AFRICAN AMERICAN STUDIES

African American Literature: Harlem Renaissance to Present
AAS 359
Professor: Nishikawa, Kinohi

Description: A survey of 20th- and 21st-century African American literature, including the tradition's key aesthetic manifestos. Special attention to how modern African American literature fits into certain periods and why certain innovations in genre and style emerged when they did. Poetry, essays, novels, popular fiction, stage production or two, and related visual texts.

Schedule: 11:00 AM - 12:20 PM M W

African American History to 1863
AAS 366
Professor: Hunter, Tera W.

Description: This course explores African American history from the Atlantic slave trade up to the Civil War. It is centrally concerned with the rise of and overthrow of human bondage, and how they shaped the modern world. Africans were central to the largest and most profitable forced migration in world history. They shaped new identities and influenced the contours of American politics, law, economics, culture, and society. The course considers the diversity of experiences in this formative period of nation-making. Race, class, gender, region, religion, labor, and resistance animate important themes in the course.

Schedule: 11:00 AM - 11:50 AM T TH

Modern Caribbean History
AAS 313
Professor: Goldthree, Reena N.

Description: This course will explore the major issues that have shaped the Caribbean since 1791, including: colonialism and revolution, slavery and abolition, migration and diaspora, economic inequality, and racial hierarchy. We will examine the Caribbean through a comparative approach--thinking across national and linguistic boundaries--with a focus on Cuba, Jamaica, Puerto Rico, Haiti, and the Dominican Republic. While our readings and discussions will foreground the islands of the Greater Antilles, we will also consider relevant examples from the circum-Caribbean and the Caribbean diaspora as points of comparison.

Schedule: 10:00 AM - 10:50 AM M W

ANTHROPOLOGY

Alcohol Culture in Everyday Life
ANT 272
Professor: Collins, Christina Tekie

Description: Alcohol is not just an intoxicating drink, but an "embodied material culture" embedded in our
experiences of everyday life. What does our relationship with alcohol reveal about individual and collective identities? What does it say about the social and economic realities of a globalized world today? Drawing from literature in anthropology, alcohol studies, and social theory, this course asks students to think critically about the relationship between alcohol and culture in both their own lives and in the lives of others. Readings primarily focus on alcohol production and consumption in Africa.

**Schedule:** 11:00 AM - 11:50 AM T TH

**Human Evolution**
**ANT 206A**
**Professor:** Fuentes, Agustin

**Description:** Humans have a deep history, one that informs our contemporary reality. Understanding our evolutionary history is understanding both what we have in common with other primates and other hominins, and what happened over the last 7 to 10 million years since our divergence from the other African ape lineages. More specifically, the story of the human is centered in what happened the ~2.5 million year history of our own genus (Homo). This class outlines the history of our lineage and offers an anthropological and evolutionary explanation for what this all means for humans today, and why we should care.

**Schedule:** 10:00 AM - 10:50 AM M W

**ART AND ARCHAEOLOGY**

**The Birth of a Profession**
**ART 324**
**Professor:** Baudez, Basile C.

**Description:** The 18th century saw the emergence of the first architectural and engineering schools. Architects and engineers started to compete all over Europe in a time when technical knowledge and efficiency were becoming as important as experience and learnedness. This course provides students with a survey of 18th-century European architecture in the light of the rivalry between two trades on the verge of professionalization. The first weeks will be devoted to the actors of the building world before focusing on the fields of contest between architects and engineers and how this battle defined the nature of each profession, between art and science.

**Schedule:** 11:00 AM - 12:20 PM M W

**ASTROPHYSICAL SCIENCES**

**The Science of Fission and Fusion Energy**
**AST 309**
**Professor:** Goldston, Robert James

**Description:** Power from the nucleus offers a low-carbon source of electricity. However, fission power also carries significant risks: nuclear proliferation (North Korea, Iran), major accidents (Chernobyl, Fukushima), and waste disposal (Yucca Mountain). Fusion carries fewer risks, but the timetable for its commercialization is uncertain. We will delve into the scientific underpinnings of these two energy sources, so you can assess them for yourselves. A benefit of
this course is that you will expand your scientific and computational skills by applying them to important real-world problems.

