries.

Offered: Summer

HIS 214 N/A

HIS 215 Archaeology of West Africa

The course will enable the student to understand the inception of present-day complex societies of West Africa and how they evolved, and their vicissitudes in the period 500 B.C. to A.D. 1950. Themes include general characteristics of West African societies in the Iron Age, origins of copper and iron technology and their effects on local societies, megalith and tumuli sites of the Western Sudan, urbanism, and trade networks and contacts in West Africa

HIS 216 Early Civilizations of Africa

The course will examine the environmental, social and cultural dynamics that led to urbanism and other aspects of cultural transformation in Africa before the advent of European colonialism. Topics include concepts of civilization, civilization of Africa, including those of the Nile Valley, the Horn of Africa, the Western Sudan, Zimbabwe, the Inland Niger Delta and the West African Rainforest. The role of the peripheries in the development of these centres will be looked at.

HIS 217 Prehistory of Ancient Peru: The Incas and Their Ancestors

From Machu Picchu to the geoglyphs on the Nasca desert, the Andean region of South America has a long and rich pre-Columbian history. This course will survey the archaeological approaches to understanding the development of Andean cultures that ranges from hunter-gatherers to the Inca Empire. Some of the prehistoric cultures we will be examining include Caral, Chavin, Nasca, Wari, and the Inca. This will class will also discuss plant and animal domestication, inequality, gender, ceramics, urbanization, and the rise and fall of states and empires.

HIS 218 Unequal Development and State Policy: Brazil, the US, and Nigeria

HIS 219 Animal Histories

This course examines the changing historical relationships between homo sapiens and other animal species from prehistory to the present. We will be concerned with how and why the relationship between humans and animals has changed from one defined by predator-prey relations to one of use-oriented dependence. We will attempt to work out how the current relationship between humans and animals came about through a dynamic historical process, with the ultimate goal of understanding that relationship in its proper historical context. The primary method of instruction will be seminar discussions of the readings.

HIS 219W Animal Histories

HIS 221 20th Century European Thought

This course is an introduction to the main currents of European thought in the twentieth century--a century historian Eric Hobsbawm has rightly termed the "Age of Extremes." Focusing on shifting and competing conceptions of selfhood and society, it will place modern European culture and the intellectuals who forged it within the context of the ordeals of two world wars; a host of revolutions (scientific, sexual, Bolshevik, fascist, and "velvet"); the Holocaust and Cold War; the collapse of European colonialism; and the expansion of American empire. We will center on French and German thought, but other regions of the modern European mind - British, Italian, Polish, Czech, émigré American - will also weigh in.

HIS 222 The Enlightenment

The Enlightenment - the structure of ideas typical of eighteenth century Europe and the Americas, shaped and was shaped by increasing globalisation and the clash of cultures between whites and indigenous peoples. Explosive questioning of religion, political justice and gender were also the consequence of these global encounters. This is a text-based course, emphasising close reading skills.

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HIS 223 War, Money, and Ordinary People: European History 1492-1789

This course covers topics such as the changing nature of warfare, the lives of ordinary people, how the state attempted to control their private lives. It also looks at the global world which had emerged along with the growth of national feeling.

Offered: Spring

HIS 223W WAR, MONEY, PEOPLE EUROPE

HIS 224 Children, Families, and the State

HIS 224W Children, Families, and the State

"Tell about the South," demands Shreve McCannon in William Faulkner's Absalom, Absalom! Was the "Old South" a region stuck in time, anti-modern, anti-North and anti-black" or was it, as historians have recently suggested, "an active participant in, and even a promoter of, change and progress?" This course will examine the many roles, nationally and internationally (real and imagined) played by the Old and New South.

HIS 225 Europe and the Great War, 1914-1918

This course is an introduction to the history of Europe during the First World War. After a preliminary look at the details of the conflict itself, we will be concerned mainly with the effect of the war on European culture, society, and consciousness. Class sessions to include both lectures, films, and regular discussions. Reading to include: Robert Graves, GOOD-BYE TO ALL THAT; Vera Britain, TESTAMENT OF YOUTH; Erich Maria Remarque, ALL QUIET ON THE WESTERN FRONT; the poems of Wilfred Owen, Siegfried Sassoon, and others; Alistair Horne, THE PRICE OF GLORY; and Paul Fussell, THE GREAT WAR AND MODERN MEMORY.

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HIS 226 History of Friendship

The course is an exploration of the history of friendship focusing on the 19th century and the United States. We will consider friendships between women, between men, and cross-gender friendships; we will also discuss love letters and letters of courtship. To the extent possible, we will look at friendships among children in the years between 1820 and 1870, and between children and adults. We will read and discuss several famous friendships from that era--e. g., Thomas Jefferson and John Adams, the poet Emily Dickinson and her childhood friend and ultimately sister-in-law Susan Dickinson--and use the family correspondence from the Seward Family Archive digital humanities project as our core primary-source evidence for arriving at a historically and culturally situated definition of friendship and the nature of epistolary relationships.

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HIS 227 History of Geographic Exploration

Exploration is examined as an integral part of European expansion into the rest of the world and of the opening of the U.S. in the eighteenth and nineteenth centuries. Three themes organize the course: Pacific exploration by James Cook; the opening of the American West by Fremont, Louis and Clark, and others; and the exploration of the Arctic by men working for Hudson Bay Company.

HIS 227W History of Geographic Exploration

HIS 229 England and Ireland since 1500

This course is an introductory survey of the tragically intermingled histories of England and Ireland from the end of the Napoleonic Wars to the present. Main topics include the effects of the Wars on England and Ireland; industrialization (and the lack thereof); class conflict in the 1830s and 40s; the Great Famine; the Irish emigration; Liberalism; Irish Nationalism and the IRA; the Depression; the two world wars, etc. Course consists of lectures, small-group discussions, and a few films.

HIS 230 Arthur and Robin Hood: History from Myth

King Arthur and Robin Hood, though so popular a feature in our culture that we almost take them as 'givens,' in fact we pay serious study about them. Medieval stories can inform us about Kingship, ideas of chivalry, socio-economic oppression and resistance, the growth and functioning of early legal systems. This course looks at such early stories within the context of their historical periods.

HIS 231 The French Revolutions

The revolutions which took place in France and the rest of Europe in the 1780s and 1790s were brutal and explosive. They caused a discontinuity in time and the rhythms of ordinary life, but also produced ideas of government and the self which have cast a long shadow over today. Every social, economic and gender group was differently affected by what happened during this time of upheaval and chaos sparked by the collapse of the old monarchy. (Hence it makes some sense to talk about revolutions in the plural). Chairman Mao was once asked when he thought the French Revolution had ended "It's too soon to tell" he replied. The course proceeds through jokes, close documentary analysis, lectures and projects, and a corresponding look at whether it is indeed too soon to tell if the revolutions are over.

HIS 231W The French Revolutions

HIS 232 Modern France

Alternately friends and rivals, modern France and the United States have had a complicated relationship ever since both nations were born in revolution at the end of the eighteenth century. This course will seek to understand France on its own terms by considering a series of formative events such as the Revolution of 1848, the Franco-Prussian War and the Paris Commune, the Dreyfus Affair and the birth of the intellectual, the very different experiences of World Wars I and II, the post-colonial conflicts in Algeria and Vietnam, the near-revolution of May 1968, and contemporary arguments over French foreign and domestic policy.

HIS 232W N/A

HIS 233 (Arezzo) Italy from Napolean to the First Republic

The Italian peninsula has a history that goes back at least 2500 years. But the state of Italy, founded in 1861, is younger than the United States. At the intersection of these two facts lies the main theme of our journey from the Napoleonic invasion of Italy to the approval of the constitution of the Republic of Italy: the difficulty faced by the political leaders of united Italy in getting its citizens to identify with the Italian state. Historical accounts and documents, integrated with a selection of literary, operatic, and cinematic materials, constitute the main sources of information and analysis.

HIS 234 Knights, Criminals, and the Crown: Research in Medieval England

Enough record evidence survives from the operations of the medieval English government to allow students to reconstruct at least public life narratives of certain individuals. This course (1) provides the setting of medieval English history and (2) guides students in individual research projects based on printed and translated English royal documents. Choices include an Italian merchant-banker in London, an English bishop running the administration of Ireland, a rebellious knight at the time of Edward II, a great lady who acts virtually as an earl, and a combative Lincolnshire landowner.

HIS 234W N/A

HIS 235 Environmental History

This course is a global history of the world from the Columbian Exchange to the present. Using the four basic elements of earth, wind, water, and fire, we will explore the earth’s environmental history from the bottom-up. Along the way we will consider the following questions: Does the environment determine human history? Are humans separate from nature? Is environmental

change a story of decline or ongoing transformation? Topics covered will include: industrial farming, salmon fishing, river reclamation, natural disasters, fossil fuels, wildfires, dust bowls, anthrax, suburban sprawl, national parks, nature tourism, and much more.

HIS 235W Earth, Wind, Water, Fire: An Environmental History of the Globe

This course is a global history of the world from the Columbian Exchange to the present. Using the four basic elements of earth, wind, water, and fire, we will explore the earth's environmental history from the bottom-up. Along the way we will consider the following questions: Does the environment determine human history? Are humans separate from nature? Is environmental change a story of decline or ongoing transformation? Topics covered will include: industrial farming, salmon fishing, river reclamation, natural disasters, fossil fuels, wildfires, dust bowls, anthrax, suburban sprawl, national parks, nature tourism, and much more.

HIS 236 Digital History: Mapping the Yellow and Yangtze Rivers

The Yellow River was the "cradle of Chinese civilization." The Yangtze River is the artery of China's wealth. Both of them originate from the Tibetan plateau and meander over three thousand miles across China until they finally meet the Pacific Ocean. Seventy million people's livelihoods are being sustained between these two rivers and their 31 main tributaries as well as 17 major tributary lakes. The Yellow and Yangtze tale, running from 5000 B.C. to 2000 A.D., is a microcosm of the history of the Chinese environment. Their past and present crises are also prime reference points to comprehend China's coming water crisis. In this class, we will make maps on top of learning history, and translate our book knowledge into visual guides using digital tools like ArcGIS, Google Earth, and Omeka.

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HIS 237 Modern Germany, 1945-Present

This course examines the history of modern Germany since World War II. Starting with the end of the war, we will examine the process by which Germany was divided and the period of its division, tracing the histories and divergent characters of East and West Germany. We will then consider Germany's re-unification after 1989, subsequent controversies over the role Germany should take in international conflicts and the challenges of identifying a newly united Germany's place in an increasingly unified Europe, focusing on issues of immigration, national identity and citizenship. Course materials will include novels, films, memoirs, and historical accounts.

HIS 237W MODERN GERMANY

HIS 238 Secret Nation: Russia's Hidden Past

Russia's profile was always that of a carefully-constructed enigma, as the government went to great trouble to gather (the secret police at home and espionage abroad) and manipulate (state control of printing and censorship) information. But the people were also keeping information from the government, and foreign states sent out disinformation of their own. It's clear that there was an active underground in religion, politics, and other areas. With the policy of glasnost, Gorbachev began the painful process of uncovering secrets from above, and a freer press began to do the same from below. We use materials from history, religion, literature, film, political science, and economics to give a broad and yet richly detailed picture of the information that was hidden and the means by which this was accomplished. The official secrecy that was originally a defensive move came to undermine the state it sought to protect. At the end, we will see to what extent old habits of secrecy persist in post-Soviet Russia.

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HIS 242 The Culture of Zen

Zen Buddhism was the core around which many of Japan's greatest cultural achievements evolved. From the medieval period on, with its importation from China, the culture of Zen served as the primary context for much of Japanese metaphysics, architecture, landscape and interior design, medicine, ink painting, noh drama, haiku poetry, as well as the entire cultural complex known as the tea ceremony. Along with the Zen doctrinal and textual roots of these remarkable achievements, this course will examine the vibrant culture fostered in the medieval Zen monastic temple institution known as the Gozan and its dispersal into the culture at large.

HIS 243 Chinese Revolutions

More than a hundred years have passed since the fall of China’s last imperial dynasty in 1911. From that time until today, China was shattered and remade by ferocious upheavals: a Republican revolution, a Nationalist revolution, a Communist revolution, and the more recent consumer revolution that is turning China into a global power. How are we to make sense of this continuous revolution, which taken together, has transformed the lives of more people than any other political revolution on earth? In this class we will read much, discuss more, and grapple with the contradictions of the Chinese Revolution to see if we can discover how deep the rabbit hole goes.

HIS 246 Digital History: Mapping China's Economic History

In this course we will learn the art of “mapping history.” China, as big as a continent, is composed of at least nine macro regions. China’s twisting economic course throughout the 20th century, was result of the different macro regions’ economic journey. Here we invite you to examine China’s past as both a historian and a cartographer, mapping your findings on a specific region with tools such as line drawings, Google Earth, ArcGIS, and QGIS. Your digital creations may offer new insights toward visualizing modern China.

HIS 246W Digital History: Mapping China's Economic History

HIS 247 The Korean War

The Korean War claimed over 3 million lives and led to the division of Korea, the isolation of China, and the rise of postwar Japan. In America, it helped push massive military buildup and McCarthyism. It was the first battlefield of the Cold War, the first jet war, and the first “limited war” whose battlefields---Chosin, Heartbreak Ridge, and Pork Chop Hill---taught Americans painful lessons that were all too quickly forgotten as the United States stumbled into Vietnam just over a decade later. This course covers modern Korean history, the role of Soviet and American intervention, China’s entry into the war, and the trauma of a Korean nation divided between North and South. Through history books, memoirs, and films, we will explore the lessons of the “Forgotten War” and the future of the Korean Peninsula.

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HIS 248 The Samurai

SAMURAI: Swordsman---Servant---Warrior. Popular imagery portrays the samurai and their warrior code (Bushido) as the “soul” of Japan, and the samurai are as heavily romanticized as the knights of medieval Europe. But who were they, and were they really nobler than bloody killers? This course examines the origins of the warrior class in the 10th-11th centuries and its rise to power in the civil wars of medieval Japan. We will read books in Japanese history and literature to trace the peak and the end of the samurai age. We will also explore how the samurai have become a pop culture phenomenon, from the classic films of

Akira Kurosawa to cult hits like “Rurouni Kenshin” and “Ghost Dog.” Careful reading and discussion will be crucial in this class to separate the real history from the popular myths.

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HIS 249 N/A

HIS 250 Economies and Societies in Latin America and the Caribbean since 1492

The main thrust of the course is an attempt to provide a historical explanation for the general problem of material poverty and the attendant socio-political crises that characterize contemporary Latin America and the Caribbean. The course begins with an examination of the organization of the economies and societies in the region on the eve of the European conquest, and the factors determining the level of development attained by this time. This is followed by a discussion of the socio-economic processes during the colonial period. The post-colonial period (which differs from one country to another) is examined in the context of the inherited socio-economic structures of the colonial period and the changing conditions in the evolving modern global system.

HIS 251 African Diaspora in Latin America

This upper-level seminar will analyze the arrival of over 6 million Africans to Latin America and their impact on the Portuguese and Spanish societies of the Western Hemisphere from 1500 to 1867. We will properly begin the study the African Diaspora in Latin America by studying the transition from Indigenous slavery to African slavery in Bahia, Brazil. The following weeks will cover the emergent demand for African laborers in the urban centers of Mexico, Colombia, Cuba and Peru. Throughout the class we will study the creative and creolizing cultural processes that accompanied the African presence in the region.

HIS 251W African Diaspora in Latin America

HIS 252 Immigration and the Americas

Although the United States received the largest number of immigrants in the western hemisphere in the nineteenth and twentieth centuries, the relative impact of immigrants was just as important in other countries such as Argentina and Brazil. This course explores the complex events, trends and personal decisions that impacted migrants' decisions. We will seek to understand their movements as a function of three essential questions: why do people migrate; who migrates; and how do they choose where they migrate? The course will incorporate a variety of materials including interviews, memoirs, monographs and demographic studies. Students will also be involved in a hands-on discovery of Rochester’s own immigrant communities.

HIS 252W We're Coming to the Americas: Immigration in the 19th and 20th Centuries

Although the United States received the largest number of immigrants in the western hemisphere in the nineteenth and twentieth centuries, the relative impact of immigrants was just as important in other countries such as Argentina and Brazil. This course explores the complex events, trends and personal decisions that impacted migrants' decisions. We will seek to understand their movements as a function of three essential questions: why do people migrate; who migrates; and how do they choose where they migrate? The course will incorporate a variety of materials including interviews, memoirs, monographs and demographic studies. Students will also be involved in a hands-on discovery of Rochester’s own immigrant communities.

HIS 253 Mexico through Time

HIS 254 Big Business in the South: Business History of Latin America

HIS 254W BIG BUSINESS IN BRAZIL

HIS 255 1492 and Beyond: Identity, Culture, and Society in Colonial Latin America

This course will examine the writings of Spanish American residents from 1492 through the end of the seventeenth century. By focusing on conquerors, nuns and indigenous intellectuals, we will analyze the uses of literature as history and viceversa within the context of colonial rule in the Spanish-speaking Caribbean, Mexico, Peru and other spaces. A broad range of sources such as journal entries, poems, and chronicles (among others) will inform our understanding of colonial religion, society, identity, and politics. Readings will include: Christopher Columbus, Hernan Cortes, El Inca Garcilaso, Sor Juana Inés del la Cruz, Chimalpahin and others. Course work will consist of several short papers, a research paper, student presentations, etc. Course in English. *Students taking the course for Spanish credit must have taken SP 200 and will do some reading and most of the writing in Spanish. .

HIS 255W 1492 AND BEYOND

HIS 256 N/A

HIS 257 History of Masculinity

“Be a man” or “He acted like a real man” – we hear these and similar phrases around us all the time, but what does it mean “to be a real man”? How do we define what masculinity is? Does our definition of masculinity differ from, say, the medieval or Victorian? If so, then how and why? Using primary and secondary sources, as well as film and other media, this seminar explores the historical development of the modern concept of masculinity, the strategies that are used to learn to be “men” (such as sports), and how modern ideas about masculinity affect gender relationships in general as well as men’s mental and physical health.

HIS 258 Women's Lives and Letters: America 1830-1880

The description for HIS 258/W, 458, Women's Lives and Letters: Using manuscript correspondence of women from upstate New York in the mid-19th century, students will explore the historical themes contained in the letters--literature and reading, the creation of epistolary selves, readership and authorship, friendship, marriage, motherhood, illness and death, child-rearing, education, spirituality and religion, medical practice, and reform, including abolitionism and women's rights, among other public and domestic themes. Reading in secondary sources will historicize the letters' content; research projects will draw on other primary sources in UR's collections. Students will each transcribe and annotate about ten letters, identifying people and places named in them, and learn text encoding in order to tag the letters for the Seward Family Archive website.

HIS 258W Women's Lives and Letters: America 1830-1880

HIS 259 History of Feminism: Colloquium

In this colloquium we will look at the history of international feminism and explore its many faces. We will examine the various factors that have contributed to women’s historically lower status in society; will look at the emergence of women’s rights and feminist movements as well as the distinctions among various feminist theories, and will discuss the relevance of feminism today.

HIS 260 Research Colloquium: Lewis Henry Morgan's Biecentennial

This colloquium will focus on the life, works and contested legacies of Lewis Henry Morgan (1818-1881), a Rochester attorney and founding figure of American anthropology. Students will conduct original research using archival materials and museum collections on campus and at local cultural institutions. This research will provide content for exhibitions, events, and a website to be planned in connection with the bicentennial of Morgan’s birth.

HIS 264 The Idea of America

WHAT IS AMERICA? A country? A continent? A political ideal? A culture? This course traces the development of ideas about America, from its historical beginnings to our own time, from European fantasies about the New World and its possibilities to the experiences of settlers and citizens facing its realities. We will explore the competing and even contending narratives of America in a wide variety of cultural documents, from orations, sermons and political tracts to novels, poems, photographs, and films. The course is open to all interested students and required for all American Studies majors.

HIS 266 The Arts in American Culture

Examines selected topics in American art and culture of the 19th and 20th centuries. A central concern will be the way in which images, especially paintings and photographs, gave shape to the ideas of what America was and what it meant to be American, as well as to the creation of an urban culture.

HIS 267 Music-Made America

This version of the course centers on the work of Bruce Springsteen and the manner in which this work reflects and reflects on American working-class experience and culture in the late twentieth century, as well as his efforts to sustain the traditions of populist social criticism while bearing the mantle of a rock star.

HIS 268 History of the American South, 1896-1946

Blue States! Red States! Why so many “red states” in the south? Why such a close attachment to family, religion, community? Why such a penchant for a distinct music, food, and sports culture? Why has the region been so long associated with social backwardness—violence, racism, and political conservatism? These and other characteristics (real or imagined) have roots that extend back to Europe and Africa while many are the result of more recent events—dating back only a few generations. This course will address these and other questions in the search of historical answer to the roots of southern peculiarities and the origins of those “Red States.”

HIS 268W History of the American South, 1896-1946

HIS 269 The Civil War

Over 150 years after the Civil War, historians continue to disagree as to "what caused the war" and raise doubts as to exactly who were the "winners" and "losers." The course re-examines the causes, conduct, and consequences of the American Civil War.

HIS 270 Progressive America

This course will examine the social, political, and cultural aspects of American Progressivism during the years 1890-1920. Among the topics of focus will be the movement's origins, its dominant strains of thought, its triumphs, and ultimate failure. In addition to providing a factual background of the movement and period, this course will assist students in developing and sharpening their reading, writing, and analytical skills.

HIS 272 Spiritualism in America

The primary aim of this course is to explore the historical development and structural make-up of modern American Spiritualism. This course offers students a historical narrative that ranges from the early development of modern Spiritualism in upstate New York to current forms, such as African American Spiritual churches of New Orleans. In addition to this historical survey, the course examines major principles making up the framework of modern Spiritualism in America. Class format includes lectures, discussions, films, and field trips.

HIS 274 History of Race in America

We will identify and discuss the salient moments in the nation's history when race functioned as an organizing principle in the construction of American public and private institutions. Course readings will examine the historical background of current debates on issues such as Affirmative Action, Diversity, Multiculturalism, Educational Testing, Reparations, the Media, and Political Party Re-alignment.

HIS 274W History of Race in America

We will identify and discuss the salient moments in the nation's history when race functioned as an organizing principle in the construction of American public and private institutions. Course readings will examine the historical background of current debates on issues such as Affirmative Action, Diversity, Multiculturalism, Educational Testing, Reparations, the Media, and Political Party Re-alignment.

HIS 275 Economics of Discrimination

Economic development of African Americans during the twentieth century, with an examination of the economics of discrimination.

HIS 276 American Movies in their Moment: The Silver Age, 1968-1980

This course considers feature films as evidence for the cultural historian of modern America by considering the role of movies in the social imaginary of the "Seventies" (1968-1980). Films include Easy Rider, Taxi Driver, Deer Hunter, Apocalypse Now, Nashville, Star Wars.

Offered: Spring

HIS 277 American Movies in their Moment: The Golden Age 1929-1945

This course considers feature films as evidence for the cultural historian of modern America by considering the role of movies in the social imaginary of the Great Depression and World War II. Films include Little Caesar, Gold Diggers of 1933, Gone with the Wind, Citizen Kane, Double Indemnity, Best Years of Our Lives.

HIS 279 The Seward Family in Peace and War

A history class in the digital studies curriculum that assumes no background in either one. It is a hands-on introduction to the history of the family, gender, and the antebellum and Civil War eras, to historical editing, and to website design and creation, using the Papers of William Henry Seward (1801-1872), Governor of New York, US Senator, and Secretary of State under Abraham Lincoln during the Civil War. This semester, we will focus on the family's correspondence from the 1830s, when Seward was away in Albany much of the time, first as a state senator and then as the governor of New York. Topics include the cholera epidemic of 1832, romantic love, and household economy.

HIS 279W The Seward Family in Peace and War

A history class in the digital studies curriculum that assumes no background in either one. It is a hands-on introduction to the history of the family, gender, and the antebellum and Civil War eras, to historical editing, and to website design and creation, using the Papers of William Henry Seward (1801-1872), Governor of New York, US Senator, and Secretary of State under Abraham Lincoln during the Civil War. This semester, we will focus on the family's correspondence from the 1830s, when Seward was away in Albany much of the time, first as a state senator and then as the governor of New York. Topics include the cholera epidemic of 1832, romantic love, and household economy.

HIS 281 The Role of the State in Global Historical Perspective

The debate on the role of the state versus that of the free market in the socioeconomic process is as old as the history of political economy. We discuss what economists, political scientists, & economic historians characterize as the Washington consensus versus the Beijing consensus or the Asian model. This is followed by a discussion of the contributions of some notable thinkers — Adam Smith, Alexander Hamilton, Friedrich List, John Maynard Keynes, & Friedrich von Hayek. The greater part of the course deals with selected historical cases across the globe. The discussions are informed by a political economy conceptual framework, which helps to explain the politics and economics of state policy and the long-run historical processes that created the political & economic conditions. Students' performance is based on three short essays (four typed pages each) presented to the class for discussion and thereafter revised for grading. No mid-term & final examinations.

Offered: Spring

HIS 283 Politics of Identity

Russia's self-image as it has evolved from Kievan Rus to the present, the product of geography, war, religion, strong leaders, brilliant writers, and other factors. Readings include works by Russian (Pushkin, Gogol, Dostoevsky), Jewish (Zionists, Sholem Aleichem, Babel), and Soviet authors, and the transcript of a conference on post-Soviet identity, held on the eve of Putin's presidency. At the conclusion of the course, we will look at Russia 2016, where a resurgent national identity has serious repercussions for the West. In English.

HIS 283W Politics of Identity

HIS 284 History of the Body

We often marvel at the physical complexities of a human body. But the body has another, perhaps even more complex dimension: the cultural. Human bodies, both male and female, are sites that have been constructed, regulated, and punished in different ways at different times. Using literary texts, art, and scholarship, we will investigate some of these constructs historically and explore how they continue to affect our body experience to this day. Among other topics, we will discuss Christian and non-Christian religious views about human body and sex; investigate how these views shaped attitude to the body in Victorian England and other parts of the world; research changing definitions of beauty and of masculinity and femininity; explore racial bodies and Social Darwinist ideas of the turn of the century, and look at the historically changing body experience of pain and illness.

HIS 284W HISTORY OF THE BODY

HIS 285 Digital History: Building a Virtual St. George's

Students will conduct guided research using a variety of software and historical sources to help create a Virtual Digital St. George's – a 400-year-old town with approximately 250 properties and historic buildings. We will build multi-layer 2D and selective 3D computer models of the oldest town in English America (founded 1612). Work will include integrating different types of historical data into Excel or ArcGIS databases, independent research on specific buildings and property owners using digital newspaper archives, "building" individual 3D houses within the town using Sketch-Up, Maya, or Revit, reconstructing and furnishing historic house interiors using interior design software. Students with computer programming experience may develop mini-games or mobile devise apps to educate modern visitors to the town.

HIS 285W Digital History: Building a Virtual St. George's

Students will conduct guided research using a variety of software and historical sources to help create a Virtual Digital St. George's – a 400-year-old town with approximately 250 properties and historic buildings. We will build multi-layer 2D and selective 3D computer models of the oldest town in English America (founded 1612). Work will include integrating different types of historical data into Excel or ArcGIS databases, independent research on specific buildings and property owners using digital newspaper archives, "building" individual 3D houses within the town using Sketch-Up, Maya, or Revit, reconstructing and furnishing historic house interiors using interior design software. Students with computer programming experience may develop mini-games or mobile devise apps to educate modern visitors to the town.

HIS 286 Modern Italy through Film

Taking the inspiration from Martin Scorsese's anthological film My Voyage to Italy, the course focuses on a few momentous episodes and phenomena of Italian political, social, and cultural history as portrayed and interpreted in film. We will discuss aspects of Risorgimento, Fascism, the World Wars and their aftermath, the culture of individual cities, the contrast between North and South, the condition of women, emigration and immigration, power and repression, spirituality, and secularism. Among the major film directors, we will include Rossellini, Visconti, Fellini, Olmi, and Bertolucci. The analysis of the movies will be integrated with readings from the fields of history, literature, criticism, and theater. A glance at Verdi's operas in the Nineteenth Century and at the tradition of social song as it develops in the post war period will complement the course. This course is complementary to HIS 228 offered in Arezzo.

HIS 288 POLITICS AND CULTURE IN FASCIST ITALY

Interviewed by the Chicago Daily News in 1924, Mussolini said that Fascism was "the greatest experiment in history in making Italians." Within the historical and political framework of the so-called Ventennio Fascista—from 1922 to 1943—the course examines Mussolini's cultural politics as a fundamental strategy not only to gain popular consent and propagate the ideology of the regime, but to implement his vision of Italian national identity. Relying on both material culture, and historical documents and analyses, we will study the fascist philosophy and politics of education, the myth of Rome and its imperial legacy, the archeological, architectural, and restoration projects, the graphic arts, fashion, sports, and documentary film.

HIS 289 Visionaries, Mystics, and Saints in Medieval and Renaissance Europe

What marked out some people as "friends of God" in medieval and Renaissance Europe? And how could contemporaries and modern authors write about interior religious states? The notion of sainthood and the status of mystical visionaries could, in fact, be topics of major dispute, as the example of Joan of Arc demonstrates. This course examines the linked phenomena of mysticism, visions, and sanctity through an introduction to major scholarship on the field, as well as to important contemporary sources for the study of saints and mystics.

HIS 290 Ancient Christianity

The rise of early Christianity from a persecuted minority religious movement to the dominant religion of the Roman Empire.

HIS 291 Christian History Part I

This course will examine the origin and evolution of Christianity, juxtaposing Christian belief and behavior with the historical environments Christianity existed in until 1500.

HIS 292 The History of the Christian Church: From the Reformation to the Present

This course will focus on the relationship between Christianity and its social environments from the late Middle Ages to the modern world with special focus on the Reformation, enlightenment and present moment.

HIS 293 Art and Culture of Eastern Christianity

This course examines Christian art in its cultural context in Eastern Europe, the Near East, and the Slavic world. The main theme will be the art of the Byzantine Empire centered in Constantinople until 1453, but in addition, we will look at developments in Post Byzantine Greece, the Balkans, Bulgaria, Kievan Rus', Armenia, and Georgia.

HIS 294 Marx, Nietzsche & Freud

This course examines the views of the Marx, Nietzsche, and Freud on religion. Each of these three thinkers developed a radical critique of the religion that was a vital part of his thought, and echoes of their views continue to be heard in contemporary debates about religion. We will discuss their explanations of the origins of religious ideas, the validity of their criticisms – most prominently that religion as such is now harmful to humanity – and how each man's view of religion reflects larger concerns in his thought. Key Concepts of each thinker, such as alienation (Marx), nihilism (Nietzsche), and neurosis (Freud), will be analyzed.

HIS 295 Jews in Italy: History, Society, and Culture

This Course will Explore the Jewish experience in Renaissance and early modern Italy with a special focus on Venice. Topics will include the institution of the ghettos, Jewish merchants and moneylenders, Jewish everyday life, the inquisition and the Marranos, and Jewish literature and the arts.

HIS 296 Ancient Greek Historiography

This course examines the craft of ancient Greek historiography by looking at the method, style, and purpose of the ancient Greek historians. We will read selections from the major historians, including Herodotus, Thucydides, Xenophon, Polybius, Arrian, Appian, and Cassius Dio, as well discuss the more fragmentary and minor historians in the Greek historiographical tradition. Among the principal questions to be discussed in this course: What are the social and historical roots of the historiographical habit as practiced by the Greeks? How does ancient Greek history writing differ from the modern practice of history? How does the practice of writing history change in relation to the different social and historical.

HIS 297 The Reformation

On the 31st of October 1517 Martin Luther tacked 95 theological challenges to medieval Catholic beliefs on a cathedral door. Luther's snowball led to the avalanche we call the Reformation. It permanently altered the western European world. Yet Luther was only a part of broad efforts to reform medieval Catholicism, many of which preceded Luther and many more would follow in the wake of his actions. Although related to problems in the church, the reform movement was also connected to complex economic, intellectual, and socio-political forces that were already at play. The purpose of this course is to examine what happened and why. The course will be conducted as a seminar and will require active participation and short essays. This course is meant to mesh with the Ferrari Symposium in the Humanities scheduled for April 2013.

HIS 298 Deep Thoughts with German Thinkers

Why are we here? Why do we think what we think? Why do we like art? Appreciate music? Why do we create? Contemplate? Heal? Destroy? All of these big questions had answers…once upon a time. And most of those answers were in…German! That's right: from the late 18th century to the middle of the 20th century German thinkers dominated the intellectual landscape of the world. This course will look at small texts by some of the most important German writers, musicians and philosophers during this period: Goethe, Kant, Beethoven, Hegel, Marx, Nietzsche, Freud, Schoenberg, Benjamin, Heidegger, Adorno and more. Additionally we will look at scientific and medical writings during this period to better understand why before 1933 Germans won more Nobel prizes than Britain and America combined. This course will be taught in English and all the literature will be in English.

HIS 299 Archaeology Field and Research Methods

Using Smiths Island, Bermuda, as a historical laboratory, this course trains students in archival research and archaeological survey, excavation, and lab analysis techniques and prepares them for professional work as historical archaeologists. Students will also learn about Bermudian and Atlantic historical developments, trade relations, and slavery and the African diaspora since 1610. Participants will also be introduced to archaeological conservation, museum studies, and underwater archaeological techniques. No prior archaeology experience is necessary.

HIS 300W The History of Nature

This course explores the history of the idea and condition of nature from ancient times to the present. Drawing on contemporary historical scholarship as well as a range of thinkers and writers from Petrarch to Thoreau and beyond, we will study the many

ways in which humans have thought about and treated the natural world around them and how the natural world has shaped human history in turn. Some background in history is recommended.

HIS 303W International Human Rights

What does it mean to be human? What political, economic, religious, social, or sexual rights might be part of different people's working definitions? This course will look at both a) the historical development of conflicting theories of human rights and b) more contemporary debates about their ideal extent, their exercise, and their enforcement. Special topics will include debates over the meaning of the American and French Revolutions, the fight to design an International Declaration of Human Rights in the aftermath of World War II, the history of organizations such as Amnesty International, and the controversy around UN events such as the 1995 World Conference on Women in Beijing, the 2002 World Summit on Sustainable Development in Rio de Janeiro, and the 2000 and 2005 Millennium Summits in New York City.

HIS 305W Maritime Atlantic World

Study of European expansion into Africa and the Americas from the ages of Discovery to Revolution has taken many forms. Some pursued their investigations topically (slavery, migration, economic development, etc.) and others focused on particular colonies or regions. We shift the focus of inquiry to the Atlantic Ocean itself, as the geographic center of an expanding European world. Rather than treat the ocean as peripheral while studying the settlement of the Atlantic coast, we will be primarily concerned with activities that took place upon its watery face, delving into the lives of the tens of thousands of mariners who were catalysts in identity formation, migration, and economic development. Our focus will be on three topics: migration, (forced and free), maritime activities (seafaring, shipping, and fishing), and trade (how merchants did business and integrated regional economies). By the end, you will hopefully appreciate the centrality of the sea to the development of Africa, Europe, and the Americas.

HIS 320W Topics in Medieval History

Selected problems in the political, social, and intellectual history of the Middle Ages.

HIS 325W Microhistory

Microhistorians focus on the everyday experiences of ordinary people and uses these to illuminate larger issues. In doing so, microhistory has challenged traditional notions of what matters within history: by choosing “little” people and events instead of seemingly more important political events and actors, by emphasizing marginalized groups usually left out of depictions of normative human experience, and by showing the limits within which individuals have been able to make meaningful choices in their lives. In this course, we’ll read several examples of microhistory, as well as critiques of the method, in order to explore some basic questions of historical study. Can we ever truly represent past lives? Where’s the boundary between history and fiction? What’s the relationship between past and present? Which is more convincing (or truthful): qualitative or quantitative evidence? Since our emphasis will be on the method itself, students will be free to choose research topics from any time period or region.

HIS 326W HISTORY OF ADVENTURE

Why do people climb high mountains, traverse torrid desserts, and sail icy polar seas at mortal peril to themselves and often to no particular purpose? With an emphasis on mountaineering and the exploration of extreme environments, this seminar traces the history of the persistent human tendency to engage in that dangerous and exciting form of activity that we call adventure. Readings will largely consist of classic accounts and memoirs, ranging from Christopher Columbus's journals to Jon Krakauer's "Into Thin Air." Course requirements to include consistent participation in seminar discussions and a final research project.

HIS 327W REAL EXISTING SOCIALISM

This course examines the diverse history of socialist ideology as lived-experience across Europe. Using historical case studies, from the Paris Commune and Anarchist Barcelona to Stalinist Moscow and Cold War East Germany, we survey the myriad forms socialist states took over the last two hundred years. The course highlights the politics, economics, and daily lives of socialist societies through historical monographs, film, and novels. It asks students to consider: how were these societies organized and why did they fail? To what extent were they a product of geo-political conflicts and the disruptive power of capitalism? Topics include: Secret Police; Plastic Cars; Revolutionaries; National Parks; World’s Fairs; Communist Fashion.

HIS 328W Global History: 1968

An exploration of a causes and consequences of the most tumultuous year in post-World War II history. 1968 was the year of the Tet Offensive in Vietnam, the rise and brutal crushing of “socialism with a human face” in Czechoslovakia, assassinations in

the United States, factory and university occupations in France, suppression of dissent in Mexico and Uruguay, and the feminist protest of the Miss America pageant, to name just a few of the highlights. Our task will be to understand why the tumult exploded internationally and how it shaped the present day.

HIS 330W British Imperialism

This seminar is an upper-level introduction to the history of British imperialism and colonialism from the 17th century to the present. Drawing on a variety of primary and secondary materials, we will explore such subjects as geographical exploration (from the South Seas to the Himalaya), colonial settlement and trade, the effects of empire on nature and environment, imperial psychology, imperial culture, gender and empire, decolonization, and the legacy of the British empire in Africa, Asia, and elsewhere. Readings will include classic works by Hobson and Lenin as well as novels, colonial memoirs, and histories. Our format will consist of a mix of informal lectures and discussions and the occasional documentary film. Short response papers and a final research paper (or alternative project) are required.

HIS 332W Stalinism

In the early 1930s Joseph Stalin consolidated his one-man dictatorship in the USSR. He and his lieutenants revolutionized Soviet society and created a new and unique political and economic system, in large part through the use of state terror. In 1941-1945 Stalin led the Soviet Union in its death struggle with Nazi Germany; in the late 1940s and early 1950s he was one of the architects of the Cold War. In this class we will study social, political, economic and cultural aspects of Stalinism. The course will be focused on discussion of readings and writing of an original research paper, about 20 pages long.

HIS 342W Rich China, Poor China

The modern Chinese state has been shaped by its efforts to tackle economic strains. Imperial China collapsed in the throes of foreign imperialism and trade deficits. Republican China, being one of the few silver-standard countries in a gold-standard world, ran out of luck in fighting inflation. Socialist China became obsessed with a self-reliant economy, and established a state industry at the costs of impoverishing the entire rural population. And today, while China holds gigantic foreign reserves and launches spectacular Olympics and space ships, social welfare and individual rights have receded into a dim future. After toiling for gross economic surplus, will the Chinese people finally be the masters that share the fortune of the state? Come join me in this century-long and still ongoing journey, and learn the story of modern China’s search for wealth and power.

HIS 350W Of Captors and Captives

This seminar focuses on captivity in Latin American societies from the prehispanic period to the twenty-first century. Captors have historically depended on the services of subjected populations in this region, whether used for labor, political domination and/or sexual control. Various forms of pre-Columbian captivity existed in Mexico, Peru and Brazil for domestic and ritual purposes (cannibalism, human sacrifice, etc.) before the arrival of African slaves to the region. We will study how indigenous systems of captivity clashed with Iberian notions of gender, domesticity and subservience. Recently, a flourishing trade in female sex slaves in Mexico and Central America has come to light. This seminar prompts us to consider why relations of extreme dependency remain so firmly entrenched in Latin American society. Students will develop an original research paper of their choice. No prior knowledge of Latin American history or Spanish/Portuguese language is necessary for this course.

HIS 351W Urban History of Latin America, 1850-present

Although today the vast majority of Latin America's population lives in large metropolitan areas, at the turn of the twentieth century, the region was largely agrarian and rural. This course looks at the actual growth process of the city where trains and immigration led to subway systems and iconic soccer stadiums in cities like Mexico City, Rio de Janeiro and Lima. The course also focuses on challenges, such as environmental effects, slum neighborhoods and political conflict, which accompany such exponential growth. Students will explore course themes and topics through a combination of primary and secondary sources, film and literature. Prior knowledge of Latin American history is not required.

HIS 360W American and the World to 1865

Surveys the historiography of colonial and antebellum America. Senior history majors may register by invitation only.

HIS 361W America and the World since 1865

Explores the major interpretations of American history from Reconstruction to the late 20th c. resurgence of conservatism. Senior history majors may register by invitation only.

HIS 364W The Black Family in Slavery and Freedom

Almost four hundred years of slavery and racial discrimination have taken a toll on the black family. Despite this, the family has demonstrated a remarkable resilience as it has adapted to the demands of both slavery and freedom. Today, however, as the number of black millionaires grows rapidly, poverty in the nation expands exponentially. The course readings, class discussions, and assignments will seek to explain the huge disparities in wealth within the black community, identify their origin, and examine the scholarly claims that the very future of the black family in America is at risk.

HIS 366W 18th Century Anglo-America

Readings on the history and historiography of 18th c. Great Britain, the European Empires, and North America from the Glorious Revolution through the American Revolution, adoption of the US Constitution, and the presidencies of George Washington and John Adams. The readings will address social, political, intellectual, and cultural issues, the history of slavery, race relations, religion, the environment, immigration, and American Indians.

HIS 368W American Culture at Mid-Twentieth Century, 1946-1975

The seminar addresses the central themes of American cultural life in the mid-twentieth century -- the growing importance of psychological explanation, the emphasis on remaking norms, and the difficulties in maintaining or find oneself. Among the issues considered are the contributions of Jews and African-Americans, abstract expressionism, the rise of youth as cultural producers, the new sexuality, and feminism.

HIS 369W GLOBAL AMERICA 1865-PRESENT

HIS 371 RELIGION,POLI&CULTURE WAR

HIS 371W Topics in 20th Century American Cultural History

This course concentrates on the cultural and intellectual ferment of the first twenty years of the twentieth century spurred by the growing acceptance of the idea that no single principle could account fully for diverse phenomena. In many fields of inquiry, the notion that there were many truths, many values, and many beauties challenged the way of the world. As a result, American cultural and intellectual life featured a sense that the world was not already made, that standards were not firm and fixed, that accepted hierarchies were not always valid, and that contingency and context mattered. Among the fields of inquiry we will address are popular culture, philosophy, political science, psychology, and anthropology.

HIS 372W Topics in 20th Century US History

A research seminar in 20th century American history. Some common reading in recent work in the field will be coupled with independent, individualized student research projects.

HIS 373W American Health Policy and Politics

This course examines the formation and evolution of American health policy from a political and historical perspective. Concentrating on developments from the early twentieth century to the present, the focus of readings and discussions will be political forces and institutions and historical and cultural contexts. Among the topics covered are periodic campaigns for national health insurance, efforts to rationalize and regionalize health care institutions, the creation of Medicare and Medicaid and the further evolution of these programs, the rise to dominance of economists and economic analysis in the shaping of health policy, incremental and state-based vs. universal and federal initiatives, the formation and failure of the Clinton administration's health reform agenda, and national health reform efforts during the Obama administration.

HIS 377W Emergence of the Modern Congress

Through intensive reading and discussion, we will analyze the major institutional features of Congress, with an emphasis on historical development. We will examine the basic institutions of the House and Senate--committees, parties, leaders, and rules. In doing this, we will consider the rise of careerism, the seniority system, agenda-setting, electoral concerns, divided government, efforts at institutional reform, party polarization, gridlock, and the Senate filibuster.

HIS 378 Urban Change and City Politics

Through reading and research, this course examines major issues in urban politics, history, and sociology. This course is a seminar, intended for advanced undergraduates with a substantial background in the social sciences.

HIS 378W Urban Change and City Politics

Through reading and research, this course examines major issues in urban politics, history, and sociology. This course is a seminar, intended for advanced undergraduates with a substantial background in the social sciences.

HIS 380W The Visual Culture of Heritage and Identity

Cultural critic Stuart Hall has observed that Heritage is a discursive practice. It is one of the ways in which the nation slowly constructs for itself a sort of collective social memory. This upper level seminar will look at case studies of how people (through the collectivities of gender, ethnicity, race, or nation) construct visual narratives about the past. Among the topics for consideration are Holocaust memorials, Native American and Polynesian museums and cultural centers, African American quilt histories, and even individual artists projects of the last few decades (Judy Chicago, Fred Wilson, Silvia Gruner, José Bedia, and Jolene Rickard, among others). We will see how various constituencies have borrowed from what Arjun Appadurai has called a warehouse of cultural scenarios in order to construct a useable past that supplies what is needed in the present, irrespective of its relationship to the verifiable realities of the past.

HIS 382W Apocalypse Now...and Then: A History of Apocalyptic Thought

This seminar examines the history of beliefs about the end of the world in the western Judeo-Christian tradition. We will examine such topics as the birth of apocalyptic thought, the medieval development of various aspects of traditions about the End (such as the figure of Antichrist and millenarian traditions), millennial influences on the discovery and colonization of the New World, millennial movements of the last two centuries (such as the Millerites and the Mormons), and contemporary apocalyptic scenarios. A major theme of the course will be the flexibility of apocalyptic language, its ability to interpret various historical situations, and its power to move people to acceptance or action.

HIS 383W Disease and Society from Antiquity to the Present

What is the relationship between disease and the society in which it strikes? How do societies define disease, and how does culture affect the treatment of the sick? How have scholars written the history of disease? In this research seminar, students will explore such questions by examining interactions between disease and society in western cultures from antiquity through the present, at the same time pondering what this insight can tell us as we face the frightening prospect of new killers like Ebola and resistant strains of old diseases like tuberculosis. Throughout, the course will insist that the experience of disease is not simply a biological fact, but is conditioned by the culture in which we live.

HIS 384W The Family in History

Family history is a sub-field of study that grew over the past fifty years as an aspect of social and cultural history. During the first half of the semester, we will discuss shared foundational readings as students define their individual research project and present a proposal, bibliography, and thesis statement. All students will research and write two drafts of a primary-source based research paper in the range of 20-30 pages in length in addition to footnotes or endnotes and bibliography according to the Chicago Manual of Style. Students may, if they are interested, focus their research on the Seward Family Papers, of which a substantial number of letters have been transcribed over the past two years. This documentary editing project draws on the correspondence of the Seward family of Auburn, New York during the period 1817-1872.

HIS 386W N/A

HIS 390 Supervised Teaching

Individual instruction in the teaching of history under the supervision of a faculty member.

Offered: Fall Spring

HIS 391 N/A

Offered: Fall Spring

HIS 391W Independent Study

Designed for junior and senior students who wish to pursue an independent reading program with a professor; required for honors program participants. Upper-level writing credit awarded if students prepare and revise an extended essay.

Offered: Fall Spring

HIS 393 N/A

Offered: Fall Spring

HIS 393W Senior Project

For seniors writing an extended essay under faculty supervision. Upper-level writing credit awarded if students prepare and revise an extended essay.

Offered: Fall Spring

HIS 394 Public History Internship

Experience in an applied setting supervised on site. Approved and overseen by a University instructor.

Offered: Fall Spring

HIS 395 N/A

HIS 395W Independent Research

HIS 398 Honors Research Seminar (2 credits)

A forum in which students can present preliminary versions of their theses and get critical feedback from both their student colleagues and the instructor.

Offered: Spring

HIS 399 Advanced Archaeology Field and Research Methods

Using Smiths Island, Bermuda, and a historical laboratory, this course trains experienced archaeology students in advanced field and research techniques, which may include geophysical remote sensing surveys, recording and GIS manipulation of digital site information, advanced lab analysis and artifact identification methods, independent historical research focused on site-specific questions, and independent field supervision of site and/or test pit excavations, depending on the interests of students.

HIS 400 The History of Nature

This course explores the history of the idea and condition of nature from ancient times to the present. Drawing on contemporary historical scholarship as well as a range of thinkers and writers from Petrarch to Thoreau and beyond, we will study the many ways in which humans have thought about and treated the natural world around them and how the natural world has shaped human history in turn. Some background in history is recommended.

HIS 403 International Human Rights

What does it mean to be human? What political, economic, religious, social, or sexual rights might be part of different people's working definitions? This course will look at both a) the historical development of conflicting theories of human rights and b) more contemporary debates about their ideal extent, their exercise, and their enforcement. Special topics will include debates over the meaning of the American and French Revolutions, the fight to design an International Declaration of Human Rights in the aftermath of World War II, the history of organizations such as Amnesty International, and the controversy around UN events such as the 1995 World Conference on Women in Beijing, the 2002 World Summit on Sustainable Development in Rio de Janeiro, and the 2000 and 2005 Millennium Summits in New York City.

HIS 405 Maritime Atlantic World

Study of European expansion into Africa and the Americas from the ages of Discovery to Revolution has taken many forms. Some pursued their investigations topically (slavery, migration, economic development, etc.) and others focused on particular colonies or regions. We shift the focus of inquiry to the Atlantic Ocean itself, as the geographic center of an expanding European world. Rather than treat the ocean as peripheral while studying the settlement of the Atlantic coast, we will be primarily concerned with activities that took place upon its watery face, delving into the lives of the tens of thousands of mariners who were catalysts in identity formation, migration, and economic development. Our focus will be on three topics: migration, (forced and free), maritime activities (seafaring, shipping, and fishing), and trade (how merchants did business and integrated regional economies). By the end, you will hopefully appreciate the centrality of the sea to the development of Africa, Europe, and the Americas.

HIS 420 Topics in Medieval European History

Selected problems in the political, social, and intellectual history of the Middle Ages.

HIS 425 Microhistory

HIS 426 HISTORY OF ADVENTURE

HIS 427 REAL EXISTING SOCIALISM

HIS 428 N/A

HIS 429 HISTORY OF FRIENDSHIP

HIS 430 War, Money, and Ordinary People

This course covers topics such as the changing nature of warfare, the lives of ordinary people, how the state attempted to control their private lives. It also looks at the global world which had emerged along with the growth of national feeling.

HIS 432 Stalinism

In the early 1930s Joseph Stalin consolidated his one-man dictatorship in the USSR. He and his lieutenants revolutionized Soviet society and created a new and unique political and economic system, in large part through the use of state terror. In 1941-1945 Stalin led the Soviet Union in its death struggle with Nazi Germany; in the late 1940s and early 1950s he was one of the architects of the Cold War. In this class we will study social, political, economic and cultural aspects of Stalinism. The course will be focused on discussion of readings and writing of an original research paper, about 20 pages long.

HIS 436 N/A

HIS 442 Rich China, Poor China

The modern Chinese state has been shaped by its efforts to tackle economic strains. Imperial China collapsed in the throes of foreign imperialism and trade deficits. Republican China, being one of the few silver-standard countries in a gold-standard world, ran out of luck in fighting inflation. Socialist China became obsessed with a self-reliant economy, and established a state industry at the costs of impoverishing the entire rural population. And today, while China holds gigantic foreign reserves and launches spectacular Olympics and space ships, social welfare and individual rights have receded into a dim future. After toiling for gross economic surplus, will the Chinese people finally be the masters that share the fortune of the state? Come join me in this century-long and still ongoing journey, and learn the story of modern China’s search for wealth and power.

HIS 450 Of Captors and Captives

HIS 451 Urban History in Latin America, 1850-present

HIS 458 Women's Lives and Letters: America 1830-1880

HIS 460 America and the World to 1865

HIS 461 American and the World since 1865

HIS 464 The Black Family in Slavery and Freedom

After a discussion of the Moynihan Report controversy and an assessment of the literature on the black family, the readings will investigate why and how stable black families were encouraged, and how they developed under slavery. The impact of factors such as economics, politics, religion, gender, medicine, and the proximity of free families, on the structure of the black family will be given special attention. In this way, the structure of the slave family on the eve of Emancipation, and its preparedness for freedom, will be tested and assessed. Students will be encouraged to identify persistent links between the "history" of slavery and the black family, and the development of social policy.

HIS 466 18th Century Anglo-America

Readings on the history and historiography of 18th c. Great Britain, the European Empires, and North America from the Glorious Revolution through the American Revolution, adoption of the US Constitution, and the presidencies of George Washington and John Adams. The readings will address social, political, intellectual, and cultural issues, the history of slavery, race relations, religion, the environment, immigration, and American Indians.

HIS 468 American Culture at Mid-Twentieth Century, 1946-1975

The seminar addresses the central themes of American cultural life in the mid-twentieth century -- the growing importance of psychological explanation, the emphasis on remaking norms, and the difficulties in maintaining or find oneself. Among the issues considered are the contributions of Jews and African-Americans, abstract expressionism, the rise of youth as cultural producers, the new sexuality, and feminism.

HIS 469 Benjamin Franklin's America

HIS 472 Topics in 20th Century US History

HIS 473 American Health Policy and Politics

This course examines the formation and evolution of American health policy from a political and historical perspective. Concentrating primarily on developments from 1932 to the mid-1990s, readings and seminar discussions focus on political forces and institutions and on historical and cultural contexts. Among the topics covered are periodic campaigns for national health insurance, efforts to rationalize and regionalize health care institutions, the creation of Medicare and Medicaid and the further evolution of these programs, the rise of dominance of economists and economic analysis in the shaping of health policy, incremental and state-based vs. universal and federal initiatives, and the formation and failure of the Clinton administration's health reform agenda.

HIS 477 Emergence of the Modern Congress

Through intensive reading and discussion, we will analyze the major institutional features of Congress, with an emphasis on historical development. We will examine the basic institutions of the House and Senate--committees, parties, leaders, and rules. In doing this, we will consider the rise of careerism, the seniority system, agenda-setting, electoral concerns, divided government, efforts at institutional reform, party polarization, gridlock, and the Senate filibuster.

HIS 479 The Seward Family in Peace and War

HIS 480 The Visual Culture of Heritage and Identity

Cultural critic Stuart Hall has observed that Heritage is a discursive practice. It is one of the ways in which the nation slowly constructs for itself a sort of collective social memory. This upper level seminar will look at case studies of how people (through the collectivities of gender, ethnicity, race, or nation) construct visual narratives about the past. Among the topics for consideration are Holocaust memorials, Native American and Polynesian museums and cultural centers, African American quilt histories, and even individual artists projects of the last few decades (Judy Chicago, Fred Wilson, Silvia Gruner, José Bedia, and Jolene Rickard, among others). We will see how various constituencies have borrowed from what Arjun Appadurai has called a warehouse of cultural scenarios in order to construct a useable past that supplies what is needed in the present, irrespective of its relationship to the verifiable realities of the past.

HIS 482 Apocalypse Now...and Then: A History of Apocalyptic Thought

This seminar examines the history of beliefs about the end of the world in the western Judeo-Christian tradition. We will examine such topics as the birth of apocalyptic thought, the medieval development of various aspects of traditions about the End (such as the figure of Antichrist and millenarian traditions), millennial influences on the discovery and colonization of the New World, millennial movements of the last two centuries (such as the Millerites and the Mormons), and contemporary apocalyptic scenarios. A major theme of the course will be the flexibility of apocalyptic language, its ability to interpret various historical situations, and its power to move people to acceptance or action.

HIS 483 Disease and Society from Antiquity to the Present

What is the relationship between disease and the society in which it strikes? How do societies define disease, and how does culture affect the treatment of the sick? How have scholars written the history of disease? In this research seminar, students will explore such questions by examining interactions between disease and society in western cultures from antiquity through the present, at the same time pondering what this insight can tell us as we face the frightening prospect of new killers like Ebola and

resistant strains of old diseases like tuberculosis. Throughout, the course will insist that the experience of disease is not simply a biological fact, but is conditioned by the culture in which we live.

HIS 484 The Family in History

Family history is a sub-field of study that grew over the past fifty years as an aspect of social and cultural history. During the first half of the semester, we will discuss shared foundational readings as students define their individual research project and present a proposal, bibliography, and thesis statement. All students will research and write two drafts of a primary-source based research paper in the range of 20-30 pages in length in addition to footnotes or endnotes and bibliography according to the Chicago Manual of Style. Students may, if they are interested, focus their research on the Seward Family Papers, of which a substantial number of letters have been transcribed over the past two years. This documentary editing project draws on the correspondence of the Seward family of Auburn, New York during the period 1817-1872.

HIS 485 N/A

HIS 486 N/A

HIS 488 Research Colloquium: Lewis Henry Morgan's Bicentennial

This colloquium will focus on the life, works and contested legacies of Lewis Henry Morgan (1818-1881), a Rochester attorney and founding figure of American anthropology. Students will conduct original research using archival materials and museum collections on campus and at local cultural institutions. This research will provide content for exhibitions, events, and a website to be planned in connection with the bicentennial of Morgan’s birth.

HIS 489 Archaeology Field and Research Methods

Using Smiths Island, Bermuda, as a historical laboratory, this course trains students in archival research and archaeological survey, excavation, and lab analysis techniques and prepares them for professional work as historical archaeologists. Students will also learn about Bermudian and Atlantic historical developments, trade relations, and slavery and the African diaspora since 1610. Participants will also be introduced to archaeological conservation, museum studies, and underwater archaeological techniques. No prior archaeology experience is necessary.

HIS 491 Reading Course at the Master's Level

Individual, specialized reading courses; topics, relevant to student's program, chosen in consultation with faculty member.

Offered: Fall Spring

HIS 495 Research at the Master's Level

Graduate level research course for the M.A. level.

Offered: Fall Spring

HIS 496 Extended Reading at the M.A.

Individual, specialized extended reading courses; topics, relevant to student's program, chosen in consultation with faculty member.

Offered: Fall Spring

HIS 498 ARCH FIELD&RESEARCH METHODS

HIS 499 ADV ARCH FIELD&RESRCH MTHDS

HIS 500 Problems in Historical Analysis

This course addresses questions of interest to beginning graduate students in history. These may include: the history of the historical profession, styles of historical writing, relations between history and literature, ethno-history, and the functions of history as criticism and as social memory.

Offered: Fall Spring

HIS 501 Worlds of Inquiry

Introduces students to the interests of the Rochester faculty, which fall into three spheres of inquiry -- the world of nations, which emphasizes the complications of government, nationalism, war, and power; the world of goods, which concentrates on commerce and trade, the supporting institutions and the consequence of various modes of production and consumption, and students will read a sequence of exemplary works in each world — works that will acquaint them with the rudiments of each sphere, the problems under investigation and some of the solutions offered.
Offered: Fall Spring

HIS 510 Advanced Historical Studies

HIS 511 Readings in 19th Century American History

HIS 520 Advanced Historical Studies

HIS 530 Advanced Historical Studies

HIS 590 Supervised Teaching in History
Individual instruction in the teaching of history under the supervision of a faculty member. For first-year Ph.D. students.
Offered: Fall Spring

HIS 591 Reading Course at the PhD Level
Individual, specialized reading courses; topics, relevant to student's program, chosen in consultation with faculty member.
Offered: Fall Spring

HIS 592 Independent Reading Course
Individual, specialized independent reading courses; topics, relevant to student's program, chosen in consultation with faculty member.
Offered: Fall Spring

HIS 593 Assisting in History
Experience, under faculty supervision, in conducting discussion sections and examinations in undergraduate history courses.
Offered: Fall Spring

HIS 595 Research at the PhD Level
Graduate level research course for the Ph.D. level.
Offered: Fall Spring

HIS 595A N/A
Offered: Fall Spring

HIS 596 N/A
Offered: Fall Spring

HIS 895 Continuation of MA Enrollment
Offered: Fall Spring

HIS 897 Master's Thesis in Absentia
Offered: Fall Spring

HIS 899 Master's Thesis
Offered: Fall Spring

HIS 899A N/A
Offered: Fall Spring

HIS 899B N/A
Offered: Fall Spring

HIS 985 Leave of Absence
Offered: Fall Spring

HIS 986V FULL TIME VISITING STUDENT

HIS 995 Continuation of PhD Enrollment
Offered: Fall Spring

HIS 997 PhD Dissertation
Offered: Fall Spring

HIS 997A PhD Dissertation In-Absentia
Offered: Fall Spring

HIS 999 PhD Dissertation
Offered: Fall Spring

HIS 999A Doctoral Dissertation in Absentia
Offered: Fall Spring

HIS 999B PhD Dissertation In-Absentia Abroad
Offered: Fall Spring

IR 101 INTRODUCTION TO COMPARATIVE POLITICS
Introduces the study of political science and comparative politics. Focuses on how citizens may be able to control public policies in different modern democracies.
Offered: Fall Spring

IR 106 INTRODUCTION TO INTERNATIONAL RELATIONS
Introduces students to the wide range of issues that make up the study of international relations, including the workings of the state system, the causes of international conflict and violence, and international economic relations.

IR 172 ATHENIAN DEMOCRACY

IR 200 POLITICS OF AUTHOR REGIMES
In The End of History and the Last Man (1992), Francis Fukuyama argued that liberal democracies may become the final form of human government. However, two decades later, 1/3 of the regimes on earth are still authoritarian. Some countries went through democratization, such as Spain after the death of Francisco Franco. But others remained authoritarian, such as North Korea. This course provides an introduction to authoritarian regimes and covers: 1) the different types of authoritarian regimes, which range from personalistic dictatorships to new forms where a variety of actors are institutionally represented (e.g., militants, monarchists, technocrats, etc.); 2) the conditions for authoritarian regimes to survive, function, and be accountable (e.g., Singapore); and 3) a comparison between democratic regimes and authoritarian regimes.

IR 205 SUST DEVLP 21ST CENTURY
With world population of 7 billion and global GDP of $70 trillion, human impacts on the environment have already reached dangerous levels. By 2050, world population could reach 9 billion and global GDP $250 trillion. Despite unprecedented growth

in countries such as China and India, over 1 billion people still live in extreme poverty—mostly in South Asia and Africa. The central challenge for humanity in the 21st century is how to address the triple issue of ending extreme poverty, improving social inclusion, and achieving sustainability for the planet. Any effort to address these complex, interlinked challenges must be interdisciplinary. Policies at the national and global level will need to draw on the best of our knowledge and innovation across sectors such as energy, biodiversity and conservation, health, sustainable business practices, food and nutritional security, social service delivery, and good governance.

IR 205W SUST DEVLP 21ST CENTURY

See description for IR 205.

IR 206 AUTHORITARIANISM

Despite three waves of democratization, many countries around the world are still governed by leaders who hold power by means other than free and fair elections. In this course we will examine topics including the persistence of authoritarian regimes, sources of regime stability and instability, and the consequences of authoritarian regimes for social and economic growth. We will cover both historical authoritarian cases such as twentieth-century communist and fascist regimes, and current authoritarian regimes in China, Iran, and on the African continent. The first half of the class will cover political science theories of authoritarian regime functioning, and the second half will focus more heavily on individual country case studies. Class will be conducted in a weekly discussion format.

IR 206W AUTHORITARIANISM

See description for IR 206.

IR 216 POLITCAL POST COMMUNISM

The course offers a comparative perspective on the political and economic development of post-communist countries. It begins with an analysis of the socialist system, its development, and crisis, and proceeds to the problems of post-communist economic transformation,covering Central and Eastern Europe, China, Vietnam and other countries. The main questions to be discussed are: What led to the creation of the communist economic system? What were the main political influences? How did the communist system operate? Was the system reformable? How did the transformation take place after the collapse of communist rule? What is the role of democracy? Why did some states become market oriented democracies, while others failed to reform or reverted to command economy dictatorships?

IR 217 HOW COUNTRIES BECOME RICH

Why are some countries rich and well-developed while other countries remain underdeveloped and poor? What role do political institutions, both domestic and outward-oriented, play in economic development? In this course we examine classic and contemporary answers to these questions, and consider evidence for competing explanations. We start with Adam Smith, and move through theories of dependency, import substitution, and export-based development. We conclude with contemporary theories on the connection between economic development and political institutions. We explore national economies from all continents, with special emphasis on countries outside the North Atlantic that have grown and developed, to varying extents, since World War II.("This course was formally titled States and Markets.")

IR 218 CHINA & ASIA: POL & ECON

Over the past two decades, China has experienced spectacular economic growth. Yet it is unclear how its institutions caused such a result and whether the current institutions can maintain the same level of growth in the future. Moreover, it remains unknown whether China's peaceful rise has positive or negative spillover effects to other East Asia countries. This course has two parts. The first part provides an introduction to political institutions and economic development of China. It will focus on the fundamental institutional features of authoritarian governance in China, including: regionally decentralized authoritarianism, deliberative governance and legislative representation, and rural governance and elections. The second part introduces economic and political relationships between China and other East Asian countries. The style of the course is half lecture and half discussion.

IR 225 POL & POLICYMAK IN DEV WORLD

Analyzes the logic and practice of international negotiations. What strategies do states use? And, how can we learn from theory and history to advise current negotiators?

IR 236 CONTENTIOUS POL&SOC MOVEMNTS

From Rochester to Gdansk to Cairo, ordinary people have joined together outside of regular political institutions to push for change. They have formed protest organizations, used nonviolence and violence, and fought to keep movements alive. These movements persist despite high risk and costs for participants. In this course we examine why and how social movements begin, organize, and succeed or fail. We examine how leaders develop new protest techniques, and how elites try to counter these activities. Finally, we explore the impact of protest on political liberalization and public policy. The course ends with a study of contemporary pro-democracy protests in the Middle East, considering hypotheses on the new use of social media. Throughout the semester, students will apply course theories to social movement organizations of their choice. Note: The course is a seminar capped at 20 students. Students will participate actively in class and complete three short research papers over the course of the semester.

IR 237 Women, Men, Gender and Development

This course examines a range of issues in international development from a gender perspective, with a particular focus on women and girls, but also men and boys. Students will review recent literature on gender and sustainable development, including how development policies, programs and issues affect men and women, and girls and boys, differently. The course also covers recent trends in economic growth and sustainable development across low, middle and high-income countries. Students will have the opportunity to examine development issues, policies, and programs that address poverty and development in a range of sectors including health, education, agriculture, microfinance, and the environment.

IR 237W Women, Men, Gender and Development

This course examines a range of issues in international development from a gender perspective, with a particular focus on women and girls, but also men and boys. Students will review recent literature on gender and sustainable development, including how development policies, programs and issues affect men and women, and girls and boys, differently. The course also covers recent trends in economic growth and sustainable development across low, middle and high-income countries. Students will have the opportunity to examine development issues, policies, and programs that address poverty and development in a range of sectors including health, education, agriculture, microfinance, and the environment.

IR 239 International Environmental Law

An examination of international environmental law and policy with a special focus on efforts to address climate change, including efforts to forge an international climate change agreement at the 2015 United Nations Paris Climate Change Conference. This course serves as a companion to PSC 246, but PSC 246 is not a prerequisite. The goal of this course is to provide a foundational understanding of this rapidly developing, controversial field. Topics include consideration of the scientific, political, and economic drivers of international environmental law; the variety of tools (e.g., treaties, agreements, "soft law," voluntary incentive programs and market based approaches); and examples of how some international environmental issues have been addressed to date. Finally, we will examine the results of the 2015 Paris Climate Change Conference - are we any closer to a "grand climate solution"? This course will be taught through lectures, discussion, several concise papers, and a group project.

IR 239W International Environmental Law

See description for IR 239.

IR 240 Human Rights, Minorities, and Migration in Europe

Historically and today, European nations have struggled with questions of ethnic identity, and migration is central to that struggle. In considering the current European crisis with migrants and refugees, we will examine how Europeans define minorities, immigrants, and human rights. The emphasis of this course will be on the Roma people in Poland and Central and Eastern Europe. The course will provide students with knowledge of contemporary Romani identities, challenges, and achievements, and also with an understanding of how the Roma people emerged as the biggest and most marginalized community in Europe. We will focus on countries in Central and Eastern Europe, but offer comparisons to the situation in Western Europe and in the rest of the world. We will also examine the obstacles standing in the way of equal status for minorities in Europe.

IR 247 ZIONISM & ITS DISCONTENT

IR 248 ARAB-ISRAELI CONFLICT

Introduces students to the contemporary politics of the Middle East from both comparative politics and international relations perspectives.

IR 249 ISRAEL/PALESTINE

IR 250 Comparative Democratic Representation

This course introduces the concept and practice of political representation in contemporary democracies, focusing largely on the developed world. After discussing goals of representation, it traces representation from the values and electoral behavior of citizens through the formation of legislatures and executives to the implementation of public policies. It compares the consequences of different institutional arrangements and party systems for party and policy congruence, and considers other benefits and costs as well.

IR 250W COMP DEMOCRATIC REPR

IR 252 ETHNIC POLITICS

Explores the growing literature on ethnic politics in the comparative politics and international relations sub-fields.

IR 253 COMPARATIVE POLITICAL PARTIES

Examines the nature of political parties and political competition across democracies in the developed and developing worlds.

IR 253W COMPARATIVE POLITICAL PARTIES

See description for IR 253.

IR 254 BLANK

IR 255 POVERTY & DEVELOPMENT

Examines film as the dominant form of political expression under state patronage, with examples from the Soviet Union, Nazi Germany, and, after World War II, from Poland, Hungary, Czechoslovakia, and the former Yugoslavia.

IR 255W POVERTY & DEVELOPMENT

IR 256 THEORIES OF COMPARATIVE POLITICS

Introduces theories in the field of comparative politics. Leads to understanding how the national and international environment, the political culture, the political institutions and the choices of citizens and leaders affect political performance. Explains democratization, stability, competition, citizen influence, and policy outcomes as consequences of the environment, culture and institutions--and human choices in these contexts.

IR 256W THEORIES OF COMPARATIVE POLITICS

See description for IR 256.

IR 257 BLANK

IR 257W ORIGINS OF MODERN WORLD

IR 258 DEMOCRATIC REGIMES

Why have some countries made a successful transition to democracy, while others have not? Why are some democracies more stable than others? Course offers a survey of the leading literature in comparative politics centered on the topic of democratization.

IR 259 BLANK

IR 259W ORDER, VIOLENCE & THE STATE

IR 260 CONTEMPRY AFRICAN POLITICS

From a socio-political perspective focused on Central Europe, analyzes the most dramatic and significant turning points in the Cold War, such as the Berlin Airlift in 1949 and the Polish Solidarity strikes in 1980, as well as survey internal and external actions and reactions across nearly five decades until the implosion of the entire communist system between 1989 and 1991.

IR 260W CONTEMPRY AFRICAN POLITICS

See description for IR 260.

IR 261 LATIN AMERICAN POLITICS

Provides an introduction to political institutions and institutional reform in contemporary Latin America. Focuses on the emergence and functioning of key political institutions in Latin America, including the presidency, the legislature, the system of electoral rules, political parties, the judiciary, and the bureaucracy.

IR 261W LATIN AMERICAN POLITICS

See description for IR 261.

IR 262 ELECTIONS: DEVELOP COUNTRIES

IR 262W Elections in Developing Countries

How do elections work in developing countries? Do contexts that are specific to countries in the developing world have implications for the nature and operation of electoral politics therein? In this course we will explore a number of issues that have particular relevance for elections in developing countries, including clientelism and votebuying, electoral manipulation and fraud, ethnic voting, and electoral violence. In addition, we will consider how limited levels of information and political credibility affect both the operation of electoral accountability and the nature of electoral competition. In doing so, we will draw on examples from Africa, Latin America, and Asia

IR 264 COMP POLITICAL INSTITUTIONS

Examines political institutions and their implications for the behavior of political actors and their effects on social outcomes.

IR 264W COMP POLITICAL INSTITUTIONS

See description for IR 264.

IR 265 CIVIL WAR AND THE INTERNATIONAL SYSTEM

Addresses the question of when and where civil wars occur and what their effects are domestically and internationally. Examines role played by external actors in civil war, such as financial support to governments or insurgents, armed interventions, and peacekeeping missions.

IR 266 The Politics of India & Pakistan

This course examines the politics of India and Pakistan, and uses the history of these countries to examine broader issues in the politics of the developing world. Topics examined include the appeal of caste, class, regional and religious identities, the influence of institutions such as parties, armies and bureaucracies, and outcomes such as authoritarianism, poverty, corruption and insurgency.

IR 266W POLITICS INDIA & PAKISTAN

See description for IR 266.

IR 267 IDENTITY, ETHNICITY, and NATIONLSM

Explores the concepts of identity, ethnicity and nationalism from a comparative perspective.

IR 268 INTERNATIONAL ORGANIZATION

Examines the effect of elections and electoral systems on economic outcomes as well as the converse, how economic variation influences elections and the choice of electoral systems.

IR 268W INTERNATIONAL ORGANIZATION

See description for IR 268.

IR 270 MECHANISMS OF INTERNATIONAL RELATIONS

Examines causal mechanisms for understanding international relations, studying several substantive themes, such as the "democratic peace," ethnic conflict, and international trade.

IR 273 The Politics of Terrorism

Over the past century, terrorism has become a common feature of world politics, enabling small groups of individuals to have a disproportionate influence on the politics of both developed and underdeveloped countries. This course explores some of the fundamental questions of terrorism: Why individuals join terrorist groups, why terrorist groups adopt certain tactics such as suicide bombing, how terrorist groups organize themselves, and what counterterrorism strategies are effective? No previous knowledge of the subject is required.

IR 273W THE POLITICS OF TERRORISM

IR 274 INTERNATL POLITICAL ECONOMY

Explores the interaction between politics and economics at the international level as well as between the international and domestic levels, involving various actors such as governments, interest groups, and multinational corporations.

IR 276 POLITICS OF INSURGENCY AND TERRORISM

Discusses the logic of asymmetric conflicts between states and non-state actors. Examines the military, political, and social factors that determine when and where asymmetric warfare is likely to occur.

IR 276W THE POLITICS OF INSURGENCY

See description for IR 276.

IR 278 FOUND. MODERN INT'L POLITICS

The bargaining model of war is the main theoretical tool in the study of international conflict these days. But the model brackets, i.e., ignores, the question of what gets put in the bargaining table in the first place, and what leaders and states choose not to contest. In this course, we examine the issues states fight over from both a historical as well as contemporary perspective. The course will involve some basic new analytical tools such as GIS (Geographical Information Systems) and some very basic data analysis.

IR 278W Foundations of Modern International Politics

See description for IR 278.

IR 279 WAR & NATION STATE

Examines the development of warfare and the growth of the state from the French Revolution to the end of the Second World War. Further examines the phenomenon of war in its broader socio-economic context, focusing on nationalism, bureaucratization, industrialization and democratization.

IR 279W WAR & NATION STATE

See the description for IR 279.

IR 280 POLITICS & ECONOMY OF CHINA

Provides an introduction to the post-war political and social history of Eastern Europe from the establishment of the Communist regime until the present.

IR 283 BLANK

IR 283W POLITICS IN THE EUROPN UNION

IR 286 POL ECON OF DEVL COUNTRIES

Why do some countries stay poor, while other countries' economies develop rapidly? To address this fundamental question, we will cover both political and economic elements of development and underdevelopment, focusing specifically on political and economic institutions. This course starts by examining whether, to what extent, and through what mechanisms institutions may cause development and underdevelopment. The rest of the course will be devoted to examining what policy interventions can effectively improve political and economic constraints on development and therefore enhance development. This course is highly application-intensive. The topics we study in the course are of interest not only to academics but also to policy-makers, development practitioners in government and non-government organizations, and donor agencies. The course is designed to provide students with both analytical and practical skills to prepare them to become both consumers and producers of research in development.

IR 289 STATE ROLE GLOBAL PERSP

The debate on the role of the state versus that of the free market in the socioeconomic process is as old as the history of political economy. We discuss what economists, political scientists, & economic historians characterize as the Washington consensus versus the Beijing consensus or the Asian model. This is followed by a discussion of the contributions of some notable thinkers - Adam Smith, Alexander Hamilton, Friedrich List, John Maynard Keynes, & Friedrich von Hayek. The greater part of the course deals with selected historical cases across the globe. The discussions are informed by a political economy conceptual framework, which helps to explain the politics and economics of state policy and the long-run historical processes that created the political & economic conditions. Students' performance is based on three short essays (four typed pages each) presented to the class for discussion and thereafter revised for grading. No mid-term & final examinations.

IR 299 COMMNCTNG YOUR PROF IDENTITY

IR 389W SENIOR HONORS SEM

IR 391 INDEPENDENT STUDY

IR 391W INDEPENDENT STUDY

IR 393 SENIOR PROJECT

IR 393W SENIOR PROJECT

A year-long research project supervised by a faculty member in the department and culminating in a written work.

IR 394 INTERNSHIP

IR 394A EUROPEAN POLITICAL INTRNSHP

IR 394W INTERNSHIP

IR 395 INDEPENDENT RESEARCH

IR 397 EUROPEAN POLITICS INTERNSHIP

Internships are available for students in Edinburgh, London, Brussels, Bonn, Berlin and Madrid. Internships are in English in Edinburgh, London, and Brussels; students need proficiency in the language for the latter three placements.

IT 100A BEGINNING ITALIAN (TAUGHT IN AREZZO, ITALY)

IT 101 ELEMENTARY ITALIAN I

The objective of the course is to provide beginners with a thorough grounding in all language skills: listening, speaking, reading and writing. Emphasis is placed on both grammar and cultural information. Classes meet five times a week and combine language theory and practice. Each class is fifty minutes long. Students must sign up for both a MWF and a TR block. As far as

Italian is concerned, the terms ¿lecture¿ and ¿recitation¿ conventionally used to identify the blocks have a purely bureaucratic significance and do not reflect in any way the pedagogical approach of the course.

Offered: Fall

IT 102 ELEMENTARY ITALIAN II

Continuation of IT 101. The objective of the course is to provide beginners with a thorough grounding in all language skills: listening, speaking, reading and writing. Emphasis is placed on both grammar and cultural information. Classes meet five times a week and combine language theory and practice. Each class is fifty minutes long. Students must sign up for both a MWF and a TR block. As far as Italian is concerned, the terms 'lecture' and 'recitation' conventionally used to identify the blocks have a purely bureaucratic significance and do not reflect in any way the pedagogical approach of the course.

Offered: Spring

IT 107 ITALIAN IN ITALY

IT 111 ELEMENTARY ITALIAN (TAUGHT IN AREZZO, ITALY)

The course offers an introduction to basic grammar with intensive training in speaking, listening, reading, and writing. It also guides students in the process of observation, experimentation, and discovery of the culture. Students' assignments often involve interacting with Italians. Sports events, movies, and other 'surprise' events are scheduled to complement the course.

IT 114 CONVERSATIONAL ITALIAN

Conversation course designed to help students with a good knowledge of Italian grammar develop facility with the spoken language. Emphasis on vocabulary-building. Class time devoted to debate, discussions, and conversations about current topics and aspects of contemporary Italian culture. Themes for discussion both extemporaneous and planned. Students are expected to prepare for the assigned themes in advance. Recommended in conjunction with any Italian course, except for IT 101 and 102. May be taken twice.

Offered: Fall Spring

IT 150 CULTURE IN CONTEXT (TAUGHT IN AREZZO, ITALY)

This course focuses on the cultural experiences involved in living and studying for a semester in Arezzo. Activities consist of learning how to make – and then savor – local foods, encountering traditions, practicing tandem-speaking with Italian university students, participating in international workshops and city sponsored events. Visits to industrial and agricultural sites are included.

IT 151 INTERMEDIATE ITALIAN I

This course is the first half of a two-semester Intermediate Italian sequence designed to help students attain a degree of linguistic and cultural competence that will allow them to engage well in an Italian-speaking environment. Conducted entirely in Italian, this course will reinforce, build upon, and refine the listening, speaking, reading, and writing skills that students obtained in the Elementary Italian sequence, and will present them to more challenging cultural material. The course will increase students' ability to understand and use the language, introducing them to more complex grammatical structures, expanding their vocabulary, and building their confidence through a variety of activities and assignments. The course materials will allow students to explore various cultural matters and develop cross-cultural skills through comparisons between their native culture and the Italian world.

Offered: Fall

IT 152 INTERMEDIATE ITALIAN II

Continuation of IT 151. The aim of the course is to reinforce the student's reading, writing, listening and speaking skills in a meaningful cultural context. This objective is achieved through both a systematic study of the fundamentals of grammar and the analysis of a variety of cultural materials. Topics for study, writing practice, and discussion include literature, history and popular culture.

Offered: Spring

IT 153 ACCELERATED ITALIAN (TAUGHT IN AREZZO, ITALY)

The course enhances comprehension and communication skills as well as knowledge of Italian grammar. Emphasis is on reading, vocabulary building, and perfecting oral and written skills.

IT 157 ITALIAN IN ITALY

An intensive, intermediate level language and culture course taught in the historic city of Padova, Italy. Students live in families and experience four weeks of full immersion in Italian life. Classes meet five times a week in the morning for three hours a day. Cultural excursions to Venice, Verona, Florence, and other cities are an integral part of the program.

IT 160 THE NEW EUROPE

IT 161 EUROPE TODAY

IT 195 DANTE'S "DIVINE COMEDY": A JOURNEY FROM INFERNO TO PARADISE, PART I. "INFERNO" AND "PURGATORIO"

The first of a sequence of two, the course approaches "The Divine Comedy" both as a poetic masterpiece and as an encyclopedia of medieval culture. Through a close textual analysis of "Inferno," and the first half of "Purgatorio," students learn how to approach Dante’s poetry as a vehicle for thought, an instrument of self-discovery, and a way to understand and affect the historical reality. They also gain a perspective on the Biblical, Christian, and Classical traditions as they intersect with the multiple levels of Dante’s concern, ranging from literature to history, from politics to government, from philosophy to theology. A visual component, including illustrations of the "Comedy" and multiple artworks pertinent to the narrative, complements the course. Class format includes lectures, discussion, and a weekly recitation session. Intensive class participation is encouraged. Dante I can be taken independently from Dante II. No prerequisites. Freshmen are welcome. Part of the Dante Humanities Cluster.

Offered: Fall

IT 196 DANTE'S "DIVINE COMEDY": A JOURNEY FROM INFERNO TO PARADISE, PART II. "PURGATORIO" AND "PARADISO"

The second of a sequence of two, the course approaches "The Divine Comedy" both as a poetic masterpiece and as an encyclopedia of medieval culture. Through a close textual analysis of the second half of "Purgatorio" and the entirety of "Paradiso," students learn how to approach Dante’s poetry as a vehicle for thought, an instrument of self-discovery, and a way to understand and affect the historical reality. They also gain a perspective on the Biblical, Christian, and Classical traditions as they intersect with the multiple levels of Dante’s concern, ranging from literature to history, from politics to government, from philosophy to theology. A visual component, including illustrations of the "Comedy" and multiple artworks pertinent to the narrative, complements the course. Class format includes lectures, discussion, and a weekly recitation session. Intensive class participation is encouraged. No prerequisites. Freshmen are welcome. Part of the Dante Humanities Cluster.

Offered: Spring

IT 197 THE DIVINE COMEDY OF DANTE ALIGHIERI: DISCOVER THE WONDERS OF A MEDIAEVAL MIND

The course approaches The Divine Comedy both as a poetic masterpiece and as an encyclopedia of medieval culture. Through a close textual analysis of selected cantos from Inferno, Purgatorio, and Paradiso, students learn how to approach poetry as a vehicle for thought, an instrument of self-discovery, and a way to understand and affect the world. They also gain a perspective on the Biblical, Christian, and Classical traditions as they intersect with the multiple levels of Dante's concern ranging from literature to history, from politics to government, from philosophy to theology. Lectures and class discussion will be complemented by a weekly recitation session. Intensive class participation is encouraged. No prerequisites.

IT 200 ADVANCED ITALIAN COMPOSITION AND CONVERSATION

Designed for students who already have a basic knowledge of spoken and written Italian, this course addresses different aspects of modern and contemporary Italian culture emphasizing, at the same time, the usage of Italian language. Topics may include politics, economics, mass media, intellectual life, education, popular culture: as well as the ethnic, economic, and cultural relations between Italy and Eastern Europe, Asia, Africa, the European Community, and the United States. Since the specific topic of the course varies each year and the course is typically taught by a different visiting professor from the University of Siena/Arezzo, Italy, IT 200 may be taken more than once. The course meets three times a week and coincides for two thirds with IT 124. Language of Instruction: Italian and English.

IT 202 INTRO TO ITALIAN CULTURE

IT 203 INTRODUCTION TO ITALIAN LITERATURE IN ITALIAN

Conducted in Italian, this course provides an overview of Italian literature from the 13th to the 20th century. Students will sample early texts in Italian vernacular: the religious poetry of the 13th century, and the writings of major authors such as Dante Alighieri, Francesco Petrarca and Niccolò Machiavelli. The course addresses different literary movements as well as different genres of writings (e.g., novella, canzone, sonnet, lyrical and epic poetry). In addition this course will aim to refine and perfect both your speaking skills, as well as your understanding of complex grammatical rules in Italian.

Offered: Spring

IT 207 INTERMED IT IN ITALY (TAUGHT IN AREZZO, ITALY)

An intensive, intermediate level language and culture course taught in the historic city of Padova, Italy. Students live in families and experience four weeks of full immersion in Italian life. Classes meet five times a week in the morning for three hours a day. Cultural excursions to Venice, Verona, Florence, and other cities are an integral part of the program.

IT 220 DANTE'S "DIVINE COMEDY": A JOURNEY FROM INFERNO TO PARADISE, PART I. "INFERNO" AND "PURGATORIO"

Offered: Fall

IT 221 DANTE'S "DIVINE COMEDY": A JOURNEY FROM INFERNO TO PARADISE, PART II. "PURGATORIO" AND "PARADISO"

Offered: Spring

IT 223 MONUMENTS OF ANCIENT ITALY: HISTORY, STRUCTURE, FORM (TAUGHT IN AREZZO, ITALY)

The course studies the archaeology and architecture of buildings in ancient Italy from the fifth century BC to the fourth century AD, adopting a multidisciplinary approach based on archeological evidence, technical and functional aspects, and historical significance. Classes are taught on location and focus on the most relevant monuments and archeological sites in central and southern Italy, including Rome, Ostia Antica, Pompeii, Herculaneum, Baia, and Paestum. The course is divided into three parts: (1) structural design and technical issues related to ancient monuments, (2) monuments of Etruscan Italy and Magna Grecia, and (3) Roman monuments.

IT 224A TOPICS IN ITALIAN CULTURE (4.0 CREDITS)

Selected topics in Italian culture taught by the visiting instructor from Arezzo, Italy.

Offered: Spring

IT 224B TOPICS IN ITALIAN CULTURE (2.0 CREDITS)

Selected topics in Italian culture taught by the visiting instructor from Arezzo, Italy.

Offered: Spring

IT 225 THE DIVINE COMEDY OF DANTE ALIGHIERI: DISCOVER THE WONDERS OF A MEDIAEVAL MIND

IT 228 HISTORY: ITALY THROUGH FILM (TAUGHT IN AREZZO, ITALY)

The course purposes to illustrate some of the major characteristics of contemporary Italian society through a few representative films produced in Italy since the second World War. Aspects of Italian culture that will be touched upon include the so-called “Southern Question” relating to the economic differences between Italy’s Northern and Southern regions, the Resistance against Nazi Fascism, the post-war reconstruction, the internal migration of the Southerners towards the industrial North, the condition of women within Italian society, and the youth culture. The films selected for the screenings touch on these issues both explicitly and implicitly; through a brief introduction to the main approaches in film analysis and criticism the students will learn how to go beyond a simple thematic reading of the works so as to embrace a more sophisticated multilayered approach which will reveal hidden meanings and intents that will help to construct a more comprehensive picture of Italy's recent past.

IT 229 PHILOSOPHY OF ART

IT 231 FLORENCE THE WONDEROUS

IT 244 ART, ARCHITECTURE, AND LITERATURE IN THE AGE OF DANTE AND BEYOND (TAUGHT IN AREZZO, ITALY)

When we look at works of art in museums, galleries, and churches we are, in most cases, looking at them out of context. Furthermore, when we look at early Renaissance paintings we do not see them through the eyes of the people who produced them or for whom they were produced. We have to learn to see them as they might have been seen. We can begin to do this by learning how to read and to interpret the complex elements at play beneath the immediate surface by setting the artist, his work, and his public in their social and religious historical contexts, and by exploring the universal unspoken language of signs and symbols used by artists. The course content is based on painted forms, i.e., panels, canvases, and frescos from the Trecento and Quattrocento with an emphasis on Tuscan painting. The selection, as far as possible, takes advantage of the availability of works in churches, museums, and galleries within easy visiting distance of Arezzo.

IT 246 VENICE AND THE JEWS

IT 247 POLITICS AND CULTURE IN FASCIST ITALY

Interviewed by the Chicago Daily News in 1924, Mussolini said that Fascism was “the greatest experiment in history in making Italians.” Within the historical and political framework of the so-called Ventennio Fascista—from 1922 to 1943—the course examines Mussolini’s cultural politics as a fundamental strategy not only to gain popular consent and propagate the ideology of the regime, but to implement his vision of Italian national identity. Relying on both material culture, and historical documents and analyses, we will study the fascist philosophy and politics of education, the myth of Rome and its imperial legacy, the archeological, architectural, and restoration projects, the graphic arts, fashion, sports, and documentary film.

IT 248 MODERN ITALY THROUGH FILM

Taking the inspiration from Martin Scorsese’s anthological film My Voyage to Italy, the course focuses on a few momentous episodes and phenomena of Italian political, social, and cultural history as portrayed and interpreted in film. We will discuss aspects of Risorgimento, Fascism, the World Wars and their aftermath, the culture of individual cities, the contrast between North and South, the condition of women, emigration and immigration, power and repression, spirituality, and secularism. Among the major film directors, we will include Rossellini, Visconti, Fellini, Olmi, and Bertolucci. The analysis of the movies will be integrated with readings from the fields of history, literature, criticism, and theater. A glance at Verdi’s operas in the Nineteenth Century and at the tradition of social song as it develops in the post war period will complement the course. This course is complementary to HIS 228 offered in Arezzo.

IT 390 SUPERVISED TEACHING

IT 391 INDEPENDENT STUDY

IT 391W INDEPENDENT STUDY

IT 392 PRACTICUM

IT 393 SENIOR PROJECT

JPN 101 ELEMENTARY JPN I

STUDENTS MUST REGISTER FOR BOTH LECTURE AND RECITATION. Designed to help beginners acquire a basic command of Modern Japanese. The classes will be conducted in English for the grammar lecture, recitation in Japanese. In the beginning, students will master “Hiragana and Katakana” writing systems. As the course progresses “Kanji’ Chinese characters will also be introduced. Classes emphasize reading, writing, listening and speaking. Requirements include regular assignments, quizzes, Lesson Tests and final Exam. Textbook: (1) Genki I: An Integrated Course in Elementary Japanese, by Eri Banno Yutaka Ohno, et.al. (The Japan Times) (2) Course Workbook by Shino 6 credits.

Offered: Fall

JPN 102 ELEMENTARY JAPANESE II

Sequel to JPN 101. STUDENTS MUST REGISTER FOR BOTH LECTURE AND RECITATION. Lecture and recitation designed to help the students at the late beginning level acquire a practical command of modern Japanese in all areas. Although the main emphasis is still on speaking and listening, the students will have more opportunities for writing than in JPN 101. The classes will be conducted in both Japanese and English. The students will master, among other things, “keigo” (polite language), female vs. male speech style, and “direct” style verbals. Textbook: (1) Genki I: An Integrated Course in Elementary Japanese, by Eri Banno Yutaka Ohno, et.al. (The Japan Times) (2) Course Workbook by Shino 6 credits.

Offered: Spring

JPN 114 INTERMEDIATE CONVERSATIONAL JAPANESE I

Emphasis on speaking skills with focus on current issues in Japanese culture and society. May be taken concurrently with JPN 151.

Offered: Fall

JPN 115 INTERMEDIATE CONVERSATIONAL JAPANESE II

Emphasis on speaking skills with focus on current issues in Japanese culture and society. May be taken concurrently with JPN 152.

Offered: Spring

JPN 151 INTERMEDIATE JAPANESE I

STUDENTS MUST REGISTER FOR BOTH LECTURE AND RECITATION. Sequel to Japanese 102. Textbooks: (1) “Genki II” by Yutaka Ohno, Second Edition (The Japan Times) (Lessons 13 through 17) (2) Course Workbook by Tamate.

Offered: Fall

JPN 152 INTERMEDIATE JAPANESE II

STUDENTS MUST REGISTER FOR BOTH LECTURE AND RECITATION. Sequel to Japanese 151. Textbooks: (1) “Genki II” by Yutaka Ohno, Second Edition (The Japan Times) (Lessons 18 through 23) (2) Course Workbook by Tamate.

Offered: Spring

JPN 201 ADVANCED INTERMEDIATE JAPANESE I

This course aims at the improvement of students' overall proficiency in the Japanese language. Listening and speaking skills will be improved through assignments based upon audio tapes, discussion, and role-playing in Japanese. Reading skills will be improved through reading of various "raw" materials. Class taught in Japanese.

Offered: Fall

JPN 202 ADVANCED INTERMEDIATE JAPANESE II

This course aims at further improvement of student's overall proficiency in the Japanese language. Students will start learning colloquial speech style used heavily among family members and/or close friends through the video program based on a Japanese TV drama. Reading skills will be improved through reading various "raw" materials. Essay assignments will be given to students regularly in order to brush up their writing skills. Requirements include unit quizzes, oral quizzes, a comprehensive final and some other little quizzes such as vocabulary tests. Class taught in Japanese.

Offered: Spring

JPN 203 ADVANCED CONVERSATIONAL JAPANESE I

Provides students of JPN 201 level or higher with the opportunity to improve their speaking skills. Class activities include discussion of current issues and oral drills. The class will be conducted in Japanese, and is not intended for students who have already acquired near-native fluency.

Offered: Fall

JPN 204 ADVANCED CONVERSATIONAL JAPANESE II

Provides students of JPN 202 level or higher with the opportunity to improve their speaking skills. Class activities include discussion of current issues and oral drills. The class will be conducted in Japanese, and is not intended for students who have already acquired near-native fluency.

Offered: Spring

JPN 205 ADVANCED JAPANESE I

This course covers various aspects of contemporary Japanese culture as found in magazines, journals, television, film and videos. Class taught in Japanese.

JPN 205W ADVANCED JAPANESE I

This course covers various aspects of contemporary Japanese culture as found in magazines, journals, television, film and videos. Class taught in Japanese.

JPN 206 ADVANCED JAPANESE II

Readings in Japanese in fiction and essays by popular Japanese writers. A video program based on a popularJapanese cartoon will enhance students' ability to understand different speech styles adopted by people at various social levels. Class taught in Japanese.

Offered: Spring

JPN 206W ADVANCED JAPANESE II

Readings in Japanese in fiction and essays by popular Japanese writers. A video program based on a popularJapanese cartoon will enhance students' ability to understand different speech styles adopted by people at various social levels. Class taught in Japanese.

JPN 207 FILM AS OBJECT

Moving images recorded on analog film defined the 20th century in an unprecedented way. This course focuses on the tangible object that is the source of the image onscreen, and the social, cultural, and historical value of a reel of film as an organic element with a finite life cycle. We focus on the analog photographic element and its origins (both theatrical and small gauge), the basics of photochemical film technology, and film conservation and preservation. Guest lectures by staff of the Moving Image Department of George Eastman Museum provide a first-hand look at analog film and its preservation in action, allowing us to consider it as an ephemeral form of material culture: a multipurpose, visual record that is in addition to being art, entertainment, and evidentiary document, also an historical artifact. There are weekly film assignments. Class meets at George Eastman Museum and on River Campus (transportation provided).

Offered: Spring

JPN 210 ANXIETY, IDENTITY, FANTASY: TOPICS IN "TRADITIONAL" JAPANESE CULTURE

This discussion-based course interrogates the construction and evolution of Japan’s cultural traditions and idioms from ancient times to the eve of modernity. Drawing from oral records and mythology, literary and historical texts, and performing and visual arts, among other mediums, this course asks students to understand and appreciate the dynamic contexts of Japanese “tradition.” At the same time, contemporary evocations of the past, as represented through manga and film, will help us understand the processes through which traditions are (re)invented and (re)made. This course is therefore invested in both the historical legacy of traditional Japan and the ways in which tradition itself remains central to contemporary evocations Japanese culture. No prior knowledge of Japan is required or expected.

JPN 210W ANXIETY, IDENTITY, FANTASY: TOPICS IN "TRADITIONAL" JAPANESE CULTURE

JPN 211 FICTIONS OF INTERIORITY: MODERN JAPANESE LITERATURE IN TRANSLATION

This course will consider modern Japanese literature through a chronological look at a variety of novels, short stories, and essays from the late 19th century to present day. While we will devote considerable time to the canonical writings of Natsume Sôseki, Tanizaki Jun’ichirô, Ôe Kenzaburô, and Murakami Haruki—authors who are in many ways synonymous with Japanese literature itself—equal attention will be given to writers yet under-appreciated and under-analyzed. Through a combination of lectures and discussions, we will study not only the texts and authors, but also issues of gender, race, psychology, sexuality, morality, and history as they relate to the Japanese literary corpus. A selection of shorter fiction and a few novels will be available in English translation and students need not be familiar with Japanese.

JPN 211W FICTIONS OF INTERIORITY: MODERN JAPANESE LITERATURE IN TRANSLATION

JPN 212 HELLO KITTY MUST DIE: JAPANESE POPULAR CULTURE IN GLOBAL CONTEXTS

In this multimedia course, we will examine a range of Japanese popular culture, including anime, manga, film, literature, and fashion. Through this exploration we will extend our understanding of Japanese cultural artifacts. But we will also use popular culture in Japan as a springboard for discussing pressing social issues such as gender, class, sexuality, nationalism, and consumer culture. Our goal is to rethink Japan through an investigation of popular culture, and to become attune to the mechanisms that have shaped and continue to shape Japan—its culture, its society, its place in the world. Class time will be devoted to lectures, discussions, and writing exercises.

JPN 212W HELLO KITTY MUST DIE: JAPANESE POPULAR CULTURE IN GLOBAL CONTEXTS

JPN 213 THE HISTORY AND STRUCTURE OF CHINESE AND JAPANESE

It is well known that Chinese civilization was central to the broad historical development of East Asian cultures including that of Japan, a relationship that might suggest that of ancient Hellenic Greek and Italic Latin. While much of Japan's vocabulary and its writing system are rooted in Chinese, however, it is less well known that Chinese and Japanese belong in fact to two entirely unrelated language families, Sinic and Japonic. This course examines the linguistic structures, historical development and interactions of the two languages. Course topics include: theories of origins and language-family affiliations; the historical development of phonological and grammatical features; the development of writing systems; and the complex role played by language in cultural influence and interaction.

JPN 214 ATOMIC CREATURES: GODZILLA

A focused study of Godzilla on film, beginning with the 1954 film that inspired and helped define the Japanese kaiju eiga genre. The larger context of the course is a critical investigation of genre film, specifically the science-fiction/horror/creature-feature film, and a careful consideration of the "culture of war" (World War II through 21st century). We begin with a sampling of seminal non-Japanese titles that provided the foundation for the Godzilla film paradigm, then focus on a close textual study of select "Godzilla films" that help us understand the historical and social contexts for Godzilla's erratic trajectory since 1954. Recent DVD releases with both dubbed and original Japanese language versions enable us to dissect the culturally generated permutations of kaiju eiga.

JPN 214W ATOMIC CREATURES: GODZILLA

JPN 215 MODERN JAPAN

The course will focus on the modern history of Japan from 1850 into the 1990s. The transformation of Japan from a traditional into a modern, industrial society with its costs, disruptions, and benefits will be emphasized. The emergence of Japan as a major power in East Asia, its expansion into Korea and Manchuria, and the growing conflict with the West, leading to the Pacific War, will also be covered as will Japanese postwar political, social, and economic change. All students will write a ten-page term paper on a subject related to modern Japanese history. Classes will be in lecture format with questions and discussions encouraged.

JPN 217 TRADITIONAL JAPANESE LITERATURE

This chronological survey of Japanese literature covers antiquity to the 18th century. We will consider the emergence of, contexts for, and aesthetics behind a variety of literary mediums including myths, prose, poetry, travelogues, diaries, and warrior tales. Conducted in a lecture/discussion format, this course focuses on literary works, though we will have opportunity to consider visual and aural interpretations and adaptations of many of the "great" works of classical Japanese letters. This course is intended to help students develop an appreciation for Japan's literary heritage, while encouraging a sophisticated and comparative understanding of the prominent themes and motifs of literary texts. No prior knowledge of Japanese or Japan is required or expected. All texts will be read in English translation.

JPN 217W TRADITIONAL JAPANESE LITERAT

JPN 219A TOURIST JAPAN

Focused on (but not limited to) the first half of the 20th century, this course explores representations of Japan in a wide range of visual and material culture: ephemera generated by tourism and education; advertisements and souvenirs; and wartime propaganda traveling similar routes of exchange. Illustrations, guidebooks, photographs, and films reflect changing concepts of urban space, rural culture, industry, geography, and military and political authority. Recurrent iconography and coded images link tourism and educational objects and images with evolving concepts of nationalism and cultural identity. How is the meaning

of modern in Japan useful to a study of the continuous transformation of culture in specific contexts, as in the transition from ukiyo-e culture to photography and animated films. This course has a digital component: students work (hands on) with the Re-Envisioning Japan Research Collection in curating their own digital exhibitions. Weekly film assignments. Trips to MAG/GEM (trans. incl.).

Offered: Spring

JPN 219W TOURIST JAPAN

Offered: Spring

JPN 227 BODY POLITICS: NEGOTIATING PUBLIC AND PRIVATE DISCOURSES OF THE BODY IN JAPANESE CULTURE

This reading intensive course is centered on public and private discourses of the body in contemporary Japan. Topics will include, but are not limited to: gender and sexuality, reproductive rights and motherhood, body image and beauty standards, youth and old age, masculinity and femininity, and health and disease. Through the conduit of journal articles, films, autobiographical essays, fiction, manga, and scholarly critiques, this course will expose students to a variety of rhetorical strategies and popular mediums concerning the body in Japan. In addition, this course will enrich students' understanding of issues facing contemporary Japan and the ways in which we read and write about the body.

JPN 227W BODY POLITICS

JPN 228 JOURNEY TO THE FEAST: CUISINE AND CULTURE IN MODERN JAPAN

This four week intensive and interdisciplinary course explores historical, cultural, economic, and geopolitical aspects of food in Japanese culture. Food and cuisine fill our stomachs, but also identify nations, religious groups, classes/castes and other communities, marking boundaries between ourselves and "Others." Our class will examine Japanese culinary artifacts, including: the relationship between food and national identity, the ways in which food can be gendered, and how gustatory choices reflect historical and cultural shifts. We will read histories and ethnographies of representative Japanese foods; analyze gender and class dimensions of food; read food through a variety of theoretical lenses; and define and redefine Japan through its culinary pathways.

JPN 228W JOURNEY TO THE FEAST

JPN 231 ASIAN CALLIGRAPHY: HISTORY AND PRACTICE I

An introduction to the Chinese and Japanese writing systems, including their historical development, artistic practices and practical applications. This entails the study of Kaisho (print script) of Kanji (Chinese characters) and the learning of the meanings of the Kanji. One class meeting per week will be devoted to the study of Calligraphy. Ideal for those studying Chinese or Japanese, but experience in the languages, while helpful, is not required. Please note that students must provide their own Asian Calligraphy equipment for practicing Kanji and complete weekly assignments.

Offered: Fall

JPN 232 ASIAN CALLIGRAPHY: HISTORY AND PRACTICE II

An elemental study of the Chinese and Japanese writing systems, including their historical development, artistic practices and practical applications. This entails the study of Kaisho (print script), the Gyosho (cursive style) and Sosho (simplified cursive style) of Kanji (Chinese characters), as well as learning the meanings of the Kanji. One class meeting per week will be devoted to the study of calligraphy. Ideal for those who have studied some calligraphy previously, but this is not required. Likewise, previous study of Chinese or Japanese, while helpful, is not required. Please note that students must provide their own Asian calligraphy equipment for practicing Kanji and complete weekly assignments.

Offered: Spring

JPN 233 THE CULTURE OF ZEN

Zen Buddhism was the core around which many of Japan's greatest cultural achievements evolved. From the medieval period on, with its importation from China, the culture of Zen served as the primary context for much of Japanese metaphysics, architecture, landscape and interior design, medicine, ink painting, noh drama, haiku poetry, as well as the entire cultural complex known as the tea ceremony. Along with the Zen doctrinal and textual roots of these remarkable achievements, this course will examine the

vibrant culture fostered in the medieval Zen monastic temple institution known as the Gozan and its dispersal into the culture at large.

JPN 233W THE CULTURE OF ZEN

JPN 254 THE RISES AND FALLS OF MODERN JAPANESE LITERATURE

This course explores major works of Japanese literature written from 1885 to the present. Central to our exploration will be the rises and falls (of authors, literary schools, regimes, tectonic plates, and, perhaps, literature itself) of Japanese literature. The focus of this survey is Japan's rich body of prose narratives. This focus is supplemented by investigations of genres and media such as poetry, film, theater, photography, advertisements, historical nonfiction, anime, and manga. This course is taught in English.

JPN 254W MODERN JPN LIT

JPN 257 JPN MYSTERY FICTION

JPN 258 JAPANESE SCIENCE FICTION IN GLOBAL PERSPECTIVE

"A good science fiction story," Frederik Pohl proposes, "should be able to predict not the automobile, but the traffic jam." This course considers the "traffic jams"—the far-flung possible worlds imagined in Japanese science fiction—from the 1920s to the present. Genres covered include the short story, short short story, novel, manga, anime, and film. The course emphasizes close readings of literary texts and analysis of the global contexts that prompt Japan's science fictional musings. Japanese science fiction is considered in global perspective: Japanese works are considered alongside pertinent works from other national traditions of science fiction. All readings are done in English translation; all viewing have English subtitling.

JPN 258W JAPANESE SCIENCE FICTION

JPN 274 Modern Japanese Women Writers

This course traces the history of modern Japanese women’s writing, beginning with the early twentieth-century and continuing to present day. In doing so, this course addresses the historical background and contribution of women writers to the development and progression of modern Japanese literature. Throughout the course, we will pay close attention to the ways in which Japanese women writers have used fiction to challenged convention and expectation. Key issues include sex and sexuality, the nature and rhetoric of desire, and the politics of the female body. Writers to be considered are Higuchi Ichiyô, Hirabayashi Taeko, Yamada Eimi, Miyabe Miyuki, Kanehara Hitomi, and many others. In addition, the course also asks students to engage with critical scholarship in English that offers new ways of thinking and talking about Japanese women's writing. No previous knowledge of Japan or Japanese is required.

JPN 274W MODERN JPN WOMEN WRITERS

JPN 294 HAYAO MIYAZAKI AND PLANET GHIBLI

This course offers 1) a comprehensive “grass roots” study of anime as film form and cultural phenomenon; and 2) a more specific and guided investigation of the work of Hayao Miyazaki and the world view and visual sensibilities of his creation, Studio Ghibli. We begin by investigating where anime comes from: historical precedence, significant sources, defining influences and routes of cultural exchange. We then focus on Miyazaki’s work and the Ghibli corpus in order to examine the specifics of animated cinematic construction that distinguish his work (e.g., iconography, visual landscape, character design, narrative tropes, music); methods of adaptation, influence, and genre variation; reception and fan culture; and anime’s potential for providing unique perspectives on race, gender, landscape, identity, and Japan's historical and mythological past. NO AUDITS.

JPN 294W MIYAZAKI & GHIBLI

JPN 390 SUPERVISED TEACHING

JPN 391 INDEPENDENT STUDY

JPN 391W INDEPENDENT STUDY

JPN 392 PRACTICUM IN JAPANESE

JPN 393 SENIOR ESSAY
A paper based upon independent study; required of concentrators.

JPN 407 FILM AS OBJECT
Offered: Spring

JPN 411 MODERN JPN LIT IN TRANS

JPN 412 HELLO KITTY MUST DIE: JAPANESE POPULAR CULTURE IN GLOBAL CONTEXTS

JPN 414W ATOMIC CREATURES: GODZILLA

JPN 419A TOURIST JAPAN
Offered: Spring

JPN 427 BODY POLITICS

JPN 433 THE CULTURE OF ZEN

JPN 454 MODERN JPN LIT

JPN 457 JPN MYSTERY FICTION

JPN 458 JAPANESE SCIENCE FICTION

JPN 474 MODERN JPN WOMEN WRITERS

JPN 494 HAYAO MIYAZAKI AND PLANET GHIBLI
A course on the work of the animated films of Hayao Miyazaki, the world view and visual sensibilities of his creation, Studio Ghibli, and anime as film form and cultural phenomenon. Focusing on Miyazaki’s films, we will examine the "nuts and bolts" of animated cinematic construction (use of narrative space, character design, etc.); methods of adaptation, influence, and genre variation; anime reception and fan culture; and issues of race, gender, landscape, identity and cultural conscience. Such detailed analysis reveals the range and possibilities of anime and its place in popular culture on a local and global scale.

JST 101 ELEMENTARY HEBREW I
Introduction to the structure of Modern Hebrew. Practice in vocabulary, use, grammar, reading, and writing.

JST 102 ELEMENTARY MODERN HEBREW II
Direct continuation of Hebrew 101 with emphasis on enhancing reading, writing, and speaking skills.

JST 103 INTERMEDIATE HEBREW
Continuation of HEB 102 with emphasis on enhancing reading comprehension and writing and speaking skills. Students are expected to have good understanding of the structure of Hebrew including familiarity with verb forms.

JST 104 INTERMEDIATE MODRN HEBREW II

JST 106 INTRODUCTION TO THE OLD TESTAMENT
Examination of the Old Testament/Hebrew Bible in Ancient Israel in its religious, historical, and literary contexts.

JST 110 INTRO TO BIBLICAL HEBREW

JST 113 HISTORY OF JUDAISM

An introduction to the religious and cultural development of Judaism. Will emphasize Judaism as a living tradition, one which has been subject to both continuity and change among its practitioners throughout its history.

JST 121 HITLER'S GERMANY 1914-1945

JST 125 REL,RACE,ETHNICTY IN AMERICA

JST 145 JUDAISM IN AMERICA

JST 154 REL&RACE FOR THE WHITE HOUSE

JST 204 HEBREW THROUGH MEDIA AND LIT

This is a fourth semester course in the Hebrew language series designed to enhance and advance conversational skills using various sources including Israeli newspapers, Hebrew stories, and topical discussions based on students' interests and Israeli life.

JST 205 NIETZSCHE & NIETZSCHEANS

JST 214 IMAGINING THE JEW

Popular representations of Jews and their influence on Jewish acculturation, Americanization, and continuity.

JST 217 MODERN JEWISH PHILOSOPHY

The music of Judaism and the Jewish people from the earliest times until the present and the role of music in shaping the character of Jewish historical, religious, and cultural experience.

JST 219 HOLOCAUST AFFECT ABSENCE

How does one represent the unrepresentable? This is the key question we will explore as we look at films and literature about the Holocaust. As we look at fictional films, novels, documentaries and memoirs, we will discuss topics including memory, trauma, truth and representation. This course offers a look at the ways in which artists and their audiences negotiate the themes of loss, horror and redemption within the context of the Holocaust and its aftermath.

JST 220 JEWS & MULTICULTURALISM IN AMERICA

Jewish immigration in the U.S.and the ways in which these immigrants chose to acculturate (or not).

JST 222 VENICE AND THE JEWS

JST 225 HOLOCAUST IN EAST EUROPE

JST 229 KAFKA & HIS WORLD

JST 232 GERMAN THINKERS

JST 238 GERMAN JEWISH-THINKERS

JST 242 JEWISH WRITER & REBEL

JST 248 RUSSIAN IDENTITY

This course examines how culture, ethnicity, and politics intersect in 20th-century Russian literature. We begin with excerpts from Dostoevsky's "Diary of a Writer," sacralizing Russianness and demonizing Jews. Political and artistic avant-gardes 1900-1930 are analyzed for their attempts to overcome traditional ethnic divisions. In Stalin's Russia an international Soviet identity was replaced by a Russian state culture, which put "cosmopolitanism" on trial after World War II. A secular Russian cultural identity was the norm until the state withdrew from the cultural sphere in the late 1980s, but Russian Jewish emigre literature was available to many readers through unofficial channels. We end with the battle of competing identities in post-1985

Russia. Readings include: Dostoevsky, Babel, Grossman, Mandelstam, Pasternak, Roziner, Tertz, Markish, Rasputin, and Brodsky. In English.

JST 248W RUSSIAN IDENTITY

This course examines how culture, ethnicity, and politics intersect in 20th-century Russian literature. We begin with excerpts from Dostoevsky's "Diary of a Writer," sacralizing Russianness and demonizing Jews. Political and artistic avant-gardes 1900-1930 are analyzed for their attempts to overcome traditional ethnic divisions. In Stalin's Russia an international Soviet identity was replaced by a Russian state culture, which put "cosmopolitanism" on trial after World War II. A secular Russian cultural identity was the norm until the state withdrew from the cultural sphere in the late 1980s, but Russian Jewish emigre literature was available to many readers through unofficial channels. We end with the battle of competing identities in post-1985 Russia. Readings include: Dostoevsky, Babel, Grossman, Mandelstam, Pasternak, Roziner, Tertz, Markish, Rasputin, and Brodsky. In English.

JST 249 SECRET NATION

The cult and culture of secrecy in Russia from Ivan the Terrible to the present. Russia was always an enigma, as tsarist and Soviet governments gathered and controlled information. The Russian people kept information from the government, and foreign states sent out disinformation of their own about Russia. There was an active underground in religion, literature, politics, the economy, and other areas. With glasnost, Gorbachev began the process of uncovering secrets from above, and a freer press began to do the same from below. We use materials from history, religion, literature, film, political science, and economics, to get a richly detailed picture of the information that was hidden, and the means by which this was accomplished. Official secrecy that was originally a defensive move came to undermine the state it sought to protect. At the end of the semester we see to what extent old habits of secrecy persists in Russia today. The course is taught in English.

JST 253 ZIONISM & ITS DISCONTENT

JST 265 ISRAEL/PALESTINE

JST 390 SUPERVISED TEACHING

JST 391 INDEPENDENT STUDY

JST 391W INDEPENDENT STUDY

JST 394 INTERNSHIP

KOR 101 ELEMENTARY KOREAN I

This course is designed for students who have no or limited background in Korean. It introduces students to the sounds, basic sentence structures, and the writing system of Korean. Emphasis will be on developing listening and speaking skills, as well as building vocabulary. Cultural aspects of the language will also be focused on to enhance students' understanding of the language. Students must register for the corresponding recitation.

Offered: Fall

KOR 102 ELEMENTARY KOREAN II

This course is the continuation of KOR 101. This course will offer students the opportunity to expand their vocabulary and to improve further conversational and grammatical skills beyond those learned in KOR 101. Focus will be on developing listening and speaking skills for everyday personal communication and developing sociocultural knowledge for interactional competence in Korean. Students must register for the corresponding recitation.

Offered: Spring

KOR 151 INTERMEDIATE KOREAN I

This course is the first half of the intermediate course designed for students who have an equivalent proficiency level with KOR 102. Focus will be given to expanding knowledge of Korean vocabulary and grammar, enhancing communicative ability that was built in Elementary Korean, and deepening the students’ understanding of Korean culture and society. Students must register for the corresponding recitation.

Offered: Fall

KOR 152 INTERMEDIATE KOREAN II

This course is the second half of the intermediate course designed for students who have an equivalent proficiency level with KOR 151. Focus is on equipping students with sociolinguistic and cross-cultural knowledge and achieving the intermediate level of proficiency and fluency in Korean. Four language skills (listening, speaking, reading, and writing) will be equally emphasized throughout this course. Students must register for the corresponding recitation.

Offered: Spring

KOR 201 ADV INTERMEDIATE KOREAN I

LAT 101 ELEMENTARY LATIN I

Come learn the language of Vergil, Cicero, and St. Augustine. Latin has been the western world's learned language for 2000 years and is the source for most of the scholarly and technical vocabulary of English. The elementary Latin sequence (LAT 101, LAT 102, LAT 103) is designed to get you reading authentic materials quickly. For LAT 101, no Latin background is required or assumed.

Offered: Spring

LAT 102 ELEMENTARY LATIN II

This course completes Latin 101's introduction to Latin grammar and introduces the reading of continuous Latin prose.

Offered: Fall

LAT 103 INTERMEDIATE LATIN

This course will transition students from the study of grammar to reading lengthy prose passages in classical Latin. It will focus on authors from the end of the Roman Republic and will include grammar review and the historical context in which the texts were composed.

Offered: Spring

LAT 105 INT CLASSICAL&MEDIEVAL LATIN

LAT 203 OVID

Translation and discussion of selections from Ovid's "Metamorphoses".

LAT 206 VIRGIL'S AENEID

A study of Virgil's Aeneid. Concentration on translation and interpretation of the work and improving linguistic and critical skills in the student.

LAT 210 CICERO

This course examines representative works of the Roman orator, philosopher, and statesman Cicero, whose writings greatly influenced the development of Latin prose.

Offered: Spring

LAT 217 LIVY AND TACITUS

In this course, we will read selections of the writings of the Roman historians Livy and Tacitus. Much of the class time will be devoted to translation and to understanding the use of language and syntax by the two authors. We will also examine critically the historical content of the texts we are reading, and we will learn about the social and historical setting in which the authors themselves lived and wrote. In this context, we will read some modern scholarship on Livy and Tacitus and also writings (in translation) of other ancient authors.

LAT 220 PLAUTUS & ROMAN COMEDY

A study and translation of one whole play of Plautus and passages from several others.

Offered: Fall

LAT 221 MEDIEVAL LATIN PROSE

Introduction to a variety of Medieval Latin texts. Students complete independent studies of an author or topic of their choice.

LAT 223 LATIN EPIGRAPHY IN ROME

LAT 224 ROMAN SATIRE

Readings in Latin drawn from authors of Roman satire, who include Lucilius, Horace, Juvenal, Martial, Seneca the Younger, Petronius, and Persius.

LAT 390 SUPERVISED TEACHING

LAT 391 INDEPENDENT STUDY

Advanced readings in unadapted Latin texts, by arrangement with the instructor.

LAT 391W INDEPENDENT STUDY

LAT 393 SENIOR PROJECT

LAT 421 MEDIEVAL LATIN PROSE

Introduction to a variety of Medieval Latin texts. Students complete independent studies of an author or topic of their choice.

LAT 491 MASTER'S READING COURSE

LAT 495 MASTER'S RESEARCH LATIN

LAT 591 PHD READINGS

LAT 895 CONT OF MASTER'S ENROLLMENT

LIN 101 Ecolinguistics: Language & Movement

LIN 101 & DAN 108: Ecolinguistics: Language & Movement This new course is a combined investigation of linguistics and movement. In the context of sustainable living, the course will examine how verbal and non-verbal expression manifest and shape overall well being. Every year, a different theme will be addressed. The themes for this year is: memory and forgetting. We will explore the scale of emotional polarities from rage to serenity, in connection to well being. The course will address questions such as: What role does memory play in our physical being and outward expression? What distinguishes the range of mundane - ritualized movement and communication? How does context influence experience and expression? What role do patterns play in verbal and non-verbal communication and memory? The course is cross-listed to bring students from each discipline together to deepen their study of human expression by offering additional perspective to the mutually fascinating subject of language

Offered: Fall

LIN 102 LANGUAGE & SOCIAL IDENTITY

This course introduces how language is used and perceived to mark social and cultural characteristics of an individual or group of individuals. We will examine how one’s social identity is constructed, which linguistic cues are used consciously to denote different social identities, and how most linguistic cues delineating social groupings are below conscious awareness. This course will discuss topics on prescriptive and descriptive perspectives of language, standardization, dialects, accents, pidgins and creoles, social stratification, and social, racial and linguistic profiling.

Offered: Spring

LIN 103 LANGUAGE & SEXUALITY

This course will investigate various aspects of language as used by members of sexual minority groups, focusing on language of and about gay men, lesbians, bisexuals and transgender people, including "reclaimed epithets" (e.g., 'dyke' and 'queer'), gender vs. sexuality vs. sex, and the role of language in creating /maintaining sexual categories and identities.

LIN 104 LANGUAGE & CULTURE

This course investigates the relationship between language and culture at the interface of linguistics and anthropology. It examines the ways in which language reflects the perception of the world, ways of life and beliefs of its speakers, creates rituals and maintains social ties, and is used by people of different ages, genders, social classes, and ethnicities. We will discuss hypotheses that try to explain the nature of relationship between language and culture and then turn to a wide variety of topics which are relevant for both linguists and anthropologists. These include, for instance, kinship systems, language of perception (e.g. colors, spatial relations), politeness across languages and cultures, and writing systems.

Offered: Fall

LIN 105 LANGUAGE & ADVERTISING

The course examines the use advertisers make of language in selling their products and how it affects our perceptions of the product and ourselves. The emphasis is on learning about linguistic practice. The course will appeal to those who are curious about the central role language plays in the art of persuasion presented as advertising. The course touches upon the structure of language only insofar as it is relevant for understanding advertising as a form of social action. The acquired linguistic tools will help us to understand how commercial messages achieve their effect, regardless of their origins: business, culture or grass roots movements.

Offered: Spring

LIN 110 INTRODUCTION TO LINGUISTIC ANALYSIS

This course introduces students to the study of the structure of human language. We will cover the six core areas of linguistic investigation: Phonetics (articulation, acoustics, and perception of speech sounds), Phonology (sound patterns), Morphology (internal structure of words and their organization in the mental lexicon), Syntax (internal structure of phrases and sentences), Semantics (word and sentence meaning), and Pragmatics (language use in context). The course focuses on developing skills in the areas of linguistic data analysis and interpretation of linguistic data in ways that aim to address theoretical and empirical issues in the study of language. In addition to the lecture students will need to register for a peer-led workshop.

Offered: Fall Spring

LIN 160 THE RHETORICAL SENTENCE

LIN 161 MODERN ENGLISH GRAMMAR

This course is a comprehensive review of the grammar of Modern Standard English. The course will be of interest to those who wish to sharpen their language skills, or to know more about the workings of the English language whether for practical, cognitive or creative ends. Drawing on work in mostly pre-theoretical, descriptive linguistics this course reveals the mechanics of Standard English structure, with occasional detours into the finesse of usage across registers (dialect to slang). Students will learn to develop the ability to see patterns in grammar, as well as its structural possibilities and limits. Assignments will regularly involve reflection on form, usage and speaker judgments. Through a final project, students will investigate some aspect of an English variety available to them. Throughout, students will be working with their data samples of English to explore how speaker choices lead to particular grammatical structures or yield ungrammaticality. Background in linguistics or grammar not needed.

Offered: Fall

LIN 162 MODERN AFRICAN-AMERICAN ENGLISH

This course looks at the varieties of English used primarily by and among African Americans. We will first explore and discuss the linguistic features (lexicon and grammar) of African American English (AAE). We will also investigate the ways in which AAE is being utilized in popular culture. Additionally, we will look at AAVE's connection to African languages and creoles. Finally, this course will look at the issues connected to AAVE and attitudes towards this variety and its effects on teachers' expectations and students' progress; linguistic profiling and discrimination in employment and housing.

Offered: Spring

LIN 205 HISTORICAL LINGUISTICS

This course is designed to give an introduction to the principles of linguistic variation and change, and to examine their practical application in the interdisciplinary subfields of historical linguistics and historical sociolinguistics. Topics covered include diachrony and synchrony, genetic relations, the comparative method and language classification, sound change, morphological,

syntactic and semantic change, borrowing, types of language contact, areal linguistics, and linguistic variation and social stratification.

Offered: Fall

LIN 206 HISTORY OF THE ENGLISH LANG

The development of the English language from the Anglo Saxon period on up, focusing on texts from representative periods.

LIN 207 OLD ENGLISH LITERATURE

LIN 208 LANGUAGE DEVELOPMENT

Introduces children's language development, including the acquisition of phonology, syntax, and semantics. Focuses on the acquisition of a first language by young children, comparing the acquisition of a variety of spoken and signed languages to find possible universal principles of language learning.

LIN 210 INTRODUCTION TO LANGUAGE SOUND SYSTEMS

The goal of this course is to provide a background for understanding the principles that underlie the structure of sound systems in human languages. Starting with the notion ‘phoneme’, the course focuses on acoustic and articulatory phonetics, as a basis for understanding phonological processes and change in linguistic sound forms. Students will acquire skills in the production, recognition, and transcription of sounds in various languages of the world. The course will serve as a foundation for work in language documentation, sociolinguistics and sociophonetics, morphology. This course can be taken as LIN 210 or as LIN 410 and is meant for linguistics majors and non-majors alike. In addition to the lecture students will need to register for a peer-led workshop.

Offered: Fall

LIN 210W INTRODUCTION TO LANGUAGE SOUND SYSTEMS

The goal of this course is to provide a background for understanding the principles that underlie the structure of sound systems in human languages. Starting with the notion ‘phoneme’, the course focuses on acoustic and articulatory phonetics, as a basis for understanding phonological processes and change in linguistic sound forms. Students will acquire skills in the production, recognition, and transcription of sounds in various languages of the world. The course will serve as a foundation for work in language documentation, sociolinguistics and sociophonetics, morphology. This course can be taken as LIN 210 or as LIN 410 and is meant for linguistics majors and non-majors alike. In addition to the lecture students will need to register for a peer-led workshop.

LIN 217 LANGUAGE & PSYCHOLINGUISTICS

Overviews the nature and processing of human languages, including comparisons between language and animal communication systems, the biological bases of human language, and the cognitive mechanisms used in producing, understanding, and learning language.

LIN 218 LANGUAGE & THE BRAIN

Examines how the comprehension and production of language is implemented in the human brain. Uses evidence from neuropsychological and brain imaging studies to consider the following questions: What is the network of brain areas that subserves language processing? What are the specific functions of these areas? What happens when these brain areas are damaged? What is the timing of brain activity in these areas during language processing? Finally, how do the brain areas involved in language processing overlap with those involved in other complex cognitive processes?

LIN 220 INTRODUCTION TO GRAMMATICAL SYSTEMS

This introductory course examines the grammatical structure of sentences from the standpoint of transformational grammar. The course develops the basic techniques of syntactic analysis in order to develop a working grammar of a (fragment of) English. LIN 220W partially satisfies the Upper-Level Writing requirement for the Linguistics major. Linguistics majors should take the W version of the course.

Offered: Spring

LIN 220W INTRO TO GRAMMATICAL SYSTEMS

This introductory course examines the grammatical structure of sentences from the standpoint of transformational grammar. The course develops the basic techniques of syntactic analysis in order to develop a working grammar of a (fragment of) English. No syntax background is assumed.

LIN 225 INTRODUCTION TO SEMANTIC ANALYSIS

This course introduces students to the basics of the analysis of meaning in natural language. The first section focuses on devices that motivate certain forms to take on the meanings they have. The second section of the course moves on to discuss how meanings combine to form meanings for larger units—how words and phrases combine to form sentences meanings. Using logical notation we illustrate the formal analysis of natural language meaning in terms of truth-conditions. We will discuss the basics of set theory, and investigate how meanings represented in these terms correlate with the syntactic and lexical structures of sentences of natural language. Students of graduate standing or those with strong formal backgrounds may consider starting with LIN 265/465 instead, for which this course is ordinarily a prerequisite. This course counts towards satisfying the core course requirement for majors.

Offered: Fall

LIN 226 MORPHOLOGY

The course examines the structure and definition of the linguistic unit "word"' its typology and the relationship of the morphological component to other levels in the grammar. The course includes an introduction to analytical techniques with emphasis placed on an examination of data from a range of languages. The building blocks of words will be analyzed and topics such as affixation, reduplication and inflectional and derivational morphology will be covered. We will examine the properties of words and how they fit into the larger structure of linguistic knowledge, including the relationship between words and syntactic structure (ex., phrases and sentences) and the relationship between words and phonological structure (ex., phonological rules and prosodic structure).

Offered: Fall

LIN 227 TOPICS IN PHONETICS & PHONOLOGY

This course is intended to provide participants with an overview of research in an area of phonetics and phonology. Issues vary from term to term but may cover areas in segmental, metrical and intonational phonology and the phonology/phonetics interface. This term we will be focusing on the phonological and sociolinguistic aspects of sound change. We will begin with foundational papers on the topic of sound change from both a historical and synchronic perspective. Students will learn about linguistic variation and ongoing change locally in the Inland North dialect area through the analysis of their own interview data. Past and recent studies of the Inland North will provide a framework for learning about the linguistic and social motivations of sound change.

Offered: Spring

LIN 228 LEXICAL SEMANTICS

In this course we investigate the study of word-meaning in current linguistics and cognitive science. We examine the meanings of lexical items such as verbs, nouns, adjectives, and prepositions, and also other categories of words, including various function words and discourse particles. We examine theories of word-meaning, and examine how words and vocabulary may vary between languages.

LIN 230 SIGNE LANGUAGE STRUCTURE

Examines signed languages and the cognitive constraints that shape them, through a detailed consideration of the structure of American Sign Language and other natural signed languages of the world. Includes training in sign language notation and analysis. Knowledge of sign language is required.

LIN 241 LANGUAGE USE & UNDERSTANDING

Explores the cognitive mechanisms used to speak and understand language, with a special focus on contextually situated language use. Studies the moment-by-moment processes underlying language production and comprehension, including how speakers choose words and phrases and how listeners understand them.

LIN 247 NATURAL LANGUAGE PROCESSING

An introduction to natural language processing: constructing computer programs that understand natural language. Topics include parsing, semantic analysis, and knowledge representation. CSC 447, a graduate-level course, requires additional readings and assignments. Prereqs: CSC 172 & CSC 242

LIN 248 STATISTICAL SPEECH & LANGUAGE PROCESSING

An introduction to statistical natural language processing and automatic speech recognition techniques. This course presents the theory and practice behind the recently developed language processing technologies that enable applications such as speech-driven dictation systems, document search engines (e.g., finding web pages) and automatic machine translation. Students taking this course at the 400 level will be required to complete additional readings and/or assignments. Pre-reqs: CSC 172 and CSC 242

LIN 250 DATA SCIENCE FOR LINGUISTICS

This course addresses linguistic research questions through data science techniques. The course will focus on developing skills to (i) acquire and process a variety of language data, from using established corpora to capturing data in the wild, and (ii) to investigate language use, particularly syntactic and semantic phenomena, through descriptive and inferential statistical techniques. A significant part of the course will be devoted to hands-on projects and will include developing familiarity with using the programming languages Python and R to acquire and explore linguistic data. Familiarity with statistics and/or computational linguistics is advantageous, but not necessary.

Offered: Spring

LIN 260 SYNTACTIC THEORY

This course picks up where LIN 220 leaves off, though focusing more on topics in natural language syntax from a cross-linguistic perspective. The goal of the course is an approach to syntax that accounts for both language-particular as well as universal constraints on language. Among the topics studied are head and phrase movement, constraints on co-reference (anaphora), elipsis, and agreement (phi features).

Offered: Spring

LIN 261 PHRASE STRUCTURE GRAMMARS

This syntactic theory course examines syntactic phenomena from the perspective of phrase structure and lexicalist grammar as opposed to transformational grammar. The course will examine and develop phrase structure grammar (specifically Head-driven Phrase Structure Grammar) approaches to standard syntactic problems, contrasting them where appropriate with transformational approaches. No background in non-transformational approaches will be assumed. This course can be taken as LIN 261 or as LIN 461 and is meant for linguistics majors and non-majors alike.

Offered: Fall

LIN 262 TOPICS IN EXPERIMENTAL SYNTAX

This course provides an introduction to experimental methods that can be used to investigate questions that are relevant for syntactic theory. We will discuss a range of methodologies, including self-paced reading, visual world eye-tracking, magnitude estimation and questionnaires. The course will be organized around several topics that have been central to syntactic research, such as anaphor resolution, ellipsis and quantifier scope in order to examine how experimental methods can complement existing work; for example, by shedding light on areas where stable judgments have traditionally been difficult to obtain, and by allowing us to investigate the time course of real-time language processing. By the end of this course students will be able to understand and critically evaluate research that uses various experimental methods, and be able to design and run their own experiments.

LIN 265 FORMAL SEMANTICS

This course is an in-depth introduction to the formal analysis of natural language meaning, employing techniques that have been developed in language and formal philosophy over the last century. Issues include intensionality, quantification, tense, presupposition, plurality, the analysis of discourse, and other current issues. Familiarity with syntax, logic, and/or computation are helpful.

Offered: Fall

LIN 266 INTRODUCTION TO PRAGMATICS

Within theoretical linguistics, pragmatics is (broadly speaking) the study of how language users convey meaning. This course covers three general areas: (1) How meaning carried by linguistic elements (such as sentences) interacts with meaning that arises

from inferences about speakers' intentions; (2) Ways of characterizing meaning, especially with respect to linguistic elements not easily handled in traditional semantic (i.e., truth-conditional) terms; (3) The role of context in determining meaning. Topics to be discussed include the relation between semantics and pragmatics, representations of context, truth-conditional and other types of meaning, presupposition; implicature and Grice's Cooperative Principle

Offered: Spring

LIN 268 COMPUTATIONAL SEMANTICS

This course is a hands-on exploration of recent advances in computational models of meaning. The first part of the course will focus on implementing traditional rule-based compositional semantics in the functional programming language Haskell. We will construct a sophisticated model of formal semantics, culminating in examining the use of monads to model types of natural language meaning phenomena. The second part of the course explores distributional semantic models and their implementation, where lexical meaning is defined in terms of lexical co-occurrence, estimating meaning from large-scale corpus resources.

Offered: Fall

LIN 270 TOOLS FOR LANGUAGE DOCUMENTATION

This is a hands-on class that introduces you to major techniques and tools in language documentation and description. You will learn how to collect and record a variety of language data through elicitation and text collection. The emphasis is then on organizing, managing, and processing these data sets for various purposes, such as building up a dictionary, annotating natural speech, and time-aligning media of different formats with computational tools such as Praat, Toolbox, and ELAN. Further, we will discuss crucial topics in language documentation such as fieldwork, ethics, and language revitalization.

Offered: Fall

LIN 271 FIELD METHODS IN LING DESC I

LIN 387 TOPICS IN LINGUISTIC RESEARCH

The course is set to explore a current linguistic topic or topics in depth, drawing on the recent theoretical and empirical discoveries. The students have two options: to engage with the topic(s) proposed by the instructor or to pursue their own research topic under the guidance of the instructor. The topic this year: iconicity, the conceived similarity or analogy between the form of a linguistic sign and its meaning, as opposed to arbitrariness. Iconicity will be (i) examined in the typologically and genetically unrelated languages of the world; (ii) evaluated from different theoretical perspectives. The course would benefit students of linguistics and anthropological linguistics, cognitive sciences, psychology, music and literature studies.

Offered: Fall

LIN 388 TOPICS IN LANGUAGE CONTACT

Typology (Phonetic/Phonological, Morphosyntactic, Semantic, Discourse). Languages of the World: looking at the range of languages, language families and isolates across the world from a typological perspective, including typological variation within and among language families and areal features. Language in flux will also be addressed, e.g., historical changes, developmental acquisition data, competence vs. performance distinction. Language vitality topics will be covered, such as language death and language description, documentation, preservation and revitalization. The class will combine lectures led by the instructor and seminar sessions led by students.

Offered: Spring

LIN 389 SENIOR SEMINAR

A seminar course for senior Linguistic majors in their last semester of coursework. This seminar is a linguistics field methods course. We will work with a native speaker to elicit data and provide a description of the grammar of that speaker's language based on our data. This course is designed for senior Linguistics majors; for interested non-Linguistics majors or those who are not in their last semester of Linguistics coursework, please contact the instructor.

Offered: Spring

LIN 390 SUPERVISED TEACHING

LIN 391 INDEPENDENT STUDY

LIN 391W INDEPENDENT STUDY

LIN 393 SENIOR PROJECT

LIN 394 INTERNSHIP

LIN 395 RESEARCH IN LIN

LIN 405 HISTORICAL LINGUISTICS

This course is designed to give an introduction to the principles of linguistic variation and change, and to examine their practical application in the interdisciplinary subfields of historical linguistics and historical sociolinguistics. Topics covered include diachrony and synchrony, genetic relations, the comparative method and language classification, sound change, morphological, syntactic and semantic change, borrowing, types of language contact, areal linguistics, and linguistic variation and social stratification.

Offered: Fall

LIN 406 HISTORY OF THE ENGLISH LANG

LIN 407 OLD ENGLISH LITERATURE

LIN 410 INTRODUCTION TO LANGUAGE SOUND SYSTEMS

The goal of this course is to provide a background for understanding the principles that underlie the structure of sound systems in human languages. Starting with the notion ‘phoneme’, the course focuses on acoustic and articulatory phonetics, as a basis for understanding phonological processes and change in linguistic sound forms. Students will acquire skills in the production, recognition, and transcription of sounds in various languages of the world. The course will serve as a foundation for work in language documentation, sociolinguistics and sociophonetics, morphology. This course can be taken as LIN 210 or as LIN 410 and is meant for linguistics majors and non-majors alike.

Offered: Fall

LIN 420 INTRO TO GRAMMATICAL SYSTEMS

This introductory course examines the grammatical structure of sentences from the standpoint of transformational grammar. The course develops the basic techniques of syntactic analysis in order to develop a working grammar of a (fragment of) English. No syntax background is assumed.

Offered: Spring

LIN 425 INTRODUCTION TO SEMANTIC ANALYSIS

This course introduces students to the basics of the analysis of meaning in natural language. The first section focuses on devices that motivate certain forms to take on the meanings they have. The second section of the course moves on to discuss how meanings combine to form meanings for larger units—how words and phrases combine to form sentences meanings. Using logical notation we illustrate the formal analysis of natural language meaning in terms of truth-conditions. We will discuss the basics of set theory, and investigate how meanings represented in these terms correlate with the syntactic and lexical structures of sentences of natural language. Students of graduate standing or those with strong formal backgrounds may consider starting with LIN 265/465 instead, for which this course is ordinarily a prerequisite. This course counts towards satisfying the core course requirement for majors.

Offered: Fall

LIN 426 MORPHOLOGY

The course examines the structure and definition of the linguistic unit "word"' its typology and the relationship of the morphological component to other levels in the grammar. The course includes an introduction to analytical techniques with emphasis placed on an examination of data from a range of languages. The building blocks of words will be analyzed and topics such as affixation, reduplication and inflectional and derivational morphology will be covered. We will examine the properties of words and how they fit into the larger structure of linguistic knowledge, including the relationship between words and syntactic structure (ex., phrases and sentences) and the relationship between words and phonological structure (ex., phonological rules and prosodic structure).

Offered: Fall

LIN 427 TOPICS PHONETICS & PHONOLOGY

This course is intended to provide participants with an overview of research in an area of phonetics and phonology. Issues vary from term to term but may cover areas in segmental, metrical and intonational phonology and the phonology/phonetics interface. This term we will be focusing on the phonological and sociolinguistic aspects of sound change. We will begin with foundational papers on the topic of sound change from both a historical and synchronic perspective. Students will learn about linguistic variation and ongoing change locally in the Inland North dialect area through the analysis of their own interview data. Past and recent studies of the Inland North will provide a framework for learning about the linguistic and social motivations of sound change.

Offered: Spring

LIN 428 LEXICAL SEMANTICS

In this course we investigate the study of word-meaning in current linguistics and cognitive science. We examine the meanings of lexical items such as verbs, nouns, adjectives, and prepositions, and also other categories of words, including various function words and discourse particles. We examine theories of word-meaning, and examine how words and vocabulary may vary between languages.

LIN 430 SIGNE LANGUAGE STRUCTURE

LIN 447 NATURAL LANGUAGE PROCESSING

LIN 448 STAT. SPEECH & LANG PROC

LIN 450 DATA SCIENCE FOR LINGUISTICS

This course addresses linguistic research questions through data science techniques. The course will focus on developing skills to (i) acquire and process a variety of language data, from using established corpora to capturing data in the wild, and (ii) to investigate language use, particularly syntactic and semantic phenomena, through descriptive and inferential statistical techniques. A significant part of the course will be devoted to hands-on projects and will include developing familiarity with using the programming languages Python and R to acquire and explore linguistic data. Familiarity with statistics and/or computational linguistics is advantageous, but not necessary.

Offered: Spring

LIN 460 SYNTACTIC THEORY

This course picks up where LIN 220 leaves off, though focusing more on topics in natural language syntax from a cross-linguistic perspective. The goal of the course is an approach to syntax that accounts for both language-particular as well as universal constraints on language. Among the topics studied are head and phrase movement, constraints on co-reference (anaphora), elipsis, and agreement (phi features).

Offered: Spring

LIN 461 PHRASE STRUCTURE GRAMMARS

This syntactic theory course examines syntactic phenomena from the perspective of phrase structure and lexicalist grammar as opposed to transformational grammar. The course will examine and develop phrase structure grammar (specifically Head-driven Phrase Structure Grammar) approaches to standard syntactic problems, contrasting them where appropriate with transformational approaches. No background in non-transformational approaches will be assumed. This course can be taken as LIN 261 or as LIN 461 and is meant for linguistics majors and non-majors alike.

Offered: Fall

LIN 462 TOPICS IN EXPERIMENTAL SYNTAX

This course provides an introduction to experimental methods that can be used to investigate questions that are relevant for syntactic theory. We will discuss a range of methodologies, including self-paced reading, visual world eye-tracking, magnitude estimation and questionnaires. The course will be organized around several topics that have been central to syntactic research, such as anaphor resolution, ellipsis and quantifier scope in order to examine how experimental methods can complement existing

work; for example, by shedding light on areas where stable judgments have traditionally been difficult to obtain, and by allowing us to investigate the time course of real-time language processing. By the end of this course students will be able to understand and critically evaluate research that uses various experimental methods, and be able to design and run their own experiments.

LIN 465 FORMAL SEMANTICS

This course is an in-depth introduction to the formal analysis of natural language meaning, employing techniques that have been developed in language and formal philosophy over the last century. Issues include intensionality, quantification, tense, presupposition, plurality, the analysis of discourse, and other current issues. Familiarity with syntax, logic, and/or computation are helpful.

Offered: Fall

LIN 466 INTRODUCTION TO PRAGMATICS

Within theoretical linguistics, pragmatics is (broadly speaking) the study of how language users convey meaning. This course covers three general areas: (1) How meaning carried by linguistic elements (such as sentences) interacts with meaning that arises from inferences about speakers' intentions; (2) Ways of characterizing meaning, especially with respect to linguistic elements not easily handled in traditional semantic (i.e., truth-conditional) terms; (3) The role of context in determining meaning. Topics to be discussed include the relation between semantics and pragmatics, representations of context, truth-conditional and other types of meaning, presupposition; implicature and Grice's Cooperative Principle

Offered: Spring

LIN 468 COMPUTATIONAL SEMANTICS

This course is a hands-on exploration of recent advances in computational models of meaning. The first part of the course will focus on implementing traditional rule-based compositional semantics in the functional programming language Haskell. We will construct a sophisticated model of formal semantics, culminating in examining the use of monads to model types of natural language meaning phenomena. The second part of the course explores distributional semantic models and their implementation, where lexical meaning is defined in terms of lexical co-occurrence, estimating meaning from large-scale corpus resources.

Offered: Fall

LIN 470 TOOLS FOR LANGUAGE DOCUMENTATION

This is a hands-on class that introduces you to major techniques and tools in language documentation and description. You will learn how to collect and record a variety of language data through elicitation and text collection. The emphasis is then on organizing, managing, and processing these data sets for various purposes, such as building up a dictionary, annotating natural speech, and time-aligning media of different formats with computational tools such as Praat, Toolbox, and ELAN. Further, we will discuss crucial topics in language documentation such as fieldwork, ethics, and language revitalization.

Offered: Fall

LIN 471 FIELD METHODS IN LING DESC I

LIN 491 MASTER'S READING IN LIN

LIN 495 MASTER'S RESEARCH IN LING

LIN 501 METHODS IN LINGUISTIC RESEARCH

An introduction to the field of linguistics and natural language emphasizing a theoretical perspective. Topics will cover subfields of linguistics, including phonetics, phonology, morphology, syntax, semantics and pragmatics.

Offered: Fall

LIN 590 SUPERVISED TEACHING

LIN 591 PHD READING COURSE IN LING

LIN 595 PHD RESEARCH IN LING

LIN 595A PHD RESEARCH IN ABSENTIA

LIN 895 CONT OF MASTER'S ENROLLMENT

LIN 897 MASTER'S DISSERTATION

LIN 899 MASTER'S DISSERTATION

LIN 985 LEAVE OF ABSENCE

LIN 986V FULL TIME VISITING STUDENT

LIN 995 CONT OF DOCTORAL ENROLLMENT

LIN 997 WRITING DISSERTATION

LIN 997A DOCT DISSERTATN IN ABSENTIA

LIN 999 DOCTORAL DISSERTATION

LIN 999A DOCT DISSERTATN IN ABSENTIA

LTS 200 STUDIES IN TRANSLATION

This course will introduce students to the theoretical backgrounds, practical challenges,and creative activity of literary translation. We will survey appropriate theories of language and communication including semiotics, post-structuralism, pragmatics, discourse analysis, and cognitive linguistics. We will consider varied and conflicting descriptions by translators of what it is they believe they are doing and what they hope to accomplish by doing it; and we will study specific translations into English from a variety of sources in order to investigate the strategies and choices translators make and the implication of those choices for our developing sense of what kinds of texts translations actually are. Finally, students will, in consultation with the instructor or with another qualified faculty member, undertake exercises in translation of their own. By the end of this class each student should have a working knowledge of both the critical backgrounds and the artistic potentials of translation.

LTS 201B NOBEL PRIZE LITERATURE

LTS 206 TRANSLATION&WORLD LITERATURE

The focus of World Literature in Translation is to examine what makes a translation "successful" as a translation. By reading a series of recently translated works (some contemporary, some retranslations of modern classics), and by talking with translators, we will have the opportunity to discuss both specific and general issues that come up while translating a given text. Young translators will be exposed to a lot of practical advice throughout this class, helping to refine their approach to their own translations, and will expand their understanding of various practices and possibilities for the art and craft of literary translation.

LTS 231 FRENCH LIT IN TRANSLATION

LTS 232 JEWISH WRITER & REBEL

In February 2011, the website Jewcy published a list of the 50 most essential works of Jewish fiction of the last 100 years. The featured books come from many different languages, cultures, and time periods and are written in a myriad of literary styles. Although few would argue with the names on the list (Kafka, Bellow, Singer), the diversity of the authors involved raises the question: what makes Jewish literature Jewish? This course will attempt to answer that question by looking at an international group of writers (some of whom identify as Jewish and some of whom do not) who often challenge their (religious and cultural) upbringing as well as the dominant politics of the countries in which they live. The authors we will read include: Franz Kafka, Jakov Lind, Bruno Schulz, Edmund Jabès, Georges Perec and Clarice Lispector.

LTS 236 CONTEMPORARY POETRY

LTS 391 INDEPENDENT STUDY

LTS 392 PRACTICUM

LTS 394 INTERNSHIP

LTS 395 INDEPENDENT RESEARCH

Capstone project for the program. Under the direction of an advisor, students complete a translation into English of a group of poems, a short story or novella, or an excerpt from a novel or play.

LTS 396 PUBLISHING LITERARY TRANSLATION

This course runs in combination with an internship at Open Letter Books and focuses on explaining the basics of the business of literary publishing: editing, marketing, promoting, fundraising, ebooks, the future of bookselling, etc. Literature in translation is emphasized in this class, and all the topics covered tie in with the various projects interns work on for Open Letter Books.

LTS 400 STUDIES IN TRANSLATION

This course will introduce students to the theoretical backgrounds, practical challenges,and creative activity of literary translation. We will survey appropriate theories of language and communication including semiotics, post-structuralism, pragmatics, discourse analysis, and cognitive linguistics. We will consider varied and conflicting descriptions by translators of what it is they believe they are doing and what they hope to accomplish by doing it; and we will study specific translations into English from a variety of sources in order to investigate the strategies and choices translators make and the implication of those choices for our developing sense of what kinds of texts translations actually are. Finally, students will, in consultation with the instructor or with another qualified faculty member, undertake exercises in translation of their own. By the end of this class each student should have a working knowledge of both the critical backgrounds and the artistic potentials of translation.

LTS 401 TRANSLATION PORTFOLIO

Under the direction of an advisor, students complete an independent translation project—a group of poems or stories, a novella, or an excerpt from a novel or play—that will be the centerpiece of the student's translation portfolio.

Offered: Fall

LTS 401B NOBEL PRIZE LITERATURE

LTS 402 MIXED GENRE TRANSLATION

LTS 406 TRANSLATION&WORLD LITERATURE

The focus of World Literature in Translation is to examine what makes a translation "successful" as a translation. By reading a series of recently translated works (some contemporary, some retranslations of modern classics), and by talking with translators, we will have the opportunity to discuss both specific and general issues that come up while translating a given text. Young translators will be exposed to a lot of practical advice throughout this class, helping to refine their approach to their own translations, and will expand their understanding of various practices and possibilities for the art and craft of literary translation.

LTS 410 INTRO TO LITERARY PUBLISHING

This course runs in combination with an internship at Open Letter Books and focuses on explaining the basics of the business of literary publishing: editing, marketing, promoting, fundraising, ebooks, the future of bookselling, etc. Literature in translation is emphasized in this class, and all the topics covered tie in with the various projects interns work on for Open Letter Books.