**Schedule:** 03:00 PM - 04:20 PM T TH

**The Universe**  
**AST 203**  
**Professor:** Chyba, Christopher F., Strauss, Michael Abram

**Description:** This course, whose subject matter covers the entire universe, targets the frontiers of modern astrophysics. Topics include the planets of our solar system; the search for extrasolar planets and extraterrestrial life and intelligence; the birth, life, and death of stars; black holes; the zoo of galaxies and their evolution; the Big Bang and the expanding universe; and dark matter, dark energy, and the large-scale structure of the universe. This course is designed for the non-science major and has no prerequisites past high school algebra and geometry. High school physics would be useful, but is not required.

**Schedule:** 03:00 PM - 04:20 PM T TH

**Topics in Modern Astronomy**  
**AST 204**  
**Professor:** Winn, Joshua Nathan

**Description:** The solar system and planets around other stars; the structure and evolution of stars; supernovae, neutron stars, and black holes; gravitational waves; the formation and structure of galaxies; cosmology, dark matter, dark energy, and the history of the entire universe. Compared to AST 203, this course employs more mathematics and physics. Intended for quantitatively-oriented students.

**Schedule:** 03:00 PM - 04:20 PM M W

**CHEMICAL AND BIOLOGICAL ENGINEERING**

**Thermodynamics**  
**CBE 246**  
**Professor:** Register, Richard Alan

**Description:** The course focuses on basic principles governing the equilibrium behavior of macroscopic systems and their applications to materials and processes of interest in modern chemical engineering. We introduce the fundamental thermodynamic concepts: energy conservation (First Law); temperature and entropy (Second Law); thermodynamic potentials; equilibrium and stability. These ideas are applied to problems such as calculating the equilibrium compositions of coexisting phases or reacting mixtures, as well as analyzing the thermodynamic efficiency of power generation and refrigeration cycles.

**Schedule:** 10:00 AM - 10:50 AM M W F
CIVIL AND ENVIRONMENTAL ENGINEERING

Soil Mechanics and Geotechnical Engineer
CEE 365
Professor: Sandiford, Raymond E.

Description: Part-1 Classical Soil Mechanics: Physical and engineering properties of soils; soil classification and identification methods; site exploration; sampling; laboratory and in-situ testing techniques; shear strength; bearing capacity; earth pressure; slope stability; permeability and seepage. Part-2 Application of Soil Mechanics in Civil Engineering: Earth retaining structures; deep foundations, ground improvement; tunneling; levees; and construction and contracting implications.

Schedule: 01:30 PM - 04:20 PM W

Statics of Structures
CEE 312
Professor: Glisic, Branko

Description: Develops notions of internal forces and displacements, and instructs students how to design and analyze structures. Presents the fundamental principles of structural analysis, determination of internal forces, and deflections under the static load conditions, and introduces the bending theory of plane beams and the basic energy theorems. The theory of the first order will be developed for continuous girders, frames, arches, suspension bridges, and trusses, including both statically determinate and indeterminate structures. Basic principles for construction of influence lines and determination of extreme influences will be presented.

Schedule: 08:30 AM - 09:50 AM M W

Structures and the Urban Environment
CEE 262A
Professor: Garlock, Maria E.

Description: Known as "Bridges", this course focuses on structural engineering as a new art form begun during the Industrial Revolution and flourishing today in long-span bridges, thin shell concrete vaults, and tall buildings. Through critical analysis of major works, students are introduced to the methods of evaluating engineered structures as an art form. Students study the works and ideas of individual engineers through their basic calculations, their builder's mentality and their aesthetic imagination. Illustrations are taken from various cities and countries thus demonstrating the influence of culture on our built environment.

Schedule: pre-recorded lectures

CLASSICS

Living Naturally: Organisms, Ecologies, and Norms in Greco-Roman Antiquity
CLA 226
Professor: Holmes, Brook
Description: Nature shapes how many of us think about the world. It's a balanced ecological system; the opposite of culture; a way of explaining how living things work; and a way of regulating how living things, especially people, should live. We will look at how ideas about natures, Nature, and "living naturally" take shape in texts from ancient Greece and Rome. We'll consider the Greek and Roman texts in relationship to other ways of imagining human and non-human life and the world in the Mediterranean and other cultures. We'll think, too, about how these ancient ideas bear on how we think about nature today—and how we might think differently.