Offered: Fall

LTS 431 FRENCH LIT IN TRANSLATION

LTS 432 JEWISH WRITER & REBEL

In February 2011, the website Jewcy published a list of the 50 most essential works of Jewish fiction of the last 100 years. The featured books come from many different languages, cultures, and time periods and are written in a myriad of literary styles. Although few would argue with the names on the list (Kafka, Bellow, Singer), the diversity of the authors involved raises the

question: what makes Jewish literature Jewish? This course will attempt to answer that question by looking at an international group of writers (some of whom identify as Jewish and some of whom do not) who often challenge their (religious and cultural) upbringing as well as the dominant politics of the countries in which they live. The authors we will read include: Franz Kafka, Jakov Lind, Bruno Schulz, Edmund Jabès, Georges Perec and Clarice Lispector.

LTS 465 DON QUIXOTE

LTS 491 MASTER'S READING COURSE

LTS 494 MASTER'S INTERNSHIP

LTS 495 MASTER'S RESEARCH

LTS 895 CONT OF MASTER'S ENROLLMENT

LTS 897 MASTERS DISSERTATION

LTS 899 MASTER'S DISSERTATION

ME 090 UR SAE BAJA TEAM
UR SAE BAJA TEAM MEMBERS

ME 091 SOLAR SPLASH

ME 104 THE ENGINEERING OF BRIDGES

An introduction to the art of bridge building based on the study of the engineering and technological problems involved in the design, construction, and collapse of bridges from antiquity to the present time. The course includes several case studies of major historical bridges selected for their structural significance. Students learn how to calculate the forces acting on structural elements, how these forces depend on the bridge structural form, how the form itself is conditioned by the structural materials, and how forces are measured with electromechanical instrumentation. The study includes fundamental notions of mechanics, strength of materials, structural behavior, instrumentation failure analysis, and design optimization. Working on teams, students use constructive experimental models as well as computer-aided programs to design, build, instrument, and test realistic bridge projects. This is a self-contained course open to all Rochester undergraduates.

Offered: Fall Spring

ME 106 ENGINEERING IN ANTIQUITY

Application of engineering principles and technology to the design and performance of engineering structures from antiquity to the pre-industrial world. Engineering principles (transfer of forces, momentum, and power), study of primary texts (in translation), and examination of existing structures/monuments. Primary texts include selections from Aristotle’s Mechanical Problems, Vitruvius' Ten Books on Architecture, Leonardo’s Notebooks, Galileo’s Dialogues on Two New Sciences. Emphasis on engineering design of engineered structures from the Bronze Age to the 18th century. Topics: Evolution of engineered materials (metals, wood, stone, marble, concrete, composites) and limitations; Bronze Age fortifications; Structural design of Greek temples; Roman aqueducts, siphons, and vaults; Force, power sources and transmission; Failure of materials; Lifting devices; Construction engineering; Columns, beams, vaults, trusses, frames; Instruments of warfare. Open to all undergraduates. No prerequisites.

ME 107 MECHANICS & OPTICS IN ANTIQUITIES

The basic principles of mechanics and optics as they developed in ancient Greece, Rome, China and Europe and the emergence of mechanics and optics prior to the industrial revolution. Examples: Law of the lever (Aristotle and Archimedes); Center of gravity (Archimedes and Galileo); Gears, metalworking, and the Antikythera mechanism; Hellenistic science; Medieval mechanics and optics; Mechanical designs of Leonardo da Vinci; Development of glass-making, eyeglasses, the telescope (Galileo, Kepler, Newton); Lens grinding and polishing; Dynamics and strength of materials (Galileo); The emergence of mechanics (Newton) and optics (Kepler). The course includes basic mechanics and optics; study of texts (in English translation); and study of artifacts and archaeological and historical discoveries. Open to all undergraduates. No prerequisites.

Offered: Spring

ME 107W MECH & OPTICS IN ANTIQUITIES

The basic principles of mechanics and optics as they developed in ancient Greece, Rome, China and Europe and the emergence of mechanics and optics prior to the industrial revolution. Examples: Law of the lever (Aristotle and Archimedes); Center of gravity (Archimedes and Galileo); Gears, metalworking, and the Antikythera mechanism; Hellenistic science; Medieval mechanics and optics; Mechanical designs of Leonardo da Vinci; Development of glass-making, eyeglasses, the telescope (Galileo, Kepler, Newton); Lens grinding and polishing; Dynamics and strength of materials (Galileo); The emergence of mechanics (Newton) and optics (Kepler). The course includes basic mechanics and optics; study of texts (in English translation); and study of artifacts and archaeological and historical discoveries. Upper level witing

ME 110 INTRODUCTION TO CAD AND DRAWING

This course covers engineering drawing, and modeling using the Computer Aided Design software Pro/ENGINEER. Topics include orthographic projections, solid modeling, assemblies, and dimensioning. Students will complete the course with a fundamental ability to create and understand solid modeling, and engineering drawings using state of the art PC CAD software. Lectures will make use of a computer projection screen as well as individual computers for each student.

Offered: Fall Spring

ME 120 ENGINEERING MECHANICS I

Basic concepts of mechanics; units; forces; moments; force systems; equilibrium; vector algebra. Plane trusses; method of joints; method of sections; space trusses; frames and machines. Centroids of lines, areas, and volumes; center of mass. Distributed loads on beams; internal forces in beams; distributed loads on cables. Basic concepts of dry friction; friction in machines. Virtual work and potential energy methods.

Offered: Fall Spring

ME 121 ENGINEERING MECHANICS II

This course uses an engineering approach to the solution of dynamics problems with an emphasis on conceptual understanding. Topics include kinematics and kinetics of particles and rigid bodies.

Offered: Fall

ME 123 INTRO TO THERMODYNAMICS

Course Content: thermodynamic systems, properties, equilibrium, and processes; energy and the first law; properties of simple compressible substances; control volume analysis; steady and transient states; entropy and the second law, general thermodynamic relations.

Offered: Spring

ME 145 CNC GRIND FOR PRECISION MFG

ME 146 CNC FINISH & PRECISION MFG

ME 147 LAB-MAGNET FINISHING

ME 160 ENGINEERING COMPUTATION I

General engineering computations using Matlab. Programming basics, including: Functions, logic, looping, File manipulation and basic data structures. Applied topics will include: Number representation and error, root finding, interpolation, curve fitting, systems of linear equations, and data reduction and plotting (2D). Examples will be drawn from typical problems in the mechanical engineering curriculum.

Offered: Fall

ME 201 APPLIED BOUNDARY VALUE PROBLEMS

This course covers the classical partial differential equations of mathematical physics: the heat equation, the Laplace equation, and the wave equation. The primary technique covered in the course is separation of variables, which leads to solutions in the form of eigenfunction expansions. The topics include Fourier series, separation of variables, Sturm-Liouville theory, unbounded

domains and the Fourier transform, spherical coordinates and Legendre's equation, cylindrical coordinates and Bessel's equation. The software package Mathematica will be used extensively. Prior knowledge of Mathematica is helpful but not essential. In the last two weeks of the course, there will be a project on an assigned topic. The course will include applications in heat conduction, electrostatics, fluid flow, and acoustics.

Offered: Fall

ME 204 MECHANICAL DESIGN

Description: The theory and application of structural mechanics to mechanical design. Topics include: matrix structural analysis and finite element techniques. Students will use the NASTRAN finite element program to solve a variety of design and analysis problems. The term project consists of a team competition to design, analyze build, and test a lightweight structure.

Offered: Fall

ME 205 ADVANCED MECHANICAL DESIGN

This is an applied course that teaches the student how to use engineering principles in the design of mechanical components and mechanical systems. Topics include: load determination, static and fatigue failure theories, design and analysis of machine components (e.g. shafts, gears, bearings, fasteners, etc.), and the mechanical design process. The student learns the mechanical design process through team based design activities. In particular, project teams will design, analyze, build, and test a working machine in a semester long project. Formal design reviews and engineering reports will be used to document results.

Offered: Spring

ME 206 Building Engineering and Technology in Antiquity

Engineering and technological problems involved in the design, construction, maintenance, and collapse of major buildings and infrastructural systems from antiquity to the pre-industrial world drawing material from case studies of relevant monuments primarily from Classical Rome and Greece, and the Middle Ages.

Offered: Spring

ME 212 VISCO IN BIO TISSUES

Viscoelastic materials have the capacity to both store and dissipate energy. As a result, properly describing their mechanical behavior lies outside the scope of both solid mechanics and fluid mechanics. This course will develop constitutive relations and strategies for solving boundary value problems in linear viscoelastic materials. In addition, the closely-related biphasic theory for fluid-filled porous solids will be introduced. An emphasis will be placed on applications to cartilage, tendon, ligament, muscle, blood vessels, and other biological tissues. Advanced topics including non-linear viscoelasticity, composite viscoelasticity and physical mechanisms of viscoelasticity will be surveyed.

ME 213 MECHANICAL SYSTEMS

Free and forced vibrations. Complex representation, the Euler-Lagrange equations, state space, matrix methods, Laplace transforms. Feedback control of linear systems in state space: stabilization, tracking and observers.

Offered: Spring

ME 222 INTRODUCTION TO ROBUST DESIGN & QUALITY ENGINEERING

Definition and pursuit of "quality" as a design criterion. The concept of robust design. Selection of the quality characteristic, incorporation of noise, and experimental design to improve robustness. Analysis and interpretation of results.

Offered: Spring

ME 223 HEAT TRANSFER

Review of thermodynamic concepts; energy balances; heat transfer mechanisms. Steady-state heat conduction; concept of thermal resistance; conduction in walls, cylinders, and spheres; cooling fins. Transient heat conduction; lumped parameter systems; transient conduction in plane walls; transient conduction in semi-infinite solids. Numerical analysis of conduction; finite difference analysis; one-dimensional steady conduction; two-dimensional steady conduction; transient conduction. Fundamentals of convection; fluid flow and heat transfer; energy equation; convective heat transfer from flat plate; use of dimensional analysis. External forced convection; flow over flat plates; flow past cylinders and spheres; flow across tube banks. Internal forced convection; thermal analysis of flow in tubes; laminar flow in tubes; turbulent flow in tubes. Heat exchangers; overall heat transfer coefficient; log mean temperature analysis; effectiveness-NTU method.

Offered: Spring

ME 225 INTRODUCTION TO FLUID DYNAMICS

Fluid properties; fluid statics; kinematics of moving fluids; the Bernoulli equation and applications; control volume analysis; differential analysis of fluid flow; inviscid flow, plane potential flow; viscous flow, the Navier-Stokes equation; dimensional analysis,similitude; empirical analysis of pipe flows; flow over immersed bodies, boundary layers, lift and drag.

Offered: Fall

ME 226 INTRODUCTION TO SOLID MECHANICS

Description: Loads and displacements, stress and strain in solids. Laws of elasticity. Mechanical properties of materials. Thermal stresses. Axial loading. Pressure vessels. Plane stress and plane strain. Stress and strain tensor rotations; principal stresses, principal strains. Torsion and bending of beams. Energy methods. Buckling.

Offered: Spring

ME 232 OPTO-MECHANICAL

The mechanical design and analysis of optical components and systems will be studied. Topics will include kinematic mounting of optical elements, the analysis of adhesive bonds, and the influence of environmental effects such as gravity, temperature, and vibration on the performance of optical systems. Additional topics include analysis of adaptive optics, the design of lightweight mirrors, thermo-optic and stress-optic (stress birefringence) effects. Emphasis will be placed on integrated analysis which includes the data transfer between optical design codes and mechanical FEA codes. A term project is required for ME 432.

Offered: Spring

ME 241 FLUIDS LAB

Description: Laboratory course. Introductory Lecture(s) on lab practice and data analysis. The lab itself consists of two parts: The first part uses simple experiments to familiarize the student with computer data acquisitions and some basic instrumentation. In the second part, students (working in groups of three) perform independent experimental projects. The course has significant writing content and makes formal use of the Writing Center. In addition to written and oral laboratory reports, each group is expected to make a final poster presentation of its work.

Offered: Spring

ME 242 SOLIDS & MATERIALS LAB

In this course, you will apply previously learned theoretical concepts to practical problems and applications. In addition, you will learn experimental techniques and enhance your technical writing skills. This course has two parts, a series of small laboratory exercises and a project. During the semester, students will work in groups of three to complete the assigned work, labs, and reports. The lab section of the course is designed to present basic applied concepts that will be useful to a broad base of engineering problems. The project portion is where you will work on a more specific idea, tailored around your desired future goals.

Offered: Fall

ME 245 PRECISION INSTRUMENT DESIGN

This course focuses teaching the multidisciplinary aspects of designing complex, precise systems. In these systems, aspects from mechanics, optics, electronics, design for manufacturing/assembly, and metrology/qualification must all be considered to design, build, and demonstrate a successful precision system. The goal of this class is to develop a fundamental understanding of multidisciplinary design for designing the next generation of advanced instrumentation. This course is open to graduate students in engineering and physics backgrounds although it has a strong emphasis on mechanical engineering and systems engineering topics. This course is open to undergraduates who are in their senior year.

Offered: Fall

ME 251 HEAT POWER APPLICATION

Review of thermodynamics, vapor power systems, gas power systems, refrigeration and heat pumps, internal combustion engines, nozzles and diffusers, compressors and turbines, aircraft propulsion, cost analysis of power production

Offered: Fall

ME 254 FINITE ELEMENTS

This course provides a thorough grounding on the theory and application of linear steady-state finite element method (FEM) applied to solid mechanics. Topics include: review of matrix algebra and solid mechanics, Principle of Minimum Potential Energy, Rayleigh Ritz Method, FEM computational procedures, isoparametric shape functions and numerical integration for 1D, 2D, and 3D elements, error estimation and convergence, and the demonstration of FEM best practices using a commercial FEM code. A semester project that involves coding FEM software in Matlab is required for graduate students.

Offered: Spring

ME 260 ENGINEERING COMPUTATION II

Advanced engineering computations using Matlab. This course will include the following programming topics: accelerated review of ME160, 3D plotting and animation, Debugging and Efficiency as well as some GUI programming. The rest of the course will be focused on numerical topics important for the mechanical engineering student including the following topics as time permits: numerical integration and differentiation, eigenvalues and eigenvectors, non-linear systems, solution of ODEs and PDEs.

Offered: Spring

ME 280 INTRODUCTION TO MATERIALS SCIENCE

Properties of engineering materials including metals, alloys, ceramics, polymers and composites. Relationship of properties to the materials microstructure including atomic bonding, atomic arrangement, crystal structure, co-existing phases, interfaces, defects and impurities. Processing techniques for altering the microstructure and properties.

Offered: Fall

ME 281 MECHANICAL PROP OF MATERIALS

Description: The mechanical response of crystalline (metals, ceramics, semiconductors)and amorphous solids (glasses, polymers) and their composites in terms of the relationships between stress, strain, damage, fracture, strain-rate, temperature, and microstructure. Topics include: (1) Material structure and property overview. (2) Isotropic and anisotropic elasticity and viscoelasticity. (3) Properties of composites. (4) Plasticity. (5) Point and line defects. (6) Interfacial and volumetric defects. (7) Yield surfaces and flow rules in plasticity of polycrystals and single crystals. (8) Macro and micro aspects of fractures in metals, ceramics and polymers.(9) Creep and superplasticity. (10) Deformation and fracture mechanism maps. (11) Fatigue damage and failure; fracture and failure in composites (If time permits).

Offered: Spring

ME 311 ENGINEERING COMPUTATION

Engineering computation and algorithms using MatLab. Solution of systems of linear equations, numerical integration, integration of differential equations, boundary value problems. Examples drawn from the mechanical engineering curriculum (statics, dynamics, fluid mechanics, mechanics of materials, heat transfer, mechanical systems.)

Offered: Spring

ME 390 SUPERVISED TEACHING

ME 391 INDEPENDENT READING

ME 391W INDEPENDENT READING

ME 392 SPECIAL TOPICS

ME 393 SPECIAL ESSAY OR THESIS

ME 393W SENIOR PROJECT

ME 394 INTERNSHIP

ME 395 INDEPENDENT RESEARCH

ME 395W INDEPENDENT RESEARCH

ME 396 SPECIAL PROJECTS

ME 400 APPLIED BOUNDARY VALUE PROB

This course covers the classical partial differential equations of mathematical physics: the heat equation, the Laplace equation, and the wave equation. The primary technique covered in the course is separation of variables, which leads to solutions in the form of eigenfunction expansions. The topics include Fourier series, separation of variables, Sturm-Liouville theory, unbounded domains and the Fourier transform, spherical coordinates and Legendre's equation, cylindrical coordinates and Bessel's equation. The software package Mathematica will be used extensively. Prior knowledge of Mathematica is helpful but not essential. In the last two weeks of the course, there will be a project on an assigned topic. The course will include applications in heat conduction, electrostatics, fluid flow, and acoustics.

Offered: Fall

ME 402 PARTIAL DIFFERENTIAL EQUATIONS

The course covers first-order equations and the theory of characteristics, classification of second-order linear equations, method of separation of variables, Green's functions, and some numerical methods.

ME 404 COMPUTATIONAL METHODS APPLIED TO BIOLOGICAL SYSTEMS

The course deals with computational methods to analytically intractable mathematical problems in biological research. For the first half of the course, general numerical analysis topics are reviewed such as linear algebra, ODE and PDE. Through homework assignments, students write their own computer code. Sufficient sample solutions are given to practice various numerical methods within limited time. The rest of the course is comprised of case studies and projects. Examples of computational analyses are drawn from life science problems such as biodynamics of human loco motion, ion channel kinetics, ionic diffusion, and finite element analysis of cells/tissues. For final project, students bring their own research problems, express them in mathematical equations, solve them using custom written computer programs and interpret the solutions.

Offered: Spring

ME 408 PHASE TRANSFORMATION

How and why atomic rearrangements leading to phase transformations occur and how they are associated with kinetic and crystallographic features; liquid-solid and solid-solid transformations, nucleation theory,growth, massive and martensitic transformations.

Offered: Fall

ME 412 VISCO IN BIO TISSUES

ME 424 INTRODUCTION ROBUST DESIGN & QUALITY ENGINEERING

Definition and pursuit of "quality" as a design criterion. The concept of robust design. Selection of the quality characteristic, incorporation of noise, and experimental design to improve robustness. Analysis and interpretation of results.

Offered: Spring

ME 432 OPTO-MECHANICAL

The mechanical design and analysis of optical components and systems will be studied. Topics will include kinematic mounting of optical elements, the analysis of adhesive bonds, and the influence of environmental effects such as gravity, temperature, and vibration on the performance of optical systems. Additional topics include analysis of adaptive optics, the design of lightweight mirrors, thermo-optic and stress-optic (stress birefringence) effects. Emphasis will be placed on integrated analysis which includes the data transfer between optical design codes and mechanical FEA codes. A term project is required for ME 432.

Offered: Spring

ME 434 INTRODUCTION TO PLASMA PHYSICS I

Basic plasma parameters; quasi-neutrality, Debye length, plasma frequency, plasma parameter, Charged particle motion: orbit theory. Basic plasma equations; derivation of fluid equations from the Vlasov equation. Waves in plasmas. MHD theory. Energy balance.

Offered: Fall

ME 435 INTRODUCTION TO PLASMA PHYSICS II

Vlasov equation, Landau damping. VanKampen modes, two-stream instability, micro-instabilities, introduction to kinetic theory, shield clouds, Thomson scattering, and the Fokker-Planck equation.

ME 436 COMPRESSIBLE FLOW

Kinematics, equations of motion; thermodynamics of gases; linear acoustics; Bernoulli equation; potential flow; steady one-dimensional flow; shock waves, normal and oblique shocks; unsteady one-dimensional flow, characteristics. Applications in engineering and astrophysics.

Offered: Spring

ME 437 CONTINUUM MECHANICS

The study of incompressible flow covers fluid motions which are gentle enough that the density of the fluid changes little or none. Topics: Conservation equations. Bernoulli's equation, the Navier-Stokes equations. Inviscid flows; vorticity; potential flows; stream functions; complex potentials. Viscosity and Reynolds number; some exact solutions with viscosity; boundary layers; low Reynolds number flows. Waves.

ME 439 TURBULENCE

This is an introduction to turbulence theory and modeling for graduate students in engineering and the physical sciences. This course stresses intuitive physical understanding, mathematical analysis techniques,and numerical methodologies. It will highlight applications in various disciplines, including aeronautics,fusion sciences, geophysics and astrophysics.

ME 440 MECHANICS OF STRUCTURES

Application of energy methods to obtain the governing equations and approximate solutions to problems involving elastic structures. Static models will be developed to determine the maximum displacements and stresses for structures subjected to forces. Dynamic models will be developed to determine approximate natural frequencies and mode shapes. Rayleigh-Ritz and Galerkin approximation methods will be covered.

Offered: Fall

ME 441 FINITE ELEMENTS

This course provides a thorough grounding on the theory and application of linear finite element analysis in solid mechanics and related disciplines. Topics: structural matrix analysis concepts and computational procedures; shape functions and element formulation methods for 1-D, 2-D problems; variational methods, weighted residual methods and Galerkin techniques; isoparametric elements; error estimation and convergence; global analysis aspects. Term project and homework require computer implementation of 1-D and 2-D finite element procedures using Matlab. Term project not required for ME254

Offered: Spring

ME 443 APPLIED VIBRATION ANALYSIS

Deformations and the stresses in different types of structural systems subjected to prescribed dynamic loading conditions. Topics include: overview of structural dynamics, matrix structural analysis and Finite Element analysis, single-degree and multi-degree-of-freedom systems, linear and inelastic systems, numerical evaluation of dynamic response, Finite Element methods in dynamic analysis, earthquake response and structural design.

Offered: Spring

ME 444 CONTINUUM MECHANICS

Course Description: The mechanics of continuous media. The basic notations and concepts in applied mechanics will be covered. These concepts are the foundation for both solid and fluid mechanics and applications in both of these areas will be used as examples. The course will include 1) indicial notation and tensor analysis, 2) concepts of stress, 3) both Eulerian and Lagrangian descriptions of deformation and strain, 4) conservation of mass, momentum, energy, and 5) constitutive equations to describe material response.

Offered: Fall

ME 445 PRECISION INSTRUMENT DESIGN

This course focuses teaching the multidisciplinary aspects of designing complex, precise systems. In these systems, aspects from mechanics, optics, electronics, design for manufacturing/assembly, and metrology/qualification must all be considered to design, build, and demonstrate a successful precisionsystem. The goal of this class is to develop a fundamental understanding of multidisciplinary design for designing the next generation of advanced instrumentation.

Offered: Fall

ME 449 ELASTICITY

Analysis of stress and strain; equilibrium; compatibility; elastic stress-strain relations; material symmetries. Torsion and bending of bars. Plane stress and plane strain; stress functions. Applications to half-plane and half-space problems; wedges; notches. 3-D problems via potentials.

Offered: Spring

ME 451 Characterization Methods in Materials

Crystallography, symmetry elements, space groups, x-ray diffraction from single crystals and powder patterns. Fourier transforms, grain size effects, residual stresses and textures, diffuse and small angle scattering, Bragg and Laue x-ray diffraction topography, thin films and epitaxial layers. Modern x-ray software for diffraction analysis including textures, residual stresses, pattern identification and Rietveld applications.

Offered: Fall

ME 458 NON-LINEAR FINITE ELEMENTS

The theory and application of nonlinear FE methods in solid and structural mechanics, and biomechanics. Topics: review and generalization of linear FE concepts, review of solid mechanics, nonlinear incremental analysis, FE formulations for large displacements and large strains, nonlinear constitutive relations, incompressibility and contact conditions, hyperelastic materials, damage plasticity formulation, solution methods, explicit dynamic formulation.

Offered: Spring

ME 460 THERMODYNAMICS OF SOLIDS

Review of basic thermodynamic quantities and laws; equations of state; statistical mechanics; heat capacity; relations between physical properties; Jacobian algebra; phase transformations, phase diagrams and chemical reactions; partial molal and excess quantities, phases of variable composition; free energy of binary and multicomponent systems; surfaces and interfaces. The emphasis is on the physical and chemical properties of micro and nano solids including stress and strain variables.

Offered: Spring

ME 461 FRACTURE & ADHESION

Stress fields near cracks in linear elasticity. Linear elastic fracture mechanics. Griffith fracture theory. K and J approaches to fracture. Failure analysis and fracture stability; crack tip deformation, crack tip shielding. Crack nucleation. Adhesion. Low cycle fatigue; fatigue crack propagation. Emphasis on the role of microstructure in determining fracture, adhesion and fatigue behavior of materials; improving fracture toughness for advanced materials especially ceramics and polymers. This course is taught at a level that brings the student to the level of current research.

Offered: Fall

ME 462 SOLIDS & MATERIALS LAB

Lecture and laboratory. Lecture: engineering problem solving methodologies and review of basic statistics. Laboratory: dealing with solids/materials instrumentation Students work in groups of three. Graduate students work alone on independent projects.

Offered: Fall

ME 466 CORROSION

A scientific approach to understanding the oxidation and dissolution of metals related to corrosion control, electrical energy generation, metallic plating, and energy storage. Characterization of corrosion types. Interfacial electrochemical mechanisms, thermodynamics, electrode potentials, interphases, and Pourbaix diagrams. Kinetics of free corrosion and electron limited corrosion including polarizations and overpotentials. Passivity. Tafel behavior with Butler-Volmer interpretations. Experimental

measurements used in corrosion research and in battery research. Corrosion in iron based and aluminum based aqueous systems. Corrosion in lithium and sodium based non-aqueous systems. Effects of stress, including mechanisms of stress corrosion cracking related to metallurgical structure and role of the electrical double layer. Catalytic behavior of free surface nanostructures intended to catalyze oxygen reactions and ease barriers to metallic plating and ionic dissolution at polar electrolyte interfaces.

ME 481 MECHANICAL PROP OF MATERIALS

The mechanical response of crystalline (metals, ceramics, semiconductors)and amorphous solids (glasses, polymers) and their composites in terms of the relationships between stress, strain, damage, fracture, strain-rate, temperature, and microstructure.

Offered: Spring

ME 482 BIOSOLID MECHANICS

ME 491 MASTER'S READING COURSE ME

ME 492 SPEC TOP:HIGH ENERGY DEN PHY

Precision Engineering is used to design and develop sensors, systems, and instruments which are generally multidisciplinary and require simultaneous consideration of many facets to achieve a desired specification. This includes systems like displacement and surface interferometers, high speed machining centers, lithography tools, and diamond turning machines. Precision engineering is used to push the current state of the art into new frontiers. The goal of this class is to develop a fundamental understanding of the tools and techniques used for designing, assessing, and ultimately implementing precision systems.

ME 493 MASTER'S ESSAY

ME 494 MASTERS INTERNSHIP

ME 495 MASTER'S RESEARCH IN ME

ME 496 CURRNT RESEARCH IN MECHANICS

ME 533 INTRO-INERTIAL CONFINEMENT FUSION

Fusion energy. Lawson criterion for thermonuclear ignition. Fundamentals of implosion hydrodynamics, temperature and density in spherical implosions. Laser light absorption. Implosion stability. Thermonuclear energy gain.

Offered: Fall

ME 535 LASER PLASMA INTERACTIONS

Breakeven conditions for inertial confinement fusion. The coronal plasma. Inverse bremsstrahlung absorption. Resonance absorption. Parametric instabilities. Nonlinear plasma waves. Zakharov equations and collapse.

ME 536 INERTIAL CONFINEMENT FUSION

Introduction to probability theory, stochastic processes, and statistical continuum theory. Experimental facts of turbulent motion. Kinematics and dynamics of homogeneous turbulence. Isotropic turbulence. The closure problem. Hopf's functional formalism and its generalizations. Mixing-length and phenomenological theories. Turbulent shear flows. Transition from laminar to turbulent flow. The general concepts of stability theory.

ME 541 NANOSCALE CRYSTALLINE DEFECT

ME 545 ADV TOPICS IN PLASMA PHYSICS

The course will discuss the physical principles of selected diagnostics used for plasma measurements. This includes measurements of density, temperature, current, magnetic field, refractive index, emitted and scattered electromagnetic radiation, radiation properties etc. The emphasis lays on a systematic presentation from first principles that will help to form the basis for gaining understanding of many applications in plasma physics. We will concentrate on laboratory plasma diagnostics from the perspective of controlled fusion research.

ME 591 PHD READING COURSE IN ME

ME 594 RESEARCH INTERNSHIP

ME 595 PHD RESEARCH IN ME

ME 595A PHD RESEARCH IN ABSENTIA

ME 890 SUMMER IN RESIDENCE - MA

ME 895 CONT OF MASTER'S ENROLLMENT

ME 897 MASTERS DISSERTATION

ME 899 MASTER'S DISSERTATION

ME 899A MSTRS DISERTATN IN ABSENTIA

ME 985 LEAVE OF ABSENCE

ME 986V FULL TIME VISITING STUDENT

ME 987V PART TIME VISITING STUDENT

ME 995 CONT OF DOCTORAL ENROLLMENT

ME 997 DOCTORAL DISSERTATION

ME 997A DOCT DISSERTATN IN ABSENTIA

ME 999 DOCTORAL DISSERTATION

ME 999A DOCT DISSERTATN IN ABSENTIA

ME 999B IN-ABSENTIA ABROAD

MSC 202 INTRO TO MATERIALS SCIENCE

Properties of engineering materials including metals, alloys, ceramics, polymers and composites. Relationship of properties to the materials microstructure including atomic bonding, atomic arrangement, crystal structure, co-existing phases, interfaces, defects and impurities. Processing techniques for altering the microstructure and properties. Graduate students will have more homework problems and additional exam problems.

Offered: Fall

MSC 230 THERMO & STAT MECHANICS

Multiplicity of physical states, equilibrium entropy and temperature, Boltzmann factor and partition function, statistical approach to free energy, chemical potential, distribution functions for ideal classical and quantum gases. Applications to chemical reactions, thermal engines, equations of state and phase transitions, applications.

Offered: Spring

MSC 307 SEM PRACTICUM

Overview of techniques for using the SEM (Scanning Electron Microscope) and Scanning Probe (AFM, STM) and analyzing data. Students perform independent lab projects by semester's end.

Offered: Spring

MSC 401 PHASE TRANSFORMATION

How and why atomic rearrangements leading to phase transformations occur and how they are associated with kinetic and crystallographic features; liquid-solid and solid-solid transformations, nucleation theory, growth, massive and martensitic transformations.

Offered: Fall

MSC 403 Characterization methods in Materials Science- Diffraction

Crystallography, symmetry elements, space groups, x-ray diffraction from single crystals and powder patterns. Fourier transforms, grain size effects, residual stresses and textures, diffuse and small angle scattering, Bragg and Laue x-ray diffraction topography, thin films and epitaxial layers. Modern x-ray software for diffraction analysis including textures, residual stresses, pattern identification and Rietveld applications.(same as ME 451)

Offered: Spring

MSC 404 BIOPHYSICAL CHEMISTRY II

This course explores how fundamental interactions determine the structure, dynamics, and reactivity of proteins and nucleic acids. Examples are taken from the current literature with emphasis on thermodynamic, kinetic, theoretical, and site-directed mutagenesis studies. Paper and presentation. (Spring - odd years).

Offered: Spring

MSC 405 THERMODYNAMICS OF SOLIDS

Review of basic thermodynamic quantities and laws; equations of state; statistical mechanics; heat capacity; relations between physical properties; Jacobian algebra; phase transformations, phase diagrams and chemical reactions; partial molal and excess quantities, phases of variable composition; free energy of binary and multicomponent systems; surfaces and interfaces. The emphasis is on the physical and chemical properties of solids including stress and strain variables.

Offered: Spring

MSC 406 FRACTURE & ADHESION

Stress fields near cracks in linear elasticity. Linear elastic fracture mechanics. Griffith fracture theory. K and J approaches to fracture. Failure analysis and fracture stability; crack tip deformation, crack tip shielding. Crack nucleation. Adhesion. Low cycle fatigue; fatigue crack propagation. Emphasis on the role of microstructure in determining fracture, adhesion and fatigue behavior of materials; improving fracture toughness for advanced materials especially ceramics and polymers. This course is taught at a level that brings the student to the level of current research.

Offered: Fall

MSC 407 SOLIDS & MATERIALS LAB

In this course, you will apply previously learned theoretical concepts to practical problems and applications. In addition, you will learn experimental techniques and enhance your technical writing skills. This course has two parts, a series of small laboratory exercises and a project. During the semester, students will work in groups of three to complete the assigned work, labs, and reports. The lab section of the course is designed to present basic applied concepts that will be useful to a broad base of engineering problems. The project portion is where you will work on a more specific idea, tailored around your desired future goals.

MSC 409 MECHANICL BEHAVIOR OF SOLIDS

The mechanical response of crystalline (metals, ceramics, semiconductors)and amorphous solids (glasses, polymers) and their composites in terms of the relationships between stress, strain, damage, fracture, strain-rate, temperature, and microstructure. Topics include: (1) Material structure and property overview. (2) Isotropic and anisotropic elasticity and viscoelasticity. (3) Properties of composites. (4) Plasticity. (5) Point and line defects. (6) Interfacial and volumetric defects. (7) Yield surfaces and flow rules in plasticity of polycrystals and single crystals. (8) Macro and micro aspects of fractures in metals, ceramics and polymers.(9) Creep and superplasticity. (10) Deformation and fracture mechanism maps. (11) Fatigue damage and failure; fracture and failure in composites (If time permits). (same as ME 481)

Offered: Fall

MSC 413 ENGINEERING OF SOFT MATTER

This course will provide an overview of several contemporary research topics pertaining to structured organic materials. Lectures will focus on intermolecular interactions and the thermodynamics of self-assembly. Additional lectures will introduce molecular crystals, polymer crystallinity, liquid crystals, self-assembled monolayers, surfactants, block copolymers, and biomimetic materials. Homework assignments and a brief technical presentation will be required. (same as CHE 413)

Offered: Spring

MSC 416 X-RAY CRYSTALLOGRAPHY

2 credit hour course- Students will learn the basic principles of X-ray diffraction, symmetry, and space groups. Students will also experience the single crystal diffraction experiment, which includes crystal mounting, data collection, structure solution and refinement, and the reporting of crystallographic data. Weekly assignments: problem sets, simple lab work, or computer work. (Spring, 2nd half of semester.)

Offered: Spring

MSC 418 STATISTICAL MECHANICS

Review of thermodynamics; general principles of statistical mechanics; micro-canonical, canonical, and grand canonical ensembles; ideal quantum gases; applications to magnetic phenomena, heat capacities, black-body radiation; introduction to phase transitions.

Offered: Spring

MSC 420 INTRO CONDENSED MATTER PHY

An emphasis on the wide variety of phenomena that form the basis for modern solid state devices. Topics include crystals; lattice vibrations; quantum mechanics of electrons in solids; energy band structure; semiconductors; superconductors; dielectrics; and magnets.

Offered: Fall

MSC 421 BIOMEDICAL NANOTECH

This course is designed to provide students with detailed knowledge of the principles of nanotechnology and their applications in the biomedical field. Topics of study will include synthesis & assembly of nanoscale structures, lithography, and nanobiomaterials. Students will focus on biomedically-relevant topics such as cancer treatment, bone disorder, diabetes; and learn how nanotechnology is helping diagnose, treat, and understand these medical disorders. Recent innovative research in the biomedical field will be highlighted during discussions of the latest journal articles. At the end of the course, students will have an appreciation of the enormous potential of biomedical nanotechnology, its current, and future applications.

Offered: Fall

MSC 423 SEMICONDUCTOR DEVICES

Review of modern solid-state electronic devices, their principles of operation, and fabrication. Solid state physics fundamentals, free electrons, band structure, and transport properties of semiconductors. Nonequilibrium phenomena in semiconductors. P-N junctions, Schottky diodes, field-effect, and bipolar transistors. Modern,high-performance devices. Ultrafast devices.

Offered: Fall

MSC 424 ROBUST DESIGN AND QUALITY

Definition and pursuit of "quality" as a design criterion. The concept of robust design. Selection of the quality characteristic, incorporation of noise, and experimental design to improve robustness. Analysis and interpretation of results.

Offered: Fall

MSC 432 OPTO-MECHANICAL

The mechanical design and analysis of optical components and systems will be studied. Topics will include kinematic mounting of optical elements, the analysis of adhesive bonds, and the influence of environmental effects such as gravity, temperature, and vibration on the performance of optical systems. Additional topics include analysis of adaptive optics, the design of lightweight mirrors, thermo-optic and stress-optic (stress birefringence) effects. Emphasis will be placed on integrated analysis which includes the data transfer between optical design codes and mechanical FEA codes. A term project is required for MSC 432.

Offered: Spring

MSC 437 Nanophotonic and Nanomechanical devices

Various types of typical nanophotonic structures and nanomechanical structures, fundamental optical and mechanical properties: micro/nano-resonators, photonic crystals, plasmonic structures, metamaterials, nano-optomechanical structures. Cavity nonlinearoptics, cavity quantum optics, and cavity optomechanics. Fundamental physics and applications, state-of-art devices and current research trends. This class is designed primarily for graduate students. It may be suitable for senior undergraduates if they have required basic knowledge.

Offered: Fall

MSC 442 MICROBIOMECHANICS

his course covers the application of mechanical principles to biotechnology and to understanding life at its smallest scales. Topics will vary with each course offering. Sample topics include force generation by protein polymerization, the mechanisms of bacterial motion, and the separation of biological molecules in porous media.

MSC 451 BIOMEDICAL ULTRASOUND

The course presents the physical basis for the use of high-frequency sound in medicine. Topics include acoustic properties of tissue, sound propagation (both linear and nonlinear) in tissues, interaction of ultrasound with gas bodies (acoustic cavitation and contrast agents), thermal and non-thermal biological effects of utrasound, ultrasonography, dosimetry, hyperthermia and lithotripsy.

MSC 454 INTERFACIAL ENGINEERING

Lectures on the fundamentals of colloids and interfaces, systems with high interfacial area, and their role in modern processes and products. Topics include interfacial tension, contact angle, adsorption, surfactants, miscelles, microemulsions, and colloidal dispersions. Techniques for formation and characterization of interfaces and colloids will be reviewed.

MSC 455 THERMODYNAMICS & STAT MECH

The course draws connections between the orderly and chaotic behavior of simple and complex systems, laying the foundations of statistical equilibrium and equilibrium thermodynamics. The different phases of matter (gases, liquids, solid) assumed by bulk classical interacting particles and their transitions are discussed in this approximation. Properties of non-interacting quantal systems are expressed in terms of partition functions, for gases of simple and complex particles. Non-equilibrium statistical behavior of multi-particle systems leads to diffusion and other transport phenomena. Reading assignments and homework. Two weekly lectures of 75 minutes.

MSC 456 CHM BONDS:FROM MOLCLS TO MAT

An introduction to the electronic structure of extended materials systems from both a chemical bonding and a condensed matter physics perspective. The course will discuss materials of all length scales from individual molecules to macroscopic three-dimensional crystals, but will focus on zero, one, and two dimensional inorganic materials at the nanometer scale. Specific topics include semiconductor nanocrystals, quantum wires, carbon nanotubes, and conjugated polymers. Two weekly lectures of 75 minutes each.

MSC 458 ELECTROCHEM&ENGG & FUEL CELL

The course will concentrate on presenting the principles of electrochemistry and electrochemical engineering, and the design considerations for the development of fuel cells capable of satisfying the projected performance of an electric car. The course is expected to prepare you for the challenges of energy conversion and storage and the environment in the 21st century.

MSC 460 SOLAR CELLS

This course will introduce students to the basics of photovoltaic devices: physics of semiconductors; pn junctions; Schottky barriers; processes governing carrier generation, transport and recombination; analysis of solar cell efficiency; crystalline and thin-film solar cells, tandem structures, dye-sensitized and organic solar cells. Students will learn about current photovoltaic technologies including manufacturing processes, and also the economics of solar cells as an alternative energy source. Critical analysis of recent advances and key publications will be a part of the course work.

MSC 462 CELL & TISSUE ENGINEERING

This course teaches the principles of modern cell and tissue engineering with a focus on understanding and manipulating the interactions between cells and their environment. After a brief overview of Cell and Tissue Engineering, the course covers 5

areas of the field. These are: 1) Physiology for Tissue Engineering; 2) Bioreactors and Biomolecule Production; 3) Materials for Tissue Engineering; 4) Cell Cultures and Bioreactors and 5) Drug Delivery and Drug Discovery. Within each of these topics the emphasis is on analytical skills and instructors will assume knowledge of chemistry, mass transfer, fluid mechanics, thermodynamics and physiology consistent with the Cell and Tissue Engineering Track in BME. In a term project, students must present written and oral reports on a developing or existing application of Cell and Tissue Engineering. The reports must address the technology behind the application, the clinical need and any ethical implications.

MSC 463 NMR SPECTROSCOPY

An introduction to NMR spectroscopy. Collection, processing, and interpretation of homonuclear and heteronuclear 1D and multidimensional spectra will be covered. Topics to be discussed include chemical shifts, relaxation, and exchange phenomena. Examples from organic, inorganic, and biological chemistry will be used. (Fall, 1st half of semester).

MSC 465 PRINCIPLES OF LASERS

Topics include quantum mechanical treatments to two-level atomic systems, optical gain, homogeneous and inhomogeneous broadening, laser resonators, cavity design, pumping schemes, rate equations, Q-switching for various lasers.

MSC 466 CORROSION

A scientific approach to understanding the oxidation and dissolution of metals related to corrosion control, electrical energy generation, metallic plating, and energy storage. Characterization of corrosion types. Interfacial electrochemical mechanisms, thermodynamics, electrode potentials, interphases, and Pourbaix diagrams. Kinetics of free corrosion and electron limited corrosion including polarizations and overpotentials. Passivity. Tafel behavior with Butler-Volmer interpretations. Experimental measurements used in corrosion research and in battery research. Corrosion in iron based and aluminum based aqueous systems. Corrosion in lithium and sodium based non-aqueous systems. Effects of stress, including mechanisms of stress corrosion cracking related to metallurgical structure and role of the electrical double layer. Catalytic behavior of free surface nanostructures intended to catalyze oxygen reactions and ease barriers to metallic plating and ionic dissolution at polar electrolyte interfaces.

MSC 469 BIOTECHNOLOGY&BIOENGINEERING

The life science and engineering principles underlying biotechnology processes; established biotechnology processes including microbial and enzyme conversions, metabolic pathways, and fermentation kinetics; tools for biotechnology development including the recombinant DNA and monoclonal antibody techniques; emerging areas at the forefront of biotechnology, including immune technology and tissue and organ cultures.

MSC 470 OPT PROPERTIES OF MATERIALS

Interaction of light with materials' electrons, phonons, plasmons, and polaritons. Optical reflection, refraction, absorption, scattering, Raman scattering (spontaneous and stimulated), light emission (spontaneous and stimulated). Electrooptic effects and optical nonlinearities in solids. Plasmonics. Semiconductors and their nanostructures are emphasized; metals and insulators also discussed.

MSC 472 BIOINTERFACES

The course will focus on interfacial phenomena in hybrid bio-inorganic systems. The goal of the course is to increase the understanding of interactions between biomolecules and surfaces. The course will aim at investigating the behavior of complex macromolecular systems at material interfaces and the importance of such systems in the fields of biology, biotechnology, diagnostics, and medicine. The first part of the course will focus on mechanisms of interactions between biomolecules and surfaces. The second part will focus on the characterization of physical, chemical, and morphological properties of biointerfaces.

MSC 473 INTRO TO OPTO-ELECTRONICS

Introduction to fundamentals of wave propagation in materials, waveguides and fibers, generation, modulation, and detection of light using semiconductor devices, and elements of optocommunication systems.

MSC 476 POLYMER SYNTHESIS

An introduction to polymerization reaction mechanisms. The kinetics of commercially relevant polymerizations are emphasized along with a discussion of important, contemporary polymerization schemes. Approaches to functionalize polymers and surface-initiated polymerizations will also be covered. An overview of polymer characterization techniques, emphasizing compositional

analysis, will be presented. The course is intended for graduate students in Chemical Engineering, Chemistry, Materials Science, and Biomedical Engineering, but advanced undergraduates are welcome.

MSC 480 INTRO TO MATERIALS SCIENCE

MSC 482 PROC MICROELEC DEVICE

This course features an overview of processes used in the fabrication of microelectronic devices, with emphasis on chemical engineering principles and methods of analysis. Modeling and processing of microelectronic devices. Includes introduction to physics and technology of solid state devices grade silicon, microlithography, thermal processing, chemical vapor deposition, etching and ion implantation and damascene processing.

MSC 485 THERMODYNAMICS & STAT MECH

Introduction to the topic: Thermodynamics and Statistical Mechanics. In the beginning macroscopic thermodynamics including phase equilibria and stability concepts will be covered followed by material related to the principles of statistical mechanics. Applications to various modern areas of the topic will be examined including the Monte Carlo simulation method, critical phenomena and diffusion in disordered media. The course will require completion of a project as well as regular homework assignments.

MSC 491 MASTERS READING COURSE

MSC 493 MASTERS ESSAY

MSC 495 MASTERS RESEARCH

MSC 496 MSC GRADUATE SEMINAR

MSC 497 TEACHING MATERIALS SCIENCE

MSC 507 SEM PRACTICUM

Overview of techniques for using the SEM (Scanning Electron Microscope) and Scanning Probe (AFM, STM) and analyzing data. Students perform independent lab projects by semester's end.

MSC 520 SPIN BASED ELECTRONICS

Up until now CMOS scaling has given us a remarkable ride with little concern for fundamental limits. It has scaled multiple generations in feature size and in speed while keeping the same power densities. However,CMOS finally encounters fundamental limits. The course is intended for students interested in research frontiers of future electronics technologies. The course begins with introduction to the basic physics of magnetism and of quantum mechanical spin. Then it covers aspects of spin transport with emphasis on spin-diffusion in semiconductors. The second part of the course is comprised of student and lecturer presentations of selected spintronics topics which may include: spin transistors, magnetic random access memories, spin-based logic paradigms, spin-based lasers and light emitting diodes, magnetic semiconductors, spin-torque devices for memory applications and the spin Hall effect.

MSC 541 NANOSCALE CRYSTALLINE DEFECT

This course is a thorough study of the means by which defects in crystalline lattices control the observable macroscopic properties of single phase materials. The properties under consideration are mechanical properties, electrical properties, optical properties, and chemical properties. The defects of interest include point, line, and planar defects, including charged defects, that determine internal friction, yield strength, transparency and translucency, chemical potential, stored energy, electrical resistivity, dielectric response. Knowledge of how such defects determine important engineering properties of solids is a fundamental requisite for all areas of materials research.

MSC 591 READING COURSE IN MAT SCIENC

MSC 591A INDEPENDNT STUDY IN ABSENTIA

MSC 592 SPECIAL PROJECTS

MSC 594 RESEARCH INTERNSHIP

MSC 595 RES IN MATERIALS SCIENCES

MSC 595A PHD RESEARCH IN ABSENTIA

MSC 890 SUMMER IN RESIDENCE - MA

MSC 895 CONT OF MASTER'S ENROLLMENT

MSC 897 MASTER'S DISSERTATION

MSC 899 MASTER'S DISSERTATION

MSC 985 LEAVE OF ABSENCE

MSC 990 SUMMER IN RESIDENCE

MSC 995 CONT OF DOCTORAL ENROLLMENT

MSC 997 DOCTORAL DISSERTATION

MSC 997A DOCT DISSERTATN IN ABSENTIA

MSC 999 DOCTORAL DISSERTATION

MSC 999A DOCT DISSERTATN IN ABSENTIA

MSC 999B DOC DISS IN-ABSENTIA ABROAD

MTH 130 EXCURSIONS IN MATH

The nature of mathematics and its application. Emphasis on concepts and understanding rather than acquisition of techniques. Intended for concentrators in the humanities and social sciences.

Offered: Spring

MTH 140 FOUNDATIONS OF CALCULUS

This course covers pre-calculus material and is intended for students lacking the algebra and trigonometry background necessary to perform successfully in MTH 141. After completing this course students are ready to take MTH 141. MTH140 cannot be taken after completing MTH141 or MTH161 or higher.

Offered: Fall

MTH 140A FOUNDATIONS OF CALCULUS

This course covers pre-calculus material and is intended for students lacking the algebra and trigonometry background necessary to perform successfully in MTH 141. After completing this course students are ready to take MTH 141. MTH140 cannot be taken after completing MTH141 or MTH161 or higher.

Offered: Fall

MTH 141 CALCULUS I

Analysis of the elementary real functions: algebraic, trigonometric, exponentials and their inverses and composites. Their graphs and derivatives. Topics include limits, continuity, asymptotes, the definition of the derivative, derivatives and derivative rules for algebraic, trigonometric, exponentials, and logarithms. Implicit differentiation, related rates, linear appoximation, differentials,

mean value theorem, maxima and minima, curve sketchings, l'Hospital's rule. MTH 141, 142, and 143 is a three-semester sequence that covers, at a slower pace, exactly the same material as the two-semester sequence, MTH 161 and 162. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time. This course cannot be taken for credit after completing any of MTH 141A, 142, 143, 161, or 162. Students who want to repeat a course for a grade need to secure the approval of the Dean by completing an online Repeat Course Request Form.

Offered: Fall Spring Summer

MTH 141A CALCULUS WITH FOUNDATIONS

This course is a continuation of MTH 140A. It combines and integrates the learning of calculus together with precalculus mathematics. MTH 141A (together with its prerequisite MTH 140A) covers all the material in MTH 141, together with a thorough presentation of the standard `precalculus' material. MTH 140A is a strict prerequisite for this course. This course cannot be taken for credit after completing any of MTH 141, 142, 143, 161, or 162."

Offered: Spring

MTH 142 CALCULUS II

Calculus of algebraic, logarithmic, exponential, and trigonometric functions and their inverses. The definite integral, the fundamental theorem of calculus, geometric and physical applications including areas, volumes, work, and arc length. Techniques of integration including substitution rule, integration by parts, trigonometric substitution, partial fractions. Improper integrals. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time. This course cannot be taken for credit after completing MTH 143 or 162. Students who want to repeat a course for a grade need to secure the approval of the Dean by completing an online Repeat Course Request Form.

Offered: Fall Spring Summer

MTH 143 CALCULUS III

This is the third semester of a three-semester calculus sequence. Calculus with parametric curves and polar coordinates. Sequences, series, tests for convergence including comparison tests, integral test, alternating series test, ratio test, root test. Taylor and Maclaurin series. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time. This course cannot be taken for credit after completing MTH 162. Students who want to repeat a course for a grade need to secure the approval of the Dean by completing an online Repeat Course Request Form.

Offered: Fall Spring Summer

MTH 150 DISCRETE MATHEMATICS

Logic, functions, algorithms, mathematical reasoning, mathematical induction, recurrence relations, techniques of counting, equivalence relations, graphs, trees. Required for Computer Science majors. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time.

Offered: Fall Spring

MTH 150A DISCRETE MATH MODULE

Passing the course will grant a waiver to the MTH 150 requirement for the Computer Science program, but does not fulfill any other requirements that MTH 150 may fulfill. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time.

Offered: Fall Spring

MTH 161 CALCULUS IA

Elementary real functions: algebraic, trionometric, exponentials and their inverses and composites; their graphs, derivatives and integrals; limits, l'Hopital's rules, Mean value theorem, maxima and minima, curve plotting. The fundamental theorem of calculus, with geometric and physical applications. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time. This course cannot be taken for credit after completing any of MTH 141, 142, 143, or 162. Students who want to repeat a course for a grade need to secure the approval of the Dean by completing an online Repeat Course Request Form.

Offered: Fall Spring

MTH 162 CALCULUS IIA

Techniques of integration, improper integrals, applications to geometry and physics. Infinite series, Taylor series in one variable. Plane curves, parametric equations, polar coordinates, arc length. NOTE: Either MTH 164 or 165 can be taken after MTH 162

or 143. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time. This course cannot be taken for credit after completing MTH 143. Students who want to repeat a course for a grade need to secure the approval of the Dean by completing an online Repeat Course Request Form.

Offered: Fall Spring

MTH 164 MULTIDIMENSIONAL CALCULUS

Equations of lines and planes, quadric surfaces, space curves, partial derivatives, linear approximation, directional derivatives, extrema, Lagrange multipliers, double/triple integrals including cylindrical and spherical coordinates. Line, surface, and volume integrals, divergence theorem, Stokes' theorem. MTH 162 (or equivalent) is a strict prerequisite and must be completed before taking 164. MTH 162 and 164 cannot be taken concurrently. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time.

Offered: Fall Spring Summer

MTH 165 LINEAR ALGEBRA WITH DIFFERENTIAL EQUATIONS

Matrix algebra and inverses, Gaussian elimination, determinants, vector spaces, eigenvalue problems. First order differential equations, linear second order differential equations with constant coefficients, undetermined coefficients, linear systems of differential equations. Applications to physical, engineering, and life sciences. MTH 162 (or equivalent) is a strict prerequisite and must be completed before taking 165. MTH 162 and 165 cannot be taken concurrently. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time.

Offered: Fall Spring Summer

MTH 171 HONORS CALCULUS I

Covers the material of MTH 161-165 in greater depth from the standpoint of both theory and applications. Students completing this sequence successfully will have met the requirements of MTH 235 and can begin taking upper-level courses immediately. Credit: 5 hours for each course in the 171-174 sequence. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time.

MTH 172 HONORS CALCULUS II

This course is a continuation of MTH 171.

Offered: Spring

MTH 173 HONORS CALCULUS III

Credit: 5 hours for each course in this sequence. An honors sequence covering the material of MTH 161-165 in greater depth from the standpoint of both theory and applications. Students completing this sequence successfully will have met the requirements of MTH 235 and can begin taking upper-level courses immediately. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time.

MTH 174 HONORS CALCULUS IV

This course is a continuation of MTH 173.

Offered: Spring

MTH 190 TOPICS IN PROBLEM SOLVING

General techniques and approaches to solving difficult nonstandard problems such as those on the Putnam examination.

Offered: Fall

MTH 199 THE INFINITE

MTH 200W TRANSITION TO HIGHER MATH

Techniques and methods of proof used in mathematics and computer science. Logical reasoning, mathematical induction, relations, functions. Applications to group theory or real analysis. A significant focus of this course is developing proof writing skills, which are central to the transition to higher mathematics. This course partially satisfies the upper-level writing requirement in mathematics.

Offered: Fall Spring

MTH 201 INTRODUCTION TO PROBABILITY

Probability spaces; combinatorial problems; random variables and expectations; discrete and continuous distributions; generating functions; independence and dependence; binomial, normal, and Poisson laws; laws of large numbers. MTH 162 (or equivalent) is a strict prerequisite and must be completed before taking 201. MTH 162 and 201 cannot be taken concurrently. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time.

Offered: Fall

MTH 201H INTRO TO PROBABILITY

MTH 202 INTRODUCTION TO STOCHASTIC PROCESSES

Theory and applications of random processes, including Markov chains, Poisson processes, birth-and-death processes, random walks.

MTH 203 INTRODUCTION TO MATH STATISTICS

Principles of statistical estimation and inference, point and interval estimation. Maximum likelihood method for estimation and inference. Tests of hypotheses and confidence intervals, multivariate normal distribution, linear hypotheses, contingency tables, and related topics.

Offered: Spring

MTH 208 OPERATIONS RESEARCH I

Linear and nonlinear programming, simplex method, duality theory, sensitivity analysis, shipping and assignment problems, Karmakar's algorithm, genetic algorithms, game theory, genetic algorithms, flow problems.

Offered: Fall

MTH 210 INTRODUCTION TO FINANCIAL MATHEMATICS

Mathematical concepts and techniques underlying finance theory; arbitrage pricing theory and option pricing. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time.

Offered: Fall

MTH 210H INTRO TO FINANCIAL MATH

Honors version of MTH 210.

Offered: Fall

MTH 215 FRACTALS & CHAOTIC DYNAMICS

Fractal geometry with applications to chaos theory and related computer software.

Offered: Fall

MTH 217 MATHEMATICAL MODELING IN POLITICAL SCIENCE

Elementary game theory with applications: Nash equilibria, prisoner's dilemma, chicken; measures of voting power, social choice, Arrow's Theorem.

Offered: Fall

MTH 218 INTRODUCTION TO MATHEMATICAL MODELS IN LIFE SCIENCE

This course is aimed at building problem-solving ability in students through the development of mathematical models for certain real-life situations in the biological sciences. Models treated cover a variety of phenomena both discrete and continuous, linear and non-linear, deterministic and stochastic. Some topics that might be treated are Leslie Matrices in Demographics, Exponential and Logistic growth, Gompertz growth in tumors, Hardy-Weinberg Law in population genetics, Lotka-Volterra predator-prey systems, principle of competitive exclusion, the Kermack-McKendrick model of epidemics (and variants), Markov chain models (with the requisite intro to probability) and the stochastic pure birth process and epidemic models.

Offered: Spring

MTH 230 NUMBER THEORY WITH APPLICATIONS

Divisibility, primes, congruences, quadratic residues and quadratic reciprocity, primitive roots, and selected topics, with applications to cryptography and computer science.

Offered: Fall

MTH 233 INTRODUCTION TO CRYPTOGRAPHY

A mathematically-oriented inroduction to modern cryptography: weaknesses of historical cryptosystems, modular arithmetic, primality testing and factorization algorithms, private-key/symmetric cryptosystems, public-key/asymmetric cryptosystems and key-sharing (including RSA and Diffie-Hellman). Additional topics may include zero-knowledge protocols, digital signatures, homomorphic encryption and secured computation, elliptic curve cryptography, lattice-based cryptography, and other applications such as digital voting and cryptocurrencies.

Offered: Spring

MTH 235 LINEAR ALGEBRA

Finite-dimensional vector spaces over R and C axiomatically and with coordinate calculations. Forms, linear transformations, matrices, eigenspaces, inner products. This course uses the Tuesday/Thursday 08:00-09:30am Common Exam time.

Offered: Fall Spring

MTH 236 INTRODUCTION TO ALGEBRA I

Basic algebraic structures, including groups, rings, and fields with applications to specific examples.

Offered: Spring

MTH 236H INTRODUCTION TO ALGEBRA I (HONORS)

Honors version of MTH 236.

Offered: Spring

MTH 237 INTRODUCTION TO ALGEBRA II

Continuation of MTH 236 covering field theory and Galois theory including proofs of the impossibility of trisecting angles, doubling the cube, squarng the circle, and solving 5th-degree polynomials".

Offered: Fall

MTH 238 COMBINATORIAL MATH.

Permutations and combinations; enumeration through recursions and generating functions; Polya's theory of counting; finite geometrics and block designs; counting in graphs.

Offered: Spring

MTH 240 INTRODUCTION TO TOPOLOGY

Review of set theory; metric spaces and topological spaces; functions and continuous functions; convergence, completeness, connectedness, and compactness; applications to surfaces.

Offered: Spring

MTH 240H INTRODUCTION TO TOPOLOGY (HONORS)

Honors version of MTH 240.

Offered: Spring

MTH 246 LOGIC AND SET THEORY

Either mathematical logic (propositional calculus; the decision problem; consistency and completeness) or set theory (sets, relations, and mappings; cardinals and ordinals; axiom of choice and equivalents), depending on the year.

Offered: Fall

MTH 248 THEORY OF GRAPHS

Paths, circuits, trees; bipartite graphs, matching problems; unicursal graphs, Hamiltonian circuits, factors; independent paths and sets; matrix representations; planar graphs; coloring problems.

Offered: Spring

MTH 250 INTRODUCTION TO GEOMETRY

Foundations of geometry; isometry, similarity, inversions; introductions to affine, projective, and non-Euclidean geometries.

Offered: Spring

MTH 255 DIFFERENTIAL GEOMETRY

Torsion, curvature; curves and surfaces in 3-space.

Offered: Fall

MTH 263 ORDINARY DIFFERENTIAL EQUATIONS

Theoretical approach to ordinary differential equations and the qualitative behavior of their solutions.

Offered: Fall

MTH 265 FUNCTIONS OF A REAL VARIABLE I

Real number system, continuity and uniform continuity, mean value theorems, bounded variation, Riemann-Stieltjes integral, sequences of functions.

Offered: Fall

MTH 265H FUNCTIONS OF A REAL VARIABLE I (HONORS)

Honors version of MTH 265.

Offered: Fall

MTH 266 TOPICS IN REAL ANALYSIS

Continuation of MTH 265/265H. Possible topics: a rigorous exposition of Fourier analysis; multivariable analysis; elementary theory of Hilbert and Banach spaces.

Offered: Spring

MTH 270 TOPICS IN DATA SCIENCE

MTH 280 INTRODUCTION TO NUMERICAL ANALYSIS

The numerical solution to mathematical problems by computer: linear systems, approximation, integration, and differential equations; floating point arithmetic and consequent pitfalls of computation.

Offered: Fall

MTH 281 INTRODUCTION TO FOURIER SERIES, ORTHOGONAL POLYNOMIALS, and BOUNDARY VALUE PROBLEMS

Fourier series and convergence theorems; orthogonal polynomials; applications to some partial differential equations; Fourier transforms.

Offered: Fall

MTH 282 INTRODUCTION TO COMPLEX VARIABLES WITH APPLICATIONS

Complex differentiation and integration, analytic functions, singularities, residues, poles, power series, conformal mapping, with some applications. This course is independent of MTH 281.

Offered: Spring

MTH 285 METHODS OF APPLIED MATHEMATICS

Topics emphasized can vary year-to-year. Typical topics covered are: Minimum principles; eigenvalues and dynamical systems; constraints and Lagrange multipliers; differential equations of equilibrium; calculus of variations; stability and chaos; nonlinear conservation laws.

Offered: Spring

MTH 287 MATH METHODS IN OPT &PHYSICS

This course introduces techniques in mathematical study of optical phenomena. Emphasis is places on gaining insight and experience in the use of these powerful and elegant tools for describing, solving and resolving optical systems and schema.

Offered: Spring

MTH 300W HISTORY OF MATHEMATICS I

The nature and style of mathematics in ancient Babylonia, Egypt, and Greece; medieval and Renaissance Europe; seventeenth-century Europe; and some aspects of the development of abstraction and rigor in analysis and set theory since 1700. This course has a limited number of seats. Students that need an upper-level writing course in mathematics can explore the alternatives of MTH 200W or MTH 391W. See the Math Department website for more information.

Offered: Spring

MTH 390 SUPERVISED COLLEGE TEACHING

MTH 391 INDEPENDENT STUDY

Independent Study in Mathematics. Special work arranged individually.

MTH 391W INDEPENDENT STUDY

Independent Study in Mathematics. Special work arranged individually.

MTH 393 SENIOR PROJECT

MTH 393W SENIOR PROJECT

MTH 394 INTERNSHIP

MTH 395 INDEPENDENT RESEARCH

MTH 395W INDEPENDENT RESEARCH

MTH 396 MATHEMATICS OF PARTICLE PHYS

MTH 403 THEORY OF PROBABILITY

Characteristic functions; the central limit theorem; infinitely divisible laws; random walk on groups.

Offered: Fall

MTH 436 ALGEBRA I

Rings and modules, group theory, fields and Galois theory.

Offered: Fall

MTH 437 ALGEBRA II

Multilinear algebra, quadratic forms, simple and semi-simple rings and modules.

Offered: Spring

MTH 440 GENERAL TOPOLOGY

Continuity; compactness, connectedness, metrizability; product spaces.

Offered: Fall

MTH 443 ALGEBRAIC TOPOLOGY

The combinatorial structure of complexes and the homology of polyhedra; applications of algebraic techniques in topology to classification of surfaces, fixed point theory, and analysis.

Offered: Spring

MTH 448 COMPUTATIONAL TOPOLOGY

Computational topology is an emerging field of study at the intersection of mathematics and computer science, devoted to the study of efficient algorithms for topological problems, especially those that arise in other areas of computing. Topics to be covered: algorithms based on higher dimensional topological structures as low dimensional data structure algorithms such as graph algorithms; topology of cell complexes, some graph theory algorithms, homotopy, covering spaces, simplicial homology, persistent homology of large data sets, discrete Morse theory, discrete differential geometry, and normal surface theory. Computing topics may include algorithms for computing topological invariants, graphics and geometry processing, mesh generation, curve and surface reconstruction, VLSI routing, motion planning, manifold learning, clustering, image processing, and combinatorial optimization.

MTH 453 DIFFERENTIABLE MANIFOLDS

Differentiable manifolds, mappings and embeddings, exterior differential forms, affine connections, curvature and torsion. Riemannian geometry, introduction to Lie groups and Lie algebras.

Offered: Spring

MTH 463 DIFFERENTIAL EQUATIONS

Classical PDE's, including the heat and wave equations, with both quantitative and qualitative analysis.

MTH 467 THEORY ANALYTIC FUNCTIONS

Cauchy theorems, Taylor and Laurent series, residues, conformal mapping, analytic continuation, product theorems.

Offered: Spring

MTH 471 REAL ANALYSIS

Lebesgue measure on the line; measure spaces; integration; convergence theorems; Radon-Nikodym theorem; differentiation; Fubini's theorem; function spaces.

Offered: Fall

MTH 472 FUNCTIONAL ANALYSIS

Banach spaces; dual spaces; Riesz representation theorem; Hilbert spaces; Fourier series; projective and unitary operators; spectral analysis of completely continuous self-adjoint operators. Applications.

Offered: Fall

MTH 491 MASTER'S READINGS IN MATH

MTH 492 SPECIAL PROJECTS

MTH 493 MASTER'S ESSAY

MTH 506 TOPICS IN PROBABILITY THEORY

Topics are related to recent research in the field.

Offered: Spring

MTH 530 ELLIPTIC CURVES

MTH 531 TOP IN ALG. NUMBER THEORY

Valuations, ideal theory, divisors. Class number, unit theorem. Geometric applications.

MTH 535 COMMUTATIVE ALGEBRA

Field theory, valuations, local rings, affine schemes. Applications to number theory and geometry.

MTH 538 TOPICS IN ALGEBRAIC GEOMETRY

Spaces with structure sheaf, schemes, cohomology of schemes, applications to algebraic curves and algebraic groups.

MTH 548 LIE GROUPS AND ALGEBRA

Structure theory of finite dimensional Lie algebras, root-weight systems, Dynkin diagrams, classification of semi-simple Lie algebras and Lie groups and applications. If time permits further topics include p-adic Lie algebras and pro-p groups, finite simple groups of Lie type and knot invariants of Lie type.

MTH 549 TOPICS IN ALGEBRAIC TOPOLOGY

I TOPICS: The course will cover the classical theory of fiber/fibre bundles and their associated principal G-bundles with a focus on vector bundles and characteristic classes. If time permits some discussion and applications of K-theory will also be covered. These topics are relatively classical (1950's and 60's) but fundamental to much current work in topology, geometry and modern physics. Tentative syllabus below: PREREQs: Prior intro course in algebraic topology and at least simultaneously taking a manifolds course.

MTH 557 TOPICS IN DIFFERENTIAL GEOMETRY

Subject matter to be selected from among advanced copies of current interest in differential geometry and geometric analysis.

MTH 565 TOPICS IN PARTIAL DIFFERENTIAL EQUATION

Linear partial differential operators with constant coefficients. Elementary solutions; elliptic, hypo-elliptic, and hyperbolic operators.

MTH 568 TOPICS IN NUMBER THEORY

This course starts with the definitions and introductory theory of modular forms, presents an overview of some of the classic papers on the subject, and focuses in on some of the recent advances. Particular topics chosen each year are left up to the individual instructor.

MTH 569 TOPICS IN ANALYTIC NUMBER THEORY

Selected topics in non-multiplicative analytic number theory considered on a seminar basis.

MTH 570 TOPICS IN ERGODIC THEORY & ARITHMETIC GEOMETRY

An introduction to the probabilistic viewpoint in dynamical systems, and the more recent equidistribution results in arithmetic geometry. After brief overview of ergodic theory and dynamical systems, the course will center on arithmetic heights in dimension 1. The emphasis will be on the intersection of these topics: Arithmetic dynamics.

Offered: Fall

MTH 578 TOPICS IN HARMONIC ANALYSIS

MTH 589 TOPICS IN INVERSE PROBLEMS

MTH 590 SUPERVISED COLLEGE TEACHING

MTH 591 PHD READINGS IN MATH

MTH 594 INTERNSHIP

MTH 595 PHD RESEARCH IN MATH

MTH 595A PHD RESEARCH IN ABSENTIA

MTH 597 SEMINAR

MTH 895 CONT OF MASTER'S ENROLLMENT

MTH 897 MASTER'S DISSERTATION

MTH 899 MASTER'S DISSERTATION

MTH 985 LEAVE OF ABSENCE

MTH 986V FULL TIME VISITING STUDENT

MTH 995 CONT OF DOCTORAL ENROLLMENT

MTH 997 DOCTORAL DISSERTATION

MTH 997A DOCT DISSERTATN IN ABSENTIA

MTH 999 DOCTORAL DISSERTATION

MTH 999A DOCT DISSERTATN IN ABSENTIA

MTH 999B IN-ABSENTIA ABROAD

MUR 100 EXPERIENCING MUSIC

A "music appreciation" course that celebrates the "ears-on" experience of various aspects of musical performance. Participants develop listening skills through live musical presentations, in-class performances, discussions with the performers and living composers, and guided listening sessions. Students will attend some rehearsals and concerts, including at least one Rochester Philharmonic concert at the Eastman Theatre.

Offered: Spring

MUR 101 ELEMENTS OF MUSIC

A course for the student with no previous musical experience. Topics covered include notation, intervals, chords, and other basic concepts of tonal harmony, with application to the study of a wide range of styles including popular idioms. Students should not be able to read music.

Offered: Fall Spring

MUR 104 CARILLON

Private carillon instruction, weekly 30-minute lessons or the equivalent. By audition only. Permission of instructor required. (2 credits)

MUR 109 MUSICIANSHIP I: LITERACY SKILLS

Introduces students to basic musicianship skills. Begins with exercises in pitch matching and basic interval recognition and progresses toward other skills, such as singing simple melodies at sight, sight-reading various rhythmic patterns, and dictating simple melodies and chord progressions. Prospective music majors, especially those with prior singing experience, typically skip this course and begin with MUR 113.

Offered: Fall Spring

MUR 110 INTRODUCTION TO MUSIC THEORY

Basic concepts addressing students with previous experience in an instrument or voice and little music theory. Scales, keys, intervals, chords, basic part-writing, and other fundamental aspects of musical structure. Some ear training and aural skills.

Offered: Fall

MUR 111 THEORY I

The first in a four-course sequence. Deals with basic elements of harmony, voice-leading, and analysis. Part-writing in chorale style teaches elementary aspects of tonal theory. Prospective music majors should begin their theory requirement with this course. Prereq: MUR 101, 110 or permission of instructor (placement test).

Offered: Fall

MUR 112 THEORY II

Continuation of MUR 111. This course continues with chorale and keyboard-style harmony exercises, but also introduces chromaticism, modulation, and analysis of form and phrase structure. Prerequisite: MUR 111.

Offered: Spring

MUR 113 MUSICIANSHIP II

This course develops basic musicianship skills with an emphasis of diatonic sight-singing, rhythmic sight-reading, and dictation of diatonic melodies and chord progressions. The exercises and in-class activities are similar to MUR 109 but at a more advanced level. (1 credit)

Offered: Fall Spring

MUR 114 MUSICIANSHIP III

Continuation of MUR 113 with an increased emphasis on chrom- aticism, especially simple modulation and mode mixture. The course puts emphasis on ensemble singing and aural analysis. Prerequisites: MUR 113 or permission of theory coordinator. (1 credit)

Offered: Fall Spring

MUR 115 MUSICIANSHIP IV

Continuation of MUR 114 with greater emphasis on chromaticism and aural analysis. (1 credit) Prerequisite: MUR 114.

Offered: Fall Spring

MUR 116 KEYBOARD SKILLS I

Introduces students to the keyboard as a vehicle for broader musical development. Covers basic piano technique, sight-reading of simple chord progressions, realization of figured bass, and basic improvisation. No prior keyboard training required. Permission of instructor required. (2 credits)

Offered: Fall Spring

MUR 117 KEYBOARD SKILLS II

Continuation of MUR 116. Students completing this course fulfill the piano proficiency for the music major. Prerequisite: MUR 116 or permission of instructor. (2 credits)

Offered: Fall Spring

MUR 118 BEGINNING PIANO: FOR NON-MUSIC MAJORS

River Campus student elective course. No previous keyboard instruction and cannot read music. Includes technique, fundamental skills, and repertoire. *Note: limited seating due to keyboard availability, no additional students taken once the sessions are full. Classes are on ESM campus. (2 credits)

Offered: Fall

MUR 119 BEGINNING PIANO: FOR NON-MUSIC MAJORS

Continuation of MUR 118. (2 credits)

Offered: Spring

MUR 120 SYMPHONY AND THE CONDUCTOR

Glimpses into the world of standard performance and an overview of the métier of the orchestra conductor. In addition to the ability to read music, and knowledge of basic theory, the participants must have a love for and active interest in symphonic music.

Offered: Spring

MUR 121 WORLD MUSIC in CONTEXT

In this introductory course, students will engage with a variety of musical genres, instruments, and performance techniques from different areas of the world. Through reading assignments, listening examples, film clips, and participatory activities, students will study how people in difference places engage with music as a sonic and social practice. Students will also learn how to write about music as a form of social practice through short reading responses and structured essay assignments.

Offered: Fall

MUR 122A HISTORY OF JAZZ

This study of Jazz, as an American musical art form, will be structured around the lives and music of jazz musicians, across a range of instrumental, vocal, and ensemble genres. Course focuses on jazz titans, those individuals and musical groups distinguished by their seminal and permanent influences, such as Louis Armstrong, Miles Davis, or Coleman Hawkins or shorter intense careers, such as Charlie Parker. Blues, ragtime, swing, bebop, cool, progressive, and free jazz are landmark terms. And finally, study of the musical history will be enhanced by considerations from sociological, linguistic, and philosophical perspectives. The instructional format includes lectures, discussion and intense emphasis on listening. This course is designed for students with little or no musical training; simple technical, musical vocabulary and concepts will be provided. Reading, listening assignments, brief written assignments and two exams. No prerequisites. (Fall Only)

MUR 122B HISTORY OF JAZZ II

This course will focus on Jazz music and musicians in the latter half of the 20th century (ca. 1955-2000). We will investigate the relationship of Jazz to the following topics: new musical styles, other art forms, changes in American society, technological developments, and the evolution of recording, broadcast, and news media. In doing so, we will consider not only musicians who first emerged as leaders during this period (Ornette Coleman, John Coltrane, Bill Evans, Herbie Hancock, Keith Jarrett, Chick Corea, Wynton Marsalis, John Scofield), but also those whose careers began earlier (Louis Armstrong, Dizzy Gillespie, Miles Davis, Gil Evans) and continued into the 1950s and beyond. We will also examine how repertoire from previous historical periods came to be viewed by subsequent generations. The instructional format includes lectures and discussion along with in-class viewings/listenings of recorded performances. This course is designed for students with little to no musical training.

MUR 123 MUSIC OF BLACK AMERICANS

Study of Black American Christian musical beginnings, including forms of worship, early musical practices, the Spiritual, evolution of Gospel. An examination of ante-bellum musical activities follows including secular song types, character of the folk music with respect to poetic and musical form, language and themes. Attention will be given to significant literary and aesthetic developments, especially during the Harlem Renaissance and the poetry of several writers of that era will be surveyed. The course will treat Blues, its origins evolution through the 1940s. Surveys of classical music forms from the 18th to mid-20th century; music of the theater from minstrelsy to Broadway; precursors of jazz, the syncopated dance orchestra and brass bands; early jazz to bebop round out the course offerings.