Schedule: pre-recorded lectures

COMPARATIVE LITERATURE

Traditions, Tales, and Tunes: Slavic and
COM 236
Professor: Beissinger, Margaret Hiebert

Description: This course explores oral traditions and oral literary genres (in English translation) of the Slavic and East European world, both past and present, including traditions that draw from the Christian, Muslim, and Jewish East European communities. Topics include traditional rituals (life-cycle and seasonal) and folklore associated with them, sung and spoken oral traditional narrative: poetry (epic and ballad) and prose (folktale and legend), and contemporary forms of traditional and popular culture. Discussion and analysis will focus on the role and meaning of Slavic and East European oral traditions as forms of expressive culture.

Schedule: 01:30 PM - 02:50 PM M W

COMPUTER SCIENCE

Distributed Systems
COS 418
Professor: Lloyd, Wyatt A.

Description: This course covers the design and implementation of distributed systems. Students will gain an understanding of the principles and techniques behind the design of modern, reliable, and high-performance distributed systems. Topics include server design, network programming, naming, concurrency and locking, consistency models and techniques, and fault tolerance. Modern techniques and systems employed at some of the largest Internet sites (e.g., Google, Facebook, Amazon) will also be covered. Through programming assignments, students will gain practical experience designing, implementing, and debugging real distributed systems.

Schedule: 10:00 AM - 10:50 AM M W

Economics and Computing
COS 445
Professor: Weinberg, Matt

Description: Computation and other aspects of our lives are becoming increasingly intertwined. We will study topics on the cusp between economics and computation. The focus will be on the
mathematical and computational tools involved in the interaction of economics and computation. Topics: games on networks, auctions, mechanism and market design, computational social choice. The aim of the course is: (1) to understand the game-theoretic issues behind systems involving computation such as online networks, (2) to learn how algorithms and algorithmic thinking can help with designing better decision and allocation mechanisms in an offline world.

**Schedule:** 01:30 PM - 02:50 PM T TH

**Innovating Across Technology, Business, & Markets**  
**COS 448**  
**Professors:** Fish, Robert S. Singh, Jaswinder Pal

**Description:** Course teaches engineering students about issues tackled by leading Chief Technology Officers: the technical visionaries and/or managers who innovate at the boundaries of technology and business by understanding both deeply, and who are true partners to the CEO, not just implementers of business goals. Focus will be on thinking like a CTO (of a startup and a large company) from technology and business perspectives, and on software and Internet-based businesses. Industry-leading guest speakers provide perspectives too.

**Schedule:** 11:00 AM - 12:20 PM M W

**Natural Language Processing**  
**COS 484**  
**Professors:** Chen, Danqi, Narasimhan, Karthik

**Description:** Recent advances have ushered in exciting developments in natural language processing (NLP), resulting in systems that can translate text, answer questions and even hold spoken conversations with us. This course will introduce students to the basics of NLP, covering standard frameworks for dealing with natural language as well as algorithms and techniques to solve various NLP problems, including recent deep learning approaches. Topics covered include language modeling, rep. learning, text classification, sequence tagging, syntactic parsing, and machine translation. The course will have programming assignments, a mid-term and a final project.

**Schedule:** 01:30 PM - 02:50 PM M W

**Theory of Algorithms**  
**COS 423**  
**Professor:** Tarjan, Robert Endre

**Description:** Design and analysis of efficient data structures and algorithms. General techniques for building and analyzing algorithms. Introduction to NP-completeness.

**Schedule:** 11:00 AM - 12:20 PM M W

**EAST ASIAN STUDIES**

**Introduction to Chinese Literature**  
**EAS 232**
**Professor:** Shields, Anna Marshall

**Description:** An introduction to some of the most important texts, writers, and topics of Classical Literature from antiquity through the Song dynasty. All readings are in English, and no previous background in Chinese or Asian culture is required. Topics include: nature of the Chinese language; the beginnings of poetry; development of narrative and historical writing; classical Chinese poetics; literature of protest, dissent, and political satire; love poetry; religious and philosophical ideas in Chinese literature.

**Schedule:** 11:00 AM - 11:50 AM M W

**Nomadic Empires**
**EAS 280**
**Professor:** Wen, Xin

**Description:** In telling histories of East Asia, South Asia, the Middle East, and Europe, various groups of nomadic people often loomed large in the background and served as the foil to the travail of their sedentary neighbors. In this course we put the nomadic peoples of Inner Asia front and center, and ask how the nomadic way of life and mode of state building served as agents of change in pre-modern Eurasia.

**Schedule:** 11:00 AM - 11:50 AM T TH

**The Origins of Japanese Culture**
**EAS 218**
**Professor:** Conlan, Thomas Donald

**Description:** This course is designed to introduce the culture and history of Japan, and to examine how one understands and interprets the past. In addition to considering how a culture, a society, and a state develop, we will try to reconstruct the tenor of life in "ancient" and "medieval" Japan and chart how patterns of Japanese civilization shifted through time.

**Schedule:** 03:00 PM - 04:20 PM M W

**ECONOMICS**

**Asian Capital Markets**
**ECO 492**
**Professor:** de Swaan, Jean-Christophe

**Description:** Course explores the increasing weight of Asia in global financial markets and its implications. It frames the discussion in the context of the globalization of financial markets, with emphasis on concepts of economic development, institutional reform of markets, and public and private market investments. Discussions and investment case studies will combine analysis of historical trends and recent data with insights from practical experience in Asian markets. Course considers China's gradual shift toward a capital market-based financial system, the potential revival of Japanese capital markets, and the development of Indian capital markets.

**Schedule:** 01:30 PM - 04:20 PM TH
Econometrics
ECO 302
Professor: Watson, Mark W.

Description: Develop facility with basic econometric methods and the ability to apply them to actual problems and understand their application in other substantive course work in economics.

Schedule: 01:30 PM - 02:50 PM M W

Economic Inequality and the Role of Government
ECO 343
Professor: Kuziemko, Ilyana

Description: In the US and many other developed countries, economic inequality has risen to historic levels in recent decades. What are the causes of this trend -- "natural" market forces (e.g., globalization?) or changes in public policy (e.g., erosion of the minimum wage)? Are measures currently proposed to counteract inequality and poverty -- e.g., progressive taxation, transfer programs to low-income families, public insurance programs such as Medicare -- effective? An emphasis is placed on understanding what basic microeconomic theory as well as empirical evidence can (and cannot) tell us about these questions.

Schedule: 07:30 PM - 10:20 PM T

Economics of Food and Agriculture
ECO 355
Professor: Weyerbrock, Silvia

Description: This course uses microeconomic analysis (specifically, tools drawn from demand/supply analysis, development, trade, and public economics) to study issues related to agriculture and food. These include the role of agriculture in the global economy and in economic development; biofuels; the Green Revolution and GMOs; agriculture and the environment/climate change; agricultural trade and trade disputes; hunger, famines and food aid; and food insecurity and obesity in the U.S. The course assesses whether farm, food and nutrition policies in poor and rich countries, including the U.S., address current challenges.

Schedule: 11:00 AM - 12:20 PM M W

Microeconomic Theory
ECO 300
Professor: Chassang, Sylvain

Description: This course builds on your knowledge of microeconomics from ECO 100. As with ECO 100, this course will focus on the decisions made by individual consumers and producers. It will consider a variety of different market structures ranging from perfect competition to monopoly. It will also discuss the rationale for government involvement when there are market failures. While the topics will be very similar to those covered in ECO 100, the analysis will be more in depth.

Schedule: 11:00 AM - 12:20 PM M W
Statistics & Data Analysis for Economics  
ECO 202  
Professor: Mueller, Ulrich K.  

Description: An introduction to probability and statistical methods for empirical work in economics. Probability, random variables, sampling, descriptive statistics, probability distributions, estimation and hypotheses testing, introduction to the regression model.  