Offered: Spring

MUR 124 SIGNED SEALED & DELIVERED: Deals & Innovations that Changed the Music Industry Forever

A look at the historical deals and innovations that have impacted the music business between 1877 to present. From ground breaking inventions to brilliant marketing initiatives to hushed back-room deals, this course will expose the key moments where the record industry changed forever, both for good and bad. ** NOTE: This is a 6 week course**

Offered: Spring

MUR 125 HISTORY OF ROCK MUSIC

This course explores the history of rock music, emphasizing primarily the period between 1955-1990. Discussion and reading focusing on identifying a variety of rock-music styles within the historical context of the development, transformation, and interaction of pop styles. Issues of technological development, social, political, and cultural context, race and gender, and music-business practices will also be considered. No prerequisites for this course.

MUR 126 OPERA

A small number of representative operas will be used to highlight the history of this controversial 400-year old art form and its creators, performers, and audiences. Drama, music, staging, spectacle, and dance will be examined as components of production. Divas welcome. Prerequisite: ability to read music.

Offered: Fall

MUR 127 THE BLUES

The origins of the Blues in the context of African-American culture in the late 19th and early 20th centuries, it's rapid rise to becoming the dominant popular music in the African- American community, and the discovery of blues by white audiences.

MUR 130 THE BEATLES, BRITISH INVASION, PSYCHEDELIA

The history of the Beatles career and music is explored in the context of the band’s stylistic development, as well as against the backdrop of social, cultural, technical, and music-business events and issues of the 1950s, 60s and 70s. No background in music theory or ability to play a musical instrument is required.

Offered: Spring

MUR 131 ROCK MUSIC IN THE 1970'S

This course surveys rock music in the 1970s, paying special attention to ways in which 70s styles developed out of 60s styles. Artists considered will include Jimi Hendrix, Cream, Yes, Led Zeppelin, The Who, The Allman Brothers, The Eagles, Black Sabbath, The Cars, Tom Petty, The Sex Pistols and Elvis Costello, plus many more. No prerequisites.

MUR 132 STARMAKERS: INSIDE THE PUBLICITY MACHINE

Will include a historical overview of music stars and the publicity campaigns used to promote their careers. From Frank Sinatra-1940s; through Elvis Presley;-1950s; through The Beatles & The Rolling Stones in the 1960s, up through self-indulgent 70s with acts like Elton John, Kiss, and Prince, up to today's high profile campaigns for Justin Bieber, Rhianna and Lady Gaga. Students will be versed in the art of writing an artist bio, press releases, and in the various types of PR events staged to gain publicity, Starmakers will also look at the various types of publicity such as career launching; crisis management(scandals; sudden death of celebrity)and tour press. We will also look at how social media has become a game changer for music publicity.

MUR 133 MUSICAL THEATER WORKSHOP

Intensive practical experience with scene-and-song work in the repertory of popular musical theater genres. Weekly rehearsals and critique sessions, with emphasis on characterization, technical skills, sub-textual dimensions, and stylistic considerations. Some reading assignments, but emphasis is on performance preparation. Initial and concluding videotaping of "audition piece." Prerequisite: One year of voice instruction; permission of instructor (by audition).

Offered: Spring

MUR 134 STYLES & GENRES: INTRODUCTION TO MUSIC HISTORY

An introduction to the history of Western classical music from the Middle Ages to the present, with emphasis on recognition of the chief stylistic characteristics and understanding of major genres of each period. Prerequisite: MUR 112 or permission of instructor.

MUR 135A AMERICAN MUSICAL THEATER

A historical and critical survey of the Broadway musical, with a focus on its so-called Golden Age (from Oklahoma! to Cabaret). Weekly listening, reading, and video assignments with analysis of dramaturgy, lyric and musical forms, process of adaptation and production, modes of performance. Offered alternate years.

Offered: Spring

MUR 136 EXPLORING CLASSICAL MUSIC

The course explores a series of musical masterpieces of different styles and genres, drawing primarily on compositions to be performed on and off campus in the coming academic year (e.g Mahler Symphony #2, Bach Toccata and Fugue in D Minor). In addition to studying a series of pieces in depth, students will discuss the topics of “masterpiece,” “genius,” and “work concept” and how they have determined the ways in which we consider and experience music. No prerequisites.

MUR 137 THINKING ABOUT MUSIC

Everyone knows that music can elicit a wide variety of emotions. But whether classical or jazz, punk, rock, or gospel, music also communicates countless other meanings, denoting aspects of race, religion, gender, culture, and politics. This course will explore various ways of thinking about musical meaning. After first building a musical vocabulary, we will discuss many kinds of music in different contexts, including classical and popular music, Broadway and opera, film scores, music videos, advertisements, and religious and nonwestern traditions.

Offered: Spring

MUR 140 RELIGION & HIP HOP CULTURE

This course considers an often overlooked element in the study of hip hop culture, religion. Specifically, the course offers students the opportunity to examine the variety of ways that religion finds expression in the dynamic cultural medium of hip hop. Class format includes lectures, discussions, films, and video/music presentations.

MUR 141 INTRO TO AUDIO MUSIC & ENGIN

MUR 142 MUSIC, POETRY & SONG

What happens when we mix music and words? This course will study the complex and evolving relationship between music and text. We will study songs from different styles and time periods—art songs, early music, rock, and jazz. We will learn about the rhythm and meter of poetry and how it relates to the basic elements of music. And we will consider how words and music combine in genres such as opera, musical theater, and modern multimedia. No prior training in music or poetry is required.

MUR 143 GLOBAL POP

MUR 144 BEETHOVEN AND HIS WORLD

MUR 145 HIGH VOLTAGE: HEAVY METAL MUSIC AND ITS HISTORY

Behind the screaming guitars, thundering pulse, and soaring vocals of heavy metal music lies an impressive history of censorship, rebellion, and redemption. Emphasis on musical structure and the fascinating social/cultural history of hard rock and metal. Over 40 years of hard rock and metal trends will be discussed— Sabbath to Stryper to Slipknot—and several guest musicians and lecturers will complement the course materials with performances and anecdotes.

MUR 146 EXPERIENCE GUINEA

MUR 147 CONCEPT ALBUMS: ART OF POP

This course explores how and why pop musicians create concept albums: full-length studio albums organized around a single compositional or narrative theme. Examples include Quadrophenia (1973) by The Who, The Wall (1979) by Pink Floyd, American Idiot (2004) by Green Day, and the seven-part Metropolis series (2007-present) by Janelle Monáe. In addition to developing a broad perspective of the concept album's significance within popular music history, students will analyze one concept album of their choice and will share findings via a class presentation and final paper. Prerequisites: MUR 110 or 111, or permission of instructor.

MUR 150 WOMEN'S CHORUS

The Women's Chorus is a choral ensemble of female students from across the university who perform a wide variety of music in concerts throughout the semester. Participants will have the opportunity to develop healthy vocal production and musicianship skills. To join, simply register for the class. Auditions will be arranged during the first week of classes.

Offered: Fall Spring

MUR 151 MEN'S GLEE CLUB

The Men's Glee Club continues the century-old tradition of singing at the UR. Students, faculty, staff and community members performs a wide repertoire of music. The men's and women's glee clubs regularly combine with various instrumental groups to perform large oratorio style works. Auditions will be held during the first class.

Offered: Fall Spring

MUR 152 UNIVERSITY CHAMBER SINGERS

Chamber Singers: A mixed ensemble of 35-45 members that performs a wide variety of choral repertoire from the Renaissance to the present. An informal voicing is required for all potential members; students must demonstrate the ability to sing in tune and read music.

Offered: Fall Spring

MUR 153 SYMPHONY ORCHESTRA

URSO (Symphony Orchestra) is a university-civic orchestra whose members are selected from both UR student body and greater Rochester community. Membership through auditions, occurs prior to the first rehearsal of each season. Other auditions may be held as needed throughout the season.

Offered: Fall Spring

MUR 154 CHAMBER ORCHESTRA

URCO (Chamber Orchestra) Membership is limited and is granted by the music director through competitive auditions, which occur prior to the first scheduled rehearsal of each season. Auditions may be held as needed during the academic year.

Offered: Fall Spring

MUR 155 CHAMBER ENSEMBLES

The chamber music program facilitates formation and coaching of serious advanced chamber ensembles. One academic credit may be earned by registering and successfully completing all requirements listed under course work. Admission by permission of the coordinator. Participation will not count toward fulfillment of the ensemble requirement.

Offered: Fall Spring

MUR 156 WIND SYMPHONY

Wind Symphony draws its membership primarily from the student body on River Campus and performs music of various styles, genres, and eras. Membership by audition. Coursework: One rehearsal per week; individual practice. At least four concerts per academic year. Attendance required at all rehearsals, dress rehearsals, and concerts, unless excused in advance by conductor.

Offered: Fall Spring

MUR 157 JAZZ ENSEMBLE

The Jazz Ensemble is open by audition to all U of R community, and performing a wide variety of music. Occasional guests artists and clinicians. (Fall and Spring) (1 credit)

Offered: Fall Spring

MUR 157A JAZZ COMBO

Small group playing of selections from the jazz repertoire, with an emphasis on improvisation. Admission is by permission of instructor only. (1 credit)

Offered: Fall Spring

MUR 158 GOSPEL CHOIR

One rehearsal per week. Two concerts per semester. In addition, there may be off-campus performances in local colleges, churches, and other venues in the greater-Rochester community. The Gospel Choir performs a varied repertoire of sacred music -- spirituals, hymns, traditional and contemporary Gospel, music of the praise-and-worship genre. (Fall and Spring) (1 credit)

Offered: Fall Spring

MUR 159 GAMELAN ENSEMBLE

The Eastman Gamelan performs traditional ceremonial music and new-style music (keybar) from Bali and also new compositions for Gamelan. (Fall and Spring) (1 credit)

Offered: Fall Spring

MUR 161 MEDIA IN THE DIGITAL AGE

This course offers a unique opportunity for students to engage critically with broadcasting and the supporting areas of the radio and television industries. Students will participate in theoretical and practical applications in a selected area of focus at Rochester's public broadcasting organization, WXXI. These areas include production for news, 1370 Connections, Second Opinion, Homework Hotline, music, television, and audio engineering and administrative support including accounting, fundraising, web development, social media, and others. Weekly class meetings cover the basics of broadcasting including the history, regulations, and formats of over-the air communications, along with an overview of the changes that digital media has brought to traditional broadcasting. This course requires students spend 8 hours per week at the WXXI studios and offices in Rochester. These times are to be arranged by the student, course instructor and WXXI Executive Vice President Susan Rogers, and the WXXI site supervisor.

Offered: Spring

MUR 162 MUSIC & THE MIND

Introduction to the discipline of music cognition. Topics include empirical methods, psycho-acoustic principles, influence of Gestalt psychology, music and language, metric and tonal hierarchies, music and the brain, aspects of musical development, and research on musical memory, expectation, and emotion.

Offered: Spring

MUR 165 MBIRA ENSEMBLE

The Eastman Mbira Ensemble provides a hands-on introduction to the ancient and sophisticated musical tradition of the Shona mbira of Zimbabwe. Visiting Zimbabwean guest artists will also offer students the opportunity to delve more deeply into traditional musical practices and their cultural and spiritual context. Songs are taught aurally so no musical experience or training is required. **Participation will not count toward fulfillment of the ensemble requirement.**

Offered: Fall Spring

MUR 168A WEST AFRICAN DRUMMING INTRO

Led by Master Drummer Fana Bangoura, the West African Drumming Ensemble is dedicated to the dynamic percussive traditions of Guinea. The ensemble combines the iconic djembe hand drum with a trio of drums played with sticks, known as dunun, sangban, and kenkeni. The powerful, multi-part relationships established by this trio of drums provide a rhythmic foundation for the ensemble, enabling djembe players to develop technique in executing both accompaniment and solo parts. Drawing upon his experience as a soloist with the internationally acclaimed groups Les Percussions de Guinée and Les Ballets Africains, Fana engages ensemble players with a wide repertory of music from various regions of Guinea, including the rhythms of the Susu, Malinke, and Baga language groups.

MUR 168B WEST AFRICAN DRUMMING ADV

In this course, students will work on expanding their repertory of rhythms from Guinea, West Africa, and on improving their playing technique on the djembe, dunun, sangban, and kenkeni. In particular, we will concentrate on learning extended solo sequences for the djembe, and more advanced arrangements played on the dunun, sangban, and kenkeni. Students will also work on developing skills specific to performance, adding choreographed onstage movement to complement their drumming.

MUR 170 BRASS CHOIR

Brass Choir is a 35-45 member ensemble dedicated to performing quality brass music at a high level while fostering a spirit of community among brass players on the RC. Open to experienced trumpet, horn, trombone, euphonium, and tuba players.

Offered: Fall Spring

MUR 175 PERCUSSION ENSEMBLE

A serious contemporary ensemble that performs works from the standard percussion ensemble repertoire, occasionally the less standard, and brand new compositions for this genre. Some of the composers whose repertoire we have performed in the past consist of Hollinden, Rouse, Beck, Cowell, Peck, Cage, and Andriessen. Prior experience in percussion, the ability to read music and an audition are required.

Offered: Fall Spring

MUR 180 ROCK REPERTORY ENSEMBLE

The Rock Repertory Ensemble is devoted to performing accurate versions of songs from the rock music repertory, with selections ranging from the early 1950s to the present day. Open to guitarists, bassists, drummers, keyboard players, and singers, with consideration given to winds players depending on repertory for a given semester. Audition required.

Offered: Fall Spring

MUR 181 GTR CLASS: BEYOND THE BASICS

This is an introductory guitar class that will teach guitar fundamentals and get students playing popular, rock, blues, classical, and simple jazz tunes by the end of the semester. This course is open to all guitar enthusiasts as well as music majors/minors seeking a 'methods class' approach to learning the instrument. Electric and acoustic guitars welcome. Contact Professor Bob Sneider bsneider@esm.rochester.edu with any questions. **GUITARS ARE NOT SUPPLIED*** TA led organized practice sessions TBA

MUR 183 INTRO TO CLASSICAL GUITAR

Intro to Classical Guitar: Intro to Classical Guitar will introduce students to rudiments of classical guitar technique, including tuning, basic posture and position, chord formation, note reading, and introduction to repertoire. Basic ensemble techniques will be incorporated into class sessions. By the end of the semester, students will be able to: - Individually perform beginning classical guitar repertoire - Accompany songs with arpeggiated technique - Sight-read assigned music selections, using standard music notation **GUITARS ARE NOT SUPPLIED***

MUR 188 A HISTORY OF SAMPLING

History of sampling and musical appropriation in western music,

MUR 191 ART AND TECH OF RECORDING

This course covers the acoustical and psychoacoustic fundamentals of audio recording including the nature of sound, sound pressure level, frequency and pitch, hearing and sound perception, reflection, absorption and diffusion of sound, sound diffraction, room acoustics, reverberation, and studio design principles. The course also provides practical experience in audio recording including an introduction to recording studio equipment, microphones and microphone placement techniques, signal flow, amplification, analog and digital recording, analog to digital conversion, digital processing of sound, multi-track recording and an introduction to mixing and mastering. Each student is required to complete a substantive recording project at the end of the course. (AME 191)

MUR 192 LISTENING AND AUDIO PROD

This course is a continuation of AME191. Emphasis is on the development of critical listening skills and proficiency in audio mixing and mastering. Fundamental topics covered include the human auditory system, theories of hearing and audio perception, perception of loudness and pitch, critical bands and auditory masking, beats and roughness, temporal and pitch acuity, binaural hearing. Listening skills development include hearing “width” and “depth” in audio, mixing techniques in various musical genres, recognition of various effects including reverb, delay, compression, phasing and distortion. Production skills development includes equalization and achieving spectral balance, the use of compression and dynamic range control, achieving depth and dimension in recordings, panning and auditory scene control.

MUR 193 SOUND DESIGN

The course is intended to provide students a basic understanding of sound design, audio recording, and working with sound for picture. The emphasis is on demonstrations and hands-on experience to enable students to gain a practical knowledge of sound and music production using computers. Fundamental topics include synthesizers & samplers; recording and editing with Pro Tools; sound effect creation; field recording; foley & ADR; basic soundtrack composition; and working to picture. Many techniques are explored using hardware, software, and state of the art workstations throughout the course. Students will complete a major sound for picture project at the conclusion of the course. (AME 193)

MUR 194 AUDIO FOR VISUAL MEDIA

MUR 201 BASIC JAZZ THEORY & IMPROVISATION I

Rudiments of jazz, including chord and scale spellings, chord scale relationships, jazz/pop chord symbol nomenclature, basic forms, chord substitutions, piano voicing; strong emphasis on ear training and vocalization and transcription from records of jazz solos.

Offered: Fall

MUR 202 JAZZ THEORY & IMPROVISATION II

Continuation of MUR 201.

Offered: Spring

MUR 204 CARILLON

Private carillon instruction, weekly 60-minute lessons. By audition only. Permission of instructor required. (4 credits)

MUR 210 Ngoma: Drumming, Dance, and Ritual in Southern Africa.

Throughout much of Southern Africa, the word “ngoma” means drum. It also refers to specific musical styles that combine drumming, dance, and song. Finally, there is often a ritual dimension to ngoma, which is used in ceremonies focused around individual and social healing. In this class, students will bring ngoma alive by learning to perform various Zimbabwean ngoma genres, with the option of specializing in either drumming or dance. Through video clips, audio recordings, photos, and articles, we will also learn to understand ngoma within a larger cultural framework.

MUR 211 THEORY III

Continuation of MUR 112. Focuses on analysis of large forms, such as sonata, rondo, and song forms. Includes advanced study of chromatic harmony and modulation to remote keys. Prerequisite: MUR 112.

Offered: Fall

MUR 212 THEORY IV

Continuation of MUR 211. Explores the theoretical and aesthetic principles of twentieth-century music, especially in relation to earlier compositional procedures. Introduces basic post-tonal theory, including set-class analysis, transformational theory, and serial techniques. Prerequisite: MUR 211.

Offered: Spring

MUR 214B TOPICS IN MUSIC THEORY: ANALYSIS OF POPULAR MUSIC

Many people love pop music for its simplicity, but this course will reveal that pop music can often be surprisingly complex in the ways it projects structure and creates musical relationships. Many dimensions of pop music will be analyzed, including harmony, melody, rhythm and meter, texture, form, recording technique, and text-music relationships. Prerequisites: MUR 112.

Offered: Spring

MUR 221 HISTORY OF WESTERN MUSIC TO 1600

Survey of Western classical music through 1600, including the investigation of style, genre, transmission, contemporary theory, patronage, cultural context and meaning, etc. Workshops deal with topics such as transcription and performance practice. Prerequisite: Completion of or current enrollment in MUR 111. For sophomores and above.

Offered: Fall

MUR 222 HISTORY OF WESTERN MUSIC 1600-1750

Survey of Western classical music from ca. 1600 to the mid-eighteenth century, with emphasis on the stylistic, generic, and performance innovations of the period; opera receives special attention. Workshops investigate specific problems posed by notation, performance, ethics, and so on.

Offered: Spring

MUR 223 HISTORY OF WESTERN MUSIC 1750-1850

The history of western art music from approximately 1730-1850, with an emphasis on analysis of the masterpieces of tonal music and their relationship to society and other arts. Lectures with extensive listening, reading, and analysis.

Offered: Fall

MUR 224 HISTORY OF WESTERN MUSIC: 1850-PRESENT

History of western art music from approximately 1850 through the present, with emphasis on the changing meaning of "New Music" and its role in society. Analysis of post-Wagnerian tonal music and non-tonal alternatives. Lectures, with extensive listening and reading, as well as analytical assignments.

Offered: Spring

MUR 233 ADVANCED MUSICAL THEATER WORKSHOP

Continuation of MUR 133.

Offered: Spring

MUR 238 PHONO-GRAPHY/MUSIC & AA LIT

MUR 240 REVOLUTIONS IN SOUND

MUR 281 MUSIC ANALYSIS: HOLLYWOOD MUSICALS

MUR 281 MUSIC ANALYSIS: HOLLYWOOD MUSICALS This course is designed for upper-level undergraduate music majors and graduate students in music. We will analyze the music of Hollywood movie musicals in detail, focusing on issues of form, harmony, lyrics, and character/story in the historical context of American popular music in the 20th century. Songwriters studied will include Jerome Kern, Richard Rodgers, Cole Porter, Irving Berlin, Stephen Sondheim, Andrew Lloyd Webber, Alan Menken and others. Prerequisites: MUR 211, TH 201, or the equivalent.

MUR 391 INDEPENDENT STUDY

Offered: Fall Spring

MUR 391W INDEPENDENT STUDY

MUR 393 SENIOR PROJECT

Offered: Fall Spring

MUR 394 INTERNSHIP

Offered: Fall Spring

MUR 395 INDEPENDENT RESEARCH

MUR 410 NGOMA:DRUM-DANCE&RIT S AFR

MUR 468 WEST AFRICAN DRUMMING INTRO

See course description for MUR 168A.

MUR 481 MUSIC ANALYSIS:HOLLYWOOD

MUR 591 PHD READINGS IN MUSIC

Offered: Fall Spring

MUR 986V FULL TIME VISITING STUDENT

NAV 093 INTRODUCTION TO NAVAL SCIENCE

Organization, administration, customs, careers, warfare platforms and basic leadership fundamentals as well as joint warfare and national military strategy. Current world events are discussed as applicable.

Offered: Fall

NAV 094 SHIP SYSTEMS I

Detailed study of ship characteristics and types including ship design, hydrodynamic forces, stability, compartmentation, propulsion, electrical and auxiliary systems, interior communications, ship control, and damage control. Included are basic concepts and theory and design of steam, gas turbine, diesel and nuclear propulsion.

Offered: Fall

NAV 098 NAVIGATION I

International and United States inland rules of the nautical road, relative motion, Vector-Analysis Theory, formation tactics and ship employment. Introduction to naval operations and operations analysis, ship behavior and characteristics in maneuvering, applied aspects of ship handling, and afloat communications

Offered: Spring

NAV 099 AMPHIBIOUS OPERATIONS

Organization, techniques and strategies employed by the U.S. Navy and Marine Corps in the conduct of amphibious operations. Track the evolution of amphibious warfare from antiquity through the 20th century and become familiar with amphibious ships, landing craft and vehicles as they are used by today's military.

Offered: Spring

NAV 222 NAVAL OPERATIONS & SEAMANSHIP

Further develop knowledge and practical skills learned in Navigation I (NAV 098). Introduction to Naval Operations at sea covering topics in four broad sections including: 1)Advanced Navigation; charts, maneuvering board, formation sailing, nautical rules of the road and international laws of the seas; 2)Communications security, radio procedures, tactical communications and maneuvering; 3)Evolutions Operations shipboard watch-standing, ship-handling evolutions; 4)Naval Doctrine and Joint/ Combined Operations. Prepares midshipmen for a first tour in the active surface ship fleet.

Offered: Fall

NAV 249 SHIPS SYSTEMS II

Investigate theories and implementation of Naval weapons systems. Explore fundamentals of target detection (using RADAR and SONAR), warhead and fuse design, guidance and control principles, propulsion and launching, fire control, and mine warfare. Case studies are utilized during the course to aid the student in understanding the concepts of Command, Control, and Communication and as a starting point for discussions on leadership and ethics. Current world events and historical issues are discussed as applicable.

Offered: Spring

NAV 250 SEAPOWER MARITIME AFFAIRS

U.S. naval history from the American Revolution to the present with emphasis on major developments. Geopolitical theory of Mahan, applied to the current maritime strategies of the United States. Instruction will include lecture, discussion and films. Two texts will be used in conjunction with handouts.

Offered: Spring

NAV 251 EVOLUTION OF WARFARE

Basic understanding of the art and concept of warfare from the beginning of recorded history to the present day as well as the threads of continuity and the interrelations of political, strategic, operational, tactical and technical levels of war from the past. Applying the same principles and concepts to the battlefields of today and the future.

Offered: Spring

NAV 265 LEADERSHIP & MANAGEMENT II

Fundamental theoretical concepts of leadership management. Develop practical leadership tools that can be derived from the theoretical concepts.

Offered: Fall

NAV 266 LEADERSHIP & ETHICS

Explore the moral, ethical, and legal issues facing leaders in industry, society, and the military while reinforcing the key underlying principles of leadership. Case studies are used in a seminar format to underscore the issues. The overall objective of this course is to develop critical thinking and reasoning skills in leadership situations, particularly those that pose a moral or ethical dilemma to the individual.

Offered: Spring

NAV 391 INDEPENDENT STUDY

NSC 201 BASIC NEUROBIOLOGY LAB

THIS LABORATORY IS FOR NEUROSCIENCE MAJORS ONLY. Students should register during online registration; do not wait until the semester begins. Due to time conflicts, students may not be able to take NSC 201P/BCS 240P and STT 212 in the same semester. Contact the Undergraduate Coordinator at ugcoord@bcs.rochester.edu if you have scheduling issues.

Offered: Fall

NSC 201P BASIC NEUROBIOLOGY LAB

THIS LABORATORY IS FOR NEUROSCIENCE MAJORS ONLY. Students should register during online registration; do not wait until the semester begins. Due to time conflicts, students may not be able to take NSC 201P/BCS 240P and STT 212 in the same semester. Contact the Undergraduate Coordinator at ugcoord@bcs.rochester.edu if you have scheduling issues.

Offered: Fall

NSC 203 LAB IN NEUROBIOLOGY

Introduces the various methods used in neurobiological research. Covers anatomical, behavioral, molecular, and physiological approaches to studying neural organization and function and concludes with a research project that extends over a period of five weeks. STUDENTS MUST REGISTER FOR A WORKSHOP WHEN REGISTERING FOR THE MAIN SECTION.

Offered: Spring

NSC 242 NEUROPSYCHOLOGY

Examines clinical neuropsychology, which bridges neurology, neuroscience, and clinical psychology. Covers history of clinical neuropsychology, principles of neuropsychological assessment, and the interpretation of cognition and behavior as they relate to brain dysfunction. Considers specific neurological syndromes including neurodegenerative, cerebrovascular, toxic, and memory disorders; epilepsy; head trauma; toxic disorders; infectious processes; pediatric neuropsychology; psychiatric syndromes; and forensic neuropsychology. Patient presentations (videotape and in-person interviews) supplement lectures.

Offered: Fall

NSC 243 NEUROCHEMICAL FOUNDATIONS OF BEHAVIOR

Introduces the field of neurochemistry with an emphasis on cellular and molecular neurochemistry. Topics range from study of neurochemical mechanisms that underlie normal neural function to discussion of behavioral disturbances that result from neurochemical abnormalities. Considers neurochemical mechanisms of adaptive behavior, learning and memory, behavioral disorders, gender differences, and drug seeking behavior.

Offered: Fall

NSC 244 NEUROETHOLOGY

Explores the neural basis of naturally occurring animal behaviors. Emphasizes how information is integrated from interactions between molecules, cells, and groups of cells, all of which are necessary to produce behavior. Considers how hormones, neural development, anatomy, physiology, and evolution lead to behaviors such as orientation, communication, feeding, and reproduction.

Offered: Spring

NSC 245 SENSORY & MOTOR NEUROSCIENCE

Focuses on how single neurons and populations of neurons represent sensory information, how sensory signals are transformed and decoded to mediate perception, and how perceptual signals are converted into neural commands to initiate actions. Explores how simple behaviors (such as detection and discrimination) can be quantified and explained in terms of neural activity.

Introduces students to quantitative approaches for linking neural activity to perception and decision-making. Emphasizes studies of the visual, oculomotor, and somatosensory systems, with some attention to the auditory and vestibular systems as well.

Offered: Spring

NSC 246 BIOLOGY OF MENTAL DISORDERS

Examines the neurobiology of anxiety/phobic conditions, mood disorders, and chronic psychotic states, particularly schizophrenia. Considers definitions of psychiatric syndromes, the problems of diagnosis, brain organization, and neurotransmitter systems involved in state functions. Introduces research approaches including epidemiologic, phenomenologic, family/adoption, longitudinal descriptive, psychophysiologic, neuropharmacologic, genetic linkage, and postmortem studies; emphasizes recent in vivo brain imaging and neuroreceptor studies.

Offered: Spring

NSC 247 TOPICS IN COMPUTATIONAL NEUROSCIENCE

This course will provide an introduction to computational neuroscience, the study of both the computations performed by the brain, and of computational models of neuronal responses. In the course we will focus on the visual system.

Offered: Spring

NSC 248 NEUROECONOMICS

Provides a basic overview of the neural basis of learning and memory formation, with a focus on the acquisition of simple associations and complex memories and skills. Considers how neurons and neuronal ensembles encode, consolidate, store and retrieve specific memories. Although emphasis is on the anatomical, molecular and cellular levels, findings obtained from the perspective of systems and cognitive neuroscience are also considered.

Offered: Fall

NSC 249 DEVELOPMENTAL NEUROBIOLOGY

Advanced treatment of the development of the nervous system, including the nature/nurture issue and factors that influence the development of neural organization and function. Topics include the production, migration, differentiation and survival of neurons; functional specialization of neural regions; axonal navigation; target mapping. Compares and contrasts developmental plasticity with forms of neural plasticity exhibited in adults.

Offered: Spring

NSC 301 SENIOR SEMINAR IN NEUROSCIENCE

To be taken for one semester in the senior year (2 credits). Format can vary from an emphasis on exploring neuroscience as a scientific career to more thematically-based seminars dealing with recent research in neuroscience. Oral and written presentation skills are sharpened through a series of student-led presentations on current issues or topics in neuroscience, as well as a series of short reports.

Offered: Fall

NSC 302 SEMINAR IN NEUROSCIENCE

To be taken for one semester in the senior year (2 credits). Format can vary from an emphasis on exploring neuroscience as a scientific career to more thematically-based seminars dealing with recent research in neuroscience. Oral and written presentation skills are sharpened through a series of student-led presentations on current issues or topics in neuroscience, as well as a series of short reports.

Offered: Spring

NSC 390 TEACHING INTERNSHIP IN NSC

NSC 391 INDEPENDENT STUDY

NSC 391W INDEPENDENT STUDY

NSC 394 INTERNSHIP

NSC 395 RESEARCH IN NEUROSCIENCE

NSC 395W RESEARCH IN NEUROSCIENCE

NSC 396 SPECIAL TOPICS IN NEUROSCIENCE

NSC 547 INTRODUCTION TO COMPUTATIONAL NEUROSCIENCE

OPT 101 INTRODUCTION TO OPTICS

A discussion of the properties of light: refraction, imaging, diffraction, interference, the development of the microscope, telescope, laser, the Internet, information storage and display, and medical applications. Demonstrations. The EAS10X seminar/ workshop is required for all students taking an EAS10X course for credit. Seminars discuss engineering and applied sciences in the real world, and provide overviews of Optics, Computer Science, Mechanical Engineering, Biomedical Engineering, Electrical and Computer Engineering, Audio and Music Engineering, and Chemical Engineering.

Offered: Fall

OPT 201 GEOMETRICAL OPTICS LAB

Students examine, analyze, measure, dismantle and reverse-engineer a variety of new and used optical tools, apparatus and systems. Emphasis on conceptual understanding and intuitive problem-solving.

OPT 202 PHYSICAL OPTICS LAB

This lab complements OPT 261. Experiments cover interference and diffraction phenomena, introduction to optical information processing and electronic imaging systems with emphasis on error analysis.

Offered: Spring

OPT 203 INSTRUMENTATION LAB LECTURE

This laboratory complements OPT 242. Students experience further optical phenomena in the lab setting to better understand equipment that provides measurement and key optical data.

OPT 204 SOURCES/DETECTORS LAB LECT

This lab complements OPT 225 and provides the basic concepts required for understanding the operation of optical sources and photodetectors. It covers important sources such as lasers and light-emitting diodes as well several types of photodetectors.

OPT 211 MATLAB for Optics Majors I

Teaches techniques of transforming continuous problems to discrete mathematical models. Students learn computational methods for solving problems in optics using high level software. Includes labs.

Offered: Spring

OPT 212 MATLAB FOR OPT MAJORS II LEC

OPT 223 QUANTUM THEORY

Intro to quantum mechanics in the context of modern optics and optical technology. Wave mechanics as applied to electrons in crystals and in quantum wells and the optical properties of materials. Semiconductor junctions in photodetectors and photoemitters.

Offered: Fall

OPT 225 SOURCES AND DETECTORS

This course provides the basic concepts required for understanding radiometry and the operation of optical sources and photodetectors. It covers important sources such as lasers and light-emitting diodes as well several types of photodetectors.

OPT 232 OPTO-MECHANICS

System performance of glass with metal or plastic, kinematic design, material limitations. Applications to optical metrology, alignment, geometry 2D and 3D. This course is an OPT elective.

Offered: Spring

OPT 241 GEOMETRICAL OPTICS

Optical instruments and their uses. First-order Gaussian optics and thin-lens system layout. Photometric theory applied to optical systems. The eye, magnifier, microscope, matrix optics, nature of Seidel aberrations.

Offered: Fall

OPT 242 ABERRATIONS, INTERFEROMETERS, AND OPTICAL TESTING

Geometrical and diffraction theory of image formation. Measurement of first-order properties. Seidel aberrations. Tests of aberrated systems. Seidel contribution formulae and more.

OPT 243 OPTICAL FABRICATION & TESTING

Fabrication of a plane parallel plate, lens, or prism from a variety of optical glasses: controlled loose abrassive grinding pitch polishing skills; optical metrology, including interferometry and evaluation of roughness.

Offered: Spring

OPT 244 LENS DESIGN

3rd order aberration theory, optimization theory, global optimization, variables and constraints of various lens materials and types. Course concludes with individual lens design projects.

OPT 245 PRECISION INSTRUMENT DESIGN

This course focuses teaching the multidisciplinary aspects of designing complex, precise systems. In these systems, aspects from mechanics, optics, electronics, design for manufacturing/assembly, and metrology/qualification must all be considered to design, build, and demonstrate a successful precision system. The goal of this class is to develop a fundamental understanding of multidisciplinary design for designing the next generation of advanced instrumentation. This course is open to graduate students in engineering and physics backgrounds although it has a strong emphasis on mechanical engineering and systems engineering topics. This course is open to undergraduates who are in their senior year.

OPT 246 OPTICAL COATING TECHNOLOGY

Optical interference in a multilayer stack and its application to anti-reflection coatings, beamsplitters, laser mirrors, polarizers, and bandpass filters.

Offered: Fall

OPT 247 ADV OPT COATING DESIGN

Specialty and custom coatings and their scientific applications and business uses.

Offered: Spring

OPT 248 VISION AND THE EYE

How the human eye's optical and neural factors process color and spatial information includes comparison with the design and capabilities of other animals' eyes.

Offered: Spring

OPT 253 QUANTUM & NANO OPT LAB

This laboratory course (3 hours per week) exposes students to cutting-edge photon counting instrumentation and methods with applications ranging from quantum information to nanotechnology,biotechnology and medicine. Major topics include quantum entanglement and Bell’s inequalities, single-photon interference, single-emitter confocal fluorescence microscopy and spectroscopy, photonic bandgap materials, Hanbury Brown and Twiss interferometer, and photon antibunching. Each lab also includes lecture and discussions of lab materials.

Offered: Fall

OPT 254 NANOMETROLOGY LABORATORY

This is a required, 4-credit-hour course for the Certificate in Nanoengineering Program. It consists of three laboratory experimental modules accompanied by lecture materials: Module 1. Scanning electron microscopy (McIntyre); Module 2. Atomic force microscopy (Papernov); Module 3. Confocal microscopy (Lukishova). The laboratory components will use the facilities of the University of Rochester Integrated Nanosystems Center, the Institute of Optics and the Laboratory for Laser Energetics. Topics covered in the 50-min lab lectures include the nature of nanoscale surface forces in solids and principles of scanning force microscopy, function and capabilities of the scanning electron microscope, and confocal fluorescence microscopy of single nanoemitters. Students are expected to have completed a sequence in introductory physics with a strong performance in electromagnetism, the basics of modern physics and physical optics. Junior and Senior level.

OPT 261 INTERFERENCE AND DIFFRACTION

Complex representation of waves; scalar diffraction theory; Fresnel and Fraunhofer diffraction and application to measurement; diffraction and image formation; optical transfer function; coherent optical systems, optical data processing, and holography.

Offered: Spring

OPT 262 ELECTROMAGNETIC THEORY

Electromagnetic Theory: Maxwell's equations in differential form, dipole radiation, Rayleigh scattering, polarization,energy flow (Poynting vector), plane waves, wave propagation in air/glass/metals, reflection and refraction, birefringence, polarization-sensitive optical elements (wave plates and polarizers),applications to nonlinear and quantum optics.

Offered: Spring

OPT 276 BIOMEDICAL OPTICS

Biomedical spectroscopy (absorption, fluorescence, Raman, elastic scattering); propagation of photons in highly scattering media (such as tissue); techniques for high-resolution imaging in biological media: confocal imaging, multiphoton imaging and optical coherence tomography. Taught every other fall.

OPT 287 MATHEMATICAL METHODS FOR OPTICS & PHYSICS

Techniques used in mathematical study of optical phenomena. Emphasis on gaining insight and experience in the use of these powerful and elegant tools for describing, solving and resolving optical systems and schema.

Offered: Spring

OPT 307 SEM PRACTICUM

Overview of techniques for using the SEM (Scanning Electron Microscope) and Scanning Probe (AFM, STM) and analyzing data. Students perform independent lab projects by semester's end.

Offered: Spring

OPT 310 SENIOR DESIGN I

Specifications, project development, and project planning will include design alternatives and subsystem segmentation discussions.

Offered: Fall

OPT 311 OPTICS SENIOR DESIGN PROJECT

Documenting each stage,student teams design, build, and test an optical device or instrument for a faculty, community or industrial sponsor.

Offered: Spring

OPT 320 SENIOR THESIS I

Under faculty supervision, preparation for year-long independent research or participation in ongoing graduate group research. Students wishing to major in "Optics" will register for this course.

OPT 321 SENIOR THESES II

With faculty supervision: reading, experimentation, and writing of final thesis and presentation of results. Students wishing to major in "Optics" will register for this course.

OPT 390 SUPERVISED TEACHING

OPT 391 INDEPENDENT READING

OPT 393 SPECIAL ESSAY

OPT 394 UNDERGRADUATE RSRCH INTRNSHP

OPT 395 UNDERGRADUATE REARCH PROJECT

OPT 396 HONORS PROJECTS

OPT 407 SEM PRACTICUM

Overview of techniques for using the SEM (Scanning Electron Microscope) and Scanning Probe (AFM, STM) and analyzing data. Students perform independent lab projects commensurate with their graduate research.

OPT 411 MATH METH FOR OPTICS & PHY

Advanced techniques utilizing vector calculus, series expansions, contour integration, integral transforms (Fourier, Laplace and Hilbert) asymptotic estimates, and second order differential equations.

OPT 412 QUANTUM MECHANICS FOR OPTICS

This course covers the topics in modern quantum theory which are relevant to atomic physics, radiation theory, and quantum optics. The theory is developed in terms of Hilbert space operators. The quantum mechanics of simple systems, including the harmonic oscillator, spin, and the one-electron atoms, are reviewed. Finally, methods of calculation useful in modern quantum optics are discussed. These include manipulation of coherent states, the Bloch spere representation, and conventional perturbation theory. Prerequisite: One course in undergraduate wave mechanics or permission of instructor. References: Cohen-Tannoudji, Diu and Laloe, Merzbacher, Schiff, Dirac.

Offered: Spring

OPT 413 INTRO TO RANDOM PROCESSES

Random signals and noise in linear systems. Selected topics in probability theory, random variables, random vectors, random sequences (random walk, Martingales, ARMA model, Markov chains), random processes (Poisson process, Gaussian process, Wiener process, Markov process), stationary and cyclostatioany processes, random process inputs to linear systems, ergodicity, filtering, linear estimation, bandlimited and bandpass processes.

OPT 414 DETECTION & ESTIMATION

Loss and utility; Bayesian inference; risk functions, randomized decisions, admissible decisions; empirical Bayes for unknown prior; Neyman-Pearson hypothesis testing, receiver operating characteristic; sufficient and minimal sufficient statistics and Rao-Blackwellization; unbiased estimation; minimum variance unbiased estimation and Cramer-Rao inequality, maximum likelihood estimation; nonparametric estimation of cdfs.

OPT 421 OPT PROPERTIES OF MATERIALS

This is a course concerning the aspects of the solid state physics of semiconductors which influence their optical properties. Topics include: electrons and holes, bandstructures, k•p theory, Kramers-Kronig relations, phonons, polaritons, electrooptic effects, nonlinear optical effects. The physics of absorption, spontaneous and stimulated emission, reflection, modulation and Raman scattering of light will be covered. III-V semiconductors will be emphasized; other semiconductor material systems will also be mentioned. Optical properties of specific semiconductor material systems will be covered. Reduced dimensionality structures such as quantum wells will be contrasted with bulk semiconductors. Optoelectronic device applications of semiconductors will be mentioned, but not covered in detail.

Offered: Spring

OPT 422 COLOR TECHNOLOGY

Color Technology is more than just pigments, dyes, paints, and textiles. Everywhere in modern technology (smart phones, tablets, displays, lighting, cinema, printers, etc.) is the need for a basic understanding of how we measure, identify, communicate, specify, and render color from one device to another. This course addresses color order systems, color spaces, color measurement, color difference, additive and subtractive color, and rendering of color images. The student will learn about color matching, lighting conditions, metamerism, and color constancy. At the semester's end, each student will have compiled a Color Toolbox with useful functions to derive different necessary color values within MatLab.

OPT 423 DETECTION OF OPTCL RADIATION

OPT 425 RADIATION & DETECTORS

The course covers the following topics: emission of thermal radiation, modeling of optical propagation (radiometry), quantifying the human perception of brightness (photometry) and of color (colorimetry), fundamentals of noise in detection systems, parameters for specifying the performance of optical detectors, and a survey of several specific types of lasers. References: Boyd, Radiometry and the Detection of Optical Radiation; Kingston, Detection of Optical and Infrared Radiation.

Offered: Fall

OPT 427 LIQUID CRYSTAL OPTICS

This course will introduce the materials, terminology, effects, and devices used in the field of liquid crystal optics. Basic structures in nematic and cholesteric liquid crystals will be discussed and related to optical phenomena like transmittance, absorption, scattering, birefringence and selective reflection (the effect seen in scarab beetles and utilized to protect the OMEGA laser at LLE from blowing itself up). Two keys for device applications are LC chemical composition and molecular alignment, and these will be covered in order to understand the manufacture and operation of passive devices like wave plates and selective reflection polarizers. The basic electro-optics for active devices like EO switches and LC displays will also be covered. Other applications to be explored include mood rings, polarizing pigments for document security, smart windows, and car paint.

Offered: Spring

OPT 429 CHM BONDS:FROM MOLCLS TO MAT

An introduction to the electronic structure of extended materials systems from both a chemical bonding and a condensed matter physics perspective. The course will discuss materials of all length scales from individual molecules to macroscopic three-dimensional crystals, but will focus on zero, one, and two dimensional inorganic materials at the nanometer scale. Specific topics include semiconductor nanocrystals, quantum wires, carbon nanotubes, and conjugated polymers.

OPT 432 OPTO-MECHANICS

The mechanical design and analysis of optical components and systems will be studied. Topics will include kinematic mounting of optical elements, the analysis of adhesive bonds, and the influence of environmental effects such as gravity, temperature, and vibration on the performance of optical systems. Additional topic include analysis of adaptive optics, the design of lightweight mirrors, thermo-optics and stress-optics (stress birefringence) effects. Emphasis will be placed on integrated analysis whish includes the data transfer between optical design codes and mechanical FEA codes. A term project is required.

Offered: Spring

OPT 433 OPT FAB AND TESTING

You will be given a first-hand working knowledge of optical glasses, their properties, and the methods for specifying, manufacturing and testing high quality optical components. Lectures emphasize the optical and physical properties of glass, and how these influence the grinding and polishing process. Conventional fixed/loose abrasive grinding and pitch polishing are examined. New concepts for optical manufacturing are covered. The meaning of specifications will be reviewed. The laboratory portion of the course exposes you to abrasive grits, slurries, pitch polishing and the vagarious nature of the conventional polishing process, under the guidance of a master optician. Glass types and part shapes are assigned to illustrate the degree of difficulty required to achieve optical quality surfaces with hand and machine operations. In-process metrology is performed with a variety of instruments.

Offered: Spring

OPT 440 FREEFORM OPTICS

OPT 441 GEOMETRICAL OPTICS

This course is designed to give the student a basic working knowledge of image-forming optical systems. The course is oriented towards problem solving. Material covered includes: image formation, raytracing and first-order properties of systems; magnification, F/number, and numerical aperture; stops and pupils, telecentricity vignetting; telescopes, microscopes, magnifiers, and projection systems; the Delano diagram; the eye and visual systems, field lenses; optical glasses, the chromatic aberrations, and their correction; derivation of the monochromatic wavefront aberrations and study of their effects upon the image; third order properties of systems of thin lenses; effects of stop position and lens bending; aplanatic, image centered, and pupil centered surfaces; and field flatteners. References: Smith, Modern Optical Engineering, McGraw-Hill; Lecture notes.

Offered: Fall

OPT 442 INSTRUMENTAL OPTICS

This course provides an in-depth understanding of the principles and practices of optical instrumentation: Optical metrology, including wavefront and surface metrology, interferometric instruments and interferogram analysis, coherence and coherence-based instruments, phase measurement and phase-shifting interferometry; spectroscopic instrumentation, including the Fourier transfrom spectrometer, the Fabry-Perot interferometer, and the grating monochromator; image plane characterization (star test, Ronchi test, and modulation transfer function); the influence of illumination and partial coherence on image forming systems, including microscopes, systems for projection lithography, and displays.

Offered: Spring

OPT 443 FUND OF MODERN OPT SYS

This course covers fundamental ray optics that are necessary to understand today’s simple to advanced optical systems. Included will be paraxial optics, first-order optical system design, illumination, optical glasses, chromatic effects, and an introduction to aberrations. References: Hecht, Optics (4th edition); Smith, Modern Optical Engineering; Lecture notes.

Offered: Fall

OPT 444 LENS DESIGN

A review of geometrical optics and 3rd order aberration theory. Specification documents. Image assessment: ray intercept plots, wavefront analysis, spot diagrams, MTFs, and point spread functions. Optimization theory, damped least squares, global optimization, merit functions, variables and constraints. Glass, plastic, UV and IR materials. Aspheres, GRINs, and diffractive optics. Secondary spectrum, spherochromatism, higher order aberrations. Induced aberrations. Splitting and compounding lens elements. Aplanats and anastigmats. Refractive design forms: landscape lens, achromatic doublet, Cooke triplet, Double Gauss, Petzval lens, wide angle, telephoto, and eyepieces. Reflective design forms: parabola, Cassegrain, Schmidt, Ritchey Cretian, Gregorian, three mirror anastigmat, and reflective triplet. Computer aided lens design exercises using CodeV - includes a 4-6 week individual lens design project.

Offered: Spring

OPT 445 PRECISION INSTRUMENT DESIGN

This course focuses teaching the multidisciplinary aspects of designing complex, precise systems. In these systems, aspects from mechanics, optics, electronics, design for manufacturing/assembly, and metrology/qualification must all be considered to design, build, and demonstrate a successful precision system. The goal of this class is to develop a fundamental understanding of multidisciplinary design for designing the next generation of advanced instrumentation.

OPT 446 OPTICAL THIN FILM COATINGS

This course addresses the design, manufacture and quality control of optical interference coatings. Topics covered include: reflection and transmission at an interface; the vector diagram; the Smith Chart; properties of periodic media; design of high reflectors, bandpass filters and edge filter; use of computer programs for design analysis; production techniques; thickness monitoring; and thickness uniformity calculations.

Offered: Fall

OPT 447 Advanced Optical Coating Design

This course will cover such topics as the effects of dispersion, scatter, and inhomogeneity in multilayer interference coating designs. Attention will be given toward manufacturability of designs and meeting common optical specifications. Design assignments will address fields including, but not limited to Ophthalmic, Lighting, Display, Anti-counterfeiting, Laser, and

Infrared applications. Each student will be given access to current market design, optical characterization, and post-process analysis software.

Offered: Spring

OPT 448 VISION AND THE EYE

This course will reveal the intricate optical and neural machinery inside the eye that allows us to see. It will describe the physical and biological processes that set the limits on our perception of patterns of light that vary in luminance and color across space and time, We will compare the human eye with the acute eyes of predatory birds and the compound eyes of insects. The course will also describe exciting new optical technologies for correcting vision and for imaging the inside of the eye with unprecedented resolution, and how these technologies can help us understand and even cure diseases of the eye. The class is intended to be accessible to advanced undergraduate students, especially those majoring in Optics, Biomedical Engineering, or Brain and Cognitive Science, but is recommended for anyone with a curiosity about vision or an interest in biomedical applications of optics. The course will also serve as an introduction to the study of vision for graduate students.

Offered: Spring

OPT 449 DES TOL FAB & COAT OPT SYS

OPT 450 POLARIZATION

This course covers the fundamentals necessary to understand the behavior of fully and partially polarized light, and the significant range of applications and optical systems in which polarization is important. Topics include foundational electromagnetic theories of propagation and scattering, polarized plane waves, polarization eigenstates, Jones and Mueller Calculii, ellipsometry, polarization in multilayers and gratings, principles of polarization effects in focusing and imaging, polarization metrology, and topics in polarization coherence.

OPT 452 MED IMAGING-THEORY&IMPLEMT

Physics and implementation of X-ray, ultrasonic, and MR imaging systems. Special attention on the Fourier transform relations and reconstruction algorithms of x-ray and ultrasonic-computer tomography, and MRI.

OPT 453 QUANTUM & NANO OPT LAB

This laboratory course (3 credits) will expose students to cutting-edge photon counting instrumentation and methods with applications ranging from quantum information to biotechnology and medicine. It will be based on quantum information, the new, exciting application of photon counting instrumentation. As much as wireless communication has impacted daily life already, the abstract theory of quantum mechanics promises solutions to a series of problems with similar impact on the twenty-first century. Major topics will be entanglement and Bells inequalities, single-photon interference, single-emitter confocal fluorescence microscopy, Hanbury Brown and Twiss correlations/photon antibunching. Photonic based quantum computing and quantum cryptography will be outlined in the course materials as possible applications of these concepts and tools..

Offered: Fall

OPT 456 OPTICS LABORATORY

This is an intensive laboratory course with experiments that likely included the following: 1. Transverse and axial mode structure of a gas laser. 2. Detector calibration using a blackbody. 3. Production of a white light viewable transmission hologram. 4. Acousto-optic modulation. 5. Twyman-Green interferometry. 6. Optical Fibers Laser. 7. The Pockels cell as an optical modulator. 8. Optical beats (heterodyning) and CATV. 9. The YAG laser and second harmonic generation. 10. Fourier optics and optical filtering. 11. Lens Evaluation. 12. Modulation Transfer Function. 13. Applications and properties of pulsed dye laser. 14. Holographic optical elements. 15. Properties of Gaussian beams.

OPT 461 Fourier Optics

The principles of physical optics including diffraction and propagation based on Fourier transform theory; integral formulation of electromagnetic propagation; diffraction from apertures and scattering objects; applications to optics of Fourier transform theory, sampling expansions, impulse response, propagation through optical systems, imaging and transforming, optical transfer function, optical filtering; and selected topics of current research interest. Text: Goodman, Introduction to Fourier Optics; class notes

Offered: Fall

OPT 462 ELECTROMAGNETIC WAVES

This course covers topics in electromagnetic theory that serve as a foundation for classical descriptions of many optical phenomena. A partial list of topics includes: review of Maxwell's equations, boundary conditions, and wave equations; polarization of light; crystal optics; vector, scalar, and Hertz potentials; radiation from accelerated charges; electric and magnetic dipole radiation; Lorentz atom description of the interaction of light with matter; scattering; optical waveguides.

Offered: Spring

OPT 463 WAVE OPTICS & IMAGING

This course provides the practicing optical engineer with the basic concepts of interference, diffraction, and imaging. Each topic will be reinforced with real-world examples. The interference section will include interferometry, Fabry-Perot etalons, and multilayer thin films. The diffraction and imaging sections will include, but are not limited to, diffractive optics, continuous and discrete Fourier transforms, convolution theory, and Linear Systems. References: Hecht, Optics (4th edition); Goodman, Introduction to Fourier Optics; Lecture notes.

Offered: Fall

OPT 464 NANOPHOT/NANOMECH DEVICES

This course aims to provide students with the understanding of fundamental principles governing optical and mechanical phenomena at micro/nanoscopic scale, with focus on current research advances on device level. The following topics will be covered: Fundamental concepts of micro-/nanoscopic optical cavities and mechanical resonators; various types of typical nanophotonic and nanomechanical structures; fabrication techniques; theoretical modeling methods and tools; typical experimental configurations; physics and application of optomechanical, quantum optical, and nonlinear optical phenomena at mesoscopic scale; state-of-the-art devices and current research advances. References: primarily based on recent literature

OPT 465 PRINCIPLES OF LASERS

This course provides an up-to-date knowledge of modern laser systems. Topics covered include quantum mechanical treatments to two-level atomic systems, optical gain, homogenous and inhomogenous broadening, laser resonators and their modes, Gaussian beams, cavity design, pumping schemes, rate equations, Q switching, mode-locking, various gas, liquid, and solid-state lasers.

Offered: Spring

OPT 467 NON-LINEAR OPTICS

Fundamentals and applications of optical systems based on the nonlinear interaction of light with matter. Topics to be treated include mechanisms of optical nonlinearity, second-harmonic and sum- and difference-frequency generation, photonics and optical logic, optical self-action effects including self-focusing and optical soliton formation, optical phase conjugation, stimulated Brillouin and stimulated Raman scattering, and selection criteria of nonlinear optical materials. References: Robert W. Boyd, Nonlinear Optics, Second Edition.

Offered: Fall

OPT 468 WAVEGUIDES & OPTOELECTRONIC DEVICES

This course covers the propagation and interactions in optical waveguides. Topics to be covered include: the Goos-Haenchen effect; modes on the planar waveguide; coupled-mode theory; modes on the optical fiber; pulse broadening in optical fibers; coupling between guided-wave structures; waveguide devices such as semiconductor lasers; fiber lasers and amplifiers; passive components and electro-optics devices.

Offered: Fall

OPT 476 BIOMEDICAL OPTICS

Biomedical spectroscopy (absorption, fluorescence, Raman, elastic scattering); propagation of photons in highly scattering media (such as tissue); techniques for high-resolution imaging in biological media: confocal imaging, multiphoton imaging and optical coherence tomography. Taught every other fall.

OPT 481 GEN MANAGEMNT OF NEW VENTURE

This course provides an opportunity to examine the management practices associated with innovation and new business development. The analysis of entrepreneurship is evaluated from the perspective of start-up ventures and established companies.

There is an appraisal of the similarities and differences in the skills and the functions required to develop successful projects in both types of situations. A range of management issues is discussed, including organizational development, analysis of market opportunities, financial planning and control, capitalization, sources of funds, the due-diligence process, and valuing the venture. Course Approach: To expose students to various facets of new venture management and entrepreneurship, classes will consist of lectures, evaluation of current business situation, and presentations by guest speakers. Furthermore, two (one for engineers) case studies must be prepared for the credit.

Offered: Spring

OPT 482 SYS INTEGRATION & PROD DEV

In this class we will explore the ISO 9000 product development process and illustrate how to use this process to develop both products and research systems that meet necessary specifications. The class will use systems such as video projectors, CD-ROM drives, bar-code scanners and scanning laser microscopes as examples to illustrate the various concepts.

OPT 491 MASTER'S READING IN OPTICS

OPT 492 SP TOP: THz Phenomenon & Technology

THz technology session provides the fundamentals of free-space THz optoelectronics for sensing, imaging and spectroscopy applications. A free-space THz-ray optoelectronic system, with diffraction-limited spatial resolution, femtosecond temporal resolution, DC-THz spectral bandwidth, and mV/cm field sensitivity, will be central to the course. We will cover the basic concepts of generation, detection and propagation of T-rays, and their applications. Students will learn how up-to-the-minute results in THz laboratories apply to research and development. Students will learn advanced systems with THz time-domain spectroscopy, optical rectification, electro-optic sampling, THz gas laser, Gunn diodes and Schottky diodes, and FTIR. Many newly developed THz systems at Rochester will be the examples used in this course. Ultrafast Phenomena session covers the methods for optical measurement with short laser pulses. Short laser pulse generation, amplification, detection, and characterization will be discussed.

Offered: Spring

OPT 493 MASTER'S ESSAY

OPT 494 MASTER'S INTERNSHIP

OPT 495 MASTER'S RESEARCH IN OPTICS

OPT 511 ADV MATH METHODS IN OPTICS

This course focuses on advanced numerical and analytical techniques that are likely to be useful for PhD-level Optics students. It will begin with a review of numerical errors and then develop simple algorithms for solving nonlinear algebraic and differential equations. The later half of the course will cover several analytical techniques useful for solving ordinary and partial differential equations encountered in various areas of optics and photonics. Students will be given weekly homework problems based on the material covered each week. Course Textbook: S. Chapra, Applied Numerical Methods with MATLAB, 3rd edition (McGraw-Hill, 2011).

OPT 533 QUANTUM OPTICS ATOM FLD INT

OPT 535 MODERN COHERENCE THEORY

OPT 544 ADVANCED LENS DESIGN

Complex zoom lenses and multi-mirror reflective systems are discussed detail starting with first principles. Other topics include materials for other wavelength bands, tolerancing, sensitivity analysis, monte carlo analysis, ghost and stray light analysis. Students required to complete two complex group design projects.

Offered: Fall

OPT 551 INTRO TO QUANTUM OPTICS

An introduction to quantum and semiclassical radiation theory with special emphasis on resonant and near-resonant interactions between atoms and optical fields. Topics covered include field quantization, Weisskopf-Wigner and Jaynes-Cummings models,

the optical Bloch equations, resonant pulse propagation, homogeneous and inhomogeneous broadening, adiabatic and non-adiabatic transitions, and dressed states.

Offered: Fall

OPT 561 ADVANCED IMAGING

Advanced topics in imaging, concentrating on computed imaging, Fourier-transform-based imaging, and unconventional imaging, with emphasis on imaging through aberrating media (particularly atmospheric turbulence), in mathematical depth. Topics are selected from the following: stellar (speckle, Michelson, and intensity) interferometry, wavefront sensing for adaptive optics, phase diversity; pupil-plane lensless laser imaging including 2-D and 3-D digital holography, imaging correlography, and X-ray diffraction imaging; Lyot coronography, synthetic-aperture radar, Fourier telescopy, Fourier-transform imaging spectroscopy, structured-illumination superresolution, optical coherence tomography, extended-depth-of-field imaging, and synthetic-aperture radar.

OPT 591 PHD READING COURSE

OPT 594 INTERNSHIP

OPT 595 PHD RESEARCH IN OPTICS

OPT 595A PHD RESEARCH IN ABSENTIA

OPT 595B PHD RSRCH IN ABSENTIA ABROAD

OPT 596 OPTICS COLLOQUIUM

Offered: Fall Spring

OPT 890 M.S. CO-OP PROGRAM IN OPT

OPT 894 CO-OP PROGRAM IN OPTICS

OPT 895 CONT OF MASTER'S ENROLLMENT

OPT 897 MASTER'S DISSERTATION

OPT 897A MASTERS IN ABSENTIA

OPT 897B MASTER'S IN ABSENTIA

OPT 899 MASTER'S DISSERTATION

OPT 899A MASTERS DISSERTATN ABSENTIA

OPT 985 LEAVE OF ABSENCE

OPT 986V FULL TIME VISITING STUDENT

OPT 987V PART TIME VISITING STUDENT

OPT 990 SUMMER IN RESIDENCE

OPT 995 CONT OF DOCTORAL ENROLLMENT

OPT 997 DOCTORAL DISSERATION

OPT 997A DOCT DISSERTATN IN ABSENTIA

OPT 997B PHD IN ABSENTIA ABROAD

OPT 999 DOCTORAL DISSERTATION

OPT 999A DOCT DISSERTATN IN ABSENTIA

OPT 999B DOC DISS IN-ABSENTIA ABROAD

PEC 575 POLITICAL ECONOMY I

Models-based course covering fundamental topics in theoretical political economy. Voting, electoral competition, special interest politics and political accountability. Highlights include institutional features shaping public policy and institutional design. Collective decisions viewed as outcomes of game played by individual decision-makers. Empirical motivations for and implications of the political economy models will be discussed.

PEC 582 POLITICAL ECONOMY II

Modern game-theoretic literature on models of voting and elections. Exposure to techniques and models used in this line of research. Topics include probabilistic voting, policy-motivated candidates, candidate entry, strategic voting, and issues of information in elections including uncertainty on the part of voters and candidates, and problems associated with private information in elections. Both complete and incomplete information models will be covered, students must have a working knowledge of Bayesian games prior to taking this course.

Offered: Spring

PH 101 INTRO TO PUBLIC HEALTH

Discussion of history and definitions of public health and emerging themes: Public Health Disparities (health and wealth; social justice); Issues in Public Health (lead poisoning; tobacco; obesity; emergency; clean water/air; injury; health systems/reform); and Global Health Issues (globalization and development; maternal and child health).

Offered: Fall Spring

PH 102 INTRO TO PUBLIC HEALTH II

Introduction to four core areas of public health: biostatistics, health policy and management, environmental health science, and social and behavioral sciences.

Offered: Spring

PH 103 CONCEPTS OF EPIDEMIOLOGY

Fundamental concepts underlying health-related information and health policy. Basic methodological principles used to describe disease occurrence in populations and identify causes of disease.

Offered: Fall

PH 116 INTRO TO THE U.S. HLTH SYSTM

The organization, financing, and functioning of the United States health care system. Also historical perspectives and the insights of international comparisons. Topics covered include the economics of U.S. health system, access to care, health policy and politics, and disability and disability politics.

PH 201 ENVIRONMENTAL HEALTH

This course covers the basic principles used to evaluate the potential human health risk of exposure to environmental contaminants in air, water, and food.

Offered: Spring

PH 201W ENVIRONMENTAL HEALTH

PH 206 FEMINISM GENDER AND HEALTH

PH 215 PUBLIC HEALTH ANTHROPOLOGY

Using a critical lens, this course examines how forms of social organization create global health for some groups and poor health for other groups.

Offered: Spring

PH 216 PEER HEALTH ADVOCACY

Contemporary issues for college students: alcohol, drugs, and sexual health topics. Focus on peer level interactions to encourage behavior change and conversational leadership among peer groups.

Offered: Fall

PH 217 PEER HEALTH ADVOCACY II

PH 230 LAW IN PUBLIC HLTH PRACTICE

The course is about the legal and social justice framework for urgent public health issues, such as regulation of vaccinations, e-cigarettes, and abortion.

Offered: Spring

PH 232 ENVIRONMENTAL HEALTH POLICY

Public health is shaped by environmental factors. This class examines policies for promoting public health with a focus on local problem-solving.

PH 236 HEALTH CARE AND LAW

This course provides an introduction to the legal foundations of health care in America. The material covers a broad range of legal issues in health care, including autonomy, privacy, liberty, and proprietary interests, from the perspective of the provider(s) and the patient.

Offered: Spring

PH 265 GLOBAL HEALTH

This course uses social theories to frame current issues in global health. Readings include critiques of development and ethnographic methods.

Offered: Spring

PH 299A FIELD WORK METHODS IN PH

Seminar for public health students scheduled for summer travel to Ladakh to work on the longitudinal tobacco control program with Dr. Chin.

Offered: Spring

PH 299B FIELD ANALYSIS

Seminar for students returning from the longitudinal tobacco control project in Ladakh. Emphasis is on data analysis and writing-up findings.

Offered: Fall

PH 300W SEMINAR IN BIOETHICS

Intended as a capstone experience, this course provides a setting in which students bring together what they have learned in the major and hone their skills by exploring in-depth two or three central issues in bioethics of particular interest to the participants.

PH 390 SUPERVISED TEACHING

PH 391 INDEPENDENT STUDY

PH 391W INDEPENDENT STUDY

PH 393 SENIOR PROJECT

PH 393W SENIOR PROJECT

PH 394 INTERNSHIP

PH 395 HONORS RESEARCH

PH 396A TEACHING ASSISTANT: PH 101

PH 396B TEACHING ASSISTANT:PH 103

PH 396C TEACHING ASSISTANT: PH 215

PH 396D TEACHING ASSISTANT: PH 265

PH 397W COMMUNITY ENGAGED INTERSHIP

This is a mentored field experience applying principles of community engaged practice in real world settings. Students work 8 hours/week with a community agency and attend a weekly 75-mintue on-campus seminar for discussion.

Offered: Fall Spring

PH 398A PH SENIOR HONORS RESEARCH

A year-long research project culminating in a written work supervised by a faculty thesis adviser and the program designated honors adviser.

Offered: Fall

PH 398B PH SENIOR HONORS SEMINAR

A year-long research project culminating in a written work supervised by a faculty thesis adviser and the program designated honors adviser.

Offered: Spring

PHL 101 INTRODUCTION TO PHILOSOPHY

Methods of philosophical inquiry and a variety of philosophical problems of perception and reality, personal identity, freedom and responsibility, existence of a supreme being, morality, knowledge and skepticism.

Offered: Fall Spring

PHL 102 ETHICS

Leading theories of right and wrong, good and evil, and related matters such as the functions of ethical language and the reality or unreality of moral knowledge.

Offered: Fall Spring

PHL 103 CONTEMPORARY MORAL PROBLEMS

Reasoned analysis of controversies concerning such matters as the death penalty, abortion, individual rights, sexual harassment and discrimination, global justice, terrorism and civil liberties, animal rights and the environment.

PHL 105 REASON AND ARGUMENT

Methods of identifying, interpreting, reconstructing, and evaluating reasoning found in speeches, essays, editorials, magazine articles, and scientific reports. Analytical methods mastered in this course do not include those of formal symbolic logic.

PHL 106 WRITING ACROSS DISCIPLINES

Formal theory of rational decisions and its philosophical foundations: General Introduction to Decision Theory, Decisions under Ignorance, Probability, Utility, Game Theory, and Social Choice Theory. No math beyond high school required.

PHL 110 INTRODUCTORY LOGIC

Symbolic logic through first-order quantification theory. Skill in deductive inference is strengthened through construction of proofs and other methods of a rigorously defined artificial language.

PHL 111 PHILOSOPHY OF RELIGION

Historical and recent readings are used to analyze issues such as: existence of God, divine attributes, the relation of God to the world, and faith and reason.

PHL 118 BUSINESS ETHICS

Questions and principles of business ethics: moral responsibilities of corporations, truth in advertising, sales practices, bribery, environmental issues, economic justice, nature of the employment contract, whistle-blowing, affirmative action, sexual harassment, corporate organization.

Offered: Spring

PHL 120 Engineering Ethics

Codes of ethics developed by the engineering profession refer to integrity, competence, leadership, commitment to enhancing the quality of life in the society and across the world, and protecting the natural and built environment. In this course we will explore these dimensions of professionalism and acquire a toolkit for principled decision-making, communication, and professional flourishing. We will focus on the value judgments that are integral to the engineering design process, while also examining the ways in which institutional settings influence decision-making. The pedagogy, written work, and evaluation in this course will be strongly oriented to case-based analysis.

PHL 125 GENDERED NATURE OF ACADEMIA

PHL 127 KNOW THYSELF:WISDOM/COG SCI

PHL 135 ENVIRONMENTAL ETHICS

An examination of central concepts and issues in environmental ethics, including the nature of and responsibility for current environmental crises, the varying responsibilities of individuals, institutions, and nations, the importance of sustainability, and the ultimate principles and values at stake.

PHL 152 SCIENCE AND REASON

The nature of science and its relationship to religion: Are there criteria that distinguish science from non-science? Is there such a thing as the scientific method? Has knowledge advanced steadily through the history of science? What role do values play in science? Do science and religion conflict? Is intelligent design science?

Offered: Spring

PHL 171 PHIL FOUNDATION OF FEMINISM

Contemporary feminist theory: the conception of women expressed through our practices, laws, theories and literature; equality and equal rights; sex roles and gender specific language; power relations and self-determination; marriage and maternity.

Offered: Spring

PHL 199 THE INFINITE

PHL 201 HISTORY OF ANCIENT PHILOSOPH

Survey of the origins of Western philosophy, from the Presocratics through Hellenistic philosophy six centuries later. The great philosophers of the Classical period, Socrates, Plato, Aristotle, are studied in detail.

PHL 202 HISTORY OF MODERN PHILOSOPHY I

Philosophical responses of the 17th and 18th centuries to the new science and methodology of Galileo and others. Readings from Galileo, Descartes, Leibniz, Newton, Locke, Berkeley, Hume, on methodology, motion, space and time, causality, perception, the mind-body problem.

Offered: Spring

PHL 212 PROB, INFRENCE & DECISION

PHL 214 LOGICAL METHODS

The tools of formal logic and set theory most widely used in contemporary philosophical analysis, such as modal propositional logic and applications: logics of necessity and possibility, tense logic, the logic of counterfactuals, modal predicate logic.

PHL 215 INTERMEDIATE LOGIC

PHL 216 MATHEMATICAL LOGIC

Metatheory of first-order logic. Relationships between validity and provability are addressed through proofs of the consistency and completeness of one or more systems.

PHL 217 UNCERTAIN INFERENCE

Analysis of inference outside logic and mathematics. Probability theory and nonmonotonic logic are used to address uncertainty arising from uncertain premises and rules of inference that are not truth preserving.

PHL 220 RECENT ETHICAL THEORY

Twentieth century classics on questions of moral theory: What makes some acts morally right? How could we ever know what has value and what we morally ought to do? Are there any universally applicable ethical norms, or is morality subjective or otherwise relative?

Offered: Spring

PHL 221 PHILOSOPHICAL FOUNDATIONS OF AMERICAN REVOLUTION

Political theory associated with the revolution and US Constitution, considered in historical context: predecessors such as John Locke, Montesquieu, and David Hume; works by Thomas Paine and Thomas Jefferson; the Federalist Papers and anti-Federalist works.

PHL 221W AMERICAN REVOLUTION

Political theory associated with the revolution and US Constitution, considered in historical context: predecessors such as John Locke, Montesquieu, and David Hume; works by Thomas Paine and Thomas Jefferson; the Federalist Papers and anti-Federalist works. Fulfills upper level writing requirement for the major.

PHL 223 SOCIAL & POLITICAL PHILOSOPHY

Nature and justification of government and democracy, conflict and revolution, relations between church and state, moral relations of individuals to government, individual freedom, economic justice. Classic and contemporary readings.

PHL 223W SOCIAL &POLITICAL PHILOSOPHY

Nature and justification of government and democracy, conflict and revolution, relations between church and state, moral relations of individuals to government, individual freedom, economic justice. Classic and contemporary readings. Fulfills upper level writing requirement for the major.

PHL 224 HISTORY OF ETHICS

Theories of ethics throughout history: Socrates, Plato, Aristotle, Augustine, Aquinas, Hume, Kant, Mill, Nietzsche.

PHL 224W HISTORY OF ETHICS

Theories of ethics throughout history: Socrates, Plato, Aristotle, Augustine, Aquinas, Hume, Kant, Mill, Nietzsche. Fulfills upper level writing requirement for the major.

PHL 225 ETHICAL DECISIONS IN MEDICINE

Principled examination of the ethical dimensions of medical decisions: respect for life, quality of life, patient privacy and autonomy, quality of care, conflicts of interest, allocation of health care resources.

PHL 225W ETHICAL DECISNS IN MEDICINE

Fulfills upper level writing requirement for the major.

PHL 226 PHILOSOPHY OF LAW

Theories of law and normative and conceptual problems in specific areas of law: transitional justice, jurisdiction, problems of legal interpretation, criminal attempts, the logic of fault, wrongful gain and compensation, moral limitations on freedom of contract, legal aspects of terrorism and torture, etc.

Offered: Spring

PHL 226W PHILOSOPHY OF LAW

Theories of law and normative and conceptual problems in specific areas of law: transitional justice, jurisdiction, problems of legal interpretation, criminal attempts, the logic of fault, wrongful gain and compensation, moral limitations on freedom of contract, legal aspects of terrorism and torture, etc. Fulfills upper level writing requirement for the major.

Offered: Spring

PHL 227 THE MEANING OF LIFE

Difficult questions about meaning in life are of perennial concern to philosophers and many other reflective people. The course looks closely and critically at these questions and traditional and contemporary answers.

PHL 228 PUBLIC HEALTH ETHICS

Examines the values of health, social needs, and freedom through a systematic examination of situations in which these conflicts arise. Public health ethics lie at the intersection of medicine, political philosophy, and public policy.

PHL 228W PUBLIC HEALTH ETHICS

Examines the values of health, social needs, and freedom through a systematic examination of situations in which these conflicts arise. Public health ethics lie at the intersection of medicine, political philosophy, and public policy. Fulfills upper level writing requirement for the major.

PHL 229 PHILOSOPHY OF EDUCATION

Theories and controversies about the nature and aims of education; boundaries of educational authority; educational adequacy, equality, and justice; learning, inquiry, knowledge, and critical thinking; the measurement of learning; moral and civic education; patriotism, evolution, and sex in the curriculum.

PHL 229W PHILOSOPHY OF EDUCATION

Theories and controversies about the nature and aims of education; boundaries of educational authority; educational adequacy, equality, and justice; learning, inquiry, knowledge, and critical thinking; the measurement of learning; moral and civic education; patriotism, evolution, and sex in the curriculum. Fulfills upper level writing requirement for the major.

PHL 230 ENVIRONMENTAL JUSTICE

Environmental justice and sustainability, both domestic and global, bringing philosophical and systems analysis to bear on environmental degradation, transparency and governance, climate change, the ethics of consumption and development, responsibility to future generations.

Offered: Spring

PHL 230W ENVIRONMENTAL JUSTICE

Environmental justice and sustainability, both domestic and global, bringing philosophical and systems analysis to bear on environmental degradation, transparency and governance, climate change, the ethics of consumption and development, responsibility to future generations. Fulfills upper level writing requirement for the major.

Offered: Spring

PHL 241 AESTHETICS

PHL 242 METAPHYSICS

Investigates topics in contemporary metaphysics, including questions about the existence and persistence conditions of abstract and material objects; the nature of space and time; the possibility of time travel; the status of quantum mechanics. No prior courses in science required.

PHL 242W METAPHYSICS

Investigates topics in contemporary metaphysics, including questions about the existence and persistence conditions of abstract and material objects; the nature of space and time; the possibility of time travel; the status of quantum mechanics. No prior courses in science required. Fulfills upper level writing requirement for the major.

PHL 243 THEORY OF KNOWLEDGE

Addresses these and related questions using contemporary philosophical readings: What is knowledge? Do people really know anything? What makes a belief justified or rational?

Offered: Fall

PHL 243W THEORY OF KNOWLEDGE

Addresses these and related questions using contemporary philosophical readings: What is knowledge? Do people really know anything? What makes a belief justified or rational? Fulfills upper level writing requirement for the major.

Offered: Fall

PHL 244 PHILOSOPHY OF MIND

An introduction to classic and contemporary problems in the philosophy of mind, this course investigates how the mind is related to the physical world. Topics include: What is the mind and how is it related to the brain? How is it possible for mental states to cause physical states, and vise versa? How do mental states get their intentional content? What is consciousness and can it be given a physical explanation? What are the minds of other beings - such as animals and artificially intelligent computers - like, and how could we know?

PHL 244W PHILOSOPHY OF MIND

An introduction to classic and contemporary problems in the philosophy of mind, this course investigates how the mind is related to the physical world. Topics include: What is the mind and how is it related to the brain? How is it possible for mental states to cause physical states, and vise versa? How do mental states get their intentional content? What is consciousness and can it be given a physical explanation? What are the minds of other beings - such as animals and artificially intelligent computers - like, and how could we know? Fulfills upper level writing requirement for the major.

PHL 247 PHILOSOPHY OF LANGUAGE

General nature of language and specific puzzles about language: the nature of truth and meaning, speech acts, reference, propositional attitudes, metaphor, understanding, interpretation, indeterminacy, etc.

PHL 247W PHILOSOPHY OF LANGUAGE

General nature of language and specific puzzles about language: the nature of truth and meaning, speech acts, reference, propositional attitudes, metaphor, understanding, interpretation, indeterminacy, etc. Fulfills upper level writing requirement for the major.

PHL 252 PHILOSOPHY OF SCIENCE

Survey of primarily metaphysical questions about science: Must the entities posited by a scientific theory exist for it to be successful? Do laws of nature govern the world or simply articulate patterns? How are lower and higher level scientific theories related to one another? Is scientific explanation primarily concerned with laws, with causes, or with something else?

Offered: Spring

PHL 252W PHILOSOPHY OF SCIENCE

Survey of primarily metaphysical questions about science: Must the entities posited by a scientific theory exist for it to be successful? Do laws of nature govern the world or simply articulate patterns? How are lower and higher level scientific theories related to one another? Is scientific explanation primarily concerned with laws, with causes, or with something else? Fulfills upper level writing requirement for the major.

Offered: Spring

PHL 256 DARWIN & RELIGION

Equal parts science, history, and philosophy, this course will examine the interaction between science and religion, especially as it pertains to Darwin's theory of evolution. Through primary and secondary readings, students will investigate: whether the relationship between science and religion has been primarily one of conflict or harmony; how religious context influenced both the formulation and acceptance of Darwin's theory; whether evolution is incompatible with common religious views; and the ongoing relevance of Darwinism to debates over the relationship between science and religion. These questions will be explored in part through an examination of Darwin's own evolving scientific, philosophical, and religious views. This course is reading-intensive and discussion-based.

PHL 256W DARWIN & RELIGION

Equal parts science, history, and philosophy, this course will examine the interaction between science and religion, especially as it pertains to Darwin's theory of evolution. Through primary and secondary readings, students will investigate: whether the relationship between science and religion has been primarily one of conflict or harmony; how religious context influenced both the formulation and acceptance of Darwin's theory; whether evolution is incompatible with common religious views; and the ongoing relevance of Darwinism to debates over the relationship between science and religion. These questions will be explored in part through an examination of Darwin's own evolving scientific, philosophical, and religious views. This course is reading-intensive and discussion-based. Fulfills upper level writing requirement for the major.

PHL 260 TOPICS IN PHILSOPHICAL THEOL

A seminar devoted to a selected topic in philosophy of religion.

Offered: Spring

PHL 260W TOPICS IN PHILSOPHICAL THEOL

Fulfills upper level writing requirement for the major.

PHL 264 MODERN JEWISH PHILOSOPHY

PHL 265 SELECT TOPICS IN ANCIENT PHILOSOPHY

Foundations of Ancient Greek philosophy from Presocratic to Hellenistic periods. Covers ancient Greek ethics, metaphysics and epistemology, philosophy of mind. Special attention to Plato and Aristotle.

PHL 265W SELECT TOP IN ANCIENT PHILOS

Foundations of Ancient Greek philosophy from Presocratic to Hellenistic periods. Covers ancient Greek ethics, metaphysics and epistemology, philosophy of mind. Special attention to Plato and Aristotle. Fulfills upper level writing requirement for the major.

PHL 267 BRITISH EMPIRICISM

Works of Francis Bacon, John Locke, and David Hume, examining their views on the nature of induction and empirical knowledge.

PHL 268 AUGUSTINE, ANSELM & AQUINAS

Three formative philosophical treatments of religious belief on such topics as the existence of God, freedom, providence, and evil.

PHL 270 SEL TOPICS IN MODERN PHIL

PHL 279 TRINITY,INCARNATION,ATONEMNT

PHL 285 LEGAL REASONING & ARGUMENT

PHL 291 SARTRE & HEIDEGGER

PHL 292 PHILOSOPHY OF ART

PHL 300 SEMINAR FOR MAJORS

Capstone seminar for philosophy majors, it serves as the main writing course for the major. Explores a limited number of changing topics in depth. Limited to students with concentrations and minors in philosophy.

Offered: Spring

PHL 311 SELECTED TOPICS IN BIOETHICS

Seminar on a limited number of changing topics in biomedical ethics.

PHL 311W SEMINAR IN BIOETHICS

Seminar on a limited number of changing topics in biomedical ethics. Fulfills upper level writing requirement for the major.

PHL 312 NEUROETHICS

PHL 312W NEUROETHICS

Fulfills upper level writing requirement for the major.

PHL 320 SELECTED TOPICS IN ETHICS

Seminar on a limited number of changing topics in ethics.

PHL 330 CaseBased Ethical Res

PHL 390 SUPERVISED TEACHING

Offered: Fall Spring

PHL 391 INDEPENDENT STUDY

The reading of philosophical literature under guidance, for seniors majoring in philosophy.

Offered: Spring

PHL 391W INDEPENDENT STUDY

The reading of philosophical literature under guidance, for seniors majoring in philosophy. Fulfills upper level writing requirement for the major.

PHL 392 HONORS TUTORIAL

Offered: Fall Spring

PHL 393 HONORS THESIS

Offered: Fall Spring

PHL 394 INTERNSHIP

Offered: Fall Spring

PHL 395 UNDERGRAD RESEARCH

Students with philosophy concentration or minor pursue 1:1 guided research proj. under direction of a full-time Phil Dept. faculty sponsor. With a paper written for another course, student seeks sponsor w/relevant expertise. Student will develop the paper

through research, analysis, and refinement of thesis and argument, to present to Phil. Council or Department. Submission for publication in an undergraduate philosophy journal and conference presentation is encouraged.

PHL 396 INTERNSHIP SEMINAR

Interns work with elementary school children, usually in the fourth and fifth grade, on thinking and writing strategies. Specific projects taken up in classes include organizing debates among students on contemporary issues, writing argumentative essays, and analyzing the persuasive techniques used in advertising. Interns spend several hours per week in their classes and attend biweekly internship meetings. Meetings will be scheduled at a mutually convenient time. Academic credit for the internship is based on a satisfactory report from the supervising teacher, participation in internship meetings, and a final paper which describes and reflects on the intern's classroom activities and examines the connections between those activities and selected readings.

Offered: Fall Spring

PHL 412 PROB, INFRENCE & DECISION

PHL 414 LOGICAL METHODS

Introduction to formal syntax and semantics, applied to modal logic, tense logic, free logic, subjunctive conditionals; elementary introduction to set theory.

PHL 415 INTERMEDIATE LOGIC

Whereas in a standard introductory logic course, students learn how to do proofs within a formal logical system, in this course, students learn how to do proofs about formal logical systems. The main goal is to learn how to prove the soundness and completeness of different sorts of logical systems. Along the way, other important results in Proof Theory and Model Theory are considered.

PHL 416 MATHEMATICAL LOGIC

This course is an introduction to the metatheory of first-order logic. The relationships between validity and provability are addressed through proofs of the consistency and completeness of one or more systems.

PHL 420 RECENT ETHICAL THEORY

The course will be a study of the work of major twentieth century philosophers on fundamental questions in ethics, such as: What is really meant by value terms like "good", "evil", "right", and "wrong"? How could we ever know what has value and what we morally ought to do? Are there any universally applicable ethical norms, or is morality subjective or otherwise relativized? Readings from Moore, Ross, Ayer, Stevenson, etc. This course may be taken for upper-level writing credit.

Offered: Spring

PHL 421 PHILOSOPHICAL FOUNDATIONS OF AMERICAN REVOLUTION

In this course, we will examine the philosophical foundations of the American Revolution by examining the political theory which lies behind the revolution itself and which underlies the foundations of the Constitution, while keeping an eye at the historical contexts that shaped the philosophy. We will begin by looking at the important predecessors to the revolution, particularly the works of John Locke, Montesquieu, and David Hume. We will then consider important works from the period surrounding the revolution, including works by Thomas Paine and Thomas Jefferson. Finally, we will look at the debates surrounding the adoption of the U.S. Constitution, including the Federalist Papers and important anti-Federalist works.

PHL 423 SOCIAL &POLITICAL PHILOSOPHY

An inquiry into the nature of human society, the role of the state, and relation of moral to legal obligations.

PHL 424 HISTORY OF ETHICS

A study of the theoretical thinking about ethics throughout history. The primary empjhasis is on Western figures, such as Socrates, Plato, Aristotle, Augustine, Aquinas, Hume, Kant, Mill, Nietzsche.

PHL 426 PHILOSOPHY OF LAW

This course will examine the nature of law in common law legal systems. It will proceed historically, beginning with Aquinas, mentioning Blackstone, examining Bentham and Austin, mentioning Gray, examining Holmes, Hart, and Dworkin. Topics

emphasized will include the relation between Law and Morality, the nature of legal interpretation, with emphasis on the role of precedent in common law, the nature of legal rules, and the issue of the completeness of law. Written work will include two short (ca. 5 pages) papers, mid-term, final exam, and periodic quizzes. Regular class attendance is expected.

Offered: Spring

PHL 428 PUBLIC HEALTH ETHICS

Examines the values of health, social needs, and freedom through a systematic examination of situations in which these conflicts arise. Public health ethics lie at the intersection of medicine, political philosophy, and public policy.

PHL 429 PHILOSOPHY OF EDUCATION

Theories and controversies about the nature and aims of education; boundaries of educational authority; educational adequacy, equality, and justice; learning, inquiry, knowledge, and critical thinking; the measurement of learning; moral and civic education; patriotism, evolution, and sex in the curriculum.

PHL 430 ENVIRONMENTAL JUSTICE

Environmental injustice occurs whenever some individual or group bears unjustifiable environmental risks, lack of access to environmental goods, or lack of opportunity to participate in environmental decision-making. This course will examine issues of environmental justice, both local and global, bringing philosophical analysis to bear on case studies and topics ranging from toxic exposure and land rights, to energy, global warming, and responsibility to future generations.

Offered: Spring

PHL 441 AESTHETICS

PHL 442 METAPHYSICS

PHL 443 THEORY OF KNOWLEDGE

The course examines some classic and contemporary themes in epistemology. The topics typically include the nature of knowledge and justification, the merits of skeptical arguments about the external world and induction, and recent work about disagreement and rationality. The graded work typically includes essay question tests and short to medium length papers on issues discussed in the course.

Offered: Fall

PHL 444 PHILOSOPHY OF MIND

An introduction to classic and contemporary problems in the philosophy of mind, this course investigates how the mind is related to the physical world. Topics include: What is the mind and how is it related to the brain? How is it possible for mental states to cause physical states, and vise versa? How do mental states get their intentional content? What is consciousness and can it be given a physical explanation? What are the minds of other beings - such as animals and artificially intelligent computers - like, and how could we know?

PHL 447 PHILOSOPHY OF LANGUAGE

The goal of the course is to examine a number of central philosophical problems about language (including the nature of linguistic meaning and its relation to truth, reference, communication, and necessity), while exploring the connections between these problems and issues in and about philosophy more generally.

PHL 452 PHILOSOPHY OF SCIENCE

PHL 456 DARWIN & RELIGION

Equal parts science, history, and philosophy, this course will examine the interaction between science and religion, especially as it pertains to Darwin’s theory of evolution. Through primary and secondary readings, students will investigate: whether the relationship between science and religion has been primarily one of conflict or harmony; how religious context influenced both the formulation and acceptance of Darwin’s theory; whether evolution is incompatible with common religious views; and the ongoing relevance of Darwinism to debates over the relationship between science and religion. These questions will be explored

in part through an examination of Darwin’s own evolving scientific, philosophical, and religious views. This course is reading-intensive and discussion-based.

PHL 460 TOPICS IN PHILSOPHICAL THEOL

See Religion and Classics, REL 291.

Offered: Spring

PHL 465 SELECTED TOPICS IN ANCIENT PHILOSOPHY: FOUNDATIONS

The course addresses central topics in ethics, metaphysics and epistemology and philosophy of mind in PreSocratic, Platonic, Aristotelian and Hellenistic philosophy.

PHL 467 BRITISH EMPIRICISM

The course examines the British Empiricist School's views on the nature of induction and empirical knowledge. Our readings will be drawn from the works of Francis Bacon, John Locke, and David Hume. There will be both lectures and class discussions.

PHL 468 AUGUSTINE, ANSELM & AQUINAS

Please see Religion and Classic REL 230.

PHL 470 SEL TOPICS IN MODERN PHIL

PHL 479 TRINITY,INCARNATION,ATONEMNT

PHL 491 MASTER'S READINGS IN PHL

Offered: Fall Spring

PHL 493 MASTER'S ESSAY

Offered: Spring

PHL 495 MASTER'S THESIS RESEARCH

Offered: Fall Spring

PHL 502 FORMAL EPISTEMOLOGY

We will study two or three leading recent issues in epistemology. Possibilities include the problem of easy knowledge, the possibility of rational peer disagreement, the relevance of practical considerations to knowledge, experimental epistemology, how knowledge is valuable, and the nature of evidence.

Offered: Spring

PHL 503 THEORY OF KNOWLEDGE

PHL 516 SEL TOP PHL OF LANGUAGE

This seminar is devoted to current issues in philosophy of language. Recent topics have included possible worlds, relativism, truth, propositions, deontic and epistemic modality.

PHL 517 SEL TOP ETHICS

Critical exploration of work in contemporary metaethics and normative ethical theory and its applications.

PHL 518 SEL TOPICS IN MORAL EPIST

PHL 521 ANCIENT PHIL: ARISTOTLE

Covers central issues and topics in Aristotle's philosophical writings. The topic to be discussed in a specific semester is determined by the instructor and announced in advance.

PHL 522 PLATO SEMINAR

Addresses central issues and topics in Plato's dialogues. The topic to be discussed in a specific semester is determined by the instructor and announced in advance.

Offered: Spring

PHL 527 SEL TOPICS IN MODERN PHL

Seminar focused on a topic or figure from early modern philosophy.

PHL 542 SPECIAL PROB IN METAPHYSICS

An examination of a particular branch of metaphysics. Examples include the metaphysics of properties, the nature of causation, the philosophy of time, and even metaphysical method.

Offered: Spring

PHL 552 SELECTED TOPICS IN PHL SCI

PHL 555 SEL TOP HX OF PHL AND MIND

PHL 560 WRITING SEMINAR

Study of recent articles; writing short commentaries, replies, criticisms. Covers various topics under guidance of several faculty members.

Offered: Fall Spring

PHL 580 SUPERVISED INSTRUCTN IN PHL

Supervised teaching of undergraduates, including leading discussion sections, grading tests and papers, and meeting with students.

Offered: Fall Spring

PHL 581 SUPERVISE INSTRUCT:LEC TO UN

Continuation of PHL 580, with practice lecturing to the undergraduate classes.

Offered: Fall Spring

PHL 591 PHD READINGS IN PHL

Offered: Fall Spring

PHL 594 INTERNSHIP

Offered: Fall Spring

PHL 595 PHD RESEARCH IN PHL

Offered: Fall Spring

PHL 595A PHD RESEARCH IN ABSENTIA

Offered: Fall Spring

PHL 895 CONT OF MASTER'S ENROLLMENT

Offered: Fall Spring

PHL 899 MASTER'S DISSERTATION

Offered: Fall Spring

PHL 985 LEAVE OF ABSENCE

Offered: Fall Spring

PHL 986V FULL TIME VISITING STUDENT

Offered: Fall Spring

PHL 995 CONT OF DOCTORAL ENROLLMENT

Offered: Fall Spring

PHL 997 DOCTORAL DISSERTATION

Offered: Fall Spring

PHL 999 DOCTORAL DISSERTATION

Offered: Fall Spring

PHL 999A DOCT DISSERTATN IN ABSENTIA

Offered: Fall Spring

PHY 099 INTRO MTH METHODS SCI & ENGR

(formerly PHY 101) A review of basic problem-solving techniques in pre-calculus mathematics (algebra, geometry, trigonometry) in the forms usually found in the equations of science and engineering. Prerequisite for PHY 121 and PHY 121P. Credit can be gained by passing the Basic Math Assessment Exam, offered in the first week of the semester. (0 credit, Fall semester, P/F only).

Offered: Fall

PHY 100 THE NATURE OF THE PHYSICAL WORLD

This is an introductory course designed especially for students in the humanities and other non-scientific fields who are interested in learning something about the physical world. Topics include the scale of the universe from galaxies to atoms and quarks; the fundamental forces of nature, motion and relativity, energy, electromagnetism and its everyday applications, the structure of matter, atoms, light and quantum mechanics.There are no prerequisites, no background knowledge is required and the material will be presented with very little mathematics. Substantial use will be made of demonstrations.

Offered: Fall Spring

PHY 101 INTRO MTH METHODS SCI & ENGR

Please see PHY 099

PHY 102 VISIONS OF THE MULTIVERSE

This is an introductory course designed especially for students in the humanities and other non-scientific fields who are interested in learning about science, physics and concepts (esp. scientific concepts) of a multiple universe reality. Topics include the nature of science, Newton's laws, relativity, light, quantum mechanics, the nature of particles and forces, and cosmology. In the course of surveying the modern scientific view of the universe, a number of serious concepts of a multiuniverse reality will be examined, including the many-worlds view of quantum mechanics, and fractal and cyclical cosmologies. There are no prerequisites, no background knowledge is required and the material will be presented with very little mathematics. Substantial use will be made of demonstrations. This course is intended to be equivalent to our Physics 100 course in terms of satisfying cluster requirements.

Offered: Spring

PHY 103 PHYSICS OF MUSIC

A study of the physical basis of musical phenomena with a focus on demonstration and experimentation. Theories of musical instruments acoustics, spectral analysis, room acoustics, and special topics selected by the class and instructor. Two lectures and one lab per week. Time in lab at the end of the semester is devoted to individual student projects, often involving construction and analysis of student instruments. The course is open to any student with a strong interest in both science and music.

Offered: Fall

PHY 104 UNCERTAINTY & CHANCE IN PHY

PHY 109 QUANTUM WORLD

This is an introductory course for non-physics major students who want to learn some basic principles of quantum mechanics. We plan to approach these concepts by relating them to human experience in everyday life. The course is designed with a lot of demonstrations, in many of which the students play a role of either quantum objects or the observers. The course is conceptual and the use of mathematics is limited to bare minimum. We plan to cover: - Properties of waves - Double-slit diffraction experiment - Particle in a box and quantization of states - Heisenberg’s uncertainty principle - Pauli principle and how to build an atom - The birth of new particles and the birth of the universe

Offered: Fall

PHY 113 GENERAL PHYSICS I

First semester of a two-course sequence suitable for students in the life sciences. Newtonian particle mechanics, including Newton's laws and their applications to straight-line and circular motions, energy; linear momentum, angular momentum; and harmonic motion; sound, wave properties, and fluid dynamics. Calculus used as needed. In addition to Two 75-minute lectures, One three-hour laboratory every other week and one workshop per week is required. Laboratory and workshop registration is done at the time of the course registration. This course is offered in the Fall, Spring and Summer Session I (A-6).

Offered: Fall Summer

PHY 113P GEN PHYSICS I (SELF-PACED)

First semester of a two-course sequence suitable for students in the life sciences. Newtonian particle mechanics, including Newton's laws and their applications to straight-line and circular motions, energy; linear momentum, angular momentum; and harmonic motion; Kepler's laws; planetary and satellite motions. Calculus used as needed. In addition to Two 75-minute lectures, One three-hour laboratory every other week and one work/shop/recitation per week is required. Laboratory and workshop registration is done at the time of the course registration. This course is offered in the Fall, Spring and Summer Session I (A-6).

PHY 114 GENERAL PHYSICS II

Second course of a two-semester sequence suitable for students in the life science. Electricity and magnetism, optics, electromagnetic waves; modern physics (introduction to relativity, quantum physics, etc.). In addition to the Two 75-minute lectures each week, One workshop/recitation each week and One approximately three-hour laboratory every other week is required. Laboratory and workshop registration is done at the time of the course registration. This course is offered in both the Spring, Summer Session II (B-6).

Offered: Spring Summer

PHY 114P GEN PHYSICS II (SELF-PACED)

Second course of a two-semester sequence suitable for students in the life science. Electricity and magnetism, optics, electromagnetic waves; modern physics (introduction to relativity, quantum physics, etc.). In addition to the Two 75-minute lectures each week, One workshop/recitation each week and One approximately three-hour laboratory every other week is required. Laboratory and workshop registration is done at the time of the course registration. This course is offered in both the Spring, Summer Session II (B-6).

PHY 121 MECHANICS

Course will make extensive use of geometry, algebra and trigonometry and simple integration and differentiation. Prior knowledge of introductory calculus (simple integration and differentiation) is required. Passing of the Math placement test (PHY 099) for PHY 121 is required. First semester of a three-course sequence for students planning to major in physics, other physical sciences, and engineering. Motion in one and two dimensions; Newton's laws; work and energy; conservation of energy; systems of particles; rotations; oscillations; gravity; thermodynamics. In addition to Two 75-minute lectures each week, One workshop each week and One three-hour laboratory every other week is required. Laboratory and workshop registration is done at the same time as the course registration. This course is offered in Spring and Summer session (A-6).

Offered: Spring Summer

PHY 121P MECHANICS MASTERY/SELF-PACED

Course will make extensive use of geometry, algebra and trigonometry and simple integration and differentiation. Prior knowledge of introductory calculus (simple integration and differentiation) is required. First semester of a three-course sequence for students planning to major in physics, other physical sciences, and engineering. Motion in one and two dimensions; Newton's

laws; work and energy; conservation of energy; systems of particles; rotations; oscillations; gravity; thermodynamics. Lectures are video-taped and accessed through Blackboard. Laboratory registration is done at the same time as the course registration.

Offered: Spring

PHY 122 ELECTRICITY & MAGNETISM

Second semester of a three-course sequence for students planning to major in physics, other physical sciences and engineering. Coulomb's Law through Maxwell's equations; electrostatics, electrical potential; capacitors; electric fields in matter; current and circuits; magnetostatics; magnetic fields in matter; induction, A.C. circuits; electromagnetic waves. In addition to Two 75-minutes lectures each week, One workshop each week and One three-hour laboratory every other week is required. The Laboratories and workshop registration is at the time of the course registration. Offered Fall, Summer Session II (B-6).

Offered: Fall Summer

PHY 122P ELECTRICITY&MAGN MASTERY/SELF-PACED

Second semester of a three-course sequence for students planning to major in physics, other physical sciences and engineering. Coulomb's Law through Maxwell's equations; electrostatics, electrical potential; capacitors; electric fields in matter; current and circuits; magnetostatics; magnetic fields in matter; induction, A.C. circuits; electromagnetic waves. The lectures and demonstrations are video-taped and put on Blackboard for student access. Workshop attendance is strongly recommended. One three-hour laboratory every other week is required. The Laboratories and workshop registration is at the time of the course registration. Offered Fall.

Offered: Fall

PHY 123 WAVES & MODERN PHYSICS

Third semester of a three-course sequence for students planning to majoring in physics, other physical sciences and engineering. Wave motion, physical optics, special relativity, photoelectric effect, Compton effect, X-rays, wave properties of particles. Schrödinger's equation applied to a particle in a box, penetration of a barrier, the hydrogen atom, the harmonic oscillator, the uncertainty principle, Rutherford scattering, the time-dependent Schrödinger equation and radioactive transitions, many electron atoms and molecules, statistical mechanics and selected topics in solid state physics, nuclear physics and particle physics. In addition to Two 75-minutes lectures each week, One workshop each week and One three-hour laboratory every other week is required. Laboratory and workshop registration is at the same time as the course registration. Offered in the Spring.

Offered: Spring Summer

PHY 141 MECHANICS (HONORS)

First semester of a three-course honors sequence, recommended for prospective departmental concentrators and other science or engineering students with interest in physics and mathematics. Topics studied are similar to those in PHY 121, but are covered in greater depth. These include symmetries, vectors, coordinate and velocity transformations, motion in one and two dimensions, Newton's Laws, work and energy, conservation of energy and momentum, special relativity, systems of particles, gravity and Kepler's laws, rotations, oscillations, molecular theory and thermodynamics. In addition to Two 75-minute lectures each week, One recitation each week and One three-hour laboratory every other week is required. The laboratory and recitation registration is at the same time as the course registration.

Offered: Fall

PHY 142 ELECTRICITY & MAGNETISM (HONORS)

Third semester of a three-course honors sequence (PHY 141, 143, 142), recommended for prospective departmental concentrators and other science or engineering students with a strong interest in physics and mathematics. Topics are the same as those of PHY 122 but in greater depth. These topics include Coulomb's Law through Maxwell's equations; electrostatics, electrical potential; capacitors; electric fields in matter; current and circuits; magnetostatics; magnet fields in matter; induction; A.C. circuits; waves.In addition to Two 75-minute lectures each week, One workshop each week and One three-hour laboratory every other week is required. The laboratories and workshop registration is at the same time as the course registration.

Offered: Fall

PHY 143 WAVES AND MODERN PHYSICS (HONORS)

Second semester of a three-course honors sequence, recommended for prospective departmental concentrators and other science or engineering students with a strong interest in physics or mathematics. Topics are the same as PHY 123 but in greater depth.

Introductory examinations of Bohr's atomic model; Broglie waves; momentum and energy quantization; Heisenberg's uncertainty relation; Schrodinger's cat; electron spin; photon interferenc;, and Bell's inequalities; selected applications to solid-state, nuclear, particle, and astrophysics. In addition to Two 75-minute lectures each week, One workshop each week and One three-hour laboratory every other week is required. The laboratories and workshop registration is at the same time as the course registration.

Offered: Spring

PHY 181 MECHANICS LABORATORY

Laboratories experiments in Mechanics: statistics and measurement; acceleration of gravity; conservation of energy and momentum; moment of inertia and oscillations; and mechanical equivalent of heat. This Laboratory uses the P/F University grading system.

Offered: Fall Spring

PHY 182 ELECTROMAGNETISM LAB

Laboratory experiments in electricity and magnetism: Coulomb's Law; electric fields; measurement of the absolute voltage and capacitance, electricity and magnetism of the electron; superconductivity; and electric circuits. This Laboratory uses the P/F University grading system.

Offered: Fall

PHY 183 MODERN PHYSICS LAB

Laboratory experiments in modern physics: velocity of sound; geometrical optics and imaging; the wave nature of light and microwaves; the spectrum of atomic hydrogen; and the Frank Hertz experiment. This Laboratory uses the P/F University grading system.

Offered: Spring Summer

PHY 184 EXPERIMENTS IN ELECTRICITY, MAGNETISM AND MODERN PHYSICS

Laboratory experiments in electricity, magnetism, and modern physics: Coulomb's Law; electric fields; electricity and magnetism ratio of the electron, superconductivity;, electric circuits; geometrical optics and imaging; the wave nature of light; and the spectrum of atomic hydrogen. This Laboratory uses the P/F University grading system.

Offered: Spring

PHY 217 ELECTRICITY & MAGNETISM I

Review of vector calculus; electrostatic field and potential; boundary value problems solved with orthogonal functions; the multiple expansion and dielectrics; the magnetic field and vector potential.

Offered: Fall

PHY 218 ELECTRICITY & MAGNETISM II

Electromagnetic induction; displacement current; Maxwell's equations; the wave equation; plane electromagnetic waves; Poynting vector; reflection and refraction; radiation; waveguides; transmission lines; propagation of light; radiation by charged particles; relativistic formulation of Maxwell's equations.

Offered: Spring

PHY 227 THERMODYNAMICS & STATISTICAL MECHANICS

Multiplicity of physical states, equilibrium entropy and temperature, Boltzmann factor and partition function, statistical approach to free energy, chemical potential, distribution functions for ideal classical and quantum gases. Applications to chemical reactions, thermal engines, equations of state and phase transitions, applications.

Offered: Spring

PHY 233 MUSICAL ACOUSTICS

PHY 235W CLASSICAL MECHANICS I

Mathematical introduction; review of elementary mechanics; central force problems; conservation theorems and applications; Fourier and Green's functions; variational calculus and Lagrangian multipliers; Lagrangian and Hamiltonian formulation of

mechanics is introduced and applied; oscillations; normal mode theory; rigid body dynamics. The course is designed to satisfy part of the upper-level writing requirement.

Offered: Fall

PHY 237 QUANTUM MECHANICS OF PHYSICAL SYSTEMS

Introduction to quantum mechanics with emphasis on applications to physical systems. Includes Schroedinger theory; solutions to the one-dimentional Schroedinger equation; the hydrogen atom; and selected applications from atomic and molecular physics; quantum statistics; lasers; solids; nuclei; and elementary particles.

Offered: Spring

PHY 243W ADVANCED EXPERIMENTAL TECHNIQUES I

Students work in pairs and each team is expected to perform three or four experiments from a variety of available setups such as Berry's phase with light, Universal chaos, lifetime of cosmic ray muons, optical pumping, electron diffraction's, etc. This is a hands-on laboratory with most experiments under computer control. This course can be used towards satisfying part of the upper-level writing requirement.

Offered: Fall

PHY 244W ADVANCED EXPERIMENTAL TECHNIQUES II

A continuation of PHY 243W with greater emphasis on independent research and construction of more complicated instrumentation. This course can be used to satisfy part of the upper-level writing requirement.

PHY 245W THE ADVANCED NUCLEAR SCIENCE EDUCATION LABORATORY

The students enrolled in ANSEL will develop a sophisticated understanding of our terrestrial radiation environment and of some of the important applications of nuclear science and technology. They will acquire practical skills in the routine use of radiation detectors, monitors, and electronics, and develop the ability to assess radiation threats and prospects of their abatement. The four in-depth ANSEL experiments are designed to help recreate a type of well-rounded, competent experimental nuclear scientist who is able to analyze an experimental problem, to select, design, and set up appropriate nuclear instrumentation, and to conduct required measurements. The laboratory sessions will meet twice a week for 2 hours and 40 minutes. The students are expected to write detailed lab reports on their work, and give a presentation on of their experiments at the end of the semester. In addition to the laboratory component of ANSEL students will attend a weekly lecture (1 hour and 15 minutes per week).

Offered: Spring

PHY 246 QUANTUM THEORY

Formalism of quantum theory with more advanced applications than PHY 237. Includes postulates of Quantum Mechanics; function spaces, Hermitian operators, completeness of basis sets; superposition, compatible observables, conservation theorems; operations in abstract vector space, spin and angular momentum matrices; addition of angular momentum; perturbation theory, and simple scattering theory.

Offered: Spring

PHY 251 INTRODUCTION TO CONDENSED MATTER PHYSICS

An emphasis on the wide variety of phenomena that form the basis for modern solid state devices. Topics include crystals; lattice vibrations; quantum mechanics of electrons in solids; energy band structure; semiconductors; superconductors; dielectrics; and magnets. (same as MSC 420, ECE224, ECE424, PHY420).

Offered: Spring

PHY 252 BIOMEDICAL ULTRASOUND

This course provides analyses of the physical bases for the use of high-frequency sound in medicine (diagnosis, therapy, and surgery) and biology. Topics include acoustic interactions of ultrasound with gas bodies (acoustic cavitation and contrast agents), thermal and nonthermal biological effects of ultrasound, ultrasonography, dosimetry, hyperthermia, and lithotripsy.

PHY 253 BIOLOGICAL PHYSICS

The course is designed for students of physical science or engineering background who are interested in biological and medical physics. Topics include fundamentals of biological physics, diffusive motion in biological system, thermal equilibrium and steady state, forces and energetics in biology, biochemical reaction, corporative transitions, biological membranes, neural system, and biophysical techniques. The materials are presented at the level of Nelson Biological Physics.

Offered: Fall Spring

PHY 254 NUCLEAR AND PARTICLE PHYSICS

This course is designed for physics majors interested in nuclear and particle physics. The course introduces the Standard Model of particle physics. The unification of electromagnetic and weak interactions is discussed. Higgs mechanism of electroweak symmetry is introduced. Finally, the fundamental interactions of elementary particles and their constituents are reviewed, with emphasis on issues pertaining to the conservation of quantum numbers and symmetries observed in high-energy collisions. (cross-listed with PHY 440).

Offered: Fall

PHY 255 INTRODUCTION TO FLUID DYNAMICS

Fluid properties; fluid statics; kinematics of moving fluids; the Bernoulli equation and applications; control volume analysis differential analysis of fluid flow; inviscid flow, plane potential flow; viscous flow, the Navier-Stokes equation; dimensional analysis, similitude; empirical analysis of pipe flows; flow over immersed bodies, boundaries layers, lift and drag. (cross-listed with ME225).

Offered: Fall

PHY 256 COMPUTATIONAL PHYSICS

Introduction of numerical and computational methods, with special emphasis on their utilities and applications in contemporary physics topics: Intro to programming language, numerical considerations, ordinary differential equations I & II, partial differential equations I & II, analysis of data, random numbers and evaluation, growth and fractal, Monte Carlo method.

Offered: Fall

PHY 257 ULTRASOUND IMAGING

Introduction to the principles and implementation of diagnostic ultrasound imaging. Topics include linear wave propagation and reflection, fields from pistons and arrays, beamfoaming, B-mode image formation, Doppler, and elastography. Project and final project. (Crosslisting PHY 467, BME 253/453, ECE 251/451)

Offered: Fall

PHY 258 ENERGY SCIENCE TECH SCTY

Interdisciplinary course on contemporary energy science, technology and policy issues, part of a sustainability minor. Historical development, present state and projected demands of US- American energy production and distribution within the boundary conditions of climate change and global competition. Provides scientific-technological knowledge of energy production and distribution technologies, energy efficiency, assessment of environmental and biological risks. Present energy policies and prospects for sustainable energy strategies. Student research projects use published data and simulated model energy scenarios. (Not open to freshman).

Offered: Spring

PHY 261 INTERFERENCE AND DIFFRACTION

Complex representation of waves; propagation of waves, diffraction; scalar diffraction theory; Fresnel and Fraunhofer diffraction and application to measurement; partially coherent light; diffraction and image formation; optical transfer function; coherent optical systems, optical data processing, and holography (same as OPT 261).

PHY 262 ELECTROMAGNETIC THEORY

Continuation of PHY 261. Vector analysis; microscopic and macroscopic forms of Maxwell's equations; energy flow in electromagnetic fields; dipole radiation from Lorentz atoms; partially polarized radiation; spectral linebroadening; dispersion; reflection and transmission; crystal optics; electro-optics; introduction to quantum optics (same as OPT 262).

PHY 371 NANOMETROLOGY LABORATORY

This is a required, 4-credit-hour course for the Certificate in Nanoengineering Program. It consists of three laboratory experimental modules accompanied by lecture materials: Module 1. Scanning electron microscopy (McIntyre); Module 2. Atomic force microscopy (Papernov); Module 3. Confocal microscopy (Lukishova). The laboratory components will use the facilities of the University of Rochester Integrated Nanosystems Center, the Institute of Optics and the Laboratory for Laser Energetics. Topics covered in the 50-min lab lectures include the nature of nanoscale surface forces in solids and principles of scanning force microscopy, function and capabilities of the scanning electron microscope, and confocal fluorescence microscopy of single nanoemitters. Students are expected to have completed a sequence in introductory physics with a strong performance in electromagnetism, the basics of modern physics and physical optics. Junior and Senior level.

Offered: Spring

PHY 373 PHYSICS & FINANCE

Introduction to econophysics and the application of statistical physics models to financial markets. Parallels between physical and financial phenomena will be emphasized. Topics will include random walks and Brownian motion, introduction to financial markets and efficient market theory, asset pricing and the Black-Scholes equation for pricing options. The course will also explore non-Gaussian Levy processes and the applicability of power law distributions and scaling to finance. Other possible topics include turbulence and critical phenomena in connection with market crashes. Cross listed as PHY373/573.

Offered: Spring

PHY 385 TEACHING & RESEARCH SEMINAR

Fall) - Noncredit course given once per week, required of all Teaching Interns and first-year graduate students. The seminar consists of lectures and discussions on various aspects of being an effective teaching assistant, including and cross-cultural issues. (Spring) - Noncredit course given once per week required for Teaching Interns (undergraduates) when topics of being an effective teaching assistant, including mid-semester evaluation. Optional attendance when members of the faculty discuss topics in their current area of research interest. (cross-listed with PHY 597).

Offered: Fall Winter

PHY 386 TEACHING INTERNSHIP I, PEDAGOGY TRAINING

This course is designed for an undergraduate to be a Workshop Leader Teaching Intern (TI) and can be taken by a Laboratory or Recitation Teaching Intern (TI), who plans to use this experience to fulfill part of the requirements for the Citation for achievement in College Leadership. Typically, the TI attends the weekly Workshop Leader Training meeting that offers specialized support and training in group dynamics, learning theory, and science pedagogy for students facilitating collaborative learning groups for science and social science courses. The TI teaches one workshop, laboratory, or recitation in the fall semester introductory physics courses: PHY 113, PHY 122, PHY 141 or PHY 142, and AST 111 . Additional requirements are: Attendance of the weekly content meetings with supervising professor, giving feedback to other leaders in a constructive evaluation process and a project designed in concert with the supervising professor and the PHY 386 instructor. (Course is similar to CAS 352).

Offered: Fall

PHY 388 TEACHING INTERNSHIP I

The student typically spends one or two semesters teaching an introductory physics laboratory section, working with a graduate TA. Faculty supervision is augmented by training, ongoing teaching seminars, and a constructive evaluation process. Student must formally apply by contacting Janet Fogg at 5-6679.

PHY 389 TEACHING INTERNSHIP II

The student typically spends one or two semesters teaching an introductory physics laboratory section, working with a graduate TA. Faculty supervision is augmented by training, ongoing teaching seminars, and a constructive evaluation process. Student must formally apply by contacting Janet Fogg at 5-6679.

PHY 390 SUPERVISED TEACHING

Introduction to the techniques of physics instruction, active observation, and participation in the teaching of an undergraduate course under the guidance of a faculty member. (Same as AST 390).

PHY 390A SUPERVISED TEACHING WITH LEADERSHIP FOCUS

This course is designed for an experienced undergraduate planning to be a Workshop Leader, Laboratory or Recitation Teaching Intern (TI), and who is planning to use this experience to fulfill part of the requirements for the Citation for achievement in College Leadership. The TI is expected to attend the weekly Leader Training meetings supporting PHY 386-387. In recognition of their experience, the TI will take on some mentoring and course organizational tasks. Students spend the semester teaching one workshop, laboratory or recitation section during the Fall/Spring semester introductory physics courses: PHY113, PHY114, PHY121, PHY122, PHY123, PHY141, PHY142, PHY143, AST111 & AST142. Additional requirements are: Weekly content meetings with supervising professor and giving feedback to other leaders in a constructive evaluation process. An additional project is required which may or may not coincide with the mentoring and course organizational tasks mentioned above. This course may be taken more than once.

PHY 391 INDEPENDENT STUDY

Independent study project under the direction of a faculty member of the Department of Physics and Astronomy.

Offered: Fall Spring Summer

PHY 391W INDEPENDENT STUDY

Normally open to seniors concentrating in physics. This course may be used to satisfy part of the upper level writing requirement.

Offered: Fall Spring Summer

PHY 393 SENIOR PROJECT

Completion of an independent research project under the direction of a faculty member of the Department of Physics and Astronomy.

Offered: Fall Spring Summer

PHY 393W SENIOR PROJECT

Completion of an independent research project under the direction of a faculty member of the Department of Physics and Astronomy. This course includes a writing component and can be used to satisfy part of the upper-level writing requirement.

Offered: Fall Spring Summer

PHY 395 SPECIAL TOPICS

Independent research project under the direction of a faculty member of the Department of Physics and Astronomy.

PHY 395W RESEARCH IN PHYSICS

Independent research project under the direction of a faculty member of the Department of Physics and Astronomy. This course includes a writing component and can be used to satisfy part of the upper-level writing requirement.

Offered: Fall Spring Summer

PHY 401 MATHEMATICAL METHODS OF OPTICS & PHYSICS

Study of mathematical techniques such as contour integration, transform theory, Fourier transforms, asymptotic expansions, and Green's functions, as applied to differential, difference, and integral equations. (Prior Titles: Complex Analysis and Diff Equations & Mathematical Methods of Theoretical Optics). (Cross-listed with OPT411).

Offered: Fall

PHY 403 DATA SCIENCE I: MODERN STATISTICS & EXPLORATION OF LARGE DATA SETS

Review the fundamentals of probability and statistics and learn to apply them in commonly encountered practical data analysis problems, including parameter estimation, hypothesis testing, regression, simulation, and advanced error analysis (both statistical and systematic). This course will have theoretical and practical components. Once the theoretical concepts are covered, the emphasis will be to apply them to actual calculations with data. Students will learn to use a software package employed in the manipulation and analysis of large data sets, and they will write their own computer programs to carry out calculations using supplied data sets.

PHY 405 GEOMETRICAL METHODS OF PHYSICS

Topological spaces. Manifolds. Vectors and Tensors. Lie groups. Riemannian Manifolds. Applications.

Offered: Fall

PHY 407 QUANTUM MECHANICS I

Quantum-mechanical axioms. Probability densities and currents. Boson representations of the oscillator. Angular momentum including Clebsch-Gordan coupling, spherical tensors, finite rotations, and applications to atoms and nuclei. Simple gauge transformations. Aharonov-Bohm effect. Bell's theorem. The SO(4) treatment of the hydrogen atom.

Offered: Fall

PHY 408 QUANTUM MECHANICS II

Symmetries including parity, lattice translations, and time reversal. Stationary-state and time-dependent perturbation theory, Stark and Zeeman effects, fine structure, transition probabilities. Scattering theory with applications. Elementary QED, multipole and plane-wave expansions, properties of the photon. The Dirac equation and elementary mass renormalization.

Offered: Spring

PHY 411 MECHANICS & CHAOTIC DYNAMICS

Lagrangian and Hamiltonian dynamics, canonical transformations, Hamilton-Jacobi equations, chaotic dynamics, periodic orbits, Stable and unstable orbits, Julia and Fatou sets, Convergence of Newton's Iteration, KAM theory. (Offered the first 8 weeks as 311A).

Offered: Fall

PHY 413 GRAVITATION

Motivation for a metric theory of gravity, principle of equivalence, principle of general covariance, mathematical tools, curvature tensor, Einstein field equations and solutions, energy momentum tensor, weak field approximation. Applications and optional topics include experimental tests; black holes; relativistic star models; cosmological models; early stages of evolution of the universe; gravitational waves.

Offered: Fall

PHY 415 ELECTROMAGNETIC THEORY I

An advanced treatment of electromagnetic phenomena. Electromagnetic wave propagation, radiation, and waveguides and resonant cavities, diffraction, electrodynamic potentials, multipole expansions, and covariant electrodynamics.

Offered: Fall

PHY 418 STATISTICAL MECHANICS

Review of thermodynamics; general principles of statistical mechanics; micro-canonical, canonical, and grand canonical ensembles; ideal quantum gases; applications to magnetic phenomena, heat capacities, black-body radiation; introduction to phase transitions. (Cross-listed with MSC418).

Offered: Spring

PHY 420 INTRODUCTION TO CONDENSED MATTER PHYSICS

An emphasis on the wide variety of phenomena that form the basis for modern solid state devices. Topics include crystals; lattice vibrations; quantum mechanics of electrons in solids; energy band structure; semiconductors; superconductors; dielectrics; and magnets.

PHY 434 QUANTUM & NANO OPT LAB

This advanced optics teaching laboratory course will expose students to cutting-edge photon counting instrumentation and methods with applications ranging from quantum information to biotechnology and medicine. It will be based on quantum information, the new, exciting application of photon counting instrumentation. As much as wireless communication has impacted daily life already, the abstract theory of quantum mechanics promises solutions to a series of problems with similar impact on the twenty-first century. Major topics will be entanglement and Bells inequalities, single-photon interference, single-emitter confocal fluorescence microscopy, Hanbury Brown and Twiss correlations/photon antibunching. Photonic based quantum computing and quantum cryptography will be outlined in the course manuals as possible applications of these concepts and tools. The full course will consist of four laboratory experiments and a special final meeting of students oral presentations.

Offered: Fall

PHY 435 PRINCIPLES OF LASERS

This course provides an up-to-date knowledge of modern laser systems. Topics include quantum mechanical treatments to two-level atomic systems, optical gain, homogeneous and inhomogenous broadening, laser resonators and their modes, Gaussian beams, cavity design, pumping schemes, rate equations, Q switching, mode-locking, various gas, liquid, and solid-state lasers.

PHY 437 NON-LINEAR OPTICS

Fundamentals and applications of optical systems based on the nonlinear interaction of light with matter. Topics to be treated include mechanisms of optical nonlinearity, second-harmonic and sum and difference-frequency generation, photonics and optical logic, optical self-action effects including self-focusing and optical soliton formatin, optical phase conjugation, stimulated Brillouin and stimulated Raman scattering, and selection criteria of nonlinear optical materials., (Cross-listed OPT 467).

PHY 440 NUCLEAR AND PARTICLE PHYSICS

This course is designed for physics majors interested in the development of nuclear and particle physics. The course describes the properties of nuclei and various models useful for the description of nuclear properties. The models and ideas include the liquid drop model, shell model, collective model, radioactivity, fission, and fusion. Properties of particle interactions with matter are covered, and used to develop principles of detections used in nuclear and particle experiments. The physical ideas behind various existing accelerators are discussed. Finally, the fundamental interactions of elementary particles and their constituents are reviewed, with emphasis on issues pertaining to the conservation of quantum numbers and symmetries observed in the high-energy collisions. (Cross-listed with PHY 254).

Offered: Fall

PHY 445 ADVANCED NUCLEAR SCIENCE EDUCATION LABORATORY

The students enrolled in ANSEL will develop a sophisticated understanding of our terrestrial radiation environment and of some of the important applications of nuclear science and technology. They will acquire practical skills in the routine use of radiation detectors, monitors, and electronics, and develop the ability to assess radiation threats and prospects of their abatement. The four in-depth ANSEL experiments are designed to help recreate a type of well-rounded, competent experimental nuclear scientist who is able to analyze an experimental problem, to select, design, and set up appropriate nuclear instrumentation, and to conduct required measurements. The laboratory sessions will meet twice a week for 2 hours and 40 minutes. The students are expected to write detailed lab reports on their work, and give a presentation on of their experiments at the end of the semester. In addition to the laboratory component of ANSEL students will attend a weekly lecture (1 hour and 15 minutes per week).

Offered: Spring

PHY 454 INTRODUCTION TO PLASMA PHYSICS

Orbit theory, adiabatic invariants, collective effects, two-fluid and MHD equations, waves in plasma, transport across magnetic fields and in velocity space. (same as ME 434). (Course was listed as PHY 426).

Offered: Fall

PHY 455 INTRODUCTION TO PLASMA PHYSICS II

Vlasov equation, Landau damping. VanKampen modes, two-stream instability, micro-instabilities, introduction to kinetic theory, shield clouds, Thomson scattering, and the Fokker-Planck equation.

PHY 456 COMPRESSIBLE FLOW

Acoustics; linearized equations for homogeneous media; mathematical theory of linear waves; waves in stratified atmospheres; geometrical acoustics. Finite amplitude compressible flow; one-dimensional waves and the theory of characteristics; shock waves; steady two-dimensional flow. Radiative transfer; emission and absorption in gases; equation of radiative transfer; radiative effects on waves. (Cross-listed with ME 436).

Offered: Fall Spring

PHY 457 CONTINUUM MECHANICS

The study of incompressible flow covers fluid motions which are gentle enough that the density of the fluid changes little or none. Topics: Conservation equations. Bernoulli’s equation, the Navier-Stokes equations. Inviscid flows; vorticity; potential

flows; stream functions; complex potentials. Viscosity and Reynolds number; some exact solutions with viscosity; boundary layers; low Reynolds number flows. Waves.

PHY 458 GEOMETRIC METHODS

This course will focus on applying methods of Riemannian geometry to fluid mechanics. At an elementary level, it involves using curvilinear co-ordinates to solve Euler and Navier-Stokes equations in various geometries; e.g., rotating and self-gravitating fluids. At a deeper level, the Euler equations are the geodesic equations in the infinite dimensional group of volume preserving diffeomorphisms. We can understand the instabilities of a fluid in terms of the sectional curvature of this space (the work of Arnold). Flow along the principal directions of this metric relates this back to "force-free" flows in fluid mechanics. Self-gravitating fluids of interest in astrophysics, relativistic fluids of nuclear physics,fluids near a critical point and quantum fluids such as Bose condensates will also be studied this way.

PHY 462 MEDICAL IMAGING THEORY & IMPLEMENTATION

Physics and implementation of X-ray, ultrasonic, and MR imaging systems. Special attention is given to the Fourier transform relations, reconstruction algorithms of X-ray and ultrasonic-computed tomography, and MRI.

PHY 464 BIOLOGICAL PHYSICS

Physical aspects of special topics in biology. The purpose of this course is to survey several important areas of biological and medical physics. Topics covered include properties of biological membranes, transport and signaling in cells and tissue, photosynthesis, magnetic resonance imaging, and physical methods in biology such as nuclear magnetic resonance, x-ray diffraction, and optical absorption and fluorescence spectroscopies. The material is presented at the level of Russeu K. Hobbie's, Intermediate Physics for Medicine and Biology. (Cross listed with PHY 253).

PHY 467 ULTRASOUND IMAGING

Introduction to the principles and implementation of diagnostic ultrasound imaging. Topics include linear wave propagation and reflection, fields from pistons and arrays, beamfoaming, B-mode image formation, Doppler, and elastography. Project and final report. (Crosslisting PHY 257, BME 253/453, ECE 251/451).

Offered: Fall

PHY 490 SPECIAL TOPICS

PHY 491 MASTER'S READINGS IN PHYSICS

Special study or work, arranged individually for master’s candidates.

PHY 492 CERTIFICATE IN TEACHING OF COLLEGE PHYSICS OR PHYSICS AND ASTRONOMY

After serving as a lead Teaching Assistant (TA), the student teaches a course during the University!=s summer session. Students successfully completing the Graduate Teaching program are awarded a Certificate of College Teaching in Physics and Astronomy to be presented during the graduation ceremony in May. Please visit department website for more information

Offered: Summer

PHY 495 MASTER'S RESEARCH IN PHYSICS

PHY 497 CERTIFICATE IN COLL TEACHING

PHY 498 SUPERVISED TEACHING ASSISTANT I

This course is designed for a student to be Laboratory or Recitation Teaching Assistant (TA). Typically, the student spends the semester teaching two laboratories or up to four recitations during the Fall semester for the introductory physics courses: PHY 113, PHY 122, PHY 141, PHY 142, or introductory astronomy course: AST 111, or teaching one or more recitation(s): AST 111, PHY 113, PHY 122, PHY 141, PHY 142, or a 200 level undergraduate physics or astronomy course. Attendance of the weekly teaching seminars PHY 597-Fall, giving feedback to other leaders, and a constructive evaluation process are required. This course is non-credit and may be taken more than once.

Offered: Fall

PHY 499 SUPERVISED TEACHING ASST II

Continuation of PHY 498.

PHY 501 ADV MATH METHODS IN OPTICS

PHY 511 FIELD THEORY

Path integral formulation of quantum mechanics, free harmonic oscillator, fermionic oscillator, instantons, free scalar field, Green's functions, generating functional statistical mechanics as Euclidean field theory, partition function as a path integral, free Bose gas, interacting quanta, Green's functions and scattering amplitudes at tree level, symmetry, Ward identities, symmetry breaking and Goldstone theorem, effective action at one loop, 1d Ising model, 2d Ising model, duality, high and low temperature expansions, transfer matrix, scaling of coupling with lattice size.

Offered: Fall

PHY 512 RENORMALIZATION

Background and introduction to renormalization, one loop divergences in perturbation theory, and Callan Symanzik equation. The Renormalization group and Wilson's point of view, effective actions, and operator product expansion.

Offered: Spring

PHY 519 Statistical Mechanics II

A continuation of PHY 418, involving the theory of imperfect gases, phase transition, and Brownian motion.

PHY 521 CONDENSED MATTER I

Classification of solids by crystal lattice, electronic band structure, phonons, and optical properties; X-ray diffraction, neutron scattering, and electron screening. (same as MSC 550, also offered first 8 weeks as P321A).

Offered: Fall

PHY 522 CONDENSED MATTER PHYSICS II

Electron-phonon interaction, transport, magnetism, and topics of current interest such as superconductivity or localization, to be determined by the instructor. (same as MSC 551).

PHY 525 DATA SCIENCE II: COMPLEXITY AND NETWORK THEORY

As the number of interacting degrees of freedom (or agents) in a given system increases, its behavior often changes qualitatively, and not only quantitatively. Complexity is the emerging field of research, which investigates the shared underlying concepts and principles of such systems. It finds its applications in Physics, Computer Science, Mathematics, Biology, Social Sciences, Economy, and more. In this introductory course we will focus on these common features and their utilization in understanding complex systems. They will include for example: Fractals, non-linearity and chaos, adaptation and evolution, critical and tipping points, patterns formation, networks modeling, feedback loops, emergence and unpredictability, etc. Students in the course will be given ample opportunities to study farther these systems and/or techniques that are of particular interest to them. Prerequisites include basic knowledge in differential equations, linear algebra, and probability.

Offered: Fall

PHY 526 SPIN BASED ELECTRONICS

One example in the research of spin-based electronics (spintronics) which is motivated by the natural ordering of ferromagnetic phase can add to large scale electronics circuits. Generally speaking, we are left to manipulate the information whereas nature takes care of preserving it. The course is intended for students who are interested in research frontiers of future electronics technologies. The course begins with introduction to the basic physics of magnetism and of quantum mechanical spin. Then it covers aspects of spin transport with emphasis on spin-diffusion in semiconductor. (crosslisted with ECE 520/MSC 520).

Offered: Spring

PHY 527 INTRODUCTION TO COMPUTATIONAL NEUROSCIENCE

Computational Neuroscience in Physics. See BCS 547.

PHY 531 INTRODUCTION TO QUANTUM OPTICS

Classical and quantum mechanical theories of the interaction of light with atoms and molecules, with emphasis on near resonance effects, including coherent nonlinear atomic response theory, relaxation and saturation, laser theory, optical pulse propagation, dressed atom-radiation states, and multi-photon processes. (same as OPT 551).

Offered: Fall

PHY 532 QUANTUM OPTICS OF THE ELECTROMAGNETIC FIELD

Properties of the free quantized electromagnetic field, quantum theory of coherence, squeezed states, theory of photoelectric detection, correlation measurements, atomic resonance fluorescence, cooperative effects, quantum effects in nonlinear optics.

Offered: Spring

PHY 533 QUANTUM OPTICS OF THE ATOM-FIELD INTERACTION

Subject matter to be selected from topics of current interest in quantum optics. (same as OPT 553).

Offered: Fall

PHY 535 MODERN COHERENCE THEORY

Theory of random process, stationarity ergodicity, the auto-correlation function and the cross-correlation function of random process. Spectrum of a stationary random process and the Wiener-Khintchine theorem, Second-order coherence theory in the space-time domain, the mutual coherence function, the degree of coherence. Second-order coherence theory in the space-frequency domain, the cross spectral density, mode representation, propagation problems. Inverse radiation problems, effects of source correlations and scattering of partially coherent light from deterministic and from random media. (same as OPT 592).

Offered: Spring

PHY 553 LASER-PLASMA INTERACTIONS

Breakeven conditions for inertial confinement fusion. The coronal plasma. Inverse bremsstrahlung absorption. Resonance absorption. Parametric instabilities. Nonlinear plasma waves. Zakharov equations and collapse.

PHY 554 COSMOLOGY

Introduction to cosmology, covering the following broad topics: Introduction to the universe, introduction to general relativity, cosmological models and Fridemann-Walker universe, thermodynamics of early universe, particle physics of the early universe, and the formation of large-scale structure (Same as AST 554).

Offered: Fall

PHY 556 HYDRODYNAMIC STABILITY & TURBULENCE

Introduction to probability theory, stochastic processes, and statistical continuum theory. Experimental facts of turbulent motion. Kinematics and dynamics of homogeneous turbulence. Isotopic turbulence. The closure problem. Hopf's functional formalism and its generalizations. Mixing-length and phenomenological theories. Turbulent shear flows. Transition from laminar to turbulent shear flows. The general concept of stability theory.

Offered: Spring

PHY 558 INTRO-INERTIAL CONFINEMENT FUSION

Fusion energy. Lawson criterion for thermonuclear ignition. Fundamentals of implosion hydrodynamics, temperature and density in spherical implosions. Laser light absorption. Implosion stability. Thermonuclear energy gain.(Cross-listed with ME 533).

PHY 573 PHYSICS AND FINANCE

Introduction to econophysics and the application of statistical physics models to financial markets. Parallels between physical and financial phenomena will be emphasized. Topics will include random walks and Brownian motion, introduction to financial markets and efficient market theory, asset pricing and the Black-Scholes equation for pricing options. The course will also explore non-Gaussian Levy processes and the applicability of power law distributions and scaling to finance. Other possible topics include turbulence and critical phenomena in connection with market crashes. Cross listed as PHY373/573.

Offered: Spring

PHY 581 PARTICLE PHYSICS I

Particle interactions the their symmetries. The particle spectrum and its classification. Calculation of elementary processes. The quark model. CP violation. Accelerators and experimental techniques. (Cross-listed with 381A)

Offered: Spring

PHY 582 PARTICLE PHYSICS II

Electroweak theory, and experimental evidence in support of it. Gauge theories and spontaneous symmetry breaking. QCD and color SU(3). Grand unification and recent advances. Particles and cosmology.

Offered: Fall

PHY 591 PHD READINGS IN PHYSICS

Special study or work, arranged individually.

PHY 593 QUANTUM NANOSTRUCTURES

PHY 594 INTERNSHIP

PHY 594A INTERNSHIP

PHY 595 PHD RESEARCH IN PHYSICS

PHY 595A PHD RESEARCH IN ABSENTIA

PHY 595B PHRSRCH IN ABSENTIA ABROAD

PHY 597 TEACHING & RESEARCH SEMINAR

A (Fall) - Noncredit course given once per week, required of all first-year graduate students. The seminar consists of lectures and discussions on various aspects of being an effective teaching assistant, including interactions with undergraduate student body and cross-cultural issues. B (Spring) - Noncredit course given once per week required of all first-year graduate students. Members of the faculty discuss topics in their curent area of research interest.

Offered: Fall Spring

PHY 598 TEACHING WORKSHOP LEADER PEDAGOGY TRAINING

This course is designed for a student to be a Workshop Leader Teaching Assistant (TA). Typically, the TA attends the weekly Workshop Leader Training meeting that offers specialized support and training in group dynamics, learning theory, and science pedagogy for students facilitating collaborative learning groups for science and social science courses. The TA teaches three to four workshops in one of the fall semester introductory physics courses: PHY 113, PHY 122, PHY 141 or PHY 142. Additional requirements are: Attendance of the weekly Graduate Teaching Seminars PHY 597-Fall, giving feedback to other leaders and a constructive evaluation process. This course is non-credit and may be taken more than once.

PHY 599 PEDAGOGY & GROUP LEADERSHIP

This course is designed as a follow-up course for an experienced Workshop Leader, titled a lead Workshop Leader Teaching Assistant (TA). Typically, the TA attends the weekly Workshop Leader Training meeting that offers specialized support and training to develop leadership skills, to foster ongoing communication among faculty members and study group leaders, and to provide an environment for review of study group related issues. Students spend the semester teaching three to four workshops during the Spring semester introductory physics courses.

PHY 895 CONT OF MASTER'S ENROLLMENT

PHY 897 MASTERS DISSERTATION

PHY 899 MASTER'S DISSERTATION

PHY 985 LEAVE OF ABSENCE

PHY 986V FULL TIME VISITING STUDENT

PHY 990 SUMMER IN RESIDENCE

PHY 995 CONT OF DOCTORAL ENROLLMENT

PHY 997 DOCTORAL DISSERTATION

PHY 997A DOCT DISSERTATN IN ABSENTIA

PHY 997B DOC DISS IN-ABSENTIA ABROAD

PHY 999 DOCTORAL DISSERTATION

PHY 999A DOCT DISSERTATN IN ABSENTIA

PHY 999B PHD IN-ABSENTIA ABROAD

POL 101 ELEMENTARY POLISH I

Introduction to the basic structures of the language and the vocabulary of everyday situations. The emphasis is on spoken Polish.

Offered: Fall

POL 102 ELEMENTARY POLISH II

Further introduction to the basic structures of the language and the vocabulary of everyday situations. The emphasis is on spoken Polish.

Offered: Spring

POL 151 INTERMEDIATE POLISH

Designed for students with previous study of the language. A reading, writing and conversation course conducted in Polish, with emphasis on everyday use of Polish language. Systematic vocabulary building and grammar review. Reading of selected texts like newspaper articles, poetry, use of film clips and various video material.

Offered: Fall

POL 157 POLISH IN POLAND

Offered on location in Krakow. A multi-level course designed to introduce students to the Polish language or to improve the knowledge of Polish they already possess.

POL 201 POLISH REVIEW

The main objective of this course is to refine the participants' language skills and to familiarize them with the history, literature and culture of Poland. The course will require a working knowledge of Polish language necessary to discuss the content of the source materials. It will focus on group discussions based on source materials and papers prepared by it's participants.

Offered: Spring

POL 201A POLISH ART: PAST & PRESENT

POL 224 LESSONS IN POLISH LITERATURE

Offered on location in Krakow. A presentation of some of the most interesting problems in the thousand-year history of Polish culture. Literary masterpieces of the past and present, including poetry of the two Nobel Prize winners - Czes#aw Mi#osz (1980) and Wis#awa Szymborska (1996), Polish Romanticism; culture in a political context; the phenomenon of exiled culture, literature and totalitarianism, and other "great questions" of Polish culture will be discussed.

POL 225 THE HOLOCAUST AND ITS MEMORY IN EASTERN EUROPE

The Holocaust, that is "the state-sponsored persecution and murder of European Jews by Nazi Germany and its collaborators between 1933 and 1945" (Holocaust Encyclopedia, Washington: US Holocaust Memorial Museum, 2012), occurred largely in Eastern Europe, that is, the countries which were under the communist rule from after the Second World War until 1989–91 and which are now independent states. The general objective of this course will be to study how the various nations in Eastern Europe remember the Holocaust over seventy years thereafter and how these memories have developed since after the war. The objective will also be to analyze to what extent the cosmopolitanization and Europeanization of Holocaust memory occurred in Eastern Europe. The course will base upon the historiography of the Holocaust. It will employ the theories and methods of cultural and social memory studies. It will also use the social theory of cosmopolitanism and theories of Europeanization.

POL 268 POST-1989 POLISH CULTURE THROUGH FILM, LITERATURE, AND DIGITAL MEDIA

The main objective of the course is to familiarize students with contemporary Polish culture through a comparative media studies approach. In addition to studying movies, fiction, non-fiction, and graphic novels, we will explore new genres such as electronic literature, popular memes,and independent games. We will examine how digital media shape the contemporary use of text and the process of remediation between analog and digital forms. We will apply this media-based and comparative approach to study contemporary Poland and its culture.

POL 284 ANTHROPOLOGY OF TOURISM

POL 390 SUPERVISED TEACHING

POL 391 INDEPENDENT STUDY

POL 394 INTERNSHIP

POL 425 THE HOLOCAUST AND ITS MEMORY IN EASTERN EUROPE

POL 468 POST-1989 POLISH CULTURE THROUGH FILM, LITERATURE, AND DIGITAL MEDIA

POR 101 ELEMENTARY PORTUGUESE I

Portuguese is the official language of approximately 240 million people in eight countries on four continents. After English and Spanish, it is the third most widely spoken European language, and the sixth most spoken language in the world. Portuguese is the official language of Brazil, the fifth most populous country in the world, the largest country in Latin America, and the fifth largest global economic power. Across Africa and Asia, Portuguese continues to be an important element of a complex cultural mosaic. Moreover, Portuguese is widely spoken outside of its officially recognized borders by over two million people across the U.S., Canada, and in other corners of the global diaspora. This course is designed for beginners who wish to master the basic structures and vocabulary of the language. Students learn the language and culture by practicing four main language skills: listening, speaking, reading and writing.

Offered: Fall

POR 102 ELEMENTARY PORTUGUESE II

Portuguese 102 is the second course of the elementary sequence. The general goal of the course is to develop basic language skills. During this course, students will: - Continue to build a vocabulary base in order to increase language skills; - Continue to use acquired vocabulary and grammatical structures; - Develop knowledge of the grammar structures associated with, but not limited to: talking about events in the present; talking about completed past events; expressing continuing events; describing daily routines and habits; - Listen to passages or conversations and discuss their content; - Read authentic texts and discuss their content; - Write paragraphs and short compositions using acquired vocabulary and grammatical structures; - Engage in and sustain face-to-face conversation with others about topics studied.

Offered: Spring

POR 151 INTERMEDIATE PORTUGUESE I

Portuguese 151 is the first intermediate course in Portuguese. In POR 151, you will continue to expand your knowledge of Portuguese vocabulary and grammar structures while engaging in activities geared toward promoting intermediate proficiency in the language. It includes authentic texts readings and discussions, as well as writing and engage in and sustain face-to-

face conversation with others about topics studied. As far as Portuguese is concerned, the terms “lecture” and “recitation” conventionally used to identify the blocks have a purely bureaucratic significance and do not reflect in any way the pedagogical approach of the course. Portuguese is the primary language of instruction.

Offered: Fall

POR 152 INTERMEDIATE PORTUGUESE II

Portuguese 152 is the second intermediate course in Portuguese. In POR 152, you will continue to expand your knowledge of Portuguese vocabulary and grammar structures while engaging in activities geared toward promoting intermediate proficiency in the language. It includes authentic texts readings and discussions, as well as writing and engage in and sustain face-to-face conversation with others about topics studied. As far as Portuguese is concerned, the terms “lecture” and “recitation” conventionally used to identify the blocks have a purely bureaucratic significance and do not reflect in any way the pedagogical approach of the course. Portuguese is the primary language of instruction.

Offered: Spring

PPC 422 PHOTOGRAPHIC PROCESSES

This course acts as an introduction to photographic preservation through the investigation of historic photographic materials.

Offered: Fall

PPC 423 COLLECTIONS MANAGEMENT AND CARE

This course provides an overview of collection registration and cataloguing.

Offered: Spring

PPC 424 HISTORY OF PHOTOGRAPHY II

Offered: Spring

PPC 425 CATALOG & RESEARCH METHODS

The cataloging portion of the class is designed to familiarize students with the basic principles behind descriptive and subject cataloging. The research methods component is dedicated to teaching the methodologies that will allow students to undertake scholarly projects focused on the history of photography.

Offered: Spring

PPC 430 HIST OF PHOTO: 1839-1915

This class traces the emergence of photographic consciousness in the 19th century as it develops within a number of specific arenas of culture & representation, from the medium’s conception in the early 19th century to its modernization in the early 20th century.

Offered: Fall

PPC 460 MASTERS SEMINAR

PPC 491 INDEPENDENT STUDY

PPC 492 MASTER'S ESSAY

PPC 493 MASTER'S ESSAY

PPC 495 MASTER'S RESEARCH

PPC 895 CONT OF MASTER'S ENROLLMENT

PPC 897 MASTER'S DISSERTATION

PPC 899 MASTER'S DISSERTATION

PPC 985 LEAVE OF ABSENCE

PSC 101 INTRODUCTION TO COMPARATIVE POLITICS

Introduces the study of political science and comparative politics. Focuses on how citizens may be able to control public policies in different modern democracies.

PSC 104 INTRODUCTION TO POLITICAL PHILOSOPHY

Most aptly called Thinking about Politics, this course aims to examine a range of contemporary issues and to explore the political and philosophical conflicts and controversies that those issues raise.

PSC 105 INTRODUCTION TO AMERICAN POLITICS

Introduces students to the foundations of American government. Examines important political institutions and the linkage mechanisms that connect institutions, political actors, and ordinary American citizens.

PSC 106 INTRODUCTION TO INTERNATIONAL RELATIONS

Introduces students to the wide range of issues that make up the study of international relations, including the workings of the state system, the causes of international conflict and violence, and international economic relations.

PSC 107 INTRODUCTION TO POSITIVE POLITICAL THEORY

Introduces students to positive political theory, a rigorous set of tools that helps clarify key questions in political science. Studies how the rules of the game affect the decisions politicians make as well as the policy outcomes we observe.

PSC 115 BLANK

PSC 117 INTRO TO AMERICAN GOVERNMENT

PSC 121 BLANK

PSC 140 BLANK

PSC 150 BLANK

PSC 152 POLITICS IN DEVELOP NATIONS

Why does corruption persist in developing countries—even democratic ones? Does corruption affect the governability of a country? Why and how do political parties in developing nations try to “buy” votes and manipulate elections? We will explore these questions and many others by focusing on both elections and policymaking in developing country democracies, particularly in Latin America and South Asia. Topics will include vote buying, patronage and clientelistic strategies in elections, as well as the role of political parties in getting candidates into office. We will also focus on how legislatures form policies and allocate resources. In addition, we will try to understand how bribery, nepotism and corruption influence elections and policy, and why it is so difficult to eradicate these problems.

PSC 160 CAMPAIGNS&ELECTNS:GLOBAL PER

What factors influence vote choice? Why do voters around the world face such different options at the ballot box? Do campaigns matter? In this course, we will explore the social, political and institutional determinants of voting behavior, and of variation in the number and types of political parties that exist. We will also discuss the different electoral strategies available to politicians around the world – from ‘priming’ to vote-buying – and discuss the efficacy and prevalence of each. Examples will be drawn from the United States, Western Europe, South Asia, Sub-Saharan Africa, and Latin America.

PSC 161 INTRO TO INTERNATNL RELATNS

Why did the United States invade Iraq in 2003? Was it driven by concerns about oil, a desire to democratize Iraq, or by the ideals of senior Bush administration officials? In this course, we will explore the theories that underpin these alternative explanations for the Iraq war and relate them to other important international events, both historical and current. We will cover a diverse set of topics, including international conflict, terrorism, transnational challenges (such as climate change, human trafficking, and the

global drug trade), non-state actors in the international system, international institutions, and the role and influence of the United States in international affairs. We will pay particular attention to current international events and crises and discuss how scholars of international relations might seek to explain them.

PSC 172 ATHENIAN DEMOCRACY

PSC 200 Data Analysis I

Data analysis has become a key part of many fields including politics, business, law, and public policy. This course covers the fundamentals of data analysis, giving students the necessary statistical skills to understand and critically analyze contemporary political, legal, and policy puzzles. Lectures will focus on the theory and practice of quantitative analysis and weekly lab sessions will guide students through the particulars of statistical software. No prior knowledge of statistics or data analysis is required.

PSC 202 ARGUMENT IN POLITICAL SCIENCE

Through reading and several short papers, the course introduces students to the questions, concepts, and analytical approaches of political scientists.

PSC 202W ARGUMENT IN POL SCI

PSC 206 AUTHORITARIANISM

PSC 206W AUTHORITARIANISM

PSC 208W UNDERGRADUATE RESEARCH SEMINAR

Through reading and critiquing political science research in American politics, comparative politics, and international relations, students learn how to select a research question, formulate testable hypotheses, find and evaluate relevant literature, locate or collect data that addresses a research question, analyze the data, and write a research report.

PSC 212 SUPREME COURT IN U.S. HISTORY

Constitutional law cases decided by the U.S. Supreme Court and their impact on the evolution of the Court, the balance of powers among the three governmental branches, relations between the federal government and the states, and individual express and implied rights.

PSC 215 AMERICAN ELECTIONS

Drawing on current elections and campaigns, examines corruption, party polarization, changes in party competition, how the rules shape election outcomes (especially party nominations), the use of the internet in campaigns, and campaign techniques.

PSC 215W AMERICAN ELECTIONS

See description for PSC 215.

PSC 216 BLANK

PSC 216W BLANK

PSC 217 HOW COUNTRIES BECOME RICH

Analyzes how public opinion is formed through the media. Examines the interaction of public opinion, mass media, and political leadership.

PSC 218 EMERGENCE OF THE MODERN CONGRESS

Analyzes major issues in congressional history and legislative institutions. Examines the basic institutions of the House and Senate--committees, parties, leaders, and rules.

PSC 218W EMERGENCE OF THE MODern CONGRES

See description for PSC 218

PSC 221 PHILOSOPHICAL FOUNDATIONS OF THE AMERICAN REVOLUTION

Examines the philosophical foundations of the American Revolution by examining the political theory which lies behind the revolution itself and which underlies the foundations of the Constitution, while keeping an eye at the historical contexts that shaped the philosophy.

PSC 221W PHILOSOPHICAL FOUNDATIONS OF THE AMERICAN REVOLUTION

See description for PSC 221

PSC 222 THE PRESIDENCY

Introduces the major topics and theoretical perspectives in the study of the U.S. presidency.

PSC 222W THE PRESIDENCY

See the description for PSC 222.

PSC 223 CONSTITUTIONAL STRUCTURE AND RIGHTS

Through the lens of the Constitution and Supreme Court cases, examines the structure of the American legal system (both separation of powers at the federal level and the authority of, and relationship among, states and the federal government), as well as the nature of civil rights of citizens.

PSC 227 BLANK

PSC 229 BLANK

PSC 230 PUBLIC HEALTH LAW

PSC 233 Innovation in Public Service

Focuses broadly on economic and neighborhood development policy at national, state and local levels, and more narrowly on community development dynamics in selected American cities.

PSC 233W INNOVAT PUBLIC SERVICE

PSC 236 HEALTH CARE AND THE LAW

Provides an introduction to the legal foundations of health care in America. Covers a broad range of legal issues in health care, including autonomy, privacy, liberty, and proprietary interests, from the perspective of the provider(s) and the patient.

PSC 238 BUSINESS AND POLITICS

Uses the tools of political science and economics to study how corporations affect and are affected by politics. Cases will be drawn from areas such as antitrust, transportation, health care, and the environment.