Schedule: 01:30 PM - 02:50 PM M W

Topics in Macroeconomics  
ECO 315  
Professor: Kiyotaki, Nobuhiro

Description: This course uses economic theory to study credit boom, financial crisis and public policy. The topics include historical overview of financial crises, credit and asset price booms, banking crisis, balance of payment crisis, sovereign debt crisis, and monetary, fiscal and macro prudential policies. We also plan to discuss the recent COVID-19 crisis.  

Schedule: 01:30 PM - 02:50 PM M W

ECOLOGY AND EVOLUTIONARY BIOLOGY

Behavioral Ecology  
EEB 313  
Professor: Riehl, Christina Pauline

Description: How does a swarm of honeybees collectively decide on a new site for their hive? When a mother mouse protects her young, are her behaviors genetically determined? Why do ravens share food with each other? This course is an introduction to behavioral ecology, which asks why animals act the way they do, how their behaviors have been shaped by natural selection, and how these behaviors influence their surroundings. We will first discuss behaviors at the individual level, then move to reproductive behaviors. The final section of the course will focus on social evolution, the origins of cooperation, and human behavioral ecology.  

Schedule: 03:00 PM - 04:20 PM T TH

Comparative Physiology  
EEB 314  
Professor: Hurley, Martha M., Sullivan, Katherine Mary

Description: This course explores the mechanisms of animal function in the contexts of evolution, ecology and behavior. We will cover the physiological bases of osmoregulation, circulation, gas exchange, digestion, energetics, motility, and neural and hormonal control of these and other processes in a variety of vertebrate and invertebrate animals, thereby revealing general principles of animal physiology as well as specific physiological adaptations to differing environments.  

Schedule: 11:00 AM - 12:20 PM T TH
ELECTRICAL ENGINEERING

Probabilistic Systems and Information
ELE 382
Professor: Lee, Jason Dean

Description: This course introduces the fundamental mathematical principles and methods that play a central role in modern signal and information processing. Specific topics include random processes, linear regression and estimation, hypothesis testing and detection, and shrinkage methods.

Schedule: 01:30 PM - 02:50 PM T TH

ENGLISH

19th-Century Fiction
ENG 345
Professor: Nunokawa, Jeff

Description: This course will acquaint students with the distinctive features of the nineteenth century novel, from Austen to Hardy. Lectures will seek to illuminate relations between social and aesthetic dimensions of the texts we read. We will consider how these fictional imaginings of things like love, sex, money, class, and race help shape the ways we live now.

Schedule: 02:30 PM - 03:20 PM M W

Introduction to Science Fiction
ENG 215
Professor: Leo, Russ

Description: In this course we will read diverse approaches to science fiction that emerged across global postwar milieux, looking carefully at how science fiction poses fundamental ethical problems: What makes a world habitable? How do human beings live together? Does science fiction offer new parameters for thinking human morality or moralities beyond "humanity"? A key term throughout the course will be utopia, which has markedly different meanings in different political situations and which draws attention to competing visions of the good.

Schedule: 01:30 PM - 02:20 PM M W

Literary History
ENG 200
Professors: Gee, Sophie Graham, Lewis, Rhodri

Description: A survey of extraordinary writing, ideas, characters, and voices from the medieval period through the 18th century. We read diversely from Chaucer to Shakespeare, Milton, Austen and others, to trace the origins of our own modernity. What did reading and writing mean in the early modern world? Are they different today? We examine England in relation to the globe, and we ask who gets included and excluded from "great books." What do people, places and situations
that existed on the margins of early English society and literature teach us about the problems we currently face? Does seeing things their way help us view our own world differently?

**Schedule:** 10:00 AM - 10:50 AM T TH

**ENVIRONMENTAL STUDIES**

**Practical Models - Environmental Systems**

**ENV 302**

**Professor:** Celia, Michael Anthony

**Description:** Humans are increasingly affecting environmental systems throughout the world. To understand the environmental impacts, quantitative modeling tools are needed. This course introduces quantitative modeling approaches for environmental systems, including global models for carbon cycling; local and regional models for water, soil, and vegetation interactions; models for transport of pollutants in both water and air; and models for population dynamics and the spread of infectious disease. Students will develop simple models for all of these systems and apply the models to a set of practical problems.