PSC 239 INT'L ENVIRONMENTAL LAW

An examination of international environmental law and policy with a special focus on efforts to address climate change, including efforts to forge an international climate change agreement at the 2015 United Nations Paris Climate Change Conference. This course serves as a companion to PSC 246, but PSC 246 is not a prerequisite. The goal of this course is to provide a foundational understanding of this rapidly developing, controversial field. Topics include consideration of the scientific, political, and economic drivers of international environmental law; the variety of tools (e.g., treaties, agreements, "soft law," voluntary incentive programs and market based approaches); and examples of how some international environmental issues have been addressed to date. Finally, we will examine the results of the 2015 Paris Climate Change Conference - are we any closer to a "grand climate solution"? This course will be taught through lectures, discussion, several concise papers, and a group project.

PSC 240 CRIMINAL PROCEDURE & CONSTITUTIONAL PRINCIPLES

Through analysis of the Constitution and the Bill of Rights, examines criminal procedure as elaborated by federal and state court decisions. Topics include arrest procedures, search and seizure, right to counsel, and police interrogation and confessions.

PSC 241 URBAN CHANGE AND CITY POLITICS

Examines the politics and history of American cities. Emphasizes the ways in which ethnicity, race, and class shape battles over housing, neighborhoods, workplaces, schools, and governmental institutions.

PSC 241W URBAN CHANGE&URBAN POLITICS

See description for PSC 241.

PSC 242 Research Practicum in Criminal Justice Reform

This course offers students the opportunity to work as part of a research collaborative between the University of Rochester and a non-governmental organization devoted to criminal justice reform. The organization, Measures For Justice, is building the first database ever created to track the performance of the thousands of county-level criminal justice systems that process most criminal cases in the United States. Through hands-on research work under the joint supervision of UofR faculty and Measures For Justice staff, students in the course will learn powerful social science research skills, gain insight into the key challenges facing the U.S. criminal justice system, and contribute directly to data-driven policymaking.

PSC 243 ENVIRONMENTAL POLITICS

Examines environmental issues from a social scientific perspective. Topics covered: the reasons for environmental regulation, the history of environmental policy, the state of contemporary environmental policy, the role of state and local governments, the impact of environmental activists, and a comparison of domestic and international regulation of environmental affairs.

PSC 243W ENVIRONMENTAL POLITICS

See description for PSC 243.

PSC 244K POLITICS & MARKETS

Studies how entrepreneurship and innovation are affected by government institutions, then examines business strategy in the global business environment, focusing on the role of regulations imposed by foreign governments and international organizations.

PSC 244W POLITICS & MARKETS

See description for PSC 244K.

PSC 246 ENVIRONMENTAL LAW & POLICY

Explores women's evolving roles in American politics. Topics include: a brief historical review of women's rights; women's roles in social movements; and women in electoral politics and as elected officials.

PSC 247 GREEN MARKETS: ENVIRONMENTAL OPPORTUNITIES AND PITFALLS

Examines the potential for “green markets,” focusing on three drivers—social, political, and economic—that can both constrain firms and potentially condition whether issues of environment and sustainability can be exploited as a means for competitive advantage.

PSC 247W GREEN MARKETS

See description for PSC 247.

PSC 248 Discrimination

An examination of discrimination from a social scientific perspective. Topics covered include defining discrimination, types of discrimination under the law, testing for discrimination, discrimination experiments, and a survey of what social scientists have discovered about discrimination in the areas of policing, bail, retail sales, automobile sales, and home mortgages. Although there is considerable time devoted to lecture, students are encouraged to participate.

PSC 249 Environmental Policy in Action

An examination of the role of environmental organizations in the development and implementation of environmental policy through experiential and academic learning. This is a small class that meets once a week. Through assigned readings, discussion and lectures, we will examine how environmental groups are formed, organized, funded and staffed to fulfill various objectives, and how the role/mission they play in developing and implementing environmental policy has evolved. Students will deepen their understanding of these issues through first-hand experience working on “real world” research for a local environmental organization. Each student will be responsible for a final paper examining these issues through the lens of a particular conservation or environmental group, completion of the project for the environmental group partner, and class discussion/ participation. This course is instructor permission only and is limited to upper level students.

PSC 250 Comparative Democratic Representation

This course introduces the concept and practice of political representation in contemporary democracies, focusing largely on the developed world. After discussing goals of representation, it traces representation from the values and electoral behavior of citizens through the formation of legislatures and executives to the implementation of public policies. It compares the consequences of different institutional arrangements and party systems for party and policy congruence, and considers other benefits and costs as well.

PSC 250W COMP DEMOCRATIC REPR

PSC 252 ETHNIC POLITICS

Explores the growing literature on ethnic politics in the comparative politics and international relations sub-fields.

PSC 253 COMPARATIVE POLITICAL PARTIES

Examines the nature of political parties and political competition across democracies in the developed and developing worlds.

PSC 253W COMPARATIVE POLITICAL PARTIES

See description for PSC 253.

PSC 254 BLANK

PSC 255 POVERTY & DEVELOPMENT

Examines film as the dominant form of political expression under state patronage, with examples from the Soviet Union, Nazi Germany, and, after World War II, from Poland, Hungary, Czechoslovakia, and the former Yugoslavia.

PSC 255W POVERTY & DEVELOPMENT

PSC 256 THEORIES OF COMPARATIVE POLITICS

Introduces theories in the field of comparative politics. Leads to understanding how the national and international environment, the political culture, the political institutions and the choices of citizens and leaders affect political performance. Explains democratization, stability, competition, citizen influence, and policy outcomes as consequences of the environment, culture and institutions--and human choices in these contexts.

PSC 256W THEORIES OF COMP POLITICS

See description for PSC 256.

PSC 257 BLANK

PSC 257W ORIGINS OF MODERN WORLD

PSC 258 DEMOCRATIC REGIMES

Why have some countries made a successful transition to democracy, while others have not? Why are some democracies more stable than others? Course offers a survey of the leading literature in comparative politics centered on the topic of democratization.

PSC 259 BLANK

PSC 259W ORDER, VIOLENCE & THE STATE

PSC 260 CONTEMPRY AFRICAN POLITICS

From a socio-political perspective focused on Central Europe, analyzes the most dramatic and significant turning points in the Cold War, such as the Berlin Airlift in 1949 and the Polish Solidarity strikes in 1980, as well as survey internal and external actions and reactions across nearly five decades until the implosion of the entire communist system between 1989 and 1991.

PSC 260W CONTEMPRY AFRICAN POLITICS

See description for PSC 260

PSC 261 LATIN AMERICAN POLITICS

Provides an introduction to political institutions and institutional reform in contemporary Latin America. Focuses on the emergence and functioning of key political institutions in Latin America, including the presidency, the legislature, the system of electoral rules, political parties, the judiciary, and the bureaucracy.

PSC 261W LATIN AMERICAN POLITICS

See description for PSC 261.

PSC 262 Elections in Developing Countries

Examines the implications of economic globalization for domestic and international politics.

PSC 262W Elections in Developing Countries

See description for PSC 262.

PSC 264 COMPARATIVE POLITICAL INSTITUTIONS

Examines political institutions and their implications for the behavior of political actors and their effects on social outcomes.

PSC 264W COMPARATIVE POLITICAL INSTITUTIONS

PSC 265 CIVIL WAR AND THE INTERNATIONAL SYSTEM

Addresses the question of when and where civil wars occur and what their effects are domestically and internationally. Also examine role played by external actors in civil war, such as financial support to governments or insurgents, armed interventions, and peacekeeping missions.

PSC 266 POLITICS OF INDIA & PAKISTAN

This course examines the politics of India and Pakistan, and uses the history of these countries to examine broader issues in the politics of the developing world. Topics examined include the appeal of caste, class, regional and religious identities, the influence of institutions such as parties, armies and bureaucracies, and outcomes such as authoritarianism, poverty, corruption and insurgency.

PSC 266W POLITICS INDIA & PAKISTAN

See description for PSC 266

PSC 267 IDENTITY, ETHNICITY & NATIONALISM

Explores the concepts of identity, ethnicity and nationalism from a comparative perspective.

PSC 268 INTERNATIONAL ORGANIZATION

Examines the effect of elections and electoral systems on economic outcomes as well as the converse, how economic variation influences elections and the choice of electoral systems.

PSC 268W INTERNATIONAL ORGANIZATION

See description for PSC 268

PSC 270 MECHANISMS OF INTERNATIONAL RELATIONS

This course consists of two parts. First, we will explore the logic of several causal mechanisms that help us to better understand patterns of international cooperation (such as coordination and collaboration problems), discussing several empirical applications. Second, we will explore the logic of several causal mechanisms that help us to better understand patterns of international conflict (such as commitment and information problems), discussing several empirical applications. Game-theoretic and statistical models will appear throughout the course, but no prior background in either is assumed or required.

PSC 273 THE POLITICS OF TERRORISM

Over the past century, terrorism has become a common feature of world politics, enabling small groups of individuals to have a disproportionate influence on the politics of both developed and underdeveloped countries. This course explores some of the fundamental questions of terrorism: Why individuals join terrorist groups, why terrorist groups adopt certain tactics such as suicide bombing, how terrorist groups organize themselves, and what counterterrorism strategies are effective? No previous knowledge of the subject is required.

PSC 273W THE POLITICS OF TERRORISM

PSC 274 INTERNATIONAL POLITICAL ECONOMY

This course explores the interaction between politics and economics at the international level as well as between the international and domestic levels, involving various actors such as governments, interest groups, and multinational corporations. As an interdisciplinary field related to both international politics and international economics, international political economy examines the management and openness of the international economy, the determinants of foreign economic policy-making on topics such as trade, foreign exchange, capital controls, the politics of economic development, the effects of domestic political competition on international trade and capital flows, the determinants of regional integration, as well as the spread or containment of international financial crises. Students are expected to complete oral and written assignments which are designed to help them develop their problem solving, writing and presentation skills.

PSC 276 THE POLITICS OF INSURGENCY AND TERRORISM

Discusses the logic of asymmetric conflicts between states and non-state actors. We will examine the military, political, and social factors that determine when and where asymmetric warfare is likely to occur.

PSC 276W THE POLITICS OF INSURGENCY

See the description for PSC 276.

PSC 278 FOUND. MODERN INT'L POLITICS

The bargaining model of war is the main theoretical tool in the study of international conflict these days. But the model brackets, i.e., ignores, the question of what gets put in the bargaining table in the first place, and what leaders and states choose not to contest. In this course, we examine the issues states fight over from both a historical as well as contemporary perspective. The course will involve some basic new analytical tools such as GIS (Geographical Information Systems) and some very basic data analysis.

PSC 278W FOUNDATIONS OF MODERN INTERNATIONAL POLITICS

See description for PSC 278

PSC 279 WAR & NATION STATE

Examines the development of warfare and the growth of the state from the French Revolution to the end of the Second World War. Further examines the phenomenon of war in its broader socio-economic context, focusing on nationalism, bureaucratization, industrialization and democratization.

PSC 279W WAR & NATION STATE

See description for PSC 279.

PSC 281 FORMAL MODELS IN POLITICAL SCIENCE

Examines how political factors, such as electoral systems, competitiveness of elections, bargaining power of NGOs, EU membership, and capital mobility, shape the development of business-government relations in Eastern and Central Europe and analyze how business-government relations affect macro-economic outcomes.

PSC 285 LEGAL REASONING & ARGUMENT

The fundamental assumption of this course is that in most important political and social settings the ability of any actor to achieve her objectives is dependent on what she expects other relevant actors to do. This sort of interdependency is the defining feature of strategic interaction.

PSC 286 POL ECON OF DEVL COUNTRIES

What determines the size of government, the extent and type of public good provision, the effect of interest groups and lobbying on legislators, and the connection between business and electoral cycles? These are the types of questions this course addresses.

PSC 287 THEORIES OF POLITICAL ECONMY

In recent decades a number of important intellectual intersections have emerged between political science and economics. The course will explore these intersections as they appear in the work of scholars such as Amartya Sen, Elinor Ostrom, Roberto Unger, Dani Rodrik. Our aim is to explore the analytical, explanatory and normative implications of this work in hopes of discerning lessons for thinking about enduring political issues and institutions such a property, markets, and democracy. Some prior course work in economics or political science will be helpful but is not required.

PSC 287W THEORIES OF POLITICAL ECONOMY

See description for PSC 287

PSC 288 GAME THEORY

Provides a unified approach to understanding social phenomena such as arms races, provision of public goods, competition between firms, electoral campaigns, and bargaining. There are no formal prerequisites, but an aptitude for logical or mathematical reasoning is desirable.

PSC 289 ROLE OF STATE IN GLOBAL HISTORICAL PERSPECTIVE

The debate on the role of the state versus that of the free market in the socioeconomic process is as old as the history of political economy. We discuss what economists, political scientists, & economic historians characterize as the Washington consensus versus the Beijing consensus or the Asian model. This is followed by a discussion of the contributions of some notable thinkers - Adam Smith, Alexander Hamilton, Friedrich List, John Maynard Keynes, & Friedrich von Hayek. The greater part of the course deals with selected historical cases across the globe. The discussions are informed by a political economy conceptual framework, which helps to explain the politics and economics of state policy and the long-run historical processes that created the political & economic conditions. Students' performance is based on three short essays (four typed pages each) presented to the class for discussion and thereafter revised for grading. No mid-term & final examinations.

PSC 290 UNEQUALDEVSTATE POL BRAUSNIG

PSC 291 FIRST AMENDMENT AND RELIGION

Examines the historical forces that led to the adoption of the religion clauses of the First Amendment, the subsequent development of those clauses (importantly through the close reading of key Supreme Court opinions), and religion's role in modern American society.

PSC 291W FIRST AMENDMENT AND RELIGION

See description for PSC 291.

PSC 292 BLANK

PSC 292W ETHICS IN MARKETS & PUBLIC

PSC 293 POL THGHT FREDRICK DOUGLASS

PSC 299 COMMNCTNG YOUR PROF IDENTITY

PSC 304 URBAN CRIME AND JUSTICE

This course offers a unique opportunity for students to engage critically with justice in courthouses in local communities. Students will participate in hands-on experiential work in a selected area of focus at the Monroe County Courthouse in Rochester. Areas of focus to choose from include adult criminal justice, juvenile justice, treatment courts, domestic violence court, court-community partnerships, or equity disparities in the court. Weekly class meetings include university faculty and Judge Craig Doran, Chief Supervising Judge of all courts in the region, who share their perspectives, research, and experience on the matters addressed by students at the courthouse. This provides students with immediate immersion in both the theoretical and practical applications of justice in society. This course requires students spend 6 hours per week at the Monroe County Courts at the Hall of Justice in Rochester.

PSC 305 POVERTY AND MENTAL HEALTH

PSC 355 BLANK

PSC 360 LEADERSHIP IN A DIVERSE WRLD

PSC 380 SCOPE OF POLITICAL SCIENCE

Students examine political science in a reflective, disciplined, critical way. Primarily designed for entering Ph.D. students, but may be appropriate for undergraduate seniors considering graduate work in political science.

PSC 389 SENIOR HONOR THESIS

PSC 389W SENIOR HONORS SEMINAR

Through reading and critiquing political science research in American politics, comparative politics, and international relations, students learn how to select a research question, formulate testable hypotheses, find and evaluate relevant literature, locate or collect data that addresses their research question, analyze the data, and write a research report.

PSC 390 SUPERVISED TEACHING

PSC 390A SUPERVISED TEACHING

PSC 391 INDEPENDENT STUDY

Work beyond the regular course offerings done by arrangement between students and full-time faculty.

PSC 391W INDEPENDENT STUDY

PSC 393 SENIOR HONORS PROJECT

A year-long research project supervised by a faculty member in the department and culminating in a written work.

PSC 393W SENIOR HONORS PROJECT

PSC 394 LOCAL LAW AND POLITICS INTERNSHIPS

Most internship placements are in the District Attorney's or Public Defender's offices. Occasionally one or two other law placements are available. Students may also propose an alternative political or law placement.

PSC 394A EUROPEAN POLITICAL INTRNSHP

PSC 394B EUR POLITICS INTRNSP BELGIUM

PSC 394G EUR POL INTRNSP BONN,GERMANY

PSC 394L UK POLITICS INTRNSP LONDON

PSC 394W Local Law and Politics Internship

PSC 395 RESEARCH

PSC 396 WASHINGTON SEMESTER

One semester's work in Washington, D.C., as a member of the staff of a U.S. Senator or Representative.

PSC 396W WASHINGTON SEMESTER

PSC 397 EUROPEAN POLITICAL INTERNSHIP

Internships are available for students in Edinburgh, London, Brussels, Bonn, Berlin and Madrid. Internships are in English in Edinburgh, London, and Brussels; students need proficiency in the language for the latter three placements.

PSC 397F UK POLITICS INTERNSHIP

PSC 404 PROBABILITY & INFERENCE

This course in mathematical statistics provides graduate students in political science with a solid foundation in probability and statistical inference. The focus of the course is on the empirical modeling of non-experimental data. While substantive political science will never be far from our minds, our primary goal is to acquire the tools necessary for success in the rest of the econometrics sequence. As such, this course serves as a prerequisite for the advanced political science graduate courses in statistical methods (PSC 405, 505, and 506).

PSC 405 LINEAR MODELS

In this course, we will examine the linear regression model and its variants. The course has two goals: (1) to provide students with the statistical theory of the linear model, and (2) to provide students with skills for analyzing data. The linear model is a natural starting point for understanding regression models in general, inferences based on them, and problems with our inferences due to data issues or to model misspecification. The model's relative tractability has made it an attractive tool for political scientists, resulting in volumes of research using the methods studied here. Familiarity with the linear model is now essentially required if one wants to be a consumer or producer of modern political science research.

PSC 407 MATHEMATICAL MODELING

Elementary game theory applications (Nash Equilibria, Prisoner’s Dilemma, Chicken), measures of voting power, social choice (Arrow’s Theorem).

PSC 408 POSTIVE POLTCL THEORY

PSC 480 SCOPE OF POLITICAL SCIENCE

Uses basic concepts in the philosophy of science to explore a range of specific examples of research in the discipline with the aim of discerning more clearly what it means to say that social and political inquiry is scientific.

PSC 487 THEORIES OF POLITICAL ECONMY

PSC 491 MASTER'S READINGS IN POL SCI

PSC 495 MASTER'S RESEARCH IN POL SCI

PSC 504 CAUSAL INFERENCE

PSC 505 MAX LIKELIHOOD ESTIMATION

PSC 506 ADV TOPICS IN METHODS

PSC 513 INTEREST GROUPS

PSC 518 EMERGENCE OF THE MOD CONGRES

Through intensive reading and discussion, we will analyze the major institutional features of Congress, with an emphasis on historical development. We will examine the basic institutions of the House and Senate--committees, parties, leaders, and rules. In doing this, we will consider the rise of careerism, the seniority system, agenda-setting, electoral concerns, divided government, efforts at institutional reform, party polarization, gridlock, and the Senate filibuster.

PSC 523 AMERICAN FIELD SEMINAR

PSC 530 URBAN CHANGE&URBAN POLITICS

PSC 535 BUREAUCRATIC POLITICS

PSC 536 CORPORATE POLITICAL STRATEGY

PSC 550 COMP POL FIELD SEMINAR

PSC 555 DEMOCRATIC POL PROCESSES

PSC 558 COMP PARTIES & ELECTIONS

PSC 562 EMPIR RESEARCH PRACT

This course presents basic issues in empirical research in the social sciences. Classes will alternate between discussion of readings on approaches to empirical research and applied weeks, where students will present successive iterations of their own research in-progress. The research design topics covered will be generating observable implications of theory; case selection; collection of large-n observational and archival data; narrative case study; experiments and natural experiments; elite interviews; and participant observation. The course is intended for students preparing for their second year paper, third year students writing a dissertation prospectus, or ABD students with an empirical project that is at a fairly early stage. First-year PhD students should consult with the instructor prior to enrolling in the course. Students who take both PSC 562 and 563 may use either, but not both, to satisfy the course requirements for the Comparative Politics field.

PSC 563 CAUSAL INF: APPL & INTER

PSC 565 POLI ECON OF DEVELOPMENT

PSC 568 INTERNATIONAL ORGANIZATION

PSC 569 STATE FORMATION

PSC 572 INTERNATL POLITICS FIELD SEM

PSC 573 TERRIT & GROUP CONFLICT

PSC 576 GRADUATE RESEARCH SEMINAR

PSC 577 THEORIES OF CONFLICT

PSC 579 Politics of International Finance

This course surveys the politics of international movements of capital, focusing on money as a power resource, the evolution of international cooperation in monetary policy, international financial institutions, and the domestic politics of macroeconomic adjustment.

PSC 580 Models of Non-Democratic Politics

This course will study game theoretic models that address core themes in comparative politics, focusing on non-democratic settings. Substantive questions include: How do authoritarian rulers maintain power? Why do countries democratize? How do states monopolize violence and prevent civil wars? The goal of the course is to understand the mechanics of important models from the literature as well as the broader research agendas to which these models contribute. This goal will enable students to identify cutting edge research questions in these literatures. The only requirement is completion of the first-year formal theory sequence or an acceptable alternative. Grading will be based primarily on problem sets and a final paper.

PSC 581 PHILOS. FOUNDATIONS OF PSC

PSC 582 POLITICAL ECONOMY II

This course covers much of the modern game-theoretic literature on models of voting and elections. It is meant to expose students to the techniques and models used in this line of research. Some of the topics covered include probabilistic voting, policy-motivated candidates, candidate entry, strategic voting, and issues of Information in elections, including uncertainty on the part of voters and candidates, and problems associated with private information in elections. The course covers both complete and incomplete information models and thus students must have a working knowledge of Bayesian games prior to taking this course.

PSC 584 GAME THEORY

This course is the third semester of the formal theory sequence for graduate students. It focuses on teaching students more sophisticated tools for modeling more complex games. Specifically, the course concentrates on games of incomplete information such as signaling games and communication games and develops analytical tools such as Bayesian-Nash equilibrium, perfect Bayesian equilibrium, and equilibrium refinements. The course also covers repeated games, bargaining games and equilibrium existence in a rigorous fashion. The prerequisites for the course are PSC 407 and 408, or an equivalent background in complete information game theory. Grading is based on homework assignments and a midterm and final exam.

PSC 585 DYNAMIC MODELS: STRUCTURE, COMPUTATION AND ESTIMATION

Dynamic considerations are becoming increasingly important in the study of such political processes as legislative policy making, the impact of the political cycle on macroeconomic performance, the stability of international systems, the conduct of war, and regime change. The course develops the theory of dynamic models in decision and game theoretic environments, develops numerical methods for the computation of these models, and culminates with a thorough treatment of statistical estimation of dynamic models. The goal of the course is to equip graduate students with analytical, numerical, and statistical tools that can be used in their future research on applied topics, and specific applications will be considered at some length. Some familiarity with a programming language (such as Matlab or R) is a plus, but the dedicated student should be able to acquire basic programming skills needed for the course.

PSC 587 POLITICAL ECONOMY II

PSC 589 POLITICAL ECONOMY I

PSC 591 PHD READINGS IN POL SCI

PSC 594 RESEARCH INTERNSHIP

PSC 595 PHD RESEARCH IN POL SCI

PSC 595A PHD RESEARCH IN ABSENTIA

PSC 895 CONT OF MASTER'S ENROLLMENT

PSC 897 MASTER'S DISSERTATION

PSC 899 MASTER'S DISSERTATION

PSC 985 LEAVE OF ABSENCE

PSC 986V FULL TIME VISITING STUDENT

PSC 995 CONT OF DOCTORAL ENROLLMENT

PSC 997 DOCTORAL DISSERTATION

PSC 997A DOCT DISSERTATN IN ABSENTIA

PSC 997B DOC DISS IN-ABSENTIA ABROAD

PSC 999 DOCTORAL DISSERTATION

PSC 999A DOCT DISSERTATN IN ABSENTIA

PSC 999B PHD IN-ABSENTIA ABROAD

PSY 101 INTRODUCTION TO PSYCHOLOGY

Is a balanced and integrated survey of psychology with coverage of both social and natural science domains. Sections of PSY 101 vary, but most consist of lectures, readings, discussions, and demonstrations. One Fall section is limited to Freshmen only.

Offered: Fall Spring Summer

PSY 110 NEURAL FOUNDATIONS OF BEHAVIOR

Introduces the structure and organization of the brain, and its role in perception, movement, thinking, and other behavior. Topics include the brain as a special kind of computer, localization of function, effects of brain damage and disorders, differences between human and animal brains, sex differences, perception and control of movement, sleep, regulation of body states and emotions, and development and aging.

Offered: Fall

PSY 111 FOUNDATIONS OF COG SCIENCE

PSY 151 PERCEPTION & ACTION

PSY 152 LANGUAGE & PSYCHOLINGUISTICS

PSY 153 COGNITION

PSY 161 SOCIAL PSYCHOLOGY & INDIVIDUAL DIFFERENCES

An introduction to the field of social psychology and an overview of research on individual differences in personality. Topics include the self, attitudes, social cognition, emotion, interpersonal attraction, relationships, helping, social influence, group behavior, and dispositional differences among people. Students will complete several individual difference measures and receive individualized feedback at the end of the course. Format is lectures augmented with discussions and demonstrations.

Offered: Spring Summer

PSY 161W SOCIAL PSYCHOLOGY & INDIVIDUAL DIFFERENCES

Fulfills Upper-Level Writing Requirement.

Offered: Spring

PSY 171 SOCIAL & EMOTIONAL DEVELOPMENT

An examination of the interpersonal, emotional, cognitive, and environmental factors that influence children's social and emotional development from early infancy through late adolescence.

Offered: Fall Summer

PSY 171W SOCIAL & EMOTIONAL DEVELOPMENT

Fulfills Upper-Level Writing Requirement.

Offered: Fall

PSY 172 DEVELOPMENT OF MIND & BRAIN

PSY 172W DEVELOPMENT OF MIND & BRAIN

PSY 181 THEORIES OF PERSONALITY & PSYCHOTHERAPY

A survey of personality, emphasizing modern theoretical approaches, basic methods of investigation, and the relations of these theories to psychotherapy and behavioral change.

Offered: Fall Summer

PSY 181W THEORY OF PERSONALITY & PSYCHOTHERAPY

Fulfills Upper-Level Writing Requirement.

Offered: Fall

PSY 183 ANIMAL MINDS

PSY 205 LAB IN DEVELOPMENT&LEARNING

PSY 208 LAB IN PERCEPTION&COGNITION

PSY 209 PSYCHOLOGY OF HUMAN SEXUALITY

Survey course on understanding sexuality. Includes such topics as biological sexual differentiation, gender role, gender-linked social behaviors, reproduction issues, intimacy, and the role of social and personal factors in psychosexual development.

Offered: Summer

PSY 209W PSYCH OF HUMAN SEXUALITY

PSY 210 SOCIAL COGNITION

PSY 210W SOCIAL COGNITION

PSY 211 INTRODUCTION TO STATISTICAL METHODS IN PSYCHOLOGY

Introduction to the use of statistics in psychological research. Topics include descriptive statistics, correlation and regression, and inferential statistics. Examples are drawn from social and personality psychology. Logic of statistical inference and proper interpretation of research findings are emphasized. Please note that, because of the significant overlap between them, students may earn degree credit for only one of these courses: BCS 200, CSP/PSY 211, STT 211 and STT 212.

Offered: Fall Spring Summer

PSY 219 RESEARCH METHODS IN PSYCHOLOGY

Fulfills Upper-Level Writing Requirement.

Offered: Fall Spring

PSY 219W RESEARCH METHODS IN PSYCHOLOGY

An introduction to the basic concepts, logic, and procedures needed to do psychological research. Hands-on experience with all major phases of the research process is provided, including: surveying the existing literature, developing research hypotheses, collecting and analyzing data, and reporting the results in manuscript form.

Offered: Fall Spring

PSY 221 AUDITORY PERCEPTION

PSY 232 PSYCHOLOGY OF CONSUMERISM

PSY 232W PSYCHOLOGY OF CONSUMERISM

PSY 242 NEUROPSYCHOLOGY

PSY 246 BIOLOGY OF MENTAL DISORDERS

PSY 259 LANGUAGE DEVELOPMENT

PSY 261 LANGUAGE USE & UNDERSTANDING

PSY 262 AN APPROACH TO HUMAN MOTIVAT

A study of the motivational and emotional processes and theories that underlie both adaptive and maladaptive behavior. Includes consideration of research largely with human subjects.

Offered: Spring

PSY 262W HUMAN MOTIVATION & EMOTION

Fulfills Upper-Level Writing Requirement.

Offered: Spring

PSY 263 RELATIONSHIP PROCESS & EMOTIONS

Relationships are among the most important endeavors of human activity. In the past two decades, extensive theory and research has been devoted to understanding the processes of regulating people's thoughts, feelings, and behavior in meaningful relationships with friends, family, and romantic partners. The purpose of this seminar will be to explore this literature. We will examine psychological research on such important topics as attachment, emotion, intimacy, conflict resolution, relationship differences and similarities, and the impact of relationships on physical health and emotional well-being (as well as other topics that may arise).

Offered: Fall

PSY 263W RELATIONSHIPS PROCESS & EMOTIONS

Fulfills Upper-Level Writing Requirement.

Offered: Fall

PSY 264 INDUST & ORG PSYCHOLOGY

PSY 264W INDUST & ORG PSYCHOLOGY

PSY 265 LANGUAGE & THE BRAIN

PSY 267 PSYCHOLOGY OF GENDER

PSY 267W PSYCHOLOGY OF GENDER

PSY 274W COMMNCTNG YOUR PROF IDENTITY

PSY 276 PSYCHOLOGY OF PARENTING

PSY 278 ADOLESCENT DEVELOPMENT

PSY 278W ADOLESCENT DEVELOPMENT

PSY 280 CLINICAL PSYCHOLOGY
Offered: Fall

PSY 280W CLINICAL PSYCHOLOGY
Offered: Fall

PSY 282 ABNORMAL PSYCHOLOGY

PSY 282W ABNORMAL PSYCHOLOGY

PSY 283 BEHAVIORAL MEDICINE

PSY 283W BEHAVIORAL MEDICINE

PSY 289 DEVLP CHILD PSYCHOPATHOLOGY

PSY 289W DEVLP CHILD PSYCHOPATHOLOGY

PSY 301W TEACHING PSYCHOLOGY
In-depth consideration of topics in psychology and their communication. PSY 101 is a lab for this course.
Offered: Fall

PSY 302 TEACHING PSY OF PERSONALITY

PSY 303 TEACHING PSYCH OF MOTIVATION

PSY 304 TEACHING OF PSYCHOLOGY

PSY 310W HONORS RESEARCH

PSY 311 HONORS RESEARCH

PSY 320 STEREOTYPING & PREJUDICE

PSY 321 PSYCHOLOGY OF RELIGION

PSY 321W PSYCHOLOGY OF RELIGION

PSY 323W POS YOUTH DVLPMNT:CHILD/ADOL

PSY 325W SUICIDE AND SELF-INJURY

PSY 340 DEPRESSION & ANXIETY SEMINAR

PSY 351 RESEARCH IN DEV NEUROPSYCHOL

PSY 352 RES IN DEVELPMNTL NEURSPSY

PSY 356 RES IN ADOLESCENT DEVELOPMNT

PSY 357 CHILD & ADOLESC SOC DEV

PSY 365 COMPETENCE&MOT:DEV COUNTRIES

PSY 368W SEMINAR IN HUMANISTIC PSYCH

PSY 369 RESEARCH IN HUMAN MOTIVATION

PSY 372 SOCIAL STRESS RESEARCH

PSY 373 EXPLORING RES. IN SOC PSY I

PSY 373W EXPLORING RES. IN SOC PSY I

PSY 374 EXPLORING RES IN SOC PSY II

PSY 377 EXPLORING RESRCH IN FAM PSY

PSY 378 EXPLOR RESRCH IN FAM PSY II

PSY 379 GERIATRIC MENTAL HEALTH PRAC

PSY 380 GERIATRIC MENTL HLTH PRAC II

PSY 383 MORAL DEVELOPMENT

PSY 385 PRAC IN DEVELOP DISABILITIES

PSY 386 RES: POSITIVE YOUTH DVLPMNT

PSY 387 SOCIAL PSYCHOPHYSIOLOGY

PSY 390 SUPERVISED TEACHING OF PSYCH

PSY 390A SUPERVISED TEACHING

PSY 391 INDEPENDENT STUDY

PSY 391W INDEPENDENT STUDY

PSY 392 PRACTICUM

PSY 393 SENIOR PROJECT

PSY 394 INTERNSHIP

PSY 394W INTERNSHIP

PSY 395 HONORS RESEARCH

PSY 395W INDEPENDENT RESEARCH

PSY 396 RESEARCH: MARITAL SEMINAR

PSY 396W RESEARCH: SOCIAL STRESS LAB

PSY 398 RESEARCH IN MOTIVATION

REL 100 INTRO TO STUDY OF RELIGION

Religion has been and continues to be deeply embedded within human history, society, and culture in multiple and varied ways. People have long turned to religion to illuminate fundamental, "ultimate" questions about the meaning and purpose of human life while, at the same time, religion has also shaped and influenced how people live their everyday lives in the mundane world. In this course, students will explore and be introduced to (a) the complex interconnections between religion and national identity, politics, gender, sexuality, as well as everyday practices related to eating, dress/adornment, family life, etc., (b) the ways in which religion has variously been defined with respect to the sacred, belief, ritual, practice, and experience, and (c) the major approaches to the academic study of religion and central debates within the field of the study of religion.

REL 101 INTRODUCTION TO THE OLD TESTAMENT

Examination of the texts of the Hebrew Bible (Old Testament for Christians) in their religious, historical, and literary contexts. In this course, students will learn the history of the Ancient Israelite people from their origins down through the post-Exilic period. Study of the texts of the Hebrew Bible (Old Testament) enable us to explore what we can know about Ancient Israelite society and culture, the rise and fall of Israel as a nation-state, religious and theological debates about the role of God in shaping history and the problem of suffering, as well as the writing of the biblical texts and the development of the canon.

Offered: Fall

REL 102 INTRODUCTION TO THE NEW TESTAMENT

Examination of the texts of the New Testament, as well as other ancient sources, in an attempt to reconstruct a picture of Christianity in its beginnings. We will study the New Testament and the early Jesus movement within the wider context of Second Temple Judaism and the Greco-Roman world. Issues such as the development of the canon, the divisions with the Jesus Movement between Jews and Gentiles, the different understandings of the figure of Jesus, the conflicts which shaped the institutional development of the early church, and the conflict between Rome and the early church will receive particular attention and analysis. We will approach the texts of the New Testament as we would any other texts in antiquity, namely from an historical perspective. Students will be exposed to the traditional tools of biblical scholarship. No previous knowledge of the New Testament or of early Christianity is assumed.

Offered: Spring

REL 103 HISTORY OF JUDAISM

An introduction to the religious and cultural development of Judaism. Will emphasize Judaism as a living tradition, one which has been subject to both continuity and change among its practitioners throughout its history.

Offered: Fall

REL 104 HISTORY OF CHRISTIANITY

The purpose of this course is to explore the general development of Christianity throughout its twenty centuries of existence, paying special attention to the religious presuppositions behind Christianity and its complex relationship to its socio-cultural matrix. The course will focus on important moments in Christian history, including its inception as a Jewish religious movement set in motion by Jesus, its dissemination in the Greco-Roman world by Paul of Tarsus, its growth and triumph in the Roman Empire, the split between the Greek- and Latin-speaking churches, medieval Catholicism, the Reformation and rise of Protestantism, Christianity and the modern world, and contemporary movements and tendencies within the Christian churches.

Offered: Fall

REL 105 ASIAN SEARCH FOR SELF

The basic teachings of Hinduism and Buddhism as to human nature and the paths to liberation.

Offered: Fall

REL 106 FROM CONFUCIUS TO ZEN

The teachings, practices, and social impact of the major religious traditions of China and Japan.

Offered: Spring

REL 107 HISTORY OF ISLAM

The development of Islam from its origins in the Qur'an and Muhammad's teachings, through the codification of the classical tradition in its various forms, and finally to the living Islam of the contemporary world.

Offered: Spring

REL 111 PHILOSOPHY OF RELIGION

Historical and recent readings are used to analyze issues such as: existence of God, divine attributes, the relation of God to the world, and faith and reason.

Offered: Fall

REL 115 SEX AND POWER

REL 125 RELIGION, RACE, AND ETHNICTY IN AMERICA

A methodological inquiry into ethnicity, race, and religion as constituents of personal and communal identity. The course will emphasize the implications of these categories for a religiously pluralistic society such as the United States. Topics to be covered in this course include American immigration history, race relations, and the process of Americanization. How do Americans achieve “whiteness”? What is the difference between “ethnic” and “racial”? How are these differences gendered? How does religion factor into these questions? Twentieth and twenty-first century shifts in American religious.

REL 135 CLASSICAL MYTHOLOGY

The major myths of the classical gods and heroes using readings in translation and visual images.

REL 140 CLASSICAL & SCRIPTURAL BACKGROUNDS

The great tradition, from Homer, Greek drama, Plato, and Virgil to the bible and Dante.

REL 145 JUDAISM IN AMERICA

Explores the development of American Judaism through the interplay of religion, ethnicity, politics and culture.

REL 148 THE ARABIAN NIGHTS

The themes of love and sex, comedy and adventure,that have given this classic of world literature it's universal appeal and timeless relevance.

Offered: Fall

REL 149 CONTEMPORARY FICTION FROM THE ARAB WORLD

This course introduces the students to major Arab authors of contemporary novels and short stories in excellent translations.

REL 151 THE BLUES

The origins of the Blues in the context of African-American culture in the late 19th and early 20th centuries, it's rapid rise to becoming the dominant popular music in the African- American community, and the discovery of blues by white audiences.

REL 153 ISLAM IN AMERICA

This course surveys the history of Islam in the Americas from the days of slavery, to the so-called Black Muslims, to the post-65 immigrants, to 9/11, and beyond.

REL 154 REL&RACE FOR THE WHITE HOUSE

REL 155 RELIGION IN AMERICA

Leaning heavily on primary sources, this course surveys the history and ethnography of religion in the United States. Special attention will be given to personal experiences of the divine, political strife and social reform, tensions between sectarianism and pluralism, and the extraordinary religious history of western New York.

REL 156 REL OF THE AFRICAN DIASPORA

This course introduces students to African Diaspora religions, with a specific focus on the Caribbean and the Americas. Religious traditions such as Africanized Christianity, Cuban Santería, Haitian Vodou, Brazilian Candomblé and African American Spiritualism will be explored. Specifically, these traditions are presented to students through the use of community field trips, lectures, discussions, and films.

Offered: Fall

REL 157 AFRICAN AMERICAN RELIGIOUS HISTORY

Historical survey of religions as practiced by people of African descent living in North America. Christianity, Islam, and African-derived religions will be examined. Through its canvassing of doctrinal and ritual frameworks, students are afforded an opportunity to view the diverse and complex terrain of African American religion. Class format includes lectures, discussions, and film/music.

REL 159 INTERFAITH RELATIONS: THE GLOBALIZATION OF GOD

This course is an exploration of the dynamic interactions between people of the diverse religions of the world as religiously pluralistic societies adapt to their multi-faith reality. We study the history of interfaith dialogue globally, nationally and locally with a particular focus on the interfaith movement on college campuses in the United States. We use case studies to examine how religion, politics and culture interact to create opportunities for positive or negative engagement across religious traditions. We study the etiquette of interreligious engagement in multi-religious contexts building skills for global citizenship. Students will be assigned to a community partner organization (e.g. Gandhi Institute, Hickey Center for Interfaith Studies and Dialogue) for hands-on interfaith projects and will attend and observe religious rituals in three world religious traditions.

REL 160 PARLIAMENT OF WORLDS RELIGNS

This course will involve students in the global interfaith movement through participation in the Parliament of the World's Religions in Salt Lake City from October 15-19, 2015. The Parliament is the preeminent gathering of the worldwide interfaith movement. Students will attend academic sessions, spiritual and religious practices in a diverse array of world religions and spiritualities, and cultural experiences including music, dance and art. They will network with scholars, activists, religious leaders and students from around the world. This course will develop intercultural and interreligious competency through hands-on interreligious and intercultural dialogue, enable students to develop relationships with people from diverse religious and cultural backgrounds, and to engage in scholarly research on topics of global significance.

REL 161 NOT CULTS: NEW RELIGIOUS MOVEMENTS EAST AND WEST

East and West: Often dismissed as fraudulent cults, NRMs are nevertheless products of the society in which they grow. This course takes a sociological approach in studying the theories, founders, organizations, and development strategies of various NRMs. While the focus will be on the better known groups in USA (such as People's Temple, Hare Krishna, and Scientology), NRMs in Asia, for instance, Shinrikyo and Falun Gong, will also be included.

REL 164 Death, Dying & Beyond

This course investigates shared and different views of death in Chinese popular religion and in the world's major religions. We will look into the nature of death itself, the identity of those who die, what awaits those who have died, and religious rituals for the living and the dying in response to death. We will also use literature to analyze how the secular world adopts and adapts religious beliefs about death and afterlife.

REL 167W SPEAKING STONES

An examination of grave stones and funerary architecture in Rochester's Mt. Hope cemetery with a focus on symbolic connections among the living and the dead.

REL 170 RELIGION & HIP HOP CULTURE

REL 171 STORYTELLING IN INDIAN RELIGION

In this course, students will read a wide variety of stories taken from the Hindu, Buddhist, and Jaina religious traditions, and examine the ways in which these stories encapsulate important philosophical and religious truths. The course will focus upon both the stories themselves and storytelling as religious instruction.

REL 174 CHINESE RELIGIONS

This is a survey course on religious traditions in China covering Buddhist, Daoist, and popular religion, while Confucian theorization and ritualization of ethics will also be included. The course aims at broadening your understanding of religion in general and deepening your conception of China as a cultural entity.

REL 175 RELIGION & CHINESE SOCIETY

This course examines the complicated relationship between religion and society in China. It takes a sociological approach, emphasizing that religion should be studied as a social phenomena that closely interacts with the development of society at large. The focus is on contemporary times from the end of the 19th century through present. During this period of time, China experienced tremendous change. This course introduces how such change impacted on and was expressed through religion, religiosity, and religious politics.

REL 176 TAO: DAODEJING TO STAR WARS

This course investigates the concept of Dao (Tao) in Chinese religious and philosophical traditions as well as its adoption in the West.

REL 182 RELIGION AND LAW

Depending on how we approach it, the law may be thought of as a body of text, as a canon for normative conduct, or as a set of practices. Religion, which may alternatively be conceptualized as creed, as ritual system, or as way (or ways) of life, possesses similar elasticity. In this mid-level interdisciplinary course, we draw on works of ethnography, philosophy, theory and literature to think through the various ways that these two concepts - Law and Religion - inform, interact with and place limits on one another.

REL 183 INCARCERATION NATION

How does a country with five percent of the world's population, a country that nominally values freedom above all else, come to have nearly a quarter of the world's incarcerated people? In this survey course we investigate the history of imprisonment in the United States--as theorized and as practiced--from the founding of the republic to the present day. Special attention is paid to the politics, economics, race politics, and religious logics of contemporary mass incarceration, and to the efforts afoot to end mass incarceration.

REL 187 SCIENCE MAGIC OCCULT

REL 189 SEXUALITY IN WORLD RELIGION

The study of issues surrounding human sexuality as it has been treated in world religions. Issues, such as homosexuality, transgender/transsexual, marriage, family, sexual ethics, gender in world religions will be covered. Also, the role of Eros in mystical traditions of various world religions (Sufi, Christian Mysticism, Hinduism) will be examined in those instances where the erotic and the spiritual have been manifested together. Classroom discussion about what is the connection between sexuality and spirituality and how have religious traditions dealt with that connection? College hook-up culture is also examined in light of the study of spirituality and sexuality.

REL 193 THE DIVINE COMEDY

REL 197 DIVINE COMEDY I

REL 198 DANTE'S DIVINE COMEDY II

REL 200 INTRODUCTION TO ARCHAEOLOGY

This course introduces the student to the field of archaeology through three units of study: 1) The history of excavation from ancient to modern times, 2) The techniques of excavation and the analysis of material remains, 3) Modern theories of cultural interpretation of archaeological sites.

Offered: Fall

REL 203 MEDIEVAL DRAMA

REL 204 ANCIENT ROMAN RELIGION

This course explores the religion of the ancient Romans from the time of the founding of the city of Rome in the eighth century BC to the end of the Roman imperial period in the fifth century AD.

Offered: Fall

REL 205 MYSTICAL LITERATURE

REL 208 MEDICINE, MAGIC & MIRACLES

Examination of the intersection of religion and healing by examining the range of ways in which people understood and responded to the experience of illness and physical suffering in Greco-Roman antiquity and the various means by which they sought healing. Drawing on a range of sources, such as medical treatises, religious texts, and archaeological evidence, focus will be on: “Medicine” (the development of ‘professional’ medicine in ancient Greece and Rome), “Magic” (magical practices, texts, and magicians as healers) and “Miracles” (miracle workers such as Jesus and Apollonius of Tyana, healing religions such as the Asklepios cults and the emerging Christian movement).

REL 214 IMAGINING THE JEW

This seminar will examine the representation of Orthodox Jews by American Jews on both page and screen. This course should equip you to understand—historically and critically—the core factors in this contemporary culture war such as (gender, religious authority, political affiliation) as well as to empathetically appreciate current concern over acculturation, Americanization, and Jewish continuity.

Offered: Spring

REL 217 MODERN JEWISH PHILOSOPHY

In this seminar, we will read some of the classic works of modern Jewish philosophy. Authors include Hermann Cohen, Franz Rosenzweig, Emmanuel Levinas, and Joseph Soloveitchik.

REL 220 JEWISH WOMEN'S WRITING

The American Jewish experience, from the Eastern European immigrant experience to the recent religious revival, through the lens of Jewish women's literature.

Offered: Fall

REL 222 VENICE AND THE JEWS

By combining the examination of primary sources, the use of media, and the access to relevant digital materials, the course explores Jewish experience in Renaissance and early modern Italy, with a focus on Venice. Topics discussed will include the institution of the first ghetto in history, the economic role of Jewish merchants and moneylenders, Jews, crypto-Jews, and Judaizers in front of the Venetian Inquisition, and Jewish everyday life on the lagoon.

REL 223 SACRED SPACES IN GREECE

REL 224 CHRISTIANITY & SOCIAL CHANGE

REL 227 ANCIENT CHRISTIANITY

The rise of early Christianity from a persecuted minority religious movement to the dominant religion of the Roman Empire.

REL 228 THE BODY IN EARLY CHRISTIANITY

Though we often assume that religion deals with the spirit or the soul, the earliest Christians were deeply and primarily concerned with the body. In this course, we examine the multiple and various early Christian debates and practices relating to the body focusing in particular on issues related to physical suffering, death, sexuality, identity, and asceticism. Topics include: early Christian debates over the nature of the body and its relationship to personal identity and the nature of the self; conflicting

ideas about the nature of Jesus' incarnated, crucified, and resurrected body; gender, sexuality, and the bodies of men and women; Christian valorization of physical suffering and the bodies of the ill; the cult of the martyrs and the cult of the relics; the rise of asceticism and the bodies of saints.

REL 229 Religion and Violence

Drawing up on historical and contemporary examples, students will read a range of classic and contemporary theories that attempt to explain the complex relationship between religion and violence. Topics include sacrifice, scapegoating, war, terrorism, domination, sanctified violence, violent religious fantasy, martyrdom, end times, etc. Is religion inherently violent? What is the relationship between religion and nationality? Religion and constructions of alterity? How can a religion claim to be concerned with peace and non-violence yet promote violence? Coursework consists of significant reading, seminar discussions, several response papers, and one major book review.

REL 230 AUGUSTINE, ANSELM & AQUINAS

Three formative philosophical treatments of religious belief on such topics as the existence of God, freedom, providence, and evil.

REL 231 HISTORY OF CHRISTIAN THOUGHT

Examines the emergence and evolution of Christianity from its 1st century roots in Palestinian Judaism and Jesus until the early 16th century and the pre-Reformation period. We will focus on such issues as Paul's message about Jesus, the persecution of Christians in the Roman Empire, the emergence of Christian theology in both the Greek and Latin halves of the Empire, Christian monasticism, and the emergence of the papacy.

Offered: Fall

REL 232 THE HISTORY OF THE CHRISTIAN CHURCH: FROM THE REFORMATION TO THE PRESENT

In the 15th century the western or Roman Catholic Church was in a state of crisis. Papal governance was in question, there were widespread abuses of power, and calls for reform were being articulated throughout Christendom. In 1517 Martin Luther unleashed an unstoppable movement that would lead to the division of western Christianity into two opposing forces – Protestant and Catholic. Others followed in this wake. This course will examine how western Christianity has evolved from the 16th century to the present by using primary sources that help us understand the evolution of Christian thought from the Reformation to the present. Short, on-going reflection papers, along with class participation, are required.

Offered: Spring

REL 234 CRY FREEDOM

The principal ideas of various liberation theologians -- Latin American, Asian, African, Afro-American, and feminist. We will also examine the social worlds in which they think and write, thus trying to see the connection between their ideas and the social environments they want to liberate.

Offered: Fall

REL 236 CATHOLICISM IN AMERICAN LIFE

Catholics have been present in what today is called the United States from its earliest years as a British colony to the present, in which the Catholic population makes up roughly 25% of the nation as a whole. In this course we will examine the principal historical events that have transpired over the years as the Catholic Church expanded from its colonial origins, became a church of immigrants, and subsequently part of the established social order. Short reflection papers are required throughout the semester.

Offered: Spring

REL 237 THE REFORMATION

On the 31st of October 1517 Martin Luther tacked 95 theological challenges to medieval Catholic beliefs on a cathedral door. Luther's snowball led to the avalanche we call the Reformation. It permanently altered the western European world. Yet Luther was only a part of broad efforts to reform medieval Catholicism, many of which preceded Luther and many more would follow in the wake of his actions. Although related to problems in the church, the reform movement was also connected to complex economic, intellectual, and socio-political forces that were already at play. The purpose of this course is to examine what happened and why. The course will be conducted as a seminar and will require active participation and short essays.

REL 238 NATIVE AMERICAN ART & RELGION

Case studies in Native American cultures where the visual arts articulate religious and philosophical systems of thought.

Offered: Fall

REL 239 SPIRITUALISM IN AMERICA

Is it possible to communicate with the dead? This course examines how followers of American Spiritualism sought to grapple with this very question. Specifically, it takes students on a historical journey from the early development of modern Spiritualism in upstate New York to current forms as expressed by African American Spiritual Churches in New Orleans. Class format includes lectures, discussions, films, and field trips.

REL 240W MUHAMMAD & THE QUR'AN

The course studies the prophet Muhammad, the Qur¿an, and their importance to medieval and modern Muslim culture. The prophet¿s life and major themes of the Qur¿an will be discussed together with interpretations of them found in Islamic legal, theological, philosophical, and mystical writings.

REL 242 CULTURES OF MUSLIM SPAIN

An examination of the history, literature, religion, and philosophy produced by Jews, Muslims, and Christians in medieval al-Andalus.

REL 243W ISLAMIC MYSTICISM

An advanced introduction to mystical life in Islam which studies mystical experience and theory and traces the importance of Islamic mysticism to religion, philosophy, art, and literature as found in medieval and modern Muslim societies.

REL 247 ISLAM AND THE THIRD WORLD

Effects of Third World political, social, and economic factors on contemporary Islam. Case-studies will be drawn from contemporary Muslim societies, with particular attention to the subjects of Muslim women, the rise of Islamic movements in the 20th-21st centuries, and instances of global religious violence involving Muslims.

REL 247W ISLAM AND THE THIRD WORLD

This course will study some of the important and often dramatic changes occurring in modern Islam by examining the effects on it of Third World political, social, and economic factors. Case studies will be drawn from twenty first century Islam but placed in context of similar situations involving other religion’s traditions in South America, Africa, and South Asia.

REL 248 ISLAM AND GLOBAL POLITICS

The response of the Islamic world to European colonialism and American foreign policy.

REL 249 RUSSIA GOES TO MOVIES

We will trace the changing face of Christ over two centuries of Russian culture in the works of Tolstoy, Dostoevsky, Bulgakov and Pasternak.

REL 253 ZIONISM & ITS DISCONTENT

A course on theories of religion, which examines recent research on the intersection between religion and science, in particular cognitive science and evolutionary biology.

REL 256 DARWIN & RELIGION

REL 260 HINDU SHAMANS, MYSTICS & DOCTORS

Hindu traditions highlight the importance of charismatic authority and various attainments as sources for understanding actions and gaining insight into the natural world and the human condition. In their attempt to connect the somatic experience of embodiment with the possibilities of the mind and even transcendental goals, Hindus describe sages, charismatics, teachers, and other concepts of "yogin" and "guru" as masterful examples of human possibilities. We'll explore these characters and the various ways Hindus create the concept of the "powerful being", the human capable of extraordinary feats and accomplishments. We'll look at sages and polymaths, poets and storytellers, ascetics and householders, all understood to be healers and discerning

contemplatives. We'll focus on primary sources in translation from Sanskrit, Tamil, and other Indian languages that tell us about these powerful beings, visible and invisible, and how we might interact with them.

REL 261 AFRICAN DIASPORA IN LAT AMER

An advanced introduction to the mysticism of the Hindu Tantras. Additional readings explore its historical and philosophical dimensions.

Offered: Spring

REL 264 ISLAMIC ARCH IN CONTEXT

REL 265 ISRAEL/PALESTINE

This course will provide a non-partisan introduction to the conflict between these two national movements. Discussion will focus on an examination of historical documents, in addition to understanding of how it plays out in literature and film.

REL 272 ADVICE AND DISSENT

Examination of works that raise issues of common interest across the history of religions and create opportunities for comparison and challenging conversation regarding ideas and values centering on the spiritual life.

REL 277 ARCHAEOLOGY AFRICAN DIASPORA

REL 278 iRELIGION: RELIGION IN THE DIGITAL AGE

How has technology impacted religion? This hands-on course explores how digital technologies like the Internet, social media, and gaming have changed the way that people think about religion. Class format includes discussions, application demonstrations, and individual/collaborative projects.

Offered: Spring

REL 279 TRINITY, INCARNATION, AND ATONEMENT

We will look at recent philosophical work that attempts to explain or to understand three central concepts of Christianity, namely, the doctrines of the Trinity, the Incarnation, and Atonement. Particular attention will be paid to the question whether these doctrines can be given a coherent formulation and, if so, what sort of metaphysical views about identity, personhood, divinity, substance, and obligation would be required.

Offered: Spring

REL 280 GOTHIC EUROPE

REL 282 DIVINE COMEDY OF DANTE ALIGHIERI

Students learn how to approach Dante's poetry as a vehicle for thought, an instrument of self-discovery, and a way to understand and affect the historical reality.

REL 285 DIVINE COMEDY I

Students gain a perspective on the Biblical, Christian, and Classical traditions as well as on the political, literary, philosophical, and theological context of medieval Europe.

REL 286 DANTE'S DIVINE COMEDY II

This course is the second segment of a two-semester sequence on the Divine Comedy. The purpose of the sequence is to introduce students to the liberal arts through one of the most significant texts in Western civilization.

Offered: Spring

REL 288 CHAUCER

The principal works of Chaucer, in their historical and intellectual context.Readings in Middle English.

REL 289 VISIONARY, MYSTICS, SAINTS

REL 291 TOPICS IN PHILOSOPHICAL THEOLOGY

A seminar devoted to a selected topic in philosophy of religion. Same as PHL 260/460.

Offered: Spring

REL 292 MARX, NIETZSCHE & FREUD

This course examines the views of Marx, Nietzsche and Freud on religion. Each of these three thinkers developed a radical critique of religion that was a vital part of his thought, and echoes of their views continue to be heard in contemporary debates about religion. We will discuss their explanations of the origins of religious ideas, the validity of their criticisms—most prominently that religion as such is now harmful to humanity—and how each man's view of religion reflects larger concerns in his thought. Key concepts of each thinker, such as alienation (Marx), nihilism (Nietzsche), and neurosis (Freud), will be analyzed.

REL 293W THEORIES OF RELIGION

An investigation of important methodological contributions to the critical study of religion. The class will be conducted as a seminar. In class, papers and discussion will constitute the work of the course. One hundred and fifty pages of reading per week.

Offered: Fall

REL 297 THE FIRST AMENDMENT & RELIGION IN AMERICA

The historical forces that led to the adoption of the religion clauses of the First Amendment, the subsequent development of those clauses (importantly through the close reading of key Supreme Court opinions), and religion's role in modern American society.

Offered: Spring

REL 299 FIELD METHODS IN ARCHAEOLOGY

In this course, taught on site at an archaeological excavation, students receive instruction and hands-on training in archaeological field and laboratory work, including remote sensing in archaeology, on-site surveying, excavation techniques, field documentation, and artifact identification and processing.

REL 315 HEROIC HEART: MAHABHARATA

REL 316W HINDU POETS AND STORYTELLERS

REL 382 APOCALYPSE NOW...AND THEN

REL 389W SENIOR SEMINAR

This advanced seminar focuses on topics, methods, and theoretical models in the study of religion. Specific subjects are determined on a yearly basis. Restricted to Senior religion majors or by permission of Instructor.

Offered: Spring

REL 390 SUPERVISED TEACHING

REL 391 INDEPENDENT STUDY

By arrangement with the chair and with the consent of an instructor, to permit work beyond the regular course offerings. Limited to juniors and seniors with background in the selected area of reading.

REL 391W INDEPENDENT STUDY

REL 392 HONORS RESEARCH

REL 393 SENIOR PROJECT

A directed, individual study project open to senior concentrators.

REL 393W SENIOR PROJECT

REL 394 INTERNSHIP

REL 396 HONOR'S RESEARCH

REL 403 MEDIEVAL DRAMA

REL 491 READINGS

REL 591 PHD READINGS IN RELIGION

REL 986V FULL-TIME VISITING STUDENT

REL 987V PART TIME VISITING STUDENT

RST 126 RUSSIA NOW (4.0 CREDITS)

Students will follow current events in Russia through the internet, newspapers, magazines, and other sources (including satellite broadcasts when available). Along with a general attention to current events, each student will follow a particular area of interest (e.g. national identity, the market economy, politics, health issues, crime, culture, foreign policy) throughout the term, do background work on this topic and write it up towards the end of the term. Students who read Russian will be encouraged to use available sources in that language. This course is designed to (1) familiarize students with the most important issues facing Russia today and the historical/political/cultural context in which to place them; (2) to acquaint students with a variety of resources from the US, Russia, and a number of other countries and the different perspectives these sources may give on one and the same issue. Students write two short essays and one longer research paper.

Offered: Fall Spring

RST 127 RUSSIA NOW (2.0 CREDITS)

In this 2-credit version of the "Russia Now" course, students will follow current events in Russia through the internet, newspapers, magazines, and other sources. Along with a general attention to current events, each student will follow a particular area of interest (e.g. national identity, the market economy, politics, health issues, crime, culture, foreign policy) throughout the term, do background work on this topic and write it up towards the end of the term. Students who read Russian will be encouraged to use available sources in that language. This course is designed to (1) familiarize students with the most important issues facing Russia today and the historical/political/cultural context in which to place them; (2) to acquaint students with a variety of resources from the US, Russia, and a number of other countries and the different perspectives these sources may give on one and the same issue. May be taken twice for credit.

Offered: Fall Spring

RST 128 RUSSIAN CIVILIZATION

RST 128W RUSSIAN CIVILIZATION

RST 133 THE RUSSIAN REVOLUTIONS

RST 160 THE NEW EUROPE

One class each week will look at the post-war rise of the European Union and the extent to which it has successfully united a majority of European countries and created a new, post-national European identity. The other weekly class will follow current events in a Europe that stretches from the Atlantic coast eastward to the Ural Mountains of Russia, and comprises more than forty nations, each of which has its own “brand” based on a complex mix of historical, geographical, economic, and cultural factors. In English.

RST 161 EUROPE TODAY

Students follow events in Europe (from Spain to Russia) using print and electronic sources. Weekly discussions, analysis. Final essay. In English.

RST 171 IMPERIAL RUSSIA

RST 224 RUSSIAN ART

RST 226 RUSSIA'S SILVER AGE

RST 231 GREAT RUSSIAN WRITERS

A survey of Russian literature from the beginning of the realistic period in the early nineteenth century to the rise of modernism at the turn of the twentieth century. We will read a broad variety of works by the most important writers, including Pushkin¿s novel in verse Eugene Onegin, the novel Hero of Our Time by the ¿Russian Byron¿, Mikhail Lermontov, Gogol¿s comic narrative Dead Souls, Goncharov¿s Oblomov (about a man who cannot get out of bed), short works by Dostoevsky and Tolstoy, and a play by Anton Chekhov. We will examine each work within the context of Russian literary and cultural history, paying particular attention to questions of structure and theme. All readings will be in translation. Four 5-6 page essays.

RST 231W GREAT RUSSIAN WRITERS

RST 235 TOLSTOY'S WAR AND PEACE

RST 235W TOLSTOY'S WAR AND PEACE

A semester-long exploration of the world of War and Peace. Besides a close analysis of the novel, we read two important short works by Tolstoy and excerpts from historical accounts. We also view Russian, American and British attempts to film the novel. In English.

RST 237 DOSTOEVSKY

We unpack the writer’s life and art through close readings of his major works, including Poor Folk, Letters from the House of the Dead, Notes from Underground, Crime and Punishment and Brothers Karamazov. In English.

RST 237W DOSTOEVSKY

RST 240 NABOKOV - Unusual Emigre

A survey of the writer's Russian and American works and his contribution to world literature. Reading his most renowned novels, we will acquire an understanding of Nabokov's style, philosophy and ethical principles. Our discussions will address his ideas of life and death, space and time, regularity and chance, as well as such issues as otherness, individual freedom, and independent thinking. We will also analyze Nabokov's artistic discourse as we attempt to assess his legacy: was he a trickster as some critics describe him, or a deep thinker and brilliant stylist, as others argue? As an American college professor, whose lectures have been published, how did the author himself think literature should be taught? Readings include King, Queen, Knave, The Defense, Camera Obscura, Invitation to a Beheading, The Gift, Lolita, Pnin and Speak Memory. In English.

RST 243 CHEKHOV AND THE MODERN SHORT STORY

RST 243W CHEKHOV AND THE MODERN SHORT STORY

RST 244 RUSSIA GOES TO MOVIES

The image of Christ has dominated Russian art and culture for a thousand years. Indeed, it may even be argued that Russian literature began with Jesus Christ, for in its earliest forms ¿ the numerous accounts written of saints¿ lives ¿ it dealt with little else than living in accordance with the words and deeds of Christ. After briefly setting the context, the course focuses on the 19th and 20th centuries, exploring the extraordinary range of poetic encounters with the figure of Jesus in works by Tolstoy, Dostoevsky, Aleksandr Blok, Anna Akhmatova, Mikhail Bulgakov, Boris Pasternak, and Venedikt Erofeev.

RST 244W RUSSIA GOES TO MOVIES

RST 247 SECRET NATION

RST 247W SECRET NATION

RST 248 RUSSIAN IDENTITY

This course examines how culture, ethnicity, and politics intersect in 20th-century Russian literature. We begin with excerpts from Dostoevsky's "Diary of a Writer," sacralizing Russianness and demonizing Jews. Political and artistic avant-gardes 1900-1930 are analyzed for their attempts to overcome traditional ethnic divisions. In Stalin's Russia an international Soviet identity was replaced by a Russian state culture, which put "cosmopolitanism" on trial after World War II. A secular Russian cultural identity was the norm until the state withdrew from the cultural sphere in the late 1980s, but Russian Jewish emigre literature was available to many readers through unofficial channels. We end with the battle of competing identities in post-1985 Russia. Readings include: Dostoevsky, Babel, Grossman, Mandelstam, Pasternak, Roziner, Tertz, Markish, Rasputin, and Brodsky. In English.

RST 248W RUSSIAN IDENTITY

RST 267 RUSSIA GOES TO MOVIES

RST 267W RUSSIA GOES TO MOVIES

RST 289 DANGEROUS TEXTS

When modern Russian literature began to evolve in the mid-1600s, the printed or written text was immediately seen as a potential danger to the power of Church and State. In this course we will examine dangerous texts' from the 17th century to the present to see what aspects of texts and their authors were seen as threats and how these threats were dealt with. We will also see the ways in which writers did indeed perceive themselves as a second government' and how this changed the way they wrote. The reading list will include works by: Avvakum, Radishchev, Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, Babel, Mayakovsky, Mandelstam, Pasternak, Yevtushenko, Solzhenitsyn, Voinovich, Grossman, and Sinyavsky/Tertz. The goal of this course is to arrive at an understanding of the unique role played by literature in Russian history. In English.

RST 289W DANGEROUS TEXTS

When modern Russian literature began to evolve in the mid-1600s, the printed or written text was immediately seen as a potential danger to the power of Church and State. In this course we will examine dangerous texts' from the 17th century to the present to see what aspects of texts and their authors were seen as threats and how these threats were dealt with. We will also see the ways in which writers did indeed perceive themselves as a second government' and how this changed the way they wrote. The reading list will include works by: Avvakum, Radishchev, Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, Babel, Mayakovsky, Mandelstam, Pasternak, Yevtushenko, Solzhenitsyn, Voinovich, Grossman, and Sinyavsky/Tertz. The goal of this course is to arrive at an understanding of the unique role played by literature in Russian history. In English.

RST 390 SUPERVISED TEACHING

RST 391 INDEPENDENT STUDY

RST 392 PRACTICUM

RST 393 SENIOR ESSAY

RST 393W SENIOR ESSAY

RST 394 INTERNSHIP

RST 443 CHEKHOV AND THE MODERN SHORT STORY

RUS 101 ELEMENTARY RUSSIAN I

Russian 101 is an introductory language course in which students learn fundamentals of grammar, vocabulary, pronunciation and speaking in the context of Russian culture. Emphasis will be on practical Russian language skills (speaking, listening, reading and writing). Lecture sections combine interactive exercises and drills in Russian with presentations in English. Students must also register for recitation section twice a week in addition to the main class. Recitations focus on group work and practicing new material. There are six unit tests and daily assignments. No midterm or final.

Offered: Fall

RUS 102 ELEMENTARY RUSSIAN II

Continuing introduction to Russian grammar, phonetics, conversation. Emphasis will be on practical Russian language skills. Lectures will combine drilling in Russian with presentations in English. By the end of the semester, students will have been introduced to the fundamental aspects of Russian grammar and lexicon.

Offered: Spring

RUS 107 RUSSIAN IN RUSSIA

Russian language and culture in St. Petersburg, Russia, in the month of June. Coursework in grammar, phonetics, conversation, reading, and culture, all oriented toward practical language skills. Lodging and meals with host families, and excursions in and around St. Petersburg, including a weekend trip to Moscow.

Offered: Summer

RUS 110 CONVERSATIONAL RUSSIAN

Conversation course designed to help students with some knowledge of Russian grammar develop facility with the spoken language. Emphasis on vocabulary building. Class time devoted to debate, discussions, and conversations about current topics and aspects of contemporary Russian culture. Themes for discussion both extemporaneous and planned. Students are expected to prepare for the assigned themes in advance. Recommended in conjunction with any Russian language course, except for RUS 101, for extra oral practice. May be taken twice.

Offered: Fall

RUS 111 RUSHIN' THROUGH RUSSIAN: INTENSIVE ELEMENTARY RUSSIAN

Our intensive introductory Russian course covers first-year Russian in just six weeks. Successful students will be able to enroll in the Intermediate Russian class in the fall. This course is ideal for those who would like to learn Russian, but whose busy schedules have prevented them from pursuing this interest during the academic year. Students will attend class 3 hours daily. We will cover all 10 chapters of Book One of ###### (Golosa), the textbook we use in RUS 101-102. Grading will be based on daily quizzes and weekly chapter tests.

Offered: Summer

RUS 126 RUSSIA NOW (4.0 CREDITS)

Offered: Fall Spring

RUS 127 RUSSIA NOW (2.0 CREDITS)

Offered: Fall Spring

RUS 128 RUSSIAN CIVILIZATION

Russian Civilization from its beginnings a thousand years ago to the present day. Each unit will cover historical and cultural background as well as literary texts. We will examine important national "myths" (narratives with a variable connection to the historical record) that govern the Russians' understanding of their history and culture, including: the Golden Age of Kiev, Moscow as the Third Rome, and the myths surrounding the city of Petersburg. We will analyze traditional tensions in Russian civilization which prevail today, such as those between: chaos and order, foreign influence and a strong national identity, innovation and tradition, and between radical skepticism and faith. Readings will include: Russian fairy tales and saints' lives, excerpts from the autobiography of the 17th century heretic Avvakum, tales by Pushkin and Gogol, one of Dostoevsky's most powerful and influential novels ("The Devils/Possessed"), and a wide range of materials from the twentieth century. In English.

RUS 128W RUSSIAN CIVILIZATION

RUS 151 INTERMEDIATE RUSSIAN I

Further development of grammatical concepts introduced in elementary Russian; building of vocabulary and comprehension skills; weekly film essays. One recitation per week.

Offered: Fall

RUS 152 INTERMEDIATE RUSSIAN II

Continuation of Intermediate Russian I (RUS 151): building of vocabulary, conversation and comprehension skills; weekly film essays. One recitation per week.

Offered: Spring

RUS 157 RUSSIAN IN RUSSIA

Russian language and culture in St. Petersburg, Russia, in the month of June. Coursework in grammar, phonetics, conversation, reading, and culture, all oriented toward practical language skills. Lodging and meals with host families, and excursions in and around St. Petersburg, including a weekend trip to Moscow.

Offered: Summer

RUS 161 EUROPE TODAY

Students follow events in Europe (from Spain to Russia) using print and electronic sources. Weekly discussions, analysis. Final essay. In English.

RUS 202 ADVANCED READINGS IN RUSSIAN I

An introduction to the reading of longer texts in Russian and the development of advanced writing, comprehension and conversation skills in Russian. In addition, we cover advanced Russian grammar topics, such as gerunds, active and passive participles, reported speech, perception and thought. Class conducted primarily in Russian.

RUS 205 ADVANCED READINGS IN RUSSIAN II

We read and discuss famous short stories by Pushkin, Gogol, Chekhov and others, write essays, make class presentations and cover various topics in advanced Russian grammar. Class conducted primarily in Russian. This class is aimed at advanced, non-heritage students.

RUS 207 RUSSIAN IN RUSSIA

Advanced Russian language and culture in St. Petersburg, Russia, in the month of June. Coursework in grammar, phonetics, conversation, reading, and culture, all oriented toward practical language skills. Lodging and meals with host families, and excursions in and around St. Petersburg, including a weekend trip to Moscow.

Offered: Summer

RUS 209 ADVANCED RUSSIAN THROUGH FILM

Students cover various topics in grammar and syntax at the advanced level with an emphasis on practical applications. Students will view six widely acclaimed films, which will form the basis for the acquisition of written skills, grammatical accuracy and conversational fluency. Class conducted primarily in Russian.

RUS 212 ADVANCED RUSSIAN LITERATURE AND CULTURE IN THE ORIGINAL I

This class is aimed at heritage speakers and non-native students who have completed at least three years of Russian. Literary texts appropriate to the abilities of the group are read and discussed. Special attention is paid to the development of writing skills. Class conducted in Russian. This class may be taken twice for credit.

RUS 215 ADVANCED RUSSIAN LITERATURE AND CULTURE IN THE ORIGINAL II

Reading, composition and conversation for advanced students and heritage speakers of Russian. Class conducted in Russian.

RUS 218 ADVANCED RUSSIAN LITERATURE AND CULTURE IN THE ORIGINAL III

This course is a continuation of RUS 212 and 215. Prior enrollment in RUS 212 and 215 is not required.

RUS 224 RUSSIAN ART

The history of Russian art and architecture from the Christianization of Russia through the twentieth century. Students learn how to read icons, discern the major features of Russian churches, and follow the development of Russian painting from the age of realism to modern times. In English.

RUS 226 CULTURE IN CHAOS: RUSSIA'S SILVER AGE

From the assassination of Alexander II in 1881 to the rise of the Soviet Union in 1925, Russia was the scene of political and cultural upheaval. The literature of this period is especially rich, with great poetic talents (Blok, Akhmatova, Mandelstam, Mayakovsky) and blockbuster novels (Sologub's Petty Demon and Bely's Petersburg), but all the arts participated. In addition to literature, this course will examine developments in music (Stravinsky, Scriabin), drama (the Moscow Art Theatre), painting (Vrubel, Roerich, Goncharova, Malevich), and dance (the Ballet Russe). No longer simply adapting foreign forms, Russian culture was at the forefront of the European avant-garde. The Bolshevik Revolution of 1917 began to bring this cultural renaissance to an end, and rising Soviet Power sent its remaining creative spirits underground or abroad, but its influence and memory in Russian and world culture has lasted till this day.

RUS 231 GREAT RUSSIAN WRITERS

This is a chronological survey of the most important Russian writers of the 19th century, from the end of romanticism through the rise of realism to the advent of modernism. We read Alexander Pushkin's novel in verse Eugene Onegin, Mikhail Lermontov's psychological study Hero of Our Time, Nikolai Gogol's comic masterpiece Dead Souls, Ivan Goncharov's novel about a man who cannot get out of bed, Oblomov, Ivan Turgenev's novel about generational differences Fathers and Sons, Dostoevsky's suspense novel The Gambler, and two plays by the forerunner of modern theater, Anton Chekhov: Uncle Vanya and Three Sisters. Our goal is twofold: to understand the shape and development of Russian prose in the 19th century; and to heighten our own appreciation of fine literature. Four 5-page essays. In English.

RUS 231W GREAT RUSSIAN WRITERS

RUS 235 TOLSTOY'S "WAR AND PEACE"

A semester-long exploration of one of the most important novels in Western literature. To help guide our reading, we will analyze two important early short works by Tolstoy on the themes of war and peace. We will also read excerpts from historical and biographical accounts. We will pay close attention to the novel's meditation on the relationship between fact and fiction in works of historical literature; its preoccupation with theories of history; its subversion of historical narratives; its various philosophical and moral propositions; and its unique contribution to the Russian idea of literature's role as a kind of textbook for how we should live. We will also view Russian, American and British attempts to film the novel, including Woody Allen's 1975 parody, Love and Death. In English.

RUS 235W TOLSTOY'S WAR AND PEACE

A semester-long exploration of the world of War and Peace. Besides a close analysis of the novel, we read two important short works by Tolstoy and excerpts from historical accounts. We also view Russian, American and British attempts to film the novel. In English.

RUS 237 DOSTOEVSKY

Dostoevsky has been called "a sick, cruel talent," "a prophet of God," "the Shakespeare of the lunatic asylum," and "Russia's evil genius." An avid student of human psychology, Dostoevsky was fascinated by the irrational aspects of human behavior. He was therefore skeptical of the rational utopian schemes of the radical materialists of his day and proposed instead that the best definition of the human being is "biped, ungrateful." His works probe the psychological paradoxes of human behavior against the background of philosophical, theological, and ideological inquiries into the burning issues of his day and the cursed questions of human existence, such as the existence of evil and innocent suffering and the death of God. We unpack the writer's life and works through close readings of important works, including "Poor Folk," "Letters from the House of the Dead," "Notes from Underground," "Crime and Punishment" and "Brothers Karamazov." In English. Freshmen welcome.