**Schedule:** 01:30 PM - 02:50 PM M W

**FRENCH**

**Topics in Francophone Literature, Culture, and History**

**FRE 403**

**Professor:** Nesbitt, F. Nick

**Description:** An examination of the literature of the francophone Caribbean from the Haitian Revolution to the present. The course focuses on how literary creation, history and theoretical reflection united in this unique and compelling culture. Caribbean literature in French is the symbolic, imaginative expression of the peoples of the French-speaking regions of the Caribbean, including Haiti, Guadeloupe, Martinique, French Guyana, and their dependencies.

**Other Information:** Students will watch a pre-recorded lecture prior to the live class.

**Schedule:** 11:00 AM - 12:20 PM M

**GEOSCIENCES**

**Climate Change: Impacts, Adaptation, Policy**

**GEO 366**

**Professor:** Oppenheimer, Michael

**Description:** An exploration of the potential consequences of human-induced climate change and their implications for policy responses, focusing on risks to people, societies, and ecosystems. As one example: we examine the risk to coastal cities from sea level rise, and measures being planned and implemented to enable adaptation. In addition, we explore local, national and international policy initiatives to reduce greenhouse-gas emissions. The course assumes students
have a basic background in the causes of human-induced climate change and the physical science of the climate system.

**Schedule:** 11:00 AM - 12:20 PM T TH

**HISTORY**

**Colonial and Postcolonial Africa**  
**HIS 315**  
**Professor:** Dlamini, Jacob S.

**Description:** This course is an examination of the major political and economic trends in twentieth-century African history. It offers an interpretation of modern African history and the sources of its present predicament. In particular, we study the foundations of the colonial state, the legacy of the late colonial state (the period before independence), the rise and problems of resistance and nationalism, the immediate challenges of the independent states (such as bureaucracy and democracy), the more recent crises (such as debt and civil wars) on the continent, and the latest attempts to address these challenges from within the continent.

**Schedule:** 11:00 AM - 11:50 AM M W

**English Constitutional History**  
**HIS 367**  
**Professor:** Jordan, William Chester

**Description:** To explore the development of institutions and theories of government in England from the Norman Conquest to about 1700.

**Schedule:** 10:00 AM - 10:50 AM M W

**PROGRAM IN HUMANISTIC STUDIES**

**Jesus and Buddha**  
**HUM 290**  
**Professor:** Gold, Jonathan C., Pagels, Elaine

**Description:** This course invites us to compare the stories, teachings, lives, deaths, and communities associated with Jesus and Buddha. While respecting each tradition's unique and distinctive sources, cultures, ideas and legacies, it invites us to deepen our understanding of each tradition by looking through the lens of the other. Course readings include accounts of the lives of Jesus and Buddha, what each taught about how to live and create society, and how they articulate the meaning of life and death, suffering and salvation.

**Schedule:** 12:30 PM - 01:20 PM M W
LINGUISTICS

**Constructed Languages: From Elvish to Esperanto**  
*LIN 202*  
**Professor:** Foley, Steven R.

**Description:** This course is about constructed languages (those deliberately created for artistic or political purposes; think Elvish or Esperanto) and how they relate to or differ from natural languages (which arise spontaneously in human communities; think English or Ewe). By studying and analyzing variation in natural languages, we will learn to appreciate language constructors' aesthetic, ethical, and philosophical intentions. We will survey the history and properties of existing constructed languages, as well as collaboratively construct our own class language, providing hands-on experience with language creation and diverse grammatical structures.

**Schedule:** 11:00 AM - 12:20 PM T TH

**Intonation: Melody in Language**  
*LIN 310*  
**Professor:** Ahn, Byron T.

**Description:** This course explores intonation (the melodic patterns of sentences), addressing questions like: What does punctuation (e.g., a comma) sound like? How can we measure intonation, acoustically? How is intonation different from "tone" in languages like Mandarin? How do we transcribe intonation and analyze it? Students learn how to use laboratory methods and computer software to study intonation in spoken languages. (We focus on Mainstream American English but study other languages/dialects as well.) We also examine how intonational features relate to other aspects of language, such as sentence structure, linguistic meaning, and social context.

**Schedule:** 03:00 PM - 04:20 PM M W

**Introduction to Language & Linguistics**  
*LIN 201*  
**Professor:** Ahn, Byron T.

**Description:** This course is an introduction to the scientific analysis of the structure and uses of language. Core areas covered include phonetics and phonology, morphology, the lexicon, syntax, semantics, and pragmatics, with data from a wide range of languages. Additional topics include sociolinguistics, historical linguistics, and language acquisition.

**Schedule:** 10:00 AM - 10:50 AM M W

MATHEMATICS

**Analysis I: Fourier Series and PDE**  
*MAT 325*  
**Professor:** Shlapentokh-Rothman, Yakov Mordechai
Description: Basic facts about Fourier Series, Fourier Transformations, and applications to the classical partial differential equations will be covered. Also Finite Fourier Series, Dirichlet Characters, and applications to properties of primes.

Schedule: 01:30 PM - 02:50 PM T TH

MECHANICAL AND AEROSPACE ENGINEERING

Energy Conversion and the Environment
MAE 427
Professor: Mueller, Michael Edward

Description: Overview of energy utilization in and environmental impacts of propulsion systems for ground and air transportation. Roughly half of the course will be devoted to reciprocating engines for ground transportation, and the other half of the course will be devoted to gas turbine engines for air transportation. The course will focus on device efficiency/performance and emissions with future outlooks for improvements in these areas including alternative fuels and alternative device concepts. Relevant thermodynamics, chemistry, fluid mechanics, and combustion fundamentals will be reviewed or introduced and will permeate the course material.

Schedule: 10:00 AM - 10:50 AM M W F

Mechanical Design
MAE 322
Professor: Nosenchuck, Daniel Mark

Description: This course builds on the technical foundations established in MAE 321, and extends the scope to include a range of advanced mechanism design. Students, working in teams, will be challenged to design and fabricate a robotic system that will draw upon multidisciplinary engineering elements. The robot will be used to facilitate common daily tasks. The selected tasks vary each year. CAD, CAE, and CAM will be utilized in the design/simulation/prototype process. Labs are designed to reinforce and expand CAD and CAE skills. A final public competition will be held among the design teams. Judges from relevant industries will be present.

Schedule: 11:00 AM - 12:20 PM W F

Rocket and Air-Breathing Propulsion Tech
MAE 426
Professor: Ju, Yiguang

Description: The study of principles, flight envelopes, and engine designs of rocket and ram/scramjet propulsion systems. Topics include jet propulsion theory, space mission maneuver, combustion control, and system components of chemical and non-chemical rockets (nuclear and electrical propulsion), gas turbine, ramjet, and scramjet engines. Characteristics, optimal flight envelopes, and technical challenges of combined propulsion systems will be analyzed.

Schedule: 11:00 AM - 11:50 AM M W F
MOLECULAR BIOLOGY

Food, Drugs and Society
MOL 250
Professor: Stock, Jeffry Benton

Description: The current environment in the US for the use and abuse of foods and drugs will be examined from a scientific fact-based perspective. Historical, economic, marketing, political, and public health drivers will be considered. Specific topics include government dietary recommendations (food politics), dietary supplements (from Vitamins to herbal extracts), pharmacology and ethical drug development (sulfa drugs, NSAIDS, etc), addiction and substance abuse (alcohol, nicotine, stimulants, opioids, etc), Alzheimer's disease and the problem of long-term care in an aging population, and Psychedelic drug use and abuse (psilocybin, mescaline, LSD, etc).

Schedule: 11:00 AM - 12:20 PM T TH

From DNA to Human Complexity
MOL 101
Professors: Bassler, Bonnie Lynn Mallarino, Ricardo Schottenfeld-Roames, Jodi Wieschaus, Eric Francis

Description: This lecture course will acquaint non-biology majors with the theory and practice of modern molecular biology focusing on topics of current interest to society. The course will cover basic molecular biology topics such as information storage and readout by DNA, RNA and proteins. The course will address how recent scientific advances influence issues relevant to humanity including stem cells and CRISPR; the human microbiome and bacterial pathogens; and how the human genome can be used to understand the evolution of modern humans.