RUS 237W DOSTOEVSKY

RUS 240 NABOKOV: UNUSUAL ÉMIGRÉ

A survey of the writer's Russian and American works and his contribution to world literature. Reading his most renowned novels, we will acquire an understanding of Nabokov's style, philosophy and ethical principles. Our discussions will address his ideas of life and death, space and time, regularity and chance, as well as such issues as otherness, individual freedom, and independent thinking. We will also analyze Nabokov's artistic discourse as we attempt to assess his legacy: was he a trickster as some critics describe him, or a deep thinker and brilliant stylist, as others argue? As an American college professor, whose lectures have been published, how did the author himself think literature should be taught? Readings include King, Queen, Knave, The Defense, Camera Obscura, Invitation to a Beheading, The Gift, Lolita, Pnin and Speak Memory. In English.

RUS 243 CHEKHOV AND THE MODERN SHORT STORY

This course covers Chekhov's short stories within the context of Russian and European/American literature of the 19th century. The short story as a literary genre, conceived as late as the end of the 18th century, grew and matured in the course of the 19th century. Edgar Allan Poe, Nikolai Gogol, Mark Twain, Ivan Turgenev, Prosper Mérimée, Lev Tolstoy, Gui De Maupassant and many other European and American writers secured its venerable position in literature. The works of Anton Chekhov are at the pinnacle of civic, lyric, and psychological realism of the 19th century. At the same time, his short stories bridge 20th century modernism, preparing the ground for Soviet avant-garde on the one hand, and the modernist writings of Ivan Bunin and Vladimir Nabokov on the other. In English.

RUS 243W CHEKHOV AND THE MODERN SHORT STORY

RUS 244 THE IMAGE OF CHRIST IN RUSSIAN LITERATURE

Jesus Christ has dominated Russian art and culture for a thousand years. We will contrast the Jesus of history with the Christ of faith, compare Gospel accounts, analyze icons and saints lives and then focus on important novels of the 19th and 20th centuries by Tolstoy (Resurrection), Dostoevsky (Idiot), Mikhail Bulgakov (Master and Margarita) and Boris Pasternak (Dr. Zhivago) that address the image of Christ. In English.

RUS 244W RUSSIA GOES TO MOVIES

RUS 247 SECRET NATION

The cult and culture of secrecy in Russia from Ivan the Terrible to the present. Russia was always an enigma, as tsarist and Soviet governments gathered and controlled information. The Russian people kept information from the government, and foreign states sent out disinformation of their own about Russia. There was an active underground in religion, literature, politics, the economy, and other areas. With glasnost, Gorbachev began the process of uncovering secrets from above, and a freer press began to do the same from below. We use materials from history, religion, literature, film, political science, and economics, to get a richly detailed picture of the information that was hidden, and the means by which this was accomplished. Official secrecy that was originally a defensive move came to undermine the state it sought to protect. At the end of the semester we see to what extent old habits of secrecy persists in Russia today. The course is taught in English.

RUS 247W SECRET NATION

The cult and culture of secrecy in Russia from Ivan the Terrible to the present. Russia was always an enigma, as tsarist and Soviet governments gathered and controlled information. The Russian people kept information from the government, and foreign states sent out disinformation of their own about Russia. There was an active underground in religion, literature, politics, the economy, and other areas. With glasnost, Gorbachev began the process of uncovering secrets from above, and a freer press began to do the same from below. We use materials from history, religion, literature, film, political science, and economics, to get a richly detailed picture of the information that was hidden, and the means by which this was accomplished. Official secrecy that was originally a defensive move came to undermine the state it sought to protect. At the end of the semester we see to what extent old habits of secrecy persists in Russia today. The course is taught in English.

RUS 248 Russian Identity: Continuity/Disruption

Russia's self-image as it has evolved from Kievan Rus to the present, the product of geography, war, religion, strong leaders, brilliant writers, and other factors. Readings include works by Russian (Pushkin, Gogol, Dostoevsky), Jewish (Zionists, Sholem Aleichem, Babel), and Soviet authors, and the transcript of a conference on post-Soviet identity, held on the eve of Putin's presidency. At the conclusion of the course, we will look at Russia 2016, where a resurgent national identity has serious repercussions for the West. In English.

RUS 248W RUSSIAN IDENTITY

RUS 267 RUSSIA GOES TO MOVIES

The dawn of the age of movies coincided with the Russian Revolution, and film was Lenin's favorite art form. The course surveys Russian film from the beginnings to the present. The course investigates the major role that cinema played in shaping the national and political identity of the Soviet Union, and looks at what was artistically interesting and popular about these films, some of whose directors, like Eisenstein and Tarkovsky, are among the world's most influential filmmakers.

RUS 267W RUSSIA GOES TO MOVIES

RUS 289 DANGEROUS TEXTS

When modern Russian literature began to evolve in the mid-1600s, the printed or written text was immediately seen as a potential danger to the power of Church and State. In this course we will examine dangerous texts' from the 17th century to the present to see what aspects of texts and their authors were seen as threats and how these threats were dealt with. We will also see the ways in which writers did indeed perceive themselves as a second government' and how this changed the way they wrote. The reading list will include works by: Avvakum, Radishchev, Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, Babel, Mayakovsky, Mandelstam, Pasternak, Yevtushenko, Solzhenitsyn, Voinovich, Grossman, and Sinyavsky/Tertz. The goal of this course is to arrive at an understanding of the unique role played by literature in Russian history. In English.

RUS 289W DANGEROUS TEXTS

When modern Russian literature began to evolve in the mid-1600s, the printed or written text was immediately seen as a potential danger to the power of Church and State. In this course we will examine dangerous texts' from the 17th century to the present to see what aspects of texts and their authors were seen as threats and how these threats were dealt with. We will also see the ways in which writers did indeed perceive themselves as a second government' and how this changed the way they wrote. The reading list will include works by: Avvakum, Radishchev, Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, Babel, Mayakovsky, Mandelstam, Pasternak, Yevtushenko, Solzhenitsyn, Voinovich, Grossman, and Sinyavsky/Tertz. The goal of this course is to arrive at an understanding of the unique role played by literature in Russian history. In English.

RUS 390 SUPERVISED TEACHING

RUS 391 INDEPENDENT STUDY

RUS 392 PRACTICUM

RUS 393 SENIOR ESSAY

A paper based upon independent study; required of concentrators.

RUS 443 CHEKHOV AND THE MODERN SHORT STORY

SA 103 ESSNTL DIGITAL MEDIA TOOLKIT

This course introduces students to current industry-standard software for creating, editing, and producing core Digital Media objects: photographs, video, vector images, 3D models, & videogames. This fast paced project driven course invites experts in the fields of photography, video, graphic design, rapid prototyping and gaming to share their knowledge and experience. Through finding creative solutions to problems posed by instructors, you will manipulate photographs, edit a short video, design graphics, use a laser scanner and software to make and modify a 3D model, create a small interactive videogame environment. The course culminates with designing a digital portfolio of the work you create in this course. Studio art supplies fee: $50.

SA 111 INTRODUCTION TO DRAWING

The coursework follows a sequence of studies that introduces basic drawing techniques, media, and composition through observation and analysis. Through a sequence of projects, students will have the opportunity to develop formal artistic skills and spatial relationships while enhancing their conceptual understanding of art as a visual language. Students will work from life and from the imagination to solve visual problems. Evaluation will primarily be based on the quantity and quality of studio production as well as the effort to thoughtfully contribute to critiques and discussions. Both traditional and non-traditional mediums and approaches will be explored. Relevant readings and short papers are to be expected. Not open to seniors.Studio art supplies fee: $50. If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

SA 114 CREATING ARCHITECTURE - an Introduction

Architecture gives form to space. It is a specialized, functional art that defines space for a utilitarian purpose, based on a specific set of conditions. Architecture makes music out of notes, poetry out of words, it elicits a response. This course will explore the fundamental design principles that are the tools used to create architecture. Through a series of talks, images, field trips, and creative exercises, the students will gain a new awareness of a building, an outdoor space or an entire city. The students will become more sensitive to both the natural and built environment through this increased understanding of architecture. This course is intended to be very interactive and therefore enrollment will be limited to 10 students. Students will be evaluated on two papers

and a final project. This course is open to all majors, and prior architecture study is not required. If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder.

SA 121 INTRODUCTION TO PAINTING

Designed to introduce students to the art of painting through a traditional and experimental approach. Through a sequence of projects, students will have the opportunity to practice observational painting skills as well as experiment with a variety of non-traditional media and innovative techniques. This course aims to enhance each students understanding of historical and contemporary painting trends through studio practice and classroom dialogue. Ultimately, students will work toward creating mature visual works that communicate meaning effectively. Your paintings, in addition to their many other functions, will serve as documentation of your artistic and intellectual pursuit. Formal and informal critiques will regularly follow the completion of most projects. Readings and short papers are to be expected. Not open to seniors. Studio art supplies fee: $50.If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder, stephanie.ashenfelder@rochester.edu.

SA 121A INTRODUCTION TO PHOTOGRAPHY: DARKROOM & DIGITAL

This course draws on basic elements of photography, in order to explore alternative modes of thinking about photographic frame and ways of presenting the image. The student will be asked to develop series of images using different photographic techniques and formats such as photograms (photography without a camera), prints on silver photographic paper and digital prints. Topics covered during the course include darkroom techniques, alternative digital processes with an emphasis on photography, and SLR cameras. No prior experience in photography is needed to successfully complete this class.

SA 131 INTRODUCTION TO SCULPTURE

A wide range of materials and techniques from metal and welding to assemblage, from wood to experimental methods and media is explored in the service of three dimensional art making. Investigations of the specific qualities of three dimensional media (i.e. space, form, scale, mass) and how they can convey ideas are made within a contemporary framework. Artworks synthesize a particular choice and use of materials and a concept or expression. It is the aim of this class to develop this synthesis, and in so doing, begin to develop the students' own working creative vocabulary. Not open to seniors. Studio art supplies fee: $50. If the course fills and you would like to be added to tat stephanie.ashenfelder@rochester.edu.he wait list, please contact Stephanie Ashenfelder.

SA 141 INTRODUCTION TO PHOTOGRAPHY

This class is an introduction to the basic elements of photography, SLR and DSLR camera, darkroom techniques and alternative digital processes with an emphasis on photography as an interpretive and hybrid medium. The student will be asked to develop series of images using various photographic techniques and formats such as photograms (photography without a camera), collages and digital negatives printed on silver photographic paper. The class will explore alternative modes of thinking about the photographic frame and ways of presenting images. In conjunction to their studio projects, students will be exposed to current issues in photography and related media through readings, screenings and group discussions. No prior experience in photography is needed to successfully complete this class. Not open to seniors. $50 Studio Fee. If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

SA 151 NEW MEDIA AND EMERGING PRACTICE 1

This course merges contemporary art production with technologies and social interventions. Students will combine historical, inter-media approaches with new, evolving trends in social practice. Studio assignments will use language, performance, programming, moving images, and more as tools and as media to construct creative-situations that prompt dialogue and critique. Special emphasis will be placed on introductory techniques that move beyond the studio and into collaborative, participatory, community-based productions. Not open to seniors. $50 Studio Fee. If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

SA 161 INTRODUCTION TO VIDEO ART

This course introduces the basic aesthetic and technical elements of video production. Emphasis is on the creative use and understanding of the video medium while learning to use the video camera, video editing processes and the fundamental procedures of planning video projects. Video techniques will be studied through screenings, group discussions, readings, practice sessions and presentations of original video projects made during the course. If the course fills and you would like to be added to the wait list, please contact Juliet Carello at juliet.carello@rochester.edu.

SA 181 INTRODUCTION TO PRINTMAKING

Printmaking is a non-digital, non-photographic manner of visual communication which emphasizes reproduction. This course will introduce procedures and techniques for creating multiple works on paper. Suites of prints will be made from linoleum cuts, woodcuts, drypoint etchings, monotypes and mono-prints. Drawing is key in the development of the reductive, visual language required in printmaking. Exercises which focus on print-based drawing skills will be assigned throughout. Not open to Seniors. Studio arts supplies fee: $50. If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder.

SA 190 INTRODUCTION TO STUDIO PRACTICE

Provides a broad framework for contemporary art practice through studio production, discussion, presentation, and critique. While many courses, including Photography, 3-D, Painting, and Digital Art, often start with the medium and work toward the concept, the projects in this class will immediately integrate conceptual challenges with material and technique. While some projects may include traditional media such as pencils and paper, others may invite nontraditional media such as hair, text, earth and sound. Presentations and discussions will address historical and theoretical approaches to art as a way of supporting expansive studio practice. Practice, critique, readings, and discussion combine to place emphasis on the visual investigation necessary to create educated and challenging art. Not open to seniors. Studio art supplies fee: $50.If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

SA 209 WRITING ON ART

This course seeks to improve students' writing and analytical skills through analysis and experimentation with different styles of writing about contemporary and historical arts. Students analyze prose by artists, historians, cultural critics, poets, and others who have written on the visual arts, with an eye towards how writing on art can be a tool for improving expression in many areas. Slide lectures, discussions, and writing projects on objects of diverse media and historical eras will be augmented by visiting speakers and field trips to museums and galleries. This course fulfills one-half of the upper level writing requirement for both studio and art history majors. Permission of instructor required.

SA 212 ADV DWG: ART & INCLUSIVITY

Serious emphasis on independent proposals, research and production further coalesce ideas addressed in introductory level two dimensional courses. The projects demand formal consideration as well as thoughtful content; along with class participation, they act as documents of an engagement in creative thought, research, and problem- solving. Individual and group critiques occur throughout the course. Studio art supplies fee: $50.

SA 212A ADVANCED DRAWING

Serious emphasis on independent proposals, research and production further coalesce ideas addressed in introductory level two dimensional courses. The projects demand formal consideration as well as thoughtful content; along with class participation, they act as documents of an engagement in creative thought, research, and problem- solving. Individual and group critiques occur throughout the course. Studio art supplies fee: $50.

SA 212B ADVANCED DRAWING

Serious emphasis on independent proposals, research and production further coalesce ideas addressed in introductory level two dimensional courses. The projects demand formal consideration as well as thoughtful content; along with class participation, they act as documents of an engagement in creative thought, research, and problem- solving. Individual and group critiques occur throughout the course. Studio art supplies fee: $50.

SA 212C ADVANCED DRAWING

Serious emphasis on independent proposals, research and production further coalesce ideas addressed in introductory level two dimensional courses. The projects demand formal consideration as well as thoughtful content; along with class participation, they act as documents of an engagement in creative thought, research, and problem- solving. Individual and group critiques occur throughout the course. Studio art supplies fee: $50.

SA 222A ADVANCED PAINTING

The evolving continuation of painting with serious emphasis on independent proposals, research and production. The broadest examination of painting and related media is expected. Group discussion and individual meetings are on a weekly basis. Permission of instructor only. Studio art supplies fee: $50.

SA 222B ADVANCED PAINTING

The evolving continuation of painting with serious emphasis on independent proposals, research and production. The broadest examination of painting and related media is expected. Group discussion and individual meetings are on a weekly basis. Permission of instructor only. Studio art supplies fee: $50.

SA 222C ADVANCED PAINTING

The evolving continuation of painting with serious emphasis on independent proposals, research and production. The broadest examination of painting and related media is expected. Group discussion and individual meetings are on a weekly basis. Permission of instructor only. Studio art supplies fee: $50.

SA 232A ADVANCED SCULPTURE

This class broadens the investigation undertaken in Introductory 3D to include other materials and processes as well as a focus on working in an interdisciplinary fashion. This course furthers the development of the student's three dimensional form vocabulary and their options for articulating their ideas. The ability to verbally and visually articulate ideas is developed through group discussion and critique. Permission of instructor required. Studio Art Supplies Fee: $50

SA 232B ADVANCED SCULPTURE

This class broadens the investigation undertaken in Introductory 3D to include other materials and processes as well as a focus on working in an interdisciplinary fashion. This course furthers the development of the student's three dimensional form vocabulary and their options for articulating their ideas. The ability to verbally and visually articulate ideas is developed through group discussion and critique. Permission of instructor required. Studio Art Supplies Fee: $50

SA 232C ADVANCED SCULPTURE

This class broadens the investigation undertaken in Introductory 3D to include other materials and processes as well as a focus on working in an interdisciplinary fashion. This course furthers the development of the student's three dimensional form vocabulary and their options for articulating their ideas. The ability to verbally and visually articulate ideas is developed through group discussion and critique. Permission of instructor required. Studio Art Supplies Fee: $50

SA 233 RADICAL PRACTICES

Radical Practices is a research-based studio course that investigates contemporary and historical art world references to inform students' independent work. Through a series of lectures, students will gain familiarity with artists—primarily, but not exclusively, visual—whose practices have contributed to dismantling cultural norms, exposing radical undercurrents, and influencing social interactions. Topics that will be covered include identity politics, social practice, performance, collective production, democratic distribution, and institutional critique. Logistically speaking the course will be composed of the three primary modes: lectures, readings and discussions, and studio work. Based on independent research, students will generate several projects that respond to and invent upon the proposition of creating one's own radical practice of making. Permission of instructor required. Studio Art Supplies Fee: $50

SA 242A ADVANCED PHOTOGRAPHY

An artist's book class that uses photographic imagery as its primary source. The photographic book extends the photographic series into time, space and tactile interaction. From digital book, to photo album, to one-of-a-kind curio box of prints, we will examine the multiple roles that contemporary photography and related media plays within our unique cultural moment. The class projects will focus on book structures and material, bookbinding, image sequencing and editing, printing, and design. Interdisciplinary and collaborative approaches will be encouraged. This course will culminate with an exhibition of works and a book exchange. Basic experience with digital photography is required. Prerequisite: SA141, SA151 or any relevant prior experience with photography. Permission of instructor is required to enroll.($50 studio fee)

SA 242B ADVANCED PHOTOGRAPHY: BOOKS AND BOXES

An artist's book class that uses photographic imagery as its primary source. The photographic book extends the photographic series into time, space and tactile interaction. From digital book, to photo album, to one-of-a-kind curio box of prints, we will examine the multiple roles that contemporary photography and related media plays within our unique cultural moment. The class projects will focus on book structures and material, bookbinding, image sequencing and editing, printing, and design. Interdisciplinary and collaborative approaches will be encouraged. This course will culminate with an exhibition of works and

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SA 243A DANCE ON CAMERA:CAM ON DANCE

Students will create and perform multi-media site-specific choreography and installations that will be captured and re-mixed. Geared for students of dance, film and photography, this course will explore creative collaboration, composition, lens based art and post-production. Students will be encouraged to curiously and playfully embody manipulations of movement material and play with technology to better understand different points of view and to explore the elements of site, space, shape, time and effort to see how they affect quality and content. Students will gain hands-on experience with digital photo and video equipment and editing software, and will serves roles both in front of and behind the camera. $50 Equipment Useage Fee.

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SA 244A ADVANCED PHOTO/DIGITAL: EXPANDED PHOTOGRAPHY

The class will examine and interrogate the multiple roles that contemporary photography and related media plays within our unique cultural moment with an emphasis on hybrid/multidisciplinary approaches to the medium. The class projects will explore site-specific photographic installation, time based imagery, large format printing, book and object making. Digital processes and studio lighting techniques will also be covered. In conjunction to their studio project, students will view and analyze a range of photographic practices, read contemporary criticism and engage in probing discussion and original writing. Upon completion of this course, students will have the capacity to more confidently engage the work they make within the broader discourse of art and will acquire an understanding of the concepts and vocabulary necessary for critical discussion of photographic work, their own and that of others. Minimal experience with digital photography is required. Permission of instructor. $50 studio fee.

SA 244B ADVANCED PHOTO/DIGITAL: EXPANDED PHOTOGRAPHY

The class will examine and interrogate the multiple roles that contemporary photography and related media plays within our unique cultural moment with an emphasis on hybrid/multidisciplinary approaches to the medium. The class projects will explore site-specific photographic installation, time based imagery, large format printing, book and object making. Digital processes and studio lighting techniques will also be covered. In conjunction to their studio project, students will view and analyze a range of photographic practices, read contemporary criticism and engage in probing discussion and original writing. Upon completion of this course, students will have the capacity to more confidently engage the work they make within the broader discourse of art and will acquire an understanding of the concepts and vocabulary necessary for critical discussion of photographic work, their own and that of others. Minimal experience with digital photography is required. Permission of instructor. $50 studio fee.

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SA 252A NEW MEDIA AND EMERGING PRACTICE 2: ART ENVIRONMENT ACTION

This course explores the possibilities of art-making through networked environments emphasizing emerging technologies and social practice. Our framing creative-research question for the semester will be: What does it mean to be an ecological being in the context of convergent ecological, digital, local, industrial, and global environments, and how do we make art that interrupts this experience? How can artists create texts, objects, and collaborative, participatory social actions that reinvigorate awareness of the ecologically and technologically interconnected world in which we live? We will find out! Not open to seniors. $50 Studio Fee.

SA 252B NEW MEDIA AND EMERGING PRACTICES 2

The goal of this course is to take digital art-making out of the computer lab and into the collaborative, ecological context of an urban farm in Rochester. Working in tandem with CAS 250 “Food Justice, Urban Farming, and Social Practice,” students will bring new media art practices to bear on issues of local food justice, community networks, and ecological sustainability. In collaboration with Seedfolk City Farm, a multi-site farm that fights food insecurity in Rochester neighborhoods, students will work with local youth to create a cooperative, educational art-centered exchange for skill#sharing and open-source expertise. Digital artworks will be created that draw on student experiences of gardening and composting, the politics of food deserts in the city of Rochester, and questions of urban ecology and sustainability, including poverty and justice. Permission of instructor is required to enroll. ($50 studio fee)

SA 252C ADVANCED DIGITAL ART: SUSTAINABILITY & SOCIALLY ENGAGED DIGITAL ART

The goal of this course is to take digital art-making out of the computer lab and into the collaborative, ecological context of an urban farm in Rochester. Working in tandem with CAS 250 “Food Justice, Urban Farming, and Social Practice,” students will bring new media art practices to bear on issues of local food justice, community networks, and ecological sustainability. In collaboration with Seedfolk City Farm, a multi-site farm that fights food insecurity in Rochester neighborhoods, students will work with local youth to create a cooperative, educational art-centered exchange for skill#sharing and open-source expertise. Digital artworks will be created that draw on student experiences of gardening and composting, the politics of food deserts in the city of Rochester, and questions of urban ecology and sustainability, including poverty and justice. SA151 or relevant prior experience. Permission of instructor is required to enroll. ($50 studio fee)

SA 262A ADVANCED VIDEO ART

This course explores video art processes with an emphasis on contemporary practice, emerging trends, and digital technologies. Students will consider time-based digital objects and sound from artistic perspectives questioning and “interrupting” conventional narrative forms while embracing experimental techniques to generate unexpected results. Original projects will involve installation, single channel, sound, and networked environments. Works will be examined within a critical framework of readings, critiques, and viewings. Permission of instructor. $50 studio fee.

SA 262B ADVANCED VIDEO ART

This course explores video art processes with an emphasis on contemporary practice, emerging trends, and digital technologies. Students will consider time-based digital objects and sound from artistic perspectives questioning and “interrupting” conventional narrative forms while embracing experimental techniques to generate unexpected results. Original projects will involve installation, single channel, sound, and networked environments. Works will be examined within a critical framework of readings, critiques, and viewings. Permission of instructor. $50 studio fee.

SA 262C ADVANCED VIDEO ART

This course explores video art processes with an emphasis on contemporary practice, emerging trends, and digital technologies. Students will consider time-based digital objects and sound from artistic perspectives questioning and “interrupting” conventional

narrative forms while embracing experimental techniques to generate unexpected results. Original projects will involve installation, single channel, sound, and networked environments. Works will be examined within a critical framework of readings, critiques, and viewings. Permission of instructor. $50 studio fee.

SA 273A ART & ACTIVISM IN PRINT

Art & Activism in Print engages students to design a social media and visual campaign aimed at raising awareness about the intersection of race, gender, class, and sexuality by embracing the role artists can play in communities. Students gain expertise in printmaking and digital media while exploring the role of artist as activist. Printmaking techniques will include screen printing, relief, and intaglio. SA273 students may work in collaboration with students from outside UR. Work builds on previous 100 level courses to effectively articulate their message. Prerequisite: any 100 level course. Permission of instructor.

SA 273B ART & ACTIVISM IN PRINT

Art & Activism in Print engages students to design a social media and visual campaign aimed at raising awareness about the intersection of race, gender, class, and sexuality by embracing the role artists can play in communities. Students gain expertise in printmaking and digital media while exploring the role of artist as activist. Printmaking techniques will include screen printing, relief, and intaglio. SA273 students may work in collaboration with students from outside UR. Work builds on previous 100 level courses to effectively articulate their message. Prerequisite: any 100 level course. Permission of instructor.

SA 273C ART & ACTIVISM IN PRINT

Art & Activism in Print engages students to design a social media and visual campaign aimed at raising awareness about the intersection of race, gender, class, and sexuality by embracing the role artists can play in communities. Students gain expertise in printmaking and digital media while exploring the role of artist as activist. Printmaking techniques will include screen printing, relief, and intaglio. SA273 students may work in collaboration with students from outside UR. Work builds on previous 100 level courses to effectively articulate their message. Prerequisite: any 100 level course. Permission of instructor.

SA 281A PERFORMANCE ART & SOCIAL INTERVENTION

Performance art is one of the most exciting & misrepresented forms of artistic expression in contemporary art. It intentionally defies any precise definition, giving artists the authority to combine traditional & non-traditional aspects of painting, drawing, photography, literature, physics, fibers, video, law, computer graphics, sound, poetry, found objects, architecture, costume design & sculpture. Performance art often blurs the boundaries between art & life & often encourages us to reconsider our beliefs regarding spirituality, identity, body, space, politics, & the definition of art itself. In this studio art class, we will look at the most fascinating performance artists from the 1960s to the present while designing our own "live sculptures" & "time-based art." No previous knowledge of performance art is necessary. This course may be taken more than once for advanced-level credit. Permission of instructor required. Studio art supplies fee: $50.

SA 281B PERFORMANCE ART AND SOCIAL INTERVENTION

Performance art is one of the most exciting & misrepresented forms of artistic expression in contemporary art. It intentionally defies any precise definition, giving artists the authority to combine traditional & non-traditional aspects of painting, drawing, photography, literature, physics, fibers, video, law, computer graphics, sound, poetry, found objects, architecture, costume design & sculpture. Performance art often blurs the boundaries between art & life & often encourages us to reconsider our beliefs regarding spirituality, identity, body, space, politics, & the definition of art itself. In this studio art class, we will look at the most fascinating performance artists from the 1960s to the present while designing our own "live sculptures" & "time-based art." No previous knowledge of performance art is necessary. This course may be taken more than once for advanced-level credit. Permission of instructor required. Studio art supplies fee: $50.

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SA 282A ADVANCED PRINTMAKING

This course is a continuation the conceptual, technical and aesthetic possibilities learned in previous printmaking courses. Students will expand their technical abilities in relief printing and screen-printing as well as alternative printmaking techniques. While assignments will vary in duration and focus, the content or subject matter of each project is largely self-directed. Students will be challenged to develop technique as well as effective visual messages. A willingness to learn from taking risks is as important as the ability to execute the basic printmaking techniques. The course will consist of demonstrations, discussions, print projects, student presentations, and critiques.Studio Art supplies fee: $50.If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

SA 282B ADVANCED PRINTMAKING

This course is a continuation the conceptual, technical and aesthetic possibilities learned in previous printmaking courses. Students will expand their technical abilities in relief printing and screen-printing as well as alternative printmaking techniques. While assignments will vary in duration and focus, the content or subject matter of each project is largely self-directed. Students will be challenged to develop technique as well as effective visual messages. A willingness to learn from taking risks is as important as the ability to execute the basic printmaking techniques. The course will consist of demonstrations, discussions, print projects, student presentations, and critiques.Studio Art supplies fee: $50.If the course fills and you would like to be added to the wait list, please contact Stephanie Ashenfelder at stephanie.ashenfelder@rochester.edu.

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SA 292A MARKINGS, METHODS & MATERIALS

This course explores of the boundaries of conventional studio production through experimentation with nontraditional materials and invented approaches. It investigates the act of making a mark and probes the motives and impulses inherent in that process. The projects demand formal consideration as well as thoughtful content; along with class participation, they act as documents of an engagement in creative thought, research, and problem-solving. Individual and group critiques occur throughout the course. Markings, Methods, and Materials can be viewed as an extension of any 100-level studio course and provides an opportunity to exercise and explore the techniques and cognitive processes that are utilized and applied in art production and adjacent fields of learning. Permission of instructor required. Studio art supplies fee: $50.

SA 292B MARKINGS, METHODS & MATERIALS

This course explores of the boundaries of conventional studio production through experimentation with nontraditional materials and invented approaches. It investigates the act of making a mark and probes the motives and impulses inherent in that process. The projects demand formal consideration as well as thoughtful content; along with class participation, they act as documents of an engagement in creative thought, research, and problem-solving. Individual and group critiques occur throughout the course. Markings, Methods, and Materials can be viewed as an extension of any 100-level studio course and provides an opportunity to exercise and explore the techniques and cognitive processes that are utilized and applied in art production and adjacent fields of learning. Permission of instructor required. Studio art supplies fee: $50.

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SA 300 ART NY NEW MEDIA CULTURE

Harvestworks will offer this course as an introduction to digital art for Art New York interns. Special application is required. Permission of instructor only.

SA 305K ART NEW YORK COLLOQUIM

As an integral part of the internship program, all students participating in ANY will meet weekly with the program's resident director. The class will visit museums, art galleries, film & media screenings, & learn from these visits through readings, papers, presentations & discussions. The colloquium will also serve to provide an intellectual framework for understanding the operations of the NY art world & to allow students to discuss with one another their experiences at the various institutions where they intern. Each student will be expected to make a presentation about their internship to the ANY group. There will be an entrepreneurial component which will introduce the students to a wide variety of entrepreneurial activity & innovative practices within arts and culture. Through guest speakers, seminars & field trips the students will learn how entrepreneurial endeavors develop. By the end of the semester, the students will create their own proposal for an entrepreneurial project.

SA 390 SUPERVISED TEACHING

SA 391 INDEPENDENT STUDY

Individual studio work at an advanced level and under the guidance of a member of the studio arts faculty.

SA 391W INDEPENDENT STUDY

Individual studio work at an advanced level and under the guidance of a member of the studio arts faculty.

SA 392 PRACTICUM

Each student will intern in an institution arranged or approved by the Art and Art History faculty. The purpose of this internship is to give students an insiders' view of the workings of the art world. Students will be expected to document their internship experiences as a means of evaluation at the end of the semester. This program is limited to second, third, fourth and fifth year undergraduate students interested in learning about all aspects of contemporary art, about how art gets made, how it reaches its public, and the processes of its interpretation. Internships will consist of 20 hours per week, for which students will receive eight credits. Permission of instructor required.

SA 393 SENIOR PROJECT

See “Requirements for Honors in Studio Art.”

SA 393W SENIOR PROJECT

SA 394 INTERNSHIP

SA 395 HONORS SEMINAR

SA 396 SENIOR STUDIO AND SEMINAR

This course is designed to support the transition between undergraduate coursework in the arts & independent, professional, and post-graduate pursuits. The course has 3 essential components: 1. Studio Production and Critique, 2. the Mechanics of the Profession, and 3. Contemporary Artists and Issues as they relate to Visual and Cultural Theory, Art History, & Art Criticism. The production component will consist of the intensive critique of ongoing studio work with emphasis on the importance of shifting toward self-motivated production. The fall semester will serve as the first half of the development toward a solo thesis exhibition & includes an artist talk, which includes documentation, explanation, reference, & an explanation of the relevance of the students work in the context of contemporary art. The spring semester includes a solo exhibition of the students work that is the culmination of their research & production. This class is limited to & required of senior studio majors. Studio Art Fee: $50

SA 397 SENIOR STUDIO AND SEMINAR: SPRING

This course is designed to support the transition between undergraduate coursework in the arts and independent, professional, and post-graduate pursuits. The course has three essential components: (1) Studio Production and Critique, (2) the Mechanics of the Profession, and (3) Contemporary Artists and Issues as they relate to Visual and Cultural Theory, Art History, and Art Criticism. By the end of the semester, students will have prepared an artist talk on their work through documentation,

explanation, reference, and relevance in the context of contemporary art. This class is limited to and required of senior studio majors. Permission of instructor required. Studio art supplies fee: $50.

SA 491 INDEPENDENT STUDY

SA 591 INDEPENDENT STUDY

SAB 090 STUDY ABROAD ORIENTATION

SAB 092 ROCHESTR IN AREZZO-ORIENTATN

SAB 286 SUMMER IN HONG KONG

SAB 287 AREZZO ITALY SUMMER

SAB 292 ISRAEL: BRAUDE SEM

SAB 293 ROCHESTER IN AREZZO ITALY SE

SAB 301 STUDY ABROAD: UR PROGRAM

SAB 302 STUDY ABROAD: NON-UR PROGRAM

SAB 328 GERMANY: COLOGNE EXCHANGE YR

SAB 330 GERMANY:INTERNSHIP(EPA)SEM

SAB 332 BRUSSELS INTERNSHIP(EPA)SEM

SAB 334 LONDON INTERNSHIP(EPA)SEM

SAB 335 MADRID INTERNSHIP (EPA) NM

SAB 336 MADRID INTERNSHIP (EPA) SEM

SAB 338 EDINBURGH INTRNSHIP (EPA)SEM

SAB 341 WASHINGTON SEMESTER

SAB 345 CONTMP BRIT POL&CULTR-LONDON

SAB 346 CONT BRIT POL&CULT-EDINBURGH

SAB 399 SENIOR YEAR IN ABSENTIA

SKT 391 INDEPENDENT STUDY

SOC 205 MICROSOCIOLOGY

Intensive study of semester-long self-analytic groups. Small group and individual interaction. Theories of interaction, small group processes, conversation analysis, narrative interpretation.

Offered: Fall

SOC 206 ADVANCED MICROSOCIOLOGY

Theories of interaction, small group processes, conversation analysis, narrative interpretation. Intensive study of semester-long self-analytic groups. Students may take both SOC 205 and 206.

Offered: Spring

SOC 221 LOVE, FRIENDSHIP & COMMUNITY

Sociological study of personal ties and face-to-face social groups: kinship networks, friendship groups, political and religious ideological groups, intellectual circles.

SOC 310K SOCIAL NET THEORY & ENTREPRENEURIAL ACTIVITY IN SILICON VALLEY I

Network theory is at the forefront of an emerging collaboration among academics, with many new and interesting interdisciplinary implications, especially those for entrepreneurship.

SOC 311K SOCIAL NETWORK THEORY & ENTREPRENEURIAL ACTIVITY IN SILICON VALLEY II

Designed for students who have already taken SOC/ANT 310K. It aims to deepen and extend skills in the same areas for which 310K was an introduction to social network theory and the new sociology of business and entrepreneurial activity.

Offered: Spring

SOC 391 INDEPENDENT STUDY

Special work individually assigned, with the consent of the department.

SOC 393 SENIOR PROJECT

SOC 394 INTERNSHIP

SP 101 ELEMENTARY SPANISH I

Intended for students with no background in Spanish, or whose background does not make placement in a higher-level Spanish course advisable. Training in speaking, comprehension, reading and writing through classroom instruction and recitation periods. Students must also register for the associated recitation section. Two or three exams; daily assignments.

Offered: Fall Spring

SP 102 ELEMENTARY SPANISH II

Spanish 102 continues the work of the beginning course Spanish 101. There is added emphasis on reading comprehension, vocabulary building and culture. Students must also register for the associated recitation session. Two or three exams; daily assignments.

Offered: Fall Spring

SP 113 INTENSIVE ELEMENTARY SPANISH

This six-credit course is designed for students with little or no background in Spanish and the desire to acquire comprehensive skills quickly. It offers intensive training in grammar, speaking, vocabulary building, oral comprehension, reading, and writing skills and prepares students for intermediate-level study. Six weeks, Monday–Thursday. Not open to students who have already taken SP 101 or 102.

Offered: Summer

SP 151 INTERMEDIATE SPANISH I

Continuing study of modern Spanish in its spoken and written forms. Emphasis is given to cultural and literary readings and discussions, as well as composition- writing skills and Multimedia Center activities. Two exams; several compositions and rewrites.

Offered: Fall Spring

SP 152 INTERMEDIATE SPANISH II

Continuation of SP 151. Intended to advance conversational skills and refine writing skills through cultural and literary readings, discussions, and Multimedia Center assignments. Two exams; several compositions and rewrites.

Offered: Fall Spring

SP 153 INTENSIVE INTERMEDIATE SPANISH

SP 153 is an six-credit, communication-based, intermediate-level Spanish language course that combines SP 151 and SP 152. Focus is on learning and review of vocabulary and grammatical structures, with emphasis on oral expression, listening comprehension, and on formal written skills. Also integrates skills related to cultural literacy. Students will revisit grammatical structures learned at the introductory level, and continue to develop meaningful and accurate communication skills. Class focuses on reading, writing, listening and oral practice with additional screening of films representative of Spanish and Spanish-American cultures for discussion. This intensive course is designed to advance communication skills (speaking, writing, reading, and listening) while working to build and expand vocabulary and cultural competence. Not open to students who have taken SP 151 or 152 already. Placement score determines eligibility.

Offered: Summer

SP 157 SPANISH IN...

Study Spanish conversation and culture abroad in a Spanish-Speaking country. (Ecuador, Mexico, or Spain) Program fee includes instruction at local language institute, family-stay and partial board, and excursions designed to complement the program's special topic. Special application required.

Offered: Summer

SP 200 ADVANCED SPANISH COMPOSITION

This course is designed to refine the student's writing and reading skills in Spanish in preparation for entering upper-level Spanish courses. The class time and the assignments are divided between developing composition - writing skills, a variety of readings in Hispanic literature, and some review of grammatical structures. Two exams; four or five compositions and rewrites. Class taught in Spanish.

Offered: Fall Spring

SP 202 THE FORGING OF A NATION: LITERARY IDEAS AND AESTHETICS FROM THE ROMANTICS TO DEMOCRATIC SPAIN

Explores the development of Spanish national identities reflected in and influenced by literary works from the early 19th century to the 21st. Symptomatic of transformations throughout Europe, Spain's writers engage with a modernity that fitfully replaces the traditional social order. Their tools were the systems of knowing the world and of linguistic expression that would be forever changed by contradictions they saw around them. From the poetry of the Romantic period through the literature of the post-Franco era, literature in Spain is a register of cultural turmoil as well as desperate hope and expectation. Readings may include: Gustavo Adolfo Bécquer, José de Espronceda, Benito Pérez Galdós, Emilia Pardo Bazán, Miguel de Unamuno, José Ortega y Gasset, Federico García Lorca, Jacinto Benavente, Ana María Matute, Carmen Martín Gaite, Antonio Buero Vallejo, Rosa Montero, Paloma Pedrero, Bernardo Atxaga, and Mercè Rodoreda.

SP 203 ORIGINS AND EMPIRE: READING THE EARLY HISPANIC WORLD

The course features early-modern Hispanic texts of Spain and Spanish America. It concentrates on the literature of the 16th and 17th centuries with works such as the Lazarillo de Tormes, the Novelas ejemplares of Cervantes and the poetry of Sor Juana Ines de la Cruz . Several papers in Spanish required. Class taught in Spanish.

SP 204 Coming to Terms: Spanish American Literature, from Tradition to Innovation

This course explores the multiple ways that intellectual debates in Spanish America have played out across literary texts from the 1800s to the twenty-first century. Independence from Spain, utopian societies, the value of European literary models, what it means to be modern, the rise of large cosmopolitan cities, autochthonous revolutions, dictatorship and post-dictatorship, the selling of the tropics, authenticity and subalternity, indigenous manifestoes, and experimental theater all respond to the burning questions put forth across Spanish America about its past, present, and future. How individual writers are inspired to respond will be our focus. Taught in Spanish.

SP 205 SPAIN: PAST, PRESENT, AND FUTURE

This course explores selected topics from the early cultural life of the Iberian Peninsula to the burning issues of the 21st century. Topics vary from semester to semester but focus on changing notions of what it means to be "Spanish;" questions of cultural, religious, and ethnic inclusion and exclusion; the rise and fall of empire; Spain in America; war, peace, and reconciliation; terror

at home; and Spain in the new Europe. Students will critique the myths, stereotypes, and realities of Spanish cultural identities as they examine representative examples of art, architecture, photography, music, sports, culinary arts, television, and film. Taught in Spanish.

SP 206 The Invention of Spanish America: From Colonial Subjects to Global Citizens

What was/is Spanish America? This course explores the processes of formation and transformation of the Spanish Americas from pre-Columbian and New World societies through the crucial issues of the globalized Americas today and tomorrow. Topics vary from semester to semester but focus on issues of language, ideology, national identity, race, class, gender, ethnicity, myths, customs and institutions as students examine the material products of folklore, music, the arts, architecture, film, popular culture. Questions of migration, diaspora, cultural hybridity, and modernity are addressed through texts and visual media. Taught in Spanish.

SP 207 SPANISH IN SUMMER STUDY ABROAD

Study Spanish conversation and culture abroad in a Spanish-Speaking country.(Ecuador, Mexico, or Spain) Program fee includes instruction at local language institute, family-stay and partial board, and excursions designed to complement the program's special topic. Special application required.

Offered: Summer

SP 211 CENSORSHIP

SP 215 "DON QUIXOTE": THE BOOK, THE MYTH, THE IMAGE

This course entails a close reading of the novel in Engllish trtanslation, coupled with a focus on the ways in which both the novel and/or protagonist have been adapted, adopted, interpreted or incorporated by various cittical and popular traditions both inside and outside of Spain from the time of its original publication in 1605 through the 21st century. We will examine several filmic adaptations, illuatrations and paintings as well, withan eye toward critically examining the problemaatic employment of Don Quixote as an icon of Pan-Hispanic culture. However, we will continually return to the novel as our anchor throughout the course, while assessing the constantly changing ways in which comtemporary readers and scholars appoach the text. Course is taught in English. *Students taking the course for Spanish credit will do the bulk of the work in Spanish

SP 218 SAINTS, SINNERS & SOVEREIGNS IN MEDIEVAL & EARLY MODERN SPAIN

This course will study various literary, artistic, and historical representations in order to better understand how the discourses of religious and secular life shaped identity, politics, and cultural production in medieval and early modern Spain. We will explore the writing of those who would become saints (e.g. Teresa de Ávila and Juan de la Cruz) as well as texts that examine either the morality or amorality of the time period through characters like go-betweens or pícaros. We will also investigate how various kings and queens (including The Catholic Monarchs, Carlos V, and Felipe II) are represented in portraits and how writers incorporated fictionalized versions of monarchs in their texts. Some themes which will help guide our discussion will include: gender, the saintly body, crime and punishment, the Spanish Inquisition, religious difference, and the burgeoning empire. A few short papers and/or exams, a longer research paper and a presentation will be the basis for evaluation. In Spanish.

SP 249D BUNUEL, DALI, LORCA

This course explores Surrealism and Spain, from the 1920s on, embedding cutting-edge works in broader questions of identity and possible threats to an emerging nation in a continent, a world, and an ethos caught between tradition and modernity. Includes films, art, essays, plays, poetry. Course taught in Spanish.

SP 249E READING FABLES & TELLING TALES IN EARLY MODERN SPAIN

This course will examine the rich tradition of short stories and fábulas in Spain, beginning in medieval times and ending in the eighteenth century. We will examine the different ways in which a story can be presented as well as the purposes (didactic, entertainment, etc.) behind a variety of shorter works produced. Some of the themes that will be addressed are: exemplarity, love, social class, marriage, revenge, gender and miracles. We will also consider the shift from an oral culture to a written one and the implications of the invention of the printing press and rising literacy rates on the short story as a genre and reading as a pastime. Special emphasis will be placed on the Novelas ejemplares by Miguel de Cervantes and the Desengaños amorosos by María de Zayas. Other authors include the Arcipreste de Hita, Don Juan Manuel and Tomás de Iriarte. In Spanish.

SP 249M Out of the Wings: Contemporary Spain on Stage

Dramatic and decisive political, social, and cultural changes in the late twentieth and early twenty-first century have been reflected in onstage experimentation and innovation by a variety of new Spanish playwrights. Tensions between progress, democracy, and modernity against the pull of the past are explored as Spain reconnects with Europe in a second transition into the new century. This course puts the theater of the absurd, the theater of the grotesque, and contemporary cutting-edge aesthetics in the limelight as well as the extraordinary flourishing of women dramatists over the past twenty years. Playwrights include José Ruibal, Fernando Arrabal, Carmen Resino, Juan Mayorga, José Luis Alonso de Santos, Jaime Salom, Paloma Pedrero, Sergi Belbel and the Catalan theater of pain, Ana Diosdado, Laila Ripoll, Concha Romero, and Itziar Pascual. Course taught in Spanish. Students will practice segments of plays in class, and stage a one-act play at the end of the semester.

SP 255 1492 AND BEYOND

SP 260 (RE)WRITING GENDER IN SPANISH-AMERICAN LITERATURE

This course examines the ways in which 20th-C Spanish-American literature constructs femininity, masculinity and sexuality in dialogue with societal norms. We will study works that reflect normative concepts of gender, and others that critique them, offer alternative constructions, or accomplish all three moves. Authors may include: Teresa de la Parra, María Luisa Bombal, Mario Vargas Llosa, Gabriel García Márquez, Carlos Fuentes, Rosario Castellanos, Rosario Ferré, Reinaldo Arenas, Sylvia Molloy, Luis Zapata. Short essays, two one-hour exams. Course taught in Spanish.

SP 262B CUBA AT A CROSSROADS

An enduring experiment in socialism, Cuba has long been part of global debate and expectation, both on the island and among Cuban diasporic communities. Academic inquiry has ranged from Havana as an architectural monument, to leadership after the Castro brothers, from the Buena Vista Social Club to tourism and international hotel chains like Melià. This course examines historical framework, cultural mestizaje (influences of Europe, Latin America, and Africa), arts, and film to elicit conversations about the strategic island. Readings include José Martí, Cristina García, Fernández Retamar, Oscar Hijuelos, Senel Paz, Nicolás Guillén, Alejo Carpentier, Lezama Lima, Reinaldo Arenas, Cabrera Infante, Nancy Morejón. Taught in Spanish.

SP 262C DISABLING DISCOURSE: DISABILITY IN SPANISH-AMERICAN LITERATURE

Disabled characters and metaphors that exploit the meanings associated with disability have been pervasive in story telling in many cultures since ancient times, and they remain a constant of literature, film, television, and other forms of narrative up to the present. This course studies the representation of characters with disabilities in Spanish-American literature from a variety of critical perspectives developed by disability studies scholars in the Global North and the Global South. Reading response papers, short essays, in-class presentation, one exam. Course taught in Spanish.

SP 262F IDENTITY SIGNS: SPANISH-AMERICAN COMING OF AGE STORIES

This course examines 20th-Century Spanish-American literary texts that represent the young person's search for identity, self-knowledge and a place in an often hostile society. Factors such as nationality, social class, gender, race, ethnicity, disability and sexual orientation make this a dynamic process that is fraught with tensions and contradictions. Authors may include: Teresa de la Parra, María Luisa Bombal, José María Arguedas, Mario Vargas Llosa, Rosario Ferré, Isabel Allende, Elena Poniatowska, Reinaldo Arenas. Short essays, research term paper. Class taught in Spanish.

SP 270 THE HISPANIC SHORT STORY

This course examines the particular aesthetic and formal challenges of the short story genre in texts from Spain and Latin America. From "realism" to science fiction, and from the humorous to the grotesque, we will explore the narrative possibilities of a variety of short texts. Authors include 'Clarin; Quiroga, Tusquets, Cortazar, Borges, Chacel, Moix, and others. Class taught in Spanish.

SP 272 POSTCARDS FROM SPAIN: VISITORS, OBSERVERS, AND IMAGINARY GEOGRAPHIES

This course examines the intersection of written text and visual image—like the flip sides of a postcard—as mediated exchanges between visitor and addressee, as dramatized encounters, and as treasured material objects. We study a variety of prose writings, essays, photographs, and films related to geographical places in Spain as seen by insiders and outsiders. Methods and media of communication, cultural interaction and correspondence, undeliverable messages, and reading visual clues are some of the theoretical concerns we explore. Taught in Spanish. Students will create digital postcards as part of their semester's projects. We will visit (digitally): Santiago de Compostela and the Camino de Santiago, Guernica, Barcelona, Madrid, Sevilla, and Granada.

SP 275 MARX AND FREUD IN LATIN AMERICA

This course examines the ongoing influence of writings by Karl Marx and Sigmund Freud on Latin American intellectuals and societies. Key theoretical frameworks—class, inequality, power, social agency, psychoanalysis and subjectivity—have elicited a variety of responses anchored in specific Latin American cultural and historical circumstances. We explore creative practices and cultural products from such encounters, ranging from short stories to novels, from plays to films, and from murals and public art to popular genres. We begin by reading foundational texts by Marx and Freud, then documents revealing how Latin America captured their imagination. Course is taught in Spanish. Most readings in Spanish, some in English.

SP 277 MEXICO, DF: GLOBAL METRO

Called by some “the capital of the 221st century,” Greater Mexico City is inhabited by close to 20 million people. The Distrito Federal (DF) and capital of Mexico is today the largest metroopolitan area in the western hemisphere and third largest city in the world by population. Established by the Spanish in 1524 on the ruins of the Aztec city Tenochtitlán they had destroyed, Mexico City is a global center of finance, culture, and industry. This course examines the development of this vibrant megalopolis over the 20th and 21st centuries using literature, film, politics, tourism, music and the arts, cultural geography, architectural space, and essays by urban wanderers to try and get a handle on a space that seems to contradict itself at every turn.

SP 280 THE TRANSHISPANIC SUPERNATURAL: GHOSTS, WITCHES, AND VAMPIRES IN FILM AND LITERATURE FROM SPAIN AND SPANISH AMERICA

A long tradition of supernatural interventions in everyday life has been portrayed in a wide variety of images in Hispanic cultures from Spain to the Americas, and from colonial times to the 21st century. This course explores the folkloric, the Gothic, and the neo-Gothic traditions as assimilated and portrayed in the media, in literature, and in the cinema as well as hybrid genres such as vampire comedies, haunted schools and children, and the political supernatural. We will explore theories of recycling and reinterpreting the supernatural to study how societies of the Spanish-speaking world have portrayed interactions between the natural world and elements of the supernatural, how they are reimagined, whether explanations are possible or ambiguities resist explanation, and the politics of the supernatural. Taught in Spanish.

SP 287 LATIN-AMERICAN FILM

This course explores the repackaging of Hollywood genres and conventions by the directors of Latin American cinema. The genres we study will include: melodrama, thriller, film noir, comedy, and literary adaptations, with films from Chile, Cuba, Colombia, Mexico, Brazil, and Argentina. Although we will screen a few classics of the golden age (1950s) for comparison, emphasis will be on films of the last twenty years. Course taught in English but written work may be done in Spanish for Spanish credit.

SP 390 SUPERVISED TEACHING

SP 391 INDEPENDENT STUDY

SP 392 PRACTICUM

SP 393 SENIOR PROJECT

SP 393W SENIOR PROJECT

SP 394 INTERNSHIP

SP 405 SPAIN PAST PRESENT FUTURE

This course explores the history of social and cultural development of modern Spain into the 21st century through a variety of media such as art, literature, and film.Topics range from the early cultural life of the peninsula to the implications of the Reconquista and from Spain's overseas empire to the Spanish Civil War, some emphasis on contemporary issues. Class taught in Spanish. Several papers, midterm exam. All written work in Spanish.

SP 406 INVENTION SP AMERICA

This course explores the ideas and events shaping the culture(s) of Spanish America, from pre-Columbian times to the present, with an emphasis on the concepts of discovery, conquest, mestizaje, and the formation of national cultural identity. Strong consideration will be given to contemporary issues. Texts will be drawn from literature, sociology, anthropology, history, the arts, and film. Several short essays, two exams. Class taught in Spanish.

SP 418 SAINTS, SINNERS & SOVEREIGNS

SP 449D BUNUEL, DALI, LORCA

In the decades preceding the Civil War, Spanish avant gardes are represented by three larger-than-life figures: exiled film director Luis Buñuel, obsessed with the feminine, with his homeland and its supposedly eternal myths; Federico García Lorca, poet and playwright of Andalucía and its mythified past, assassinated on the eve of the conflict; and Salvador Dalí who lives the tenets of both Surrealism and capitalism in the flesh. Each leaves a legacy that extends beyond the borders of Spain and beyond the end of the twentieth century. This course explores Surrealism and Spain, from the 1920s on, embedding cutting-edge works in broader questions of identity and possible threats to an emerging nation in a continent, a world, and an ethos caught between tradition and modernity. Includes films, art, essays, plays, poetry. Course taught in Spanish.

SP 449E READING FABLES TELLING TALES

This course will examine the rich tradition of short stories and fábulas in Spain, beginning in medieval times and ending in the eighteenth century. We will examine the different ways in which a story can be presented as well as the purposes (didactic, entertainment, etc.) behind a variety of shorter works produced. Some of the themes that will be addressed are: exemplarity, love, social class, marriage, revenge, gender and miracles. We will also consider the shift from an oral culture to a written one and the implications of the invention of the printing press and rising literacy rates on the short story as a genre and reading as a pastime. Special emphasis will be placed on the Novelas ejemplares by Miguel de Cervantes and the Desengaños amorosos by María de Zayas. Other authors include the Arcipreste de Hita, Don Juan Manuel and Tomás de Iriarte. In Spanish.

SP 460 SPANISH AMERICAN WOMEN WRITERS

Through study of texts (mostly novels) written by women from Latin America, we will ask broad questions concerning cultural contexts with respect to sexuality and gender, language, aesthetics, psychology, and social issues. The course will use materials from a variety of fields (literary and cultural theory, history, sociology, anthropology, feminist studies) in addition to the primary texts. Emphasis on collaborative research and progressive writing assignments. Campus visit by one of the authors planned. Class taught in English.

SP 462B CUBA AT A CROSSROADS

Now that the twenty-first century has arrived, we cannot help but picture a Cuba “without Fidel.” But what does that mean? How do those in Cuba imagine their nation down the road? How does the Cuban community in Miami represent its hopes and dreams? This course examines art, film, and literary texts from the “homeland” and from the diaspora to compare and contrast images that negotiate between the past and the future. Course taught in English. Readings may be done in English or Spanish (for SP credit).

SP 462C DISABLING DISCOURSE: DISABILITY IN SPANISH-AMERICAN LITERATURE

SP 462F IDENTITY SIGNS

This course will examine a variety of 20th-Century Spanish-American literary texts that represent the young person’s search for identity, self-knowledge and a place inn an often hostile society. Factors such as nationality, social class, gender, race, ethnicity and sexual orientation make this a dynamic process that is fraught with tensions and contradictions. Authors may include: Marîa Luisa Bombal, José Maria Arguedas, Mario Vargas Llosa, Rosario Ferré, Nelson Estupinan Bass, José Augustîn, Isabel Allende, Elena Poniatowska and Rosamarîa Roffiel. This course will be taught in Spanish.

SP 470 HISPANIC SHORT STORY

SP 472 POSTCARDS FROM SPAIN

SP 475 MARX AND FREUD

SP 477 MEXICO, DF: GLOBAL METRO

Called by some “the capital of the 221st century,” Greater Mexico City is inhabited by close to 20 million people. The Distrito Federal (DF) and capital of Mexico is today the largest metroopolitan area in the western hemisphere and third largest city in the world by population. Established by the Spanish in 1524 on the ruins of the Aztec city Tenochtitlán they had destroyed, Mexico City is a global center of finance, culture, and industry. This course examines the development of this vibrant megalopolis over

the 20th and 21st centuries using literature, film, politics, tourism, music and the arts, cultural geography, architectural space, and essays by urban wanderers to try and get a handle on a space that seems to contradict itself at every turn.

SP 480 TRANSHISANIC SUPERNATURAL

SP 487 LATIN-AMERICAN FILM

SP 491 MASTER'S READNG COURSE IN SP

SP 495 MASTER'S RESEARCH IN SP

SP 591 PHD READINGS

SP 895 CONT OF MASTER'S ENROLLMENT

SP 899 MASTER'S DISSERTATION

SP 985 LEAVE OF ABSENCE

STT 201 INTRODUCTION TO PROBABILITY

Probability spaces, combinatorial problems, random variables and expectations, discrete and continuous distributions, generating functions, independence and dependence, binomial, normal, and Poisson laws, laws of large numbers. Prerequisite: MTH 143 or 162. Same as MTH 201.

STT 203 INTRODUCTION TO MATHEMATICAL STATISTICS

Discrete and continuous probability distributions and their properties. Principle of statistical estimation and inference. Point and interval estimation. Maximum likelihood method for estimation and inference. Tests of hypotheses and confidence intervals, contingency tables, and related topics.

Offered: Spring

STT 211 APPLIED STATISTICS FOR SOCIAL SCIENCES I

Descriptive statistics, statistical analysis, and statistical inference as used in the social sciences; including elements of correlation, regression, and analysis of variance. Excel, Minitab and similar programs. Please note that, because of the significant overlap between them, students may earn degree credit for only one of these courses: BCS 200, CSP/PSI 211, STT 211 and STT 212.

Offered: Fall

STT 212 APPLIED STATISTICS FOR THE BIOLOGICAL AND PHYSICAL SCIENCES I

Descriptive statistics, statistical analysis, and statistical inference as used in the biological and physical sciences; including elements of correlation, regression, and analysis of variance. Excel, Minitab and similar programs. Pleaae note that, because of the significant overlap between them, students may earn degree credit for only one of these courses: BCS 200, CSP/PSI 211, STT 211 and STT 212.

Offered: Fall Spring

STT 213 ELEMENTS OF PROBABILITY & MATH STATISTICS

Descriptive statistics; probability; binomial, Poisson, normal distributions; estimation of means, proportions, and their differences; confidence limits; tests of hypotheses; chi-square tests of association; introduction to regression analysis.

Offered: Fall

STT 214 BIOSTATISTICS

STT 214W BIOSTATISTICS WRITING

STT 216 APPLIED STATISTICS II

Continuation of STT 211 or 212. Analysis of variance, regression, correlation contingency table analysis, and associated topics. Excel, Minitab and similar programs.

Offered: Spring

STT 221W SAMPLING TECHNIQUES

Simple random, stratified, systematic, and cluster sampling; estimation of the means, proportions, vaiance, and ratios of a finite population. Ratio and regession methods of estimation and the use of auxiliary information. The nonresponse problem. Prerequisite: familiarity with the concepts of expectation, variance, covariance and correlation.

Offered: Fall

STT 222 DESIGN OF EXPERIMENTS

Randomized blocks and Latin squares, one- and two-way classifications, factorial experiments, analysis of variance and covariance, t-tests and F-tests. Excel, Minitab and JMMP and SAS and similar programs.

Offered: Spring

STT 226W INTRODUCTION TO LINER MODELS

Simple linear, multiple, and polynomial regression methods and applications; ordinary and generalized least squares, estimation, tests of hypotheses, and confidence intervals, and simultaneous inference, and computer packages. Computer programs including JMP and SAS.

Offered: Fall

STT 241 APPLIED MULTIVARIATE ANALYSIS

Methodology and applications of multivariate analysis. Hotelling's T-square, multivariate regression and analysis of variance. Classification and discrimination. Principal components, clustering, multidimensional scaling. Compute programs including JMP and SAS.

Offered: Spring

STT 277 COMPUTING, INTRODUCTION TO STATISTICAL SOFTWARE

The first half of this course covers the elements of programming in R, SAS®, and operation of the JMP® graphical user interface. The student will learn how to get data into (and out of) these programs, execute fundamental statistical procedures, and write programs in R and SAS to document and automate analyses. The second half explores the use of this software to understand data from observational studies. The student will learn the philosophy, capabilities, and pitfalls of exploratory data analysis. Univariate, bivariate and multivariate methods will be introduced. Graphical methods will be emphasized, but numerically-oriented procedures such as linear models will be included where appropriate. Each student will analyze a real-life data set in some depth and write a report. Instructor permission required. Registration priority will be given to Statistics majors who will be taking the course in their senior year.

Offered: Fall

STT 390 SUPERVISED TEACHING

STT 391 INDEPENDENT STUDY

STT 391W INDEPENDENT STUDY

STT 392 PRACTICUM

STT 394 INTERNSHIP IN STT

STT 395 RESEARCH IN STATISTICS

STT 422 DESIGN OF EXPERIMENTS

STT 477 INTRO STATISTICAL SOFTWARE I

STT 591 PHD READINGS IN STAT

STT 595 PHD RESEARCH

STT 595A PHD RESEARCH IN ABSENTIA

STT 899 MASTER'S DISSERTATION

STT 999 DOCTORAL DISSERTATION

STT 999A DOCT DISSERTATN IN ABSSENTIA

TCS 412 HUMAN COMPUTER INTERACTION

This course will explore the design, implementation, and evaluation of user interfaces. Students will study the theoretical methods for interface design and evaluation, including requirements gathering, usability heuristics, user interface inspections, usability studies, information visualization, and prototyping. Case studies of interface successes and failures will augment theory with practical experiences. Students will apply this methodology to assignments in the design, implementation, and evaluation cycle. Students taking this course at the graduate level will have additional readings and assignments.

TCS 440 DATA MINING

Fundamental concepts and techniques of data mining, including data attributes, data visualization, data pre-processing, mining frequent patterns, association and correlation, classification methods, and cluster analysis. Advanced topics include outlier detection, stream mining, and social media data mining.

TCS 444 LOGICAL FOUNDATIONS OF A.I.

An introduction to the logical foundations of AI, including first-order logic, search, knowledge representation, planning. Students taking this course at the 400 level will be required to complete additional readings and/or assignments, including a significant project or essay.

TCS 446 MACHINE LEARNING

This course presents the mathematical foundations of AI, including probability, decision theory and machine learning.

TCS 447 NATURAL LANGUAGE PROCESSING

An introduction to natural language processing: constructing computer programs that understand natural language. Topics include parsing, semantic analysis, and knowledge representation.

TCS 448 STAT. SPEECH & LANG PROC

An introduction to statistical natural language processing and automatic speech recognition techniques. This course presents the theory and practice behind the recently developed language processing technologies that enable applications such as speech-driven dictation systems, document search engines (e.g., finding web pages) and automatic machine translation. Students taking this course at the 400 level will be required to complete additional readings and/or assignments.

TCS 449 MACHINE VISION

Introduction to computer vision, including camera models, basic image processing, pattern and object recognition, and elements of human vision. Specific topics include geometric issues, statistical models, Hough transforms, color theory, texture, and optic flow. CSC 449, a graduate-level course, requires additional readings and assignments.

TCS 453 DYNAMIC LANG. & SOFT. DEV.

This course explores unique aspects of dynamically-typed programming languages, which are now pervasive in domains such as scientific research, Web application development, gaming, and user interface design. The lessons you will learn here complement those in traditional compilers and programming languages courses, which focus mainly on statically-typed languages. We will use the Python language as a case study. In the first half of this course, we will study the internals of the Python interpreter,

which is implemented in C. In the second half, we will build analysis and debugging tools for Python, potentially extending open-source tools with large user bases.

TCS 454 PROG LANGUAGE DESIGN & IMP.

Design and implementation of programming languages, with an emphasis on imperative languages and on implementation tradeoffs. In-depth examination of "how programming languages work." Topics include fundamental language concepts (names, values, types, abstraction, control flow); compilation and interpretation (syntactic and semantic analysis, code generation and optimization); major language paradigms (imperative, object-oriented, functional, logic-based, concurrent). Course projects include assignments in several different languages, with an emphasis on compilation issues.

TCS 455 SOFTWARE ANALYSIS & IMPROV

Programming is the automation of information processing. Program analysis and transformation is the automation of programming itself---how much a program can understand and improve other programs. Because of the diversity and complexity of computer hardware, programmers increasingly depend on automation in compilers and other tools to deliver efficient and reliable software. This course combines fundamental principles and (hands-on) practical applications. Specific topics include data flow and dependence theories; static and dynamic program transformation including parallelization; memory and cache management; type checking and program verification; and performance analysis and modeling. The knowledge and practice will help students to become experts in software performance and correctness. Students taking the graduate level will have additional course requirements and a more difficult project.

TCS 456 OPERATING SYSTEMS

Principles of operating system design, explored within the practical context of traditional, embedded, distributed, and real-time operating systems. Topics include device management, process management, scheduling, synchronization principles, memory management and virtual memory, file management and remote files, protection and security, fault tolerance, networks, and distributed computing. CSC 456, a graduate-level course, requires additional readings and assignments.

TCS 457 COMPUTER NETWORKS

Introduction to computer networks and computer communication: Architecture and Protocols:. Design of protocols for error recovery, reliable delivery, routing and congestion control. Store-and-forward networks, satellite networks, local area networks and locally distributed systems. Case studies of networks, protocols and protocol families. Emphasis on software design issues in computer communication.

TCS 458 PARALLEL & DIST. SYSTEMS

Principles of parallel and distributed systems, and the associated implementation and performance issues. Topics covered will include programming interfaces to parallel and distributed computing, interprocess communication, synchronization, and consistency models, fault tolerance and reliability, distributed process management, distributed file systems, multiprocessor architectures, parallel program optimization, and parallelizing compilers. Students taking this course at the 400 level will be required to complete additional readings and/or assignments.

TCS 461 DATABASE SYSTEMS

This course presents the fundamental concepts of database design and use. It provides a study of data models, data description languages, and query facilities including relational algebra and SQL, data normalization, transactions and their properties, physical data organization and indexing, security issues and object databases. It also looks at the new trends in databases. The knowledge of the above topics will be applied in the design and implementation of a database application using a target database management system as part of a semester-long group project.

TCS 462 COMP INTRO TO STATISTICS

This course will cover foundational concepts in probability and statistical inference, with an emphasis on topics of interest to computer scientists. Following an introduction to elementary probability theory, topics will include applications of combinatorics; Markov chains; principles of statistical classification (Bayes' rule, sensitivity and specificity, ROC curves) and random number generation. The theory of statistical estimation and hypothesis testing will be introduced, and applied to one and two sample inference for population means, proportions, variances and correlations. Nonparametric procedures will be discussed. Topics also include statistical modeling (ANOVA, simple and multiple regression), and computational methods. Students will be introduced to the R statistical computing environment.

TCS 465 INTERMED STATISTICAL METHODS

This course is a continuation of CSC262, covering intermediate statistical methodology and related computational methods, with an emphasis on the R statistical computing environment.

TCS 481 INTRO TO CRYPTOGRAPHY

The modern study of cryptography investigates techniques for facilitating interactions between distrustful entities. In this course we introduce some of the fundamental concepts of this study. Emphasis will be placed on the foundations of cryptography and in particular on precise definitions and proof techniques.

TCS 484 ADVANCED ALGORITHIMS

Advanced study of design and analysis of algorithms. Topics typically include: growth of functions; recurrences; probabilistic analysis and randomized algorithms; maximum flow; sorting networks; expander graphs; matrix operations; linear programming; discrete Fourier transform; number-theoretic algorithms; string matching; computational geometry; NP-completeness; approximation algorithms.

TCS 485 ALGORITHMS & ELECTIONS

The focus of this course is on using algorithms to manipulate elections and on using complexity to protect elections from such manipulative attacks. Among the attacks we will study are manipulation, bribery and control. Students taking this course at the 400 level may be required to complete additional tests, readings, or assignments.

TCS 486 COMPUTATIONAL COMPLEXITY

The difference between computable and uncomputable problems and between feasible and infeasible problems. Regarding the latter, what properties of a problem make it computationally simple? What properties of a problem may preclude its having efficient algorithms? How computationally hard are problems? Complete sets and low information content; P=NP?; unambiguous computation and one-way functions; reductions relating the complexity of problems; complexity classes and hierarchies.

TEB 411 CELLULAR&MOLECULAR BIO FOUND

Molecular biology, biochemistry, and genetics that are required to understand the biomedical and broader biological issues that affect our lives.

TEB 418 INTRO TO NEUROENGINEERING

Quantitative studies of neural responses at the cellular, circuit, and systems levels. Analytical and computational modeling of neurons, including nonlinear behavior of neurons and neural circuits. Neural coding of information by single cells or neural populations. Applications of neural networks. Techniques for recording and monitoring neural activity, and applications of neural recording and stimulation to neural prostheses.

TEB 420 BIOMEDICAL NANOTECH

This course is designed to provide students with detailed knowledge of the principles of nanotechnology and their applications in the biomedical field. Topics of study will include synthesis & assembly of nanoscale structures, lithography, and nanobiomaterials. Students will focus on biomedically-relevant topics such as cancer treatment, bone disorder, diabetes; and learn how nanotechnology is helping diagnose, treat, and understand these medical disorders. Recent innovative research in the biomedical field will be highlighted during discussions of the latest journal articles. At the end of the course, students will have an appreciation of the enormous potential of biomedical nanotechnology, its current, and future applications.

TEB 428 PHYSIOLOGICAL CONTROL SYSTMS

This course introduces students to the theory and practice of control systems engineering. Topics include frequency domain modeling, time domain stability, transient and steady-state error analysis, root locus and frequency response techniques and feedback system design. Emphasis is placed on analyzing physiological control systems, but the concepts and design techniques are applicable and applied to a wide variety of other systems including mechanical and electrical systems. Graduate students will have more homework problems and additional exam problems.

TEB 442 MICROBIOMECHANICS

This course covers the application of mechanical principles to biotechnology and to understanding life at its smallest scales. Topics will vary with each course offering. Sample topics include force generation by protein polymerization, the mechanisms of bacterial motion, and the separation of biological molecules in porous media.

TEB 451 BIOMEDICAL ULTRASOUND

The course presents the physical basis for the use of high-frequency sound in medicine. Topics include acoustic properties of tissue, sound propagation (both linear and nonlinear) in tissues, interaction of ultrasound with gas bodies (acoustic cavitation and contrast agents), thermal and non-thermal biological effects of utrasound, ultrasonography, dosimetry, hyperthermia and lithotripsy.

TEB 452 MED IMAGING-THEORY&IMPLEMT

Physics and implementation of X-ray, ultrasonic, and MR imaging systems. Fourier transform relations and reconstruction algorithms of X-ray and ultrasonic-computed tomography, and MRI.

TEB 453 ULTRASOUND IMAGING

This course investigates the imaging techniques applied in state-of-the-art ultrasound imaging and their theoretical bases. Topics include linear acoustic systems, spatial impulse responses, the k-space formulation, methods of acoustic field calculation, dynamic focusing and apodization, scattering, the statistics of acoustic speckle, speckle correlation, compounding techniques, phase aberration correction, velocity estimation, and flow imaging. A strong emphasis is placed on readings of original sources and student assignments and projects based on realistic acoustic simulations.

TEB 460 QUANTITATIVE PHYSIOLOGY

A quantitative, model-oriented approach to physiological systems is presented. Topics include muscle and nerve tissue, the cardiovascular system, the respiratory system, the renal system, and a variety of neural systems

TEB 462 CELL & TISSUE ENGINEERING

This course teaches the principles of modern cell and tissue engineering with a focus on understanding and manipulating the interactions between cells and their environment. After a brief overview of Cell and Tissue Engineering, the course covers 5 areas of the field. These are: 1) Physiology for Tissue Engineering; 2) Bioreactors and Biomolecule Production; 3) Materials for Tissue Engineering; 4) Cell Cultures and Bioreactors and 5) Drug Delivery and Drug Discovery. Within each of these topics the emphasis is on analytical skills and instructors will assume knowledge of chemistry, mass transfer, fluid mechanics, thermodynamics and physiology consistent with the Cell and Tissue Engineering Track in BME. In a term project, students must present written and oral reports on a developing or existing application of Cell and Tissue Engineering. The reports must address the technology behind the application, the clinical need and any ethical implications.

TEB 466 BIOPROCESS ENGINEERING

This course will explore the bioprocesses involved in producing a biopharmaceutical product (therapeutic proteins, cell therapy products, and vaccines). The course will take a stepwise journey through a typical production process from the perspective of a Bioprocess Engineer, starting with cell culture and moving downstream through purification and final fill. Engineering concepts involved in bioreactor design and control, cell removal/recovery operations, and protein purification will be examined. The course will also provide an introduction to the analytical methods used to test biopharmaceutical products for critical quality attributes The role of the regulatory agencies, like the US Food and Drug Administration, and the regulations that govern the industry will be introduced throughout the course in the context of the bioprocess to which they relate. Graduate students will need to complete a semester-end project in order to receive graduate credit for the course.

TEB 483 BIOSOLID MECHANICS

In this course, we will survey the role of mechanics in cells, tissues, organs and organisms. A particular emphasis will be placed on the mechanics of the musculoskeletal system, the circulatory system and the eye. Engineering concepts will be used to understand how physical forces contribute to biological processes, especially disease and healing. Experimental and modeling techniques for characterizing the complex mechanical response of biosolids will be discussed in detail, and the continuum mechanics approach will highlighted.

TEC 413 ENGINEERING OF SOFT MATTER

This course will provide an overview of several contemporary research topics pertaining to structured organic materials. Lectures will focus on intermolecular interactions and the thermodynamics of self-assembly. Additional lectures will introduce molecular crystals, polymer crystallinity, liquid crystals, self-assembled monolayers, surfactants, block copolymers, and biomimetic materials. Homework assignments and a brief technical presentation will be required. Advanced undergraduate students are welcome.

TEC 441 ADV TRANSPORT PHENOMENON

This course will acquaint the student with important topics in advanced transport phenomena (momentum, heat and mass transport). Topics include laminar and turbulent flow, thermal conductivity and the energy equation, molecular mass transport and diffusion with heterogeneous and homogeneous chemical reactions. Focus will be to develop physical understanding of principles discussed and with emphasis on chemical engineering applications. In addition to the text, the student will be exposed to classic and current literature in the field.

TEC 447 LIQUID CRYSTAL OPTICS

This course will introduce the student to the physical, chemical and optical properties of liquid crystals (LC) that are the basis for their wide and successful exploitation as optical materials for a broad variety of applications in optics, photonics and information display. Topics to be presented include: origins of LC physical properties in thermotropic and lyotropic materials as a function of chemical structure, influence of these structure-property relationships on macroscopic organization in LC mesophases, and the effect of molecular ordering and order parameter on properties of special significance for device applications. Operating principles for LC devices in a wide variety of applications will be described, including passive and tunable/switchable polarizers, wave plates, filters, information displays and electronic addressing, electronic paper, color-shifting polarizing pigments, optical modulators, and applications in photonics and lasers.

TEC 454 INTERFACIAL ENGINEERING

Lectures on the fundamentals of colloids and interfaces, systems with high interfacial area, and their role in modern processes and products. Topics include interfacial tension, contact angle, adsorption, surfactants, miscelles, microemulsions, and colloidal dispersions. Techniques for formation and characterization of interfaces and colloids will be reviewed.

TEC 458 ELECTROCHEM&ENGG & FUEL CELL

The course will concentrate on presenting the principles of electrochemistry and electrochemical engineering, and the design considerations for the development of fuel cells capable of satisfying the projected performance of an electric car. The course is expected to prepare you for the challenges of energy conversion and storage and the environment in the 21st century. Course is offered October 23 - December 11.

TEC 460 SOLAR CELLS

This course will introduce students to the basics of photovoltaic devices: physics of semiconductors; pn junctions; Schottky barriers; processes governing carrier generation, transport and recombination; analysis of solar cell efficiency; crystalline and thin-film solar cells, tandem structures, dye-sensitized and organic solar cells. Students will learn about current photovoltaic technologies including manufacturing processes, and also the economics of solar cells as an alternative energy source. Critical analysis of recent advances and key publications will be a part of the course work.

TEC 464 BIOFUELS

This course will provide the student with a grounding in the fundamental principles of biofuels, including their sources, properties, and the biological processes by which they are made.

TEC 465 SUSTAINABLE CHEM PROCESSES

Elements of sustainable chemical processes. Bulk and fine chemicals derived from renewable resources-- e.g. carbohydrates, animal fats, plant seeds, lignocellulose, algae, and carbon dioxide. Use of environmentally benign solvents-- e.g. ionic liquids, supercritical carbon dioxide, fluorous solvents, and liquid polymer-- for chemical reactions and separations. Chemical reactions activated by unconventional means-- e.g. ball milling, microwave heating, and ultrasound irradiation-- requiring minimum energy, catalysts, and solvents. Polymers produced with monomers from renewable resources, designed for recovery and recycling beyond intended service. Chemical and enzymatic catalysis enhanced by process integration to minimize the need for product separation and purification. Microreactor technologies to maximize rates of heat & mass transfer, chemical reaction rates, product yields and selectivity, in addition to facilitating process control, optimization, and scale-up.

TEC 469 BIOTECHNOLOGY&BIOENGINEERING

The life science and engineering principles underlying biotechnology processes; established biotechnology processes including microbial and enzyme conversions, metabolic pathways, and fermentation kinetics; tools for biotechnology development including the recombinant DNA and monoclonal antibody techniques; emerging areas at the forefront of biotechnology, including immune technology and tissue and organ cultures.

TEC 472 ENERGY SYSTEM ECON&MODELING

One of the goals for the course is to introduce basic economic principles and methodologies necessary to evaluate the economics of various energy options. Students will learn the basics of energy systems modeling using Powersim Modeling software. Students will also be introduced to various modeling tools from Sandia National Lab and National Renewable Energy Lab (NREL) for evaluating economics of energy options. Students should expect to have discussion about what it will take economically, technically, and politically to increase the role of renewable technologies into our energy systems.

TEC 476 POLYMER SYNTHESIS

An introduction to polymerization reaction mechanisms. The kinetics of commercially relevant polymerizations are emphasized along with a discussion of important, contemporary polymerization schemes. Approaches to functionalize polymers and surface-initiated polymerizations will also be covered. An overview of polymer characterization techniques, emphasizing compositional analysis, will be presented. The course is intended for graduate students in Chemical Engineering, Chemistry, Materials Science, and Biomedical Engineering, but advanced undergraduates are welcome.

TEC 482 PROC MICROELEC DEVICE

This course features an overview of processes used in the fabrication of microelectronic devices, with emphasis on chemical engineering principles and methods of analysis. Modeling and processing of microelectronic devices. Includes introduction to physics and technology of solid state devices grade silicon, microlithography, thermal processing, chemical vapor deposition, etching and ion implantation and damascene processing. Course is offered August 30 - October 18.

TEC 485 THERMODYNAMICS & STAT MECH

Introduction to the topic: Thermodynamics and Statistical Mechanics. In the beginning macroscopic thermodynamics including phase equilibria and stability concepts will be covered followed by material related to the principles of statistical mechanics. Applications to various modern areas of the topic will be examined including the Monte Carlo simulation method, critical phenomena and diffusion in disordered media. The course will require completion of a project as well as regular homework assignments.

TEC 486 POLYMER PHYSICS

Mechanisms and kinetics of polymerization reactions; solution, suspension, and emulsion polymerization processes; thermodynamics of polymer solutions; characterization by membrane osmometry, light scattering, viscometry, and size exclusion chromatography; polymer rheology including linear viscoelasticity; polymer morphology and phase transitions.

TEC 487 SURFACE ANALYSIS

TEC 488 INTRO TO ENERGY SYSTEMS

A succinct, yet complete and critical introduction to the different means of producing energy.

TEE 401 ADVNCD COMPUTER ARCHITECTURE

Instruction set architectures. Advanced pipelining techniques Instruction level parallelism. Memory hierarchy design. Multiprocessing. Storage systems. Interconnection network.

TEE 404 MULTIPROCESSOR ARCH

This course provides in-depth discussions of the design and implementation issues of multiprocessor system architecture. Topics include cache coherence, memory consistency, interconnect, their interplay and impact on the design of high-performance micro-architectures.

TEE 405 MIXED-SIGNAL IC DESIGN

Review of complex embedded project development with Xilinx Virtex FPGA eval board and Xilinx CAD tools using Verilog HDL and C programming language. Embedded development and introduction to ethernet, USB, SATA, VGA, DVI, PS2, RS232, GPIO, and soft processor cores.

TEE 406 INTRO TO PARALLEL COMP GPUS

GPU micro-architecture, including global memory, constant memory, texture memory, SP, SM, scratchpad memory, L1 and L2 cache memory, multi-ported memory, register file, and task scheduler. Parallel programming applications to parallel sorting, reduction, numeric iterations, fundamental graphics operations such as ray tracing. Desktop GPU programming using Nvidia's CUDA (Compute-Unified Device Architecture). CPU/GPU cooperative scheduling of partially serial/partially parallel tasks. No midterms or written exams. Course consists of seven hands-on projects using CUDA.

TEE 407 ADV GPU PROJECT DEV

Students develop an advanced project for the GPU platform. A GPU compute-cluster can be employed, as well as a single GPU computer. Students meet with the instructor twice a week to report the progress and the new direction is determined based on the results and the ongoing progress. Project options include: Protein folding (BLAST algorithm), Face recognition (using Open CV), 3D Image reconstruction of biomedical images, and other sophisticated image processing algorithms.

TEE 423 SEMICONDUCTOR DEVICES

Review of modern solid-state electronic devices, their principles of operation, and fabrication. Solid state physics fundamentals, free electrons, band structure, and transport properties of semiconductors. Nonequilibrium phenomena in semiconductors. P-N junctions, Schottky diodes, field-effect, and bipolar transistors. Modern,high-performance devices. Ultrafast devices.

TEE 427 Electric Power: Conversion, Transmission, and Consumption

We will describe how the principal sources of energy - coal, natural gas, impounded water (hydroelectric), and fissile materials - are exploited to create electric power, how it is transmitted and distributed through the grid and finally the patterns of its consumption. To assure that students gain a proper appreciation for the factors that determine the real cost of electricity per kilowatt-hour, the subject will be treated in a highly quantitative way. The goal will be to provide students with the information and tools they need for informed analysis of the true prospects and technological challenges involved in integration of new energy sources, such as solar, wind, geothermal, and tidal power, with the existing grid. There will be weekly homework and a midterm. Two projects with oral presentations, including a major one at the end of the semester, are required. There is no final exam. Several required field trips to local power facilities occur during the semester.

TEE 432 ACOUSTICAL WAVES

Acoustic wave equation; plane, spherical, and cylindrical wave propagation; reflection and transmission at boundaries; normal modes; absorption and dispersion; radiation from points, spheres, cylinders, pistons, and arrays; diffraction; nonlinear acoustics.

TEE 433 MUSICAL ACOUSTICS

Aspects of acoustics. Review of oscillators, vibratory motion, the acoustics wave equation, reflection and transmission, and radiation and reception of acoustic waves. Resonators, hearing and speech, architectural and environmental acoustics.

TEE 435 INTRO TO OPTO-ELECTRONICS

Introduction to fundamentals of wave propagation in materials, waveguides and fibers, generation, modulation, and detection of light using semiconductor devices, and elements of optocommunication systems.

TEE 436 NANOPHOT/NANOMECH DEVICES

Various types of typical nanophotonic structures and nanomechanical structures, fundamental optical and mechanical properties: micro/nano-resonators, photonic crystals, plasmonic structures, metamaterials, nano-optomechanical structures. Cavity nonlinearoptics, cavity quantum optics, and cavity optomechanics. Fundamental physics and applications, state-of-art devices and current research trends. This class is designed primarily for graduate students. It may be suitable for senior undergraduates if they have required basic knowledge.

TEE 440 INTRO TO RANDOM PROCESSES

The goal of this course is to learn how to model, analyze and simulate stochastic systems, found at the core of a number of disciplines in engineering, for example communication systems, stock options pricing and machine learning. This course is

divided into five thematic blocks: Introduction, Probability review, Markov chains, Continuous-time Markov chains, and Gaussian, Markov and stationary random processes.

TEE 444 DIGITAL COMMUNICATIONS

Digital communication system elements, characterization and representation of communication signals and systems. Digital transmission, binary and M-ary modulation schemes, demodulation and detection, coherent and incoherent demodulators, error performance. Channel capacity, mutual information, simple discrete channels and the AWGN channel. Basics of channel coding and error correction codes.

TEE 445 WIRELESS COMMUNICATIONS

This course teaches the underlying concepts behind traditional cellular radio and wireless data networks as well as design trade-offs among RF bandwidth, transmitter and receiver power and cost, and system performance. Topics include channel modeling, digital modulation, channel coding, network architectures, medium access control, routing, cellular networks, WiFi/IEEE 802.11 networks, mobile ad hoc networks, sensor networks and smart grids. Issues such as quality of service (QoS), energy conservation, reliability and mobility management are discussed. Students are required to complete a semester-long research project in order to obtain in-depth experience with a specific area of wireless communication and networking.

TEE 446 DIGITAL SIGNAL PROCESSING

Analysis and design of discrete-time signals and systems, including: difference equations, discrete-time filtering, z-transforms, A/D and D/A conversions, mutli-rate signal processing, FIR and IIR filter design, the Discrete Fourier Transform (DFT), circular convolution, Fast Fourier Transform (FFT) algorithms, windowing, and classical spectral analysis.

TEE 447 DIGITAL IMAGING PROCESSING

1. Introduction to Python programming language, 2. Intensity transformation and spatial filtering (basic intensity transformation functions, histogram processing, fundamental of spatial filtering, smoothing filters, sharpening filters 3. Filtering the frequency domain (Sampling and the Fourier transform, discrete Fourier transform of one and two variables, image smoothing using frequency domain filters, Image Sharpening using Fourier domain filters) 4. Image restoration and reconstruction (restoration in the presence of noise, periodic noise reduction by frequency domain filtering, estimating degradation function, inverse filtering, constrained least squares filtering, image reconstruction from projections) 5. Image compression, 6. Morphological image processing (erosion and dilation, Gray-scale morphology) 7. Image segmentation (thresholding, region based segmentation, morphology watersheds), 8. Image registration

TEE 448 WIRELESS SENSOR NETWORKS

This course will cover the latest research in the area of Wireless Sensor Networks. We will cover all aspects of these unique and important systems, from the hardware and radio architecture through protocols and software to applications. Topics will include sensor network architectures, hardware platforms, physical layer techniques, medium access control, routing, topology control, quality of service (QoS) management, localization, time synchronization, security, storage, and other advanced topics. Each student must complete a semester-long course project related to wireless sensor networks.

TEE 450 INFORMATION THEORY

Entropy, Relative Entropy, mutual information, asymptotic equipartition property, data compression, channel capacity, joint source channel coding theorem, Gaussian channels, rate distortion theory, selected applications.

TEE 452 MED IMAGING-THEORY&IMPLEMT

Physics and implementation of X-ray, ultrasonic, and MR imaging systems. Fourier transform relations and reconstruction algorithms of X-ray and ultrasonic-computed tomography, and MRI.

TEE 461 INTRO TO VLSI

Introduction to high performance integrated circuit design. Semiconductor technologies. CMOS inverter. General background on CMOS circuits, ranging from the inverter to more complex logical and sequential circuits. The focus is to provide background and insight into some of the most active high performance related issues in the field of high performance integrated circuit design methodologies, such as CMOS delay and modeling, timing and signal delay analysis, low power CMOS design and analysis, optimal transistor sizing and buffer tapering, pipelining and register allocation, synchronization and clock distribution, retiming,

interconnect delay, dynamic CMOS design techniques, power delivery, on-chip regulators, 3-D technology and circuit design, asynchronous vs. synchronous tradeoffs, clock distribution networks, low power design, and CMOS power dissipation.

TEE 462 ADVANCED CMOS VLSI DESIGN

Senior design course for "Computer Design" or "Integrated Electronics" concentrations. Review of CMOS Subsystem design. Design focus on digital or mixed-signal systems, such as a simple microprocessor, a self-timed multiplier, a digital filter, data converter, or memory. Project design requirements include architectural design, logic and timing verification, layout design, and test pattern generation. Extensive use of CAD tools. The resulting VLSI chips may be fabricated.

TEE 466 RF AND MICROWAVE INTEGRATED CURCUITS

This course involves the analysis and design of radio-frequency (RF) and microwave integrated circuits at the transistor level. We begin with a review of electromagnetics and transmission line theory. Several design concepts and techniques are then introduced, including Smith chart, s-parameters, and EM simulation. After the discussion of RLC circuits, high-frequency narrow-band amplifiers are studied, followed by broadband amplifiers. Then we examine the important issue of noise with the design example of low-noise amplifiers (LNA). Nonlinear circuits are studied next with the examples of mixers. A study of oscillators and phase noise follows. Afterwards we introduce phase-locked loops (PLL) and frequency synthesizers. The course concludes with an overview of transceivers architectures. The course emphasizes the development of both circuit design intuition and analytical skills. There are bi-weekly design labs and a term project using industry-standard EDA tools (ADS, Asitic, etc.).

TEE 468 ADVANCED ANALOG CMOS CIRCUITS AND SYSTEMS

Circuitry, algorithms, and architectures used in analog and mixed-mode CMOS integrated circuits. Switched-capacitor (SC) elements, amplifier stages, and filters. Other SC circuits: S/H stages, comparators, PGAs, oscillators, modulators, voltage boosters, and dividers, Non-ideal effects in SC circuits, and correction techniques. Low-voltage SC design. Nyquist-rate data converter fundamentals; SC implementations of DACs and ADCs. Oversampling (delta-sigma) data converters: fundamentals and implementations.

TEE 469 HIGH SPEED INTEGRATED ELECT

Integrated electronics in high speed and wideband applications, which spans the fields of wireless communications, computing, fiber optics, and instrumentation. High speed semiconductor technologies (CMOS, SiGe, SOI, GaAs, InP, etc) and devices (MOSFET, MESFET, HEMT, HBT, and tunneling diodes), design of high speed phase locked and delay-locked loops (PLL and DLL). VCO, frequency divider, phase detector, and loop filter.

TEE 472 AUDIO SIGNAL PROC

This course is a survey of audio digital signal processing fundamentals and applications. Topics include sampling and quantization, analog to digital converters, time and frequency domains, spectral analysis, vocoding, digital filters, audio effects, music audio analysis and synthesis, and other advanced topics in audio signal processing. Implementation of algorithms using Matlab and on dedicated DSP platforms is emphasized.

TEE 475 AUDIO SOFTWARE DESIGN

This course aims to give students the ability to develop their own audio/music programs in C and a few major open-source audio programming languages. It begins with an introduction to computer music and audio programming, and a comparative survey of audio programming languages. After an overview of the C language, we then explore the topics of programming for sound synthesis. The second half of this course introduces the primary techniques of sound design using the audio programming environments of Pure Data and CSound. Students will practice their programming techniques through a series of programming assignments and a final project.

TEE 476 AUDIO SOFTWARE DES II

This course is a sequel to AME262/ECE475/TEE475 Audio Software Design I. The first part of the course will explore designing audio plug-ins with Faust (Function AUdio STream), which is a high-level functional programming language designed for real-time audio digital signal processing (DSP) and sound synthesis. Students will learn how to design plug-ins for Pro Tools, Logic and other digital audio workstations (DAWs). The second part of the course will focus on audio programming for iOS apps in Swift, which is the new programming language for iOS and OS X. Students will learn how to make musical apps with the sound engine libpd, which turns Pure Data (Pd) into an embeddable library. A special topic will introduce audio programming for video games with Wwise and FMod.

TEE 477 COMPUTER AUDITION

Computer audition is the study of how to design a computational system that can analyze and process auditory scenes. Problems in this field include source separation (splitting audio mixtures into individual source tracks), pitch estimation (estimating the pitches played by each instrument), streaming (finding which sounds belong to a single event/source), source localization (finding where the sound comes from) and source identification (labeling a sound source).

TEE 479 Audio Recording - Technology and Fundamentals

This course covers the acoustical and psychoacoustic fundamentals of audio recording including the nature of sound, sound pressure level, frequency and pitch, hearing and sound perception, reflection, absorption and diffusion of sound, sound diffraction, room acoustics, reverberation, and studio design principles. The course also provides practical experience in audio recording including an introduction to recording studio equipment, microphones and microphone placement techniques, signal flow, amplification, analog and digital recording, analog to digital conversion, digital processing of sound, multi-track recording and an introduction to mixing and mastering. Each student is required to complete a substantive recording project at the end of the course.

TEE 520 SPIN BASED ELECTRONICS

Up until now CMOS scaling has given us a remarkable ride with little concern for fundamental limits. It has scaled multiple generations in feature size and in speed while keeping the same power densities. However,CMOS finally encounters fundamental limits. The course is intended for students interested in research frontiers of future electronics technologies. The course begins with introduction to the basic physics of magnetism and of quantum mechanical spin. Then it covers aspects of spin transport with emphasis on spin-diffusion in semiconductors. The second part of the course is comprised of student and lecturer presentations of selected spintronics topics which may include: spin transistors, magnetic random access memories, spin-based logic paradigms, spin-based lasers and light emitting diodes, magnetic semiconductors, spin-torque devices for memory applications and the spin Hall effect.

TEM 401 ECONOMICS, MARKETING AND STRATEGY PRIMER FOR ENTREPRENEURS

This course presents fundamental concepts of microeconomics, marketing, and strategy to provide a foundation for understanding the economic marketplace and for identifying and assessing entrepreneurial opportunities. We begin with the study of consumer and firm behavior and the resulting demand and supply conditions in markets for goods and services. Using equilibrium analysis, we then investigate the determinants of market structure, prices, output levels, firm profitability, and consumer welfare when firms and consumers interact in the marketplace. Building on the economic model, we explore marketing issues, in particular the value proposition for new products and strategies for market entry, distribution, pricing and product positioning. Additional strategy topics include game theory and its managerial implications, incentive conflicts and contracts, and the relationship between government regulation and the business environment.

Offered: Fall

TEM 402 ACCOUNTING AND FINANCE PRIMER FOR ENTREPRENEURS

This course is designed to present the fundamentals of financial accounting and analysis to enable participants to understand and use the principles of finance and accounting information to better structure business decisions. The accounting module will present skills required to interpret and analyze common financial statements, and evaluate a company’s past and potential future performance. Topics of discussion will include transaction analysis, cash vs. accrual accounting, financial statements and analysis, development of budgets and pro-forma statements, and depreciation and inventory methodologies. The financial module will present skills required to understand how companies make investment and financing decisions. Topics of discussion will include net present values, an intro to financial instruments, the tradeoff between risk and return in financial markets, capital budgeting and investment decision-making, choosing a capital structure, and using the weighted average cost of capital.

Offered: Fall

TEM 411 GEN MANAGEMNT OF NEW VENTURE

This course provides an opportunity to examine the management practices associated with technical innovation and new business development. The analysis of entrepreneurship is evaluated primarily from the perspective of a start-up venture that requires equity capital investment. Management issues discussed include organizational development, analysis of market opportunities, market engagement, financial planning and control, capitalization, sources of funds, the due-diligence process and valuing the venture. Teams of three to four students will collaborate in the preparation of a business plan. The course will include time for students to share business ideas and identify possible team members. Each team will have a coach who is an experienced businessperson. The coach will be available to provide feedback to the team.

TEM 440 SCREENING TECH OPPORTUNITIES

This course provides a process used to quickly assess the commercial merits of raw technologies. This course focuses on the very earliest stage of concepts where information is greatly lacking and the time and money to research such answers is also limited. Students, in group format, will select and “thicken” two technologies of interest. Thickening will involve a cursory evaluation based upon technical merit, early market indicators, human resource availability, and business challenges. Teams will use a template to present the results of their investigation to a panel. Teams must state whether or not each technology is worthy to bring forward into TEM 441 and TEM 411.

Offered: Fall

TEM 441 PRODUCT DEV & TECH MGMT

In this class we will explore system engineering via the ISO9000 product development process and will illustrate how to use this process to develop both products and research systems that meet necessary specifications. The first eight weeks emphasize system integration including the development of the product development plans, partitioning of a system into subsystems, quantitative analysis of system performance and the role of prototypes. The second half of the semester emphasizes the planning needed to take systems to manufacture. During the course the students will prepare a product development plan on a project that was selected during TEM 440 Screening Technical Opportunities. The course is intended to be interactive. A portion of the classes will be dedicated to "brain-storming" solutions to technical problems and formal design reviews where the students will review the project plans of other students.

TEM 491 MASTER'S READING

TEM 492 ENERGY SYSTEM ECON&MODELING

One of the goals for the course is to introduce basic economic principles and methodologies necessary to evaluate the economics of various energy options. Students will learn the basics of energy systems modeling using Powersim Modeling software. Students will also be introduced to various modeling tools from Sandia National Lab and National Renewable Energy Lab (NREL) for evaluating economics of energy options. Students should expect to have discussion about what it will take economically, technically, and politically to increase the role of renewable technologies into our energy systems.

TEM 494 INTERNSHIP

TEM 494P INTERNSHIP

TEM 897 MASTER'S DISSERTATION

TEM 897A MASTERS DISSERTATN ABSENTIA

TEM 899 MASTER'S DISSERTATION

TEO 412 QUANTUM MECHANICS - OPTICS

Quantum theory topics relevant to atomic physics, radiation theory and quantum optics.

TEO 421 OPT PROPERTIES OF MATERIALS

Interaction of light with materials’ electrons, phonons, plasmons, and polaritons. Optical reflection, refraction, absorption, scattering, Raman scattering (spontaneous and stimulated), light emission (spontaneous and stimulated). Electrooptic effects and optical nonlinearities in solids. Plasmonics. Semiconductors and their nanostructures are emphasized; metals and insulators also discussed.

TEO 423 DETECTION OF OPTCL RADIATION

TEO 425 RADIATION & DETECTORS

The course covers the following topics: emission of thermal radiation, modeling of optical propagation (radiometry), quantifying the human perception of brightness (photometry) and of color (colorimetry), fundamentals of noise in detection systems, parameters for specifying the performance of optical detectors, and a survey of several specific types of detectors. References: Boyd, Radiometry and the Detection of Optical Radiation; Kingston, Detection of Optical and Infrared Radiation.

TEO 432 OPTO-MECHANICAL

The mechanical design and analysis of optical components and systems will be studied. Topics will include kinematic mounting of optical elements, the analysis of adhesive bonds, and the influence of environmental effects such as gravity, temperature, and vibration on the performance of optical systems. Additional topics include analysis of adaptive optics, the design of lightweight mirrors, thermo-optic and stress-optic (stress birefringence) effects. Emphasis will be placed on integrated analysis which includes the data transfer between optical design codes and mechanical FEA codes. A term project is required for the course.

TEO 433 OPT FAB AND TESTING TECH

You will be given a first-hand working knowledge of optical glasses, their properties, and the methods for specifying, manufacturing and testing high quality optical components. Lectures emphasize the optical and physical properties of glass, and how these influence the grinding and polishing process. Conventional fixed/loose abrasive grinding and pitch polishing are examined. New concepts for optical manufacturing are covered. The meaning of specifications will be reviewed. The laboratory portion of the course exposes you to abrasive grits, slurries, pitch polishing and the vagarious nature of the conventional polishing process, under the guidance of a master optician. Glass types and part shapes are assigned to illustrate the degree of difficulty required to achieve optical quality surfaces with hand and machine operations. In-process metrology is performed with a variety of instruments.

TEO 441 GEOMETRICAL OPTICS

This course is designed to give the student a basic working knowledge of image-forming optical systems. The course is oriented towards problem solving. Material covered includes: image formation, raytracing and first-order properties of systems; magnification, F/number, and numerical aperture; stops and pupils, telecentricity vignetting; telescopes, microscopes, magnifiers, and projection systems; the Delano diagram; the eye and visual systems, field lenses; optical glasses, the chromatic aberrations, and their correction; derivation of the monochromatic wavefront aberrations and study of their effects upon the image; third order properties of systems of thin lenses; effects of stop position and lens bending; aplanatic, image centered, and pupil centered surfaces; and field flatteners. References: Smith, Modern Optical Engineering, McGraw-Hill; Lecture notes.

TEO 442 INSTRUMENTAL OPTICS

This course provides an in-depth understanding of the principles and practices of optical instrumentation: Optical metrology, including wavefront and surface metrology, interferometric instruments and interferogram analysis, coherence and coherence-based instruments, phase measurement and phase-shifting interferometry; spectroscopic instrumentation, including the Fourier transfrom spectrometer, the Fabry-Perot interferometer, and the grating monochromator; image plane characterization (star test, Ronchi test, and modulation transfer function); the influence of illumination and partial coherence on image forming systems, including microscopes, systems for projection lithography, and displays.

TEO 443 FOUND OF MODERN OPT SYS

This course covers fundamental ray optics that are necessary to understand today’s simple to advanced optical systems. Included will be paraxial optics, first-order optical system design, illumination, optical glasses, chromatic effects, and an introduction to aberrations. References: Hecht, Optics (4th edition); Smith, Modern Optical Engineering; Lecture notes.

TEO 444 LENS DESIGN

A review of geometrical optics and 3rd order aberration theory. Specification documents. Image assessment: ray intercept plots, wavefront analysis, spot diagrams, MTFs, and point spread functions. Optimization theory, damped least squares, global optimization, merit functions, variables and constraints. Glass, plastic, UV and IR materials. Aspheres, GRINs, and diffractive optics. Secondary spectrum, spherochromatism, higher order aberrations. Induced aberrations. Splitting and compounding lens elements. Aplanats and anastigmats. Refractive design forms: landscape lens, achromatic doublet, Cooke triplet, Double Gauss, Petzval lens, wide angle, telephoto, and eyepieces. Reflective design forms: parabola, Cassegrain, Schmidt, Ritchey Cretian, Gregorian, three mirror anastigmat, and reflective triplet. Computer aided lens design exercises using CodeV - includes a 4-6 week individual lens design project.

TEO 446 OPTICAL THIN FILM COATINGS

Optical interference in a multilayer stack and its application to anti-reflection coatings, beamsplitters, laser mirrors, polarizers, and bandpass filters.

TEO 447 LIQUID-CRYSTAL MATERIALS AND OPTICAL APPLICATIONS

This course will introduce the student to the physical, chemical and optical properties of liquid crystals (LC) that are the basis for their wide and successful exploitation as optical materials for a broad variety of applications in optics, photonics and information display. Topics to be presented include: origins of LC physical properties in thermotropic and lyotropic materials as a function of chemical structure, influence of these structure-property relationships on macroscopic organization in LC mesophases, and the effect of molecular ordering and order parameter on properties of special significance for device applications. Operating principles for LC devices in a wide variety of applications will be described, including passive and tunable/switchable polarizers, wave plates, filters, information displays and electronic addressing, electronic paper, color-shifting polarizing pigments, optical modulators, and applications in photonics and lasers

TEO 448 VISION AND THE EYE

How the human eye's optical and neural factors process color and spatial information includes comparison with the design and capabilities of other animals' eyes.

TEO 450 POLARIZATION

The physics and engineering of polarized light, including polarization ray tracing and polarization in high numerical aperture focusing.

TEO 461 FOURIER OPTICS

The principles of physical optics including diffraction and propagation based on Fourier transform theory; integral formulation of electromagnetic propagation; diffraction from apertures and scattering objects; applications to optics of Fourier transform theory, sampling expansions, impulse response, propagation through optical systems, imaging and transforming, optical transfer function, optical filtering; and selected topics of current research interest. Text: Goodman, Introduction of Fourier Optics; Class Notes; References: Born and Wolf, Principles of Optics; Gaskill, Linear Systems, Fourier Transforms and Optics; Papoulis, Systems and Transforms with Applications in Optics; Siegman, Lasers.

TEO 462 Electromagnetism of Waves

Electromagnetic theory as a foundation for classical descriptions of many optical phenomena. Pertaining topics reviewed and expanded upon.

TEO 463 WAVE OPTICS & IMAGING

This course provides the practicing optical engineer with the basic concepts of interference, diffraction, and imaging. Each topic will be reinforced with real-world examples. The interference section will include interferometry, Fabry-Perot etalons, and multilayer thin films. The diffraction and imaging sections will include, but are not limited to, diffractive optics, continuous and discrete Fourier transforms, convolution theory, and Linear Systems. References: Hecht, Optics (4th edition); Goodman, Introduction to Fourier Optics; Lecture notes.

TEO 465 PRINCIPLES OF LASERS

Topics include quantum mechanical treatments to two-level atomic systems, optical gain, homogeneous and inhomogeneous broadening, laser resonators, cavity design, pumping schemes, rate equations, Q-switching for various lasers.

TEO 467 NON-LINEAR OPTICS

Fundamentals and applications of optical systems based on the nonlinear interaction of light with matter. Topics to be treated include mechanisms of optical nonlinearity, second-harmonic and sum- and difference-frequency generation, photonics and optical logic, optical self-action effects including self-focusing and optical soliton formation, optical phase conjugation, stimulated Brillouin and stimulated Raman scattering, and selection criteria of nonlinear optical materials. References: Robert W. Boyd, Nonlinear Optics, Second Edition.

TEO 468 Integrated Photonics

TEO 476 BIOMEDICAL OPTICS

Biomedical spectroscopy (absorption, fluorescence, Raman, elastic scattering); propagation of photons in highly scattering media (such as tissue); techniques for high-resolution imaging in biological media: confocal imaging, multiphoton imaging and optical coherence tomography. Taught every other fall.

TEO 511 ADV MATH METHODS IN OPTICS

TME 408 PHASE TRANSFORMATION

How and why atomic rearrangements leading to phase transformations occur and how they are associated with kinetic and crystallographic features; liquid-solid and solid-solid transformations, nucleation theory,growth, massive and martensitic transformations.

TME 424 INTRODUCTION TO ROBUST DESIGN & QUALITY ENGINEERING

Definition and pursuit of "quality" as a design criterion. The concept of robust design. Selection of the quality characteristic, incorporation of noise, and experimental design to improve robustness. Analysis and interpretation of results.

TME 432 OPTO-MECHANICAL

The mechanical design and analysis of optical components and systems will be studied. Topics will include kinematic mounting of optical elements, the analysis of adhesive bonds, and the influence of environmental effects such as gravity, temperature, and vibration on the performance of optical systems. Additional topics include analysis of adaptive optics, the design of lightweight mirrors, thermo-optic and stress-optic (stress birefringence) effects. Emphasis will be placed on integrated analysis which includes the data transfer between optical design codes and mechanical FEA codes. A term project is required for ME 432.

TME 434 INTRO TO PLASMA PHYSICS I

Basic plasma parameters; quasi-neutrality, Debye length, plasma frequency, plasma parameter, Charged particle motion: orbit theory. Basic plasma equations; derivation of fluid equations from the Vlasov equation. Waves in plasmas. MHD theory. Energy balance.

TME 435 INTRO TO PLASMA PHYSICS II

Vlasov equation, Landau damping. VanKampen modes, two-stream instability, micro-instabilities, introduction to kinetic theory, shield clouds, Thomson scattering, and the Fokker-Planck equation.

TME 436 COMPRESSIBLE FLOW

Kinematics, equations of motion; thermodynamics of gases; linear acoustics; Bernoulli equation; potential flow; steady one-dimensional flow; shock waves, normal and oblique shocks; unsteady one-dimensional flow, characteristics. Applications in engineering and astrophysics.

TME 437 CONTINUUM MECHANICS

The study of incompressible flow covers fluid motions which are gentle enough that the density of the fluid changes little or none. Topics: Conservation equations. Bernoulli’s equation, the Navier-Stokes equations. Inviscid flows; vorticity; potential flows; stream functions; complex potentials. Viscosity and Reynolds number; some exact solutions with viscosity; boundary layers; low Reynolds number flows. Waves.

TME 440 MECHANICS OF STRUCTURES

Application of energy methods to obtain the governing equations and approximate solutions to problems involving elastic structures. Static models will be developed to determine the maximum displacements and stresses for structures subjected to forces. Dynamic models will be developed to determine approximate natural frequencies and mode shapes. Rayleigh-Ritz and Galerkin approximation methods will be covered.

TME 441 FINITE ELEMENTS

This course provides a thorough grounding on the theory and application of linear steady-state finite element method (FEM) applied to solid mechanics. Topics include: review of matrix algebra and solid mechanics, Principle of Minimum Potential Energy, Rayleigh Ritz Method, FEM computational procedures, isoparametric shape functions and numerical integration for 1D, 2D, and 3D elements, error estimation and convergence, and the demonstration of FEM best practices using a commercial FEM code. A semester project that involves coding FEM software in Matlab is required for graduate students.

TME 443 APPLIED VIBRATION ANALYSIS

Deformations and the stresses in different types of structural systems subjected to prescribed dynamic loading conditions. Topics include: overview of structural dynamics, matrix structural analysis and Finite Element analysis, single-degree and multi-degree-of-freedom systems, linear and inelastic systems, numerical evaluation of dynamic response, Finite Element methods in dynamic analysis, earthquake response and structural design.

TME 444 CONTINUUM MECHANICS

The mechanics of continuous media. Introduction to tensors and differential geometry in the context of deformation. Eulerian and Lagrangian formulations. Invariants and constitutive relations. Material symmetry and anisotropy. Conservation of mass, momentum and energy.

TME 445 PRECISION INSTRUMENT DESIGN

This course focuses teaching the multidisciplinary aspects of designing complex, precise systems. In these systems, aspects from mechanics, optics, electronics, design for manufacturing/assembly, and metrology/qualification must all be considered to design, build, and demonstrate a successful precision system. The goal of this class is to develop a fundamental understanding of multidisciplinary design for designing the next generation of advanced instrumentation. This course is open to graduate students in engineering and physics backgrounds although it has a strong emphasis on mechanical engineering and systems engineering topics. This course is open to undergraduates who are in their senior year.

TME 449 ELASTICITY

Analysis of stress and strain; equilibrium; compatibility; elastic stress-strain relations; material symmetries. Torsion and bending of bars. Plane stress and plane strain; stress functions. Applications to half-plane and half-space problems; wedges; notches. 3-D problems via potentials.

TME 458 NON-LINEAR FINITE ELEMENTS

The theory and application of nonlinear FE methods in solid and structural mechanics, and biomechanics. Topics: review and generalization of linear FE concepts, review of solid mechanics, nonlinear incremental analysis, FE formulations for large displacements and large strains, nonlinear constitutive relations, incompressibility and contact conditions, hyperelastic materials, damage plasticity formulation, solution methods, explicit dynamic formulation.

TME 460 THERMODYNAMICS OF SOLIDS

Review of basic thermodynamic quantities and laws; equations of state; statistical mechanics; heat capacity; relations between physical properties; Jacobian algebra; phase transformations, phase diagrams and chemical reactions; partial molal and excess quantities, phases of variable composition; free energy of binary and multicomponent systems; surfaces and interfaces. The emphasis is on the physical and chemical properties of micro and nano solids including stress and strain variables.

TME 461 FRACTURE & ADHESION

Stress fields near cracks in linear elasticity. Linear elastic fracture mechanics. Griffith fracture theory. K and J approaches to fracture. Failure analysis and fracture stability; crack tip deformation, crack tip shielding. Crack nucleation. Adhesion. Low cycle fatigue; fatigue crack propagation. Emphasis on the role of microstructure in determining fracture, adhesion and fatigue behavior of materials; improving fracture toughness for advanced materials especially ceramics and polymers. This course is taught at a level that brings the student to the level of current research.

TME 462 SOLIDS & MATERIALS LAB

In this course, you will apply previously learned theoretical concepts to practical problems and applications. In addition, you will learn experimental techniques and enhance your technical writing skills. This course has two parts, a series of small laboratory exercises and a project. During the semester, students will work in groups of three to complete the assigned work, labs, and reports. The lab section of the course is designed to present basic applied concepts that will be useful to a broad base of engineering problems. The project portion is where you will work on a more specific idea, tailored around your desired future goals.

TME 466 CORROSION

A scientific approach to understanding the oxidation and dissolution of metals related to corrosion control, electrical energy generation, metallic plating, and energy storage. Characterization of corrosion types. Interfacial electrochemical mechanisms, thermodynamics, electrode potentials, interphases, and Pourbaix diagrams. Kinetics of free corrosion and electron limited

corrosion including polarizations and overpotentials. Passivity. Tafel behavior with Butler-Volmer interpretations. Experimental measurements used in corrosion research and in battery research. Corrosion in iron based and aluminum based aqueous systems. Corrosion in lithium and sodium based non-aqueous systems. Effects of stress, including mechanisms of stress corrosion cracking related to metallurgical structure and role of the electrical double layer. Catalytic behavior of free surface nanostructures intended to catalyze oxygen reactions and ease barriers to metallic plating and ionic dissolution at polar electrolyte interfaces.

TME 481 MECHANICAL PROP OF MATERIALS

Description: The mechanical response of crystalline (metals, ceramics, semiconductors)and amorphous solids (glasses, polymers) and their composites in terms of the relationships between stress, strain, damage, fracture, strain-rate, temperature, and microstructure. Topics include: (1) Material structure and property overview. (2) Isotropic and anisotropic elasticity and viscoelasticity. (3) Properties of composites. (4) Plasticity. (5) Point and line defects. (6) Interfacial and volumetric defects. (7) Yield surfaces and flow rules in plasticity of polycrystals and single crystals. (8) Macro and micro aspects of fractures in metals, ceramics and polymers.(9) Creep and superplasticity. (10) Deformation and fracture mechanism maps. (11) Fatigue damage and failure; fracture and failure in composites (If time permits).

TME 536 INERTIAL CONFINEMENT FUSION

Introduction to probability theory, stochastic processes, and statistical continuum theory. Experimental facts of turbulent motion. Kinematics and dynamics of homogeneous turbulence. Isotropic turbulence. The closure problem. Hopf's functional formalism and its generalizations. Mixing-length and phenomenological theories. Turbulent shear flows. Transition from laminar to turbulent flow. The general concepts of stability theory.

TUR 101 ELEMENTARY MODERN TURKISH I

An introduction to modern Turkish, including pronunciation vocabulary, grammar, elementary conversation, reading and writing.

TUR 102 ELEMENTARY MODERN TURKISH II

This course is the continuation of TUR 101. In the course, students will continue to gain familiarity with Turkish culture through the intensive learning of Turkish language. Turkish is the primary language of instruction. Note: The terms “lecture” and “recitation” used to identify the blocks do not reflect in any way the pedagogical approach of the course.

TUR 103 INTERMEDIATE TURKISH

TUR 104 INTERMEDIATE TURKISH

TUR 204 Turkish Media and Literature

In this language class students will further develop their Turkish skills, with a focus on reading and discussing authentic texts, viewing Turkish videos and films, listening to music, and writing short essays and engaging in in-depth conversation. The class is conducted in Turkish. Prerequisite: TUR 104, or permission of instructor.

TUR 246 Modern Turkish History and Literature

The Nobel laureate Orhan Pamuk has gained worldwide recognition for his innovative novels and status as a radical author. As Turkey becomes more central to debates concerning the Middle East and thus more legible on global scale, Pamuk’s novels have become symbols of intense political and cultural repercussions. This semester we will read Pamuk’s novels to trace this writer’s transformation from a national to a global author, and will examine his role as a mediator between the Ottoman past, the Turkish national tradition, and an international canon represented by works (and film adaptations) from Borges, Dostoevsky, Eco, Faulkner, Kafka, Nabokov, and Rushdie. Larger questions of secularism, Islam, collective memory, and cultural translation will be inseparable from our discussions of historiography, intertextuality, orientalism, Sufism, modernism, metafiction, and post-colonialism.

WRT 101 EAPP COMMUNICATION ACROSS CONTEXTS I

This course is designed to help undergraduate non-native speakers of English improve their English oral communication and listening skills in preparation for social interactions at the university. Students will practice speaking at greater length and faster speed by developing fluency, grammatical accuracy, complexity of sentence structures, and vocabulary. In addition, students will practice listening actively to peers, summarizing, paraphrasing, and repeating key information from native speakers of English. The course will also cover such techniques as asking follow-up questions, using socialization strategies, adapting to cultural

differences, practicing small talk, and making formal and informal introductions. Class work will take place in and out of the classroom with the collaboration of native and non-native speakers of English in formal and informal settings. Significant class time will be devoted to English pronunciation.

Offered: Fall

WRT 102 EAPP COMMUNICATION ACROSS CONTEXTS II

This course builds upon the lessons from WRT 101: EAPP Communication across Contexts I, and it is designed to help undergraduate non-native speakers of English improve their English oral communication and listening skills in preparation for academic and social interactions. Students will practice taking notes, summarizing, repeating, and critiquing key information from recorded lectures and presentations – with an emphasis on the discourse most prevalent in undergraduate university courses. Students will also practice communicating in different academic, social, and cultural contexts as they engage in classroom conversation, debates, interviews, speaking to formal audiences, and giving academic presentations in English. Class work will take place in and out of the classroom with the collaboration of native and non-native speakers of English in formal and informal settings.

Offered: Spring

WRT 103 EAPP CRITICAL READING, REASONING, AND WRITING

WRT 103 is an introduction to critical reading and writing skills. Lessons will center on the analysis of varied readings and on using writing as a tool for critical thinking and reflection. Students will be introduced to concepts of rhetorical analysis and the use of logic, as well as the roles of audience and purpose in shaping the organization, style and argumentative strategies of their own papers. In addition, students will build writing fluency and self-expression through freewriting and in-class writing. Collaboration is an important part of learning; therefore, students will work together as they learn to critique their own work and the work of their peers. Attention will be given to writing beyond the classroom, such as communicating with faculty and others campus programs and departments.

Offered: Fall

WRT 104 EAPP RESEARCH, READING, AND WRITING

WRT 104 extends the critical reading and writing skills learned in WRT 103: EAPP Critical Reading, Reasoning, and Writing to the act of research. Research may include traditional library sources and academic journals, but it may also include primary research such as fieldwork, surveys, and interviews. A variety of texts will be analyzed and discussed in preparation for constructing extended argumentative essays and a final research paper. Reading and responding critically to texts will be practiced. Students will learn to incorporate source material into research writing and integrate one's ideas with those from other texts. Collaboration is an important part of learning; therefore, students will work together as they learn to critique their work and the work of peers. Attention will be given to writing beyond the classroom, such as communicating with faculty and other campus programs and departments.

Offered: Spring

WRT 105 REASONING AND WRITING IN THE COLLEGE

WRT 105E is an extended version of Reasoning and Writing in the College. While WRT 105 and WRT 105E have the same demands and criteria for completion, WRT 105E is intended for students who decide that they need a more supported writing experience to meet the demands of college writing. All sections of WRT 105E include an additional class session each week and are taught in computer labs and limited to 10 students. WRT 105E students who have worked diligently but have not attained a C or above may take an incomplete and sign up for the WRT 105E Extension, a weekly workshop and tutorial that allows students to raise their final grades and satisfy the Primary Writing Requirement.

Offered: Fall Spring

WRT 105A REASONING AND WRITING IN THE COLLEGE: FIRST COURSE IN WRT 105A-WRT 105B SEQUENCE

WRT 105A (Fall) and WRT 105B (Spring) distribute the work of WRT 105E across two semesters, with WRT 105A covering the first half of WRT 105E. WRT 105A immerses students in the experience of academic writing, with a particular emphasis on analyzing, using, and documenting scholarly and non-scholarly texts. It provides instruction and practice in constructing cogent and compelling arguments, as students draft and revise two short argumentative essays. Students will develop and test their ideas through discussion, informal writing, peer critiques and self-assessments. All sections of WRT 105A&B revolve around a theme and include a weekly writing group in which students do the work of writing with immediate support from the course instructor. To proceed from WRT 105A to WRT 105B, students must earn a grade of “C” or higher.

WRT 105B REASONING AND WRITING IN THE COLLEGE: SECND PART OF THE WRT 105A-WRT 105B SEQUENCE

The second-half of the WRT 105A-WRT 105B sequence, WRT 105B immerses students in the experience of academic writing, with a particular emphasis on analyzing, using, and documenting scholarly and non-scholarly texts. It provides instruction and practice in constructing cogent and compelling arguments, as students draft and revise a proposal and an 8-10 page argumentative research paper. Students will develop and test their ideas through discussion, informal writing, peer critiques and self-assessments. All sections of WRT 105A&B revolve around a theme and include a weekly writing group in which students do the work of writing with immediate support from the course instructor. WRT 105B students who have worked diligently but have not attained a grade of "B-" or higher may take an incomplete and sign up for the Extension, a weekly workshop and tutorial program that allows students to continue working on their writing, raise their final grades, and satisfy the Primary Writing Requirement.

WRT 105E REASONING AND WRITING IN THE COLLEGE

WRT 105E is an extended version of Reasoning and Writing in the College. While WRT 105 and WRT 105E have the same demands and criteria for completion, WRT 105E is intended for students who decide that they need a more supported writing experience to meet the demands of college writing. All sections of WRT 105E include an additional class session each week and are taught in computer labs and limited to 10 students. WRT 105E students who have worked diligently but have not attained a C or above may take an incomplete and sign up for the WRT 105E Extension, a weekly workshop and tutorial that allows students to raise their final grades and satisfy the Primary Writing Requirement.

Offered: Fall Spring

WRT 108 WORKSHOP IN WRITING

Offers ongoing practice and instruction in writing and critiquing writing. Students meet weekly with a writing center consultant to work on forms of academic writing relevant to their spring coursework. These forms may include summaries, critical responses, argumentative essays, and lab reports, among others. Students may also choose to revise essays completed in previous semesters or work on other non-fiction projects. Guided by a writing center consultant, students plan, draft and revise their writing, critique each other's work, assess their own writing, and participate in group session on common writing issues. The semester's work will culminate in a final portfolio that features polished essays and an overall self-assessment.

Offered: Spring

WRT 245 ADVANCED WRITING & PEER TUTORING

Prepares sophomores, juniors, and seniors enrolled in five-year programs, from the humanities, sciences, and the social sciences for work as writing fellows. Course design facilitates the development of a strong, intuitive writer and speaker in order to become a successful reader, listener and responder in peer-tutoring situations. Ample writing and rewriting experiences, practice in informal and formal speaking, and the critical reading of published essays and student work enhance students' ability to become conscious, flexible communicators. Before tutoring on their own, students observe writing fellows and writing center consultants conduct tutoring sessions. On completion of the course with a B or better, fellows should be prepared to accept their own hours as peer tutors.

Offered: Fall

WRT 247 SPOKEN COMMUNICATION AND PEER TUTORING

Prepares selected sophomores, juniors, and eligible freshmen for work as Speaking Fellows. This course focuses not only on the skill of public speaking, but also on peer tutoring and assisting students with their own forms of spoken communication. In this course, we will examine various components of presentations, including effective use of visual aids and professional delivery styles. We will also explore several types of spoken communication for different purposes and audiences, including argumentative and descriptive speeches, interviews, and group presentations. Through analyzing, studying the construction of, and creating and delivering their own presentations, students will improve their own speaking styles and develop the skills necessary to aid their peers in constructing and revising presentations. By the end of the semester, students should be ready to take on their own hours as peer tutors. This course satisfies a requirement for the Citation for Achievement in College Leadership.

WRT 250 MODERN ENGLISH GRAMMAR

This course is a comprehensive review of the grammar of Modern Standard English. The course will be of interest to those who wish to sharpen their language skills, or to know more about the workings of the English language whether for practical, cognitive or creative ends. Drawing on work in mostly pre-theoretical, descriptive linguistics this course reveals the mechanics

of Standard English structure, with occasional detours into the finesse of usage across registers (dialect to slang). Students will learn to develop the ability to see patterns in grammar, as well as its structural possibilities and limits. Assignments will regularly involve reflection on form, usage and speaker judgments. Through a final project, students will investigate some aspect of an English variety available to them. Throughout, students will be working with their data samples of English to explore how speaker choices lead to particular grammatical structures or yield ungrammaticality. Background in linguistics or grammar not needed.

WRT 251 THE RHETORICAL SENTENCE

Drawing on work in linguistics and rhetorical grammar (e.g., Halliday, Biber, Kolln, Hyland), this course investigates the sentence—its structure, its potential, and its limits in creating meaning. Students will learn about the form and function of "the sentence" and its parts, develop the ability to see patterns and possibilities within and across sentences, and create and analyze sentences of wildly different shapes. Assignments will regularly involve meaningful play with sentences. Through a final project, students will investigate some aspect of the sentence in extended discourse or discuss how knowledge of the sentence might be meaningfully integrated into a writing curriculum. This course is ideal for those interested in writing, writing education, or editing. Background in linguistics or grammar is not necessary. Open to undergraduates and graduate students.

WRT 261 WRITING IN A DIGITAL WORLD

The purpose of writing in a digital world is to engage with a broader community around a topic of interest and contribute to public knowledge. In this course, students are invited to dig deeply into a question of interest, write for a public audience, and use the Internet as an archive of information waiting to be discovered, analyzed, and written about. Students can draw on pre-existing research interests from their majors or develop a line of inquiry stemming from class discussions, writing, and research. In order to gain experience writing to a range of readers, students will engage in a writing process informed by peer review, self-assessment, and revision. Shorter writing assignments will help students develop and refine ideas as they transform texts for different audiences. The final research project will be multimodal, published for a public audience, and should demonstrate your ability to think critically about a topic and effectively communicate that knowledge to a range of readers.

WRT 262 READING AND WRITING ABOUT RESEARCH IN THE SOCIAL, NATURAL, AND APPLIED SCIENCES

Drawing on the concepts of discourse community and rhetorical genre analysis (e.g., Bazerman, Berkenhotter & Huckin, Swales), this course investigates ways of understanding the choices writers make when communicating about the sciences, with the goal of better understanding how to read and write as an 'insider' in your chosen discipline. You will develop a technical vocabulary and set of skills that allow you to identify and describe recurring patterns and describe writer choices within those patterns. Using these tools, you will investigate how writers convey meaning in different disciplinary situations and why they make the writing choices that they do in order to convey meaning. Through a final research project of your choice, you will practice using what you have learned to communicate the results of your own research.

Offered: Fall

WRT 263 TRANSLATION: INTERPRETING & ADAPTING

This course approaches translation processes as an object of study. Interdisciplinary, with team problem-solving by design, it investigates a range of potentially high-stakes translation cases involving textual, audiovisual, or multimodal renditions of a source work into a target work. These may include translating an ad or museum label; subtitling news, TEDTalks, or a foreign-language stage production; dubbing in anime, games, or TV shows; recasting research procedure in video; or mediated interpreting of a human subject as in ethnographic studies or between an interpreter and a health professional. Course readings and informal translation experiments will support students in learning how a given situation affects the choices and strategies that translators use, as well as the viability and style of the translated work. Based on their earlier work and interests, students will create individual or collaborative final projects that foreground their disciplinary, linguistic, technical, and other expertise.

WRT 264 DIGITAL PORTFOLIO

WRT 265 WRITING ACROSS DISCIPLINES

In this course, students will examine three central questions: what is argument, what is evidence, and what is unique about different forms of disciplinary inquiry. The purpose of this course is to examine how argument is enacted in different contexts and how that affects our understanding of evidence. We will begin by looking at traditional philosophical conceptions of argument, and use this understanding as a basis for comparison of how arguments are developed and supported in different academic disciplines. We will also think about how argument is manifested in different divisions of academic inquiry such as the humanities and social sciences. For instance, we might ask if history falls within the humanities or social sciences and why, or

how the digitization of the humanities is affecting humanistic conceptions of argument and evidence. Students will be encouraged to investigate writing from several disciplinary perspectives of their choice as a means to investigate these questions.

WRT 272 COMMUNICATING YOUR PROFESSIONAL IDENTITY IN BIOLOGY

This interactive course teaches "real life" communication skills and strategies that help students present their best professional selves and develop a fulfilling career. Students will explore and articulate their internship, career and graduate school goals for distinct audiences and purposes as they develop a professional communication portfolio of materials such as resumes, cover letters, statements of purpose, electronic communications, elevator pitches, project descriptions and abstracts, and online profiles (i.e., LinkedIn). Students will revise and refine their written and spoken work across the semester based on feedback from peers, instructors, and alumni. By the semester's end, students will have gained extensive experience with the communication skills expected in today's competitive environment. The class can be used to fulfill 1 of the 2 required Upper-Level Writing experiences in biology, and is suitable for junior and senior year biology majors; all others require permission of the instructor.

Offered: Spring

WRT 273 COMMUNICATING YOUR PROFESSIONAL IDENTITY IN ENGINEERING

This interactive course teaches "real life" communication skills and strategies that help students present their best professional selves and develop a fulfilling career. Students will explore and articulate their internship, career and graduate school goals for distinct audiences and purposes as they develop a professional communication portfolio of materials such as resumes, cover letters, statements of purpose, electronic communications, elevator pitches, project descriptions and abstracts, and online profiles (i.e., LinkedIn). Students will revise and refine their written and spoken work across the semester based on feedback from peers, instructors, and alumni. By the semester's end, students will have gained extensive experience with the communication skills expected in today's competitive environment. This course is suitable for second-semester sophomores, juniors and first-semester seniors in the Hajim School; all others require permission of the instructor.

WRT 274 COMMUNICATING YOUR PROFESSIONAL IDENTITY IN PSYCHOLOGY

This interactive course teaches "real life" communication skills and strategies that help students present their best professional selves and develop a fulfilling career. Students will explore and articulate their internship, career and graduate school goals for distinct audiences and purposes as they develop a professional communication portfolio of materials such as resumes, cover letters, statements of purpose, electronic communications, elevator pitches, project descriptions and abstracts, and online profiles (i.e., LinkedIn). Students will revise and refine their written and spoken work across the semester based on feedback from peers, instructors, and alumni. By the semester's end, students will have gained extensive experience with the communication skills expected in today's competitive environment. This course is suitable for second-semester sophomores, juniors and first-semester seniors; all others require permission of the instructor.

WRT 275 COMMUNICATING YOUR PROFESSIONAL IDENTITY IN MATHEMATICS

This interactive course teaches "real life" communication skills and strategies that help students present their best professional selves and develop a fulfilling career. Students will explore and articulate their internship, career and graduate school goals for distinct audiences and purposes as they develop a professional communication portfolio of materials such as resumes, cover letters, statements of purpose, electronic communications, elevator pitches, project descriptions and abstracts, and online profiles (i.e., LinkedIn). Students will revise and refine their written and spoken work across the semester based on feedback from peers, instructors, and alumni. By the semester's end, students will have gained extensive experience with the communication skills expected in today's competitive environment. This course is suitable for second-semester sophomores, juniors and first-semester seniors; all others require permission of the instructor.

WRT 276 COMMUNICATING YOUR PROFESSIONAL IDENTITY IN POLITICAL SCIENCE AND INTERNATIONAL RELATIONS

Two-credit course. Cannot be used to satisfy any requirements for the major or minor in Political Science or International Relations. This interactive course teaches "real life" communication skills and strategies that help students present their best professional selves and develop a fulfilling career. Students will explore and articulate their internship, career and graduate school goals for distinct audiences and purposes as they develop a professional communication portfolio of materials such as resumes, cover letters, statements of purpose, electronic communications, elevator pitches, and online profiles. Students will revise and refine their written and spoken work based on feedback from peers, instructors, and alumni. By the semester's end, students will have gained extensive experience with the communication skills expected in today's competitive environment. This course is suitable for second-semester sophomores through first-semester seniors; all others require permission of the instructor.

WRT 281 WRITING STUDIES WORKSHOP

This course is designed for students who wish to pursue research in writing studies; it provides trained writing and speaking fellows with an opportunity to carry out research projects relevant to their interests in writing pedagogy, writing and speaking center theory and practice, or topics related to program development. Students may pursue a new research question or extend an earlier investigation; student research will be complemented by readings on quantitative and qualitative methods. Weekly group meetings will guide students through the process of shaping a research project, identifying fitting methods to address research questions, and analyzing and reporting research effectively for the intended purpose and audience. Individualized feedback and guidance will support students as they (individually or in groups) develop projects that will contribute to the shared knowledge of the field. The aim is for students to produce work that may be shared at a conference and/or submitted for publication.

WRT 391 INDEPENDENT STUDY

WRT 395 INDEPENDENT RESEARCH

WRT 396 RESEARCH PAPER WRITING IN BIOLOGY

This course will guide students through the process of developing, revising, and presenting a data-driven research write-up. Through writing and speaking exercises, students will learn how to write and speak in a manner appropriate to one’s discipline and audience, obtain feedback from the scientific community, and revise work at each stage of the writing process. It is strongly recommended or required (depending on track) for students writing a senior thesis, but suitable for anyone who plans to pursue research in either basic science or medicine. Open to all Biology-track majors; all others require permission of the instructor. This course meets weekly, and fulfills one of the two ULW requirements. Students cannot use both 395W and 396W for ULW credit.

Offered: Fall

WRT 451 THE RHETORICAL SENTENCE

Drawing on work in linguistics and rhetorical grammar (e.g., Halliday, Biber, Kolln, Hyland), this course investigates the sentence—its structure, its potential, and its limits in creating meaning. Students will learn about the form and function of “the sentence” and its parts, develop the ability to see patterns and possibilities within and across sentences, and create and analyze sentences of wildly different shapes. Assignments will regularly involve meaningful play with sentences. Through a final project, students will investigate some aspect of the sentence in extended discourse or discuss how knowledge of the sentence might be meaningfully integrated into a writing curriculum. This course is ideal for those interested in writing, writing education, or editing. Background in linguistics or grammar is not necessary. Open to undergraduates and graduate students.

WRT 571 WRITING PEDAGOGY

WRT 572 PRACTICUM IN TEACHING OF WRITING

Offered: Spring

WST 000 WST COURSES LISTED UNDER GSW

WST 100 INTRO TO WOMEN'S STUDIES

The study of women and gender through specific topics that change each semester.

Offered: Fall Spring

WST 101 DEVELOPING FROM WITHIN

WST 103 LANGUAGE & SEXUALITY

This course will investigate various aspects of language as used by members of sexual minority groups, focusing on language of and about gay men, lesbians, bisexuals and transgendered people, including "reclaimed epithets" (e.g., 'dyke' and 'queer'), gender vs. sexuality vs. sex, and the role of language in creating /maintaining sexual categories and identities.

WST 105 SEX AND POWER

WST 115 INTRO TO MED ANTHROPOLOGY

Exploration of anthropological interpretation, research, and writing on the ways different peoples understand and deal with issues of illness and disease.

WST 123 INTRO TO VISUAL&CULTURL STDS

The aim of this course is two-fold: First, to develop an understanding of the extraordinary variety of ways meaning is produced in visual culture; secondly, to enable students to analyze and describe the social, political and cultural effects of these meanings. By studying examples drawn from contemporary art, film, television, digital culture, and advertising we will learn techniques of analysis developed in response to specific media and also how to cross-pollinate techniques of analysis in order to gain greater understanding of the complexity of our visual world. Grades are based on response papers, class attendance and participation, and a midterm and a final paper. Occasional film screenings will be scheduled as necessary in the course of the semester.

WST 125 BIJIN-GA:GLAMOUR GIRL OF JPN

WST 155 INTRO AFRICAN-AMERICAN LIT

WST 189 SEXUALITY IN WORLD RELIGION

WST 190 MDL EASTERN DANCE FOLKLORIC

Traditional Folkloric roots of Middle Eastern Dance, focusing on specific Bedouin dance styles of North Africa (Raks Shaabi). Discourse and research will address issues of gender and body image. Improving strength, flexibility and self-awareness of the body, the class work will include meditative movement, dance technique, choreography and improvisation. No prior dance experience necessary.

WST 193 MID EASTERN DANCE:ORIENTALE

Improve strength, flexibility and self-awareness of the body. Includes meditative movement, dance technique, improvisation and rhythm identification through music and drumming. Dance forms such as Egyptian, Turkish, and American Tribal will be taught. Traditional costuming will be addressed. History, art, and culture from these countries will be explored and experienced. Discourse and research topics will explore issues of gender, body image, historical perspectives and Orientalism.

WST 200 COLLOQUIUM IN WOMENS STUDIES

WST 205 PHIL FOUNDATION OF FEMINISM

Contemporary feminist theory: the conception of women expressed through our practices, laws, theories and literature; equality and equal rights; sex roles and gender specific language; power relations and self-determination; marriage and maternity.

WST 206 FEMINISM, GENDER & HEALTH

This course explores how ideas about gender and sex have shaped past and present approaches to health and medicine. We will consider the effects gender, race, and class have had on medical knowledge and practices, with particular emphasis on women’s bodies and women’s health. Topics will include the social and cultural constructions of gender, the politics of human sexuality, women’s interventions in the fields of health and medicine, and reproductive politics. This is a writing-intensive course and may be counted toward the University of Rochester’s Women’s Studies major, minor, or cluster.

Offered: Spring

WST 208 SHERLOCK:RACE, GEND, CRIME

WST 209 PSYCH OF HUMAN SEXUALITY

The question of difference will be approached in this seminar through the narrow lens of what has come to be called "queer theory." A select number of foundational texts, including Foucault's History of Sexuality and Freud's Three Essays, will lay the groundwork for analysis of recent theorists working within the domains of psychoanalysis and new historicism. Students will lead seminar discussions on theoretical texts of their choosing.

WST 210 LGBTQ EXPERIENCES US HISTORY

This course will explore the historical, social, and cultural experiences of Lesbian, Bisexual, Gay, Transgender, and Queer communities and individuals in America. We will focus on intersectional identities, historical events, activist movements, legal issues, and cultural trends in American LBGTQ history.

Offered: Fall

WST 212 QUEER THEORY

Queer Theory emerged out of the intersection of conceptualizations of gender/sexuality advanced by feminist scholars, early LGBT scholarship, and theories of postmodernism. Queer theory has not only attempted to recuperate non-dominant sexualities, but perhaps more tellingly, has sought to deconstruct the assumed correlation between sex, gender, and sexuality. In other words, what ought we to do with bodies that do not conform to binary gender norms? How might we understand sexuality if it is a contingent practice with open-ended objects? In what ways can we understand the embodiments of gender/sexuality as a "performance"? How have queer identities been informed by other socially significant forms of identity (such as: race, class, gender, nationality, etc)?

WST 214 IMPRESS & POST IMPRESS

Feminist art historians have changed the way we think about images of women, works by women artists, and the very notion of artistic genius. This course will investigate the way in which visual images of women participate with other cultural and social factors in the construction of the idea of woman. It will look at types and conventions in works by male and female artists, as well as in anonymous prints and advertising from different periods, with a concentration on the 19th and 20th centuries. Readings will introduce a variety of approaches.

WST 219 The Politics of Sport

Athletic competitions are not just spectacles that celebrate physical strength and human endurance, but also important symbolic events that serve to reinforce and challenge ideas about gender, race, and national identity. This course explores the origins of stereotypes that permeate sports (such as notions of masculine prowess; women's natural weakness; ethnic and racial limitations and advantages), reasons for their persistence, and the effect they have on our society and the unequal relationship of power. Topics will include the history of the Olympic Games (the Berlin, Mexico City, and Beijing Olympics); the roles of soccer, football, and other sports in shaping national identities; sport, racism, and resistance; sport and sexualization/empowerment of women; sport and masculinity; persistent heteronormalcy of sport, and many others.

Offered: Fall

WST 219W THE POLITICS OF SPORT

Athletic competitions are not just spectacles that celebrate physical strength and human endurance, but also important symbolic events that serve to reinforce and challenge ideas about gender, race, and national identity. This course explores the origins of stereotypes that permeate sports (such as notions of masculine prowess; women's natural weakness; ethnic and racial limitations and advantages), reasons for their persistence, and the effect they have on our society and the unequal relationship of power. Topics will include the history of the Olympic Games (the Berlin, Mexico City, and Beijing Olympics); the roles of soccer, football, and other sports in shaping national identities; sport, racism, and resistance; sport and sexualization/empowerment of women; sport and masculinity; persistent heteronormalcy of sport, and many others.

WST 220 BODY POLITICS IN JPN CULTURE

WST 223 MADNESS,MARRIAGE&MONSTROSITY

Varying topics relating to the literature and culture of England in the nineteenth century.

WST 228 BODY IN EARLY CHRISTIANITY

WST 231 GENDER & DEVELOPMENT

WST 234 THE BLACK BODY

WST 235 HISTORY OF MASCULINITY

WST 237 MEDIEVAL CELTIC STUDIES

WST 238 ALL IS FAIR IN LOVE AND WAR

WST 239 JEWISH WOMEN'S WRITING

WST 240 WRITING WOMEN'S LIVES

In this course we shall examine women's lives through the act of non- fiction writing. Focusing on prose writing (rather than poetry), each student will actively practice the creative act of telling the truth about her own and other women's lives. We shall also read many diverse examples of women's autobio graphical writing and other non-fiction genres, by such acclaimed practitioners as Virginia Woolf, bell hooks, Alice Walker, Annie Dillard, Dorothy Allison, and Maxine Hong Kingston.

WST 242 DANCE THERAPY FOUNDATIONS

WST 243 MAJOR AUTHOR: TONI MORRISON

Intensive study of the writings of a single author or small group of authors from British or American literary traditions.

WST 244 MUTILATED BODIES & DISCOURSE

'Transnational sisterhood' or cultural imperialism? Legitimate ritualized practice or outdated violent ritual? Genital cutting, female circumcision, female genital surgery? The controversy over this practice already begins with the act of its naming. If there seems to be a consensus about the physical violence imposed on the female body, why is it that western feminist discourse is suspected of perpetuating the mutilation African voices? This course seeks to provide an understanding of the context in which a fragmented 'transnational sisterhood' allows for a proliferation of mutilated discourses on mutilated postcolonial bodies. Readings and Films include Alice Walker (Warrior Marks), Florence Ayissi Fauziya Kassindja (Do They Hear You When You Cry), Maryse Conde and more critical and theoretical readings from African, French and North American authors. In English.

WST 246 ANT APP GENDER/SEXUALITY

WST 250 BLACK PARIS

This course is a study of Black Paris, as imagined by three generations of Black cultural producers from the United States, the Caribbean and Africa. Paris is as a space of freedom and artistic glory that African American writers, solders and artists were denied back home. For colonized fricans, and Antilleans, Paris was the birthace of the Negritude, the cultural renaissance informed by the dreams and teachings of the Harlem Renaissance. Black Paris, for the young generations caught in the marginal space of poor suburbs, calls to mind images of burning cars, riots, dilapidated schools that are rendered through rap music, hip-hop that are weaving the thread of a new youth-oriented transnational imagination.

WST 253 GENDER & LANG LIT FILM & SOC

WST 254 THE MONSTROUS FEMININE

WST 255 TOPICS IN ITALIAN CULTURE

WST 256 GENDER IN SPANISH-AMER LIT

Through study of texts (mostly novels) written by women from Latin America, broad questions concerning cultural contexts with respect to sexuality and gender, language, aesthetics, psychology, and social issues are addressed. The course uses materials from a variety of fields (literary and cultural theory, film studies, psychology, history, sociology, anthropology, feminist studies) in addition to the primary texts. All texts and discussions in English. Emphasis on collaborative research and progressive writing assignments.

WST 257 JOURNEY TO THE FEAST

WST 258 WOMEN LIVES AND LETTERS

WST 260 RACE & GENDER IN POP FILM

This course explores Hollywood's current fascination with race and gender as social issues and spectacles. In particular, we will focus on the ways that social difference have become the sites of increasingly conflicted narrative and visual interactions in our

films. To examine competing representations of racial difference and sexual difference in contemporary US culture, we analyze popular films of the 1980s and 1990s, from thrillers to action films to comedies.

WST 266 PSYCHOLOGY OF GENDER

Exploration of the ways males and females differ in interaction, theories of development of sex differences, consequences for social change.

WST 267 CHANGING GENRES OF EROTICA

WST 269 THE MATTER WITH MEN FILM/SOC

WST 272 GENDER & SEXUALITY

This course will examine literary, artistic, and theoretical representations of gender and sexuality as they have changed in the course of the 20 Century. The focus will be on texts from Western Europe and the US, but we will also consider other perspectives. From the New Women to French Feminists and transnational feminism. from homophile societies to “queer nation and gay marriage, from Sigmund Freud to Michel Foucault and Judith Butler, we will explore the contested and politically charged debates around gender and sexuality that have shaped our views of identity over the last century.

WST 275 MODERN JPN WOMEN WRITERS

WST 285 HISTORY OF THE BODY

WST 288 MOTHERS, COMRADES & WHORES

It is common now to hear that we live in a transnational age, but what does this really mean? How do we imagine our transnational community? In this course we will examine contemporary transformations from national to trans-national culture by focusing precisely on film production. This course will examine how film provides one of the central sources of transnational images. Germany will provide us with a case study and we will view a wide variety of German and European, national and transnational films. Through this case study we will address larger questions of globalization. Through hot new cult films like "Run, Lola Run," or big budget epics like "House of the Spirits," we will examine the aesthetic and technical transformations that have given rise to these new ways of imagining our community. PLEASE NOTE: Attendance at weekly film screening is mandatory -- alternative time will be set up.

WST 292 INTRO TO EAST EURO FILM

WST 296 INTL HUMAN RIGHTS

What does it mean to be human? What political, economic, religious, social, or sexual rights might be part of different people's working definitions? This course will look at both a) the historical development of conflicting theories of human rights and b) more contemporary debates about their ideal extent, their exercise, and their enforcement. Special topics will include debates over the meaning of the American and French Revolutions, the fight to design an International Declaration of Human Rights in the aftermath of World War II, the history of organizations such as Amnesty International, and the controversy around UN events such as the 1995 World Conference on Women in Beijing, the 2002 World Summit on Sustainable Development in Rio de Janeiro, and the 2000 and 2005 Millennium Summits in New York City.

WST 350 BLACK FAM IN SLAVE AND FREE

After a discussion of the Moynihan Report controversy and an assessment of the literature on the black family, the readings will investigate why and how stable black families were encouraged, and how they developed under slavery. The impact of factors such as economics, politics, religion, gender, medicine, and the proximity of free families, on the structure of the black family will be given special attention. In this way, the structure of the slave family on the eve of Emancipation, and its preparedness for freedom, will be tested and assessed. Students will be encouraged to identify persistent links between the "history" of slavery and the black family, and the development of social policy.

WST 391 INDEPENDENT STUDY

Students interested in Independent Studies should contact the Women's Studies Department.

Offered: Fall Spring

WST 392 PRACTICUM IN WOMEN'S STUDIES

Interested students should contact the Women's Studies Department.

WST 393 SENIOR PROJECT

Independent research with substantial supervised research and written work in gender and women's studies. This research should be directed toward work in WST 397.

WST 393H HONORS-INDEPENDENT RESEARCH

Independent research with substantial supervised research and written work in gender and women's studies. This research should be directed toward work in WST 397.

WST 394 INTERNSHIP

It is the student's responsibility to arrange the internship with the organization and to find a professor as an advisor for the internship. Organization/Companies currently offering internships are Afterimage, Alternatives for Battered Women, Center for Dispute Settlement, City Council of Rochester, Division of Human Rights, Gay Alliance of Genesee Valley, Monroe Districts Attorney's Office, Planned Parenthood, St. Joseph's Villa, Sojourner House, Susan B. Anthony House, TV Dinner/Metro Justice, Urban League of Rochester, Visual Studies Workshop, Wheatley Library Branch and the YWCA. Position descriptions are available in Lattimore 538.

WST 394H INTERNSHIP - HONORS

WST 395 INDEPENDENT RESEARCH

Independent research with substantial supervised research and written work in gender and women's studies.

WST 395W INDEPENDENT RESEARCH

WST 396 SEMINAR IN WOMEN'S STUDIES

Juniors and seniors only or prerequisite course in African American Literature, American Literature or Women's Studies. Interested students should contact the Women's Studies Department.

WST 397 INDEPENDENT HONORS THESIS

Open only to senior majors or by permission of instructor. Honors in Research recognizes the completion of a distinguished thesis, research paper of approximately 35 pages researched and written under the direction of the faculty advisor, and approved by the faculty advisor and second reader. It is expected that this thesis will be based on research undertaken through WST 393H and WST 394H, and completed in WST 397.

WST 444 MUTILATED BODIES & DISCOURSE

'Transnational sisterhood' or cultural imperialism? Legitimate ritualized practice or outdated violent ritual? Genital cutting, female circumcision, female genital surgery? The controversy over this practice already begins with the act of its naming. If there seems to be a consensus about the physical violence imposed on the female body, why is it that western feminist discourse is suspected of perpetuating the mutilation African voices? This course seeks to provide an understanding of the context in which a fragmented 'transnational sisterhood' allows for a proliferation of mutilated discourses on mutilated postcolonial bodies. Readings and Films include Alice Walker (Warrior Marks), Florence Ayissi Fauziya Kassindja (Do They Hear You When You Cry), Maryse Conde and more critical and theoretical readings from African, French and North American authors. In English.

WST 453 GENDER & LANG LIT FILM & SOC

WST 454 THE MONSTROUS FEMININE

WST 456 GENDER IN SPANISH-AMER LIT

WST 458 WOMEN LIVES AND LETTERS

WST 467 CHANGING GENRES OF EROTICA

WST 472 GENDER & SEXUALITY

This course will examine literary, artistic, and theoretical representations of gender and sexuality as they have changed in the course of the 20 Century. The focus will be on texts from Western Europe and the US, but we will also consider other perspectives. From the New Women to French Feminists and transnational feminism. from homophile societies to “queer nation and gay marriage, from Sigmund Freud to Michel Foucault and Judith Butler, we will explore the contested and politically charged debates around gender and sexuality that have shaped our views of identity over the last century.

WST 496 INTL HUMAN RIGHTS

What does it mean to be human? What political, economic, religious, social, or sexual rights might be part of different people's working definitions? This course will look at both a) the historical development of conflicting theories of human rights and b) more contemporary debates about their ideal extent, their exercise, and their enforcement. Special topics will include debates over the meaning of the American and French Revolutions, the fight to design an International Declaration of Human Rights in the aftermath of World War II, the history of organizations such as Amnesty International, and the controversy around UN events such as the 1995 World Conference on Women in Beijing, the 2002 World Summit on Sustainable Development in Rio de Janeiro, and the 2000 and 2005 Millennium Summits in New York City.

WST 591 INDEPENDENT STUDY

Students interested in Independent Studies should contact the Women's Studies Department.