Schedule: 11:00 AM - 12:20 PM T TH

Intro to Cellular & Molecular Biology
MOL 214
Professors: McDonald, Karin Rainey Notterman, Daniel A. Thieringer, Heather A.

Description: Important concepts and elements of molecular biology, biochemistry, genetics, and cell biology, are examined in an experimental context. This course fulfills the basic biology requirement for students majoring in the biological sciences and satisfies the basic biology requirement for entrance into medical school and most other health professions schools.

Schedule: 11:00 AM - 12:20 PM T TH

Molecular and Cellular Immunology
MOL 340
Professor: Ploss, Alexander

Description: A broad survey of the field of immunology and the mammalian immune system. The cellular and molecular basis of innate and acquired immunity will be discussed in detail. The course will provide frequent examples drawn from human biology in health and disease.
MUSIC

Music in the Middle Ages
MUS 230
Professor: Wegman, Rob C.

Description: Introduction to European musical culture in the period 600-1400. The course is divided in the following main periods (1) chant in Carolingian and post-Carolingian Europe, (2) the Enchiriadis tradition of polyphony; (3) troubadours and trouvères, (4) Ars Antiqua, and (5) Ars Nova. The course will make intensive use of primary sources, scores, and will also feature an extensive playlist. The objective is to provide students with a thorough introduction in fully 800 years of music history.

Schedule: 11:00 AM - 12:20 PM M W

Music of the Romantic Era
MUS 238
Professor: Morrison, Simon Alexander

Description: A survey of major styles, genres, and modes of performance in European art music from about 1814 to the 1890's.

Schedule: 11:00 AM - 11:50 AM M W

OPERATIONS RESEARCH AND FINANCIAL ENGINEERING

Fundamentals of Statistics
ORF 245
Professor: Cattaneo, Matias Damian

Description: A first introduction to probability and statistics. This course will provide background to understand and produce rigorous statistical analysis including estimation, confidence intervals, hypothesis testing and regression. Applicability and limitations of these methods will be illustrated in the light of modern data sets and manipulation of the statistical software R. Precepts are based on real data analysis.

Schedule: 03:00 PM - 04:20 PM M W

Stochastic Optimization and Machine Learning
ORF 311
Professor: Mulvey, John Michael

Description: A survey of quantitative approaches for making optimal decisions under uncertainty, including decision trees, Monte Carlo simulation, and stochastic programs. Forecasting and planning systems are integrated in the context of financial applications. Machine learning methods are linked to the stochastic optimization models.
PHILOSOPHY

Introductory Logic
PHI 201
Professor: Halvorson, Hans P.

Description: Logic is the study of the principles of valid reasoning. This course provides an introduction to symbolic logic, which studies the principles of valid reasoning from an abstract point of view—paying attention to the form of valid arguments rather than their subject matter. We will cover the basic concepts and principles of symbolic logic: validity, logical truth, truth-functional and quantificational inference, formal languages and formal systems, axiomatic and deductive proof procedures.

Schedule: pre-recorded

Philosophical Analysis from 1900 to 1950
PHI 338
Professor: Kelly, Thomas P.

Description: A study of the history of analytic philosophy. Topics covered include the origins of analytic philosophy in the work of Bertrand Russell, G.E. Moore and Gottlob Frege; new ideas about the roles of common sense, logic, and linguistic analysis in approaching traditional problems in metaphysics, epistemology, and ethics; the rise and fall of logical positivism; and responses to the early analytic tradition in the work of W.V. Quine and Saul Kripke.

Schedule: 10:00 AM - 10:50 AM M W

Plato and His Predecessors
PHI 300
Professor: Morison, Benjamin Charles Atkin

Description: We shall investigate Plato's views on knowledge, metaphysics, and the nature of the soul, including moral psychology. We will read and discuss Plato's dialogues philosophically - for their philosophical content - rather than from a literary or cultural point of view. Only those interested in reading Plato this way should enroll.

Schedule: 10:00 AM - 10:50 AM T TH

PHYSICS

Introductory Physics II
PHY 102
Professor: Visnjic, Katerina

Description: This course presents an introduction to the fundamental laws of nature, especially optics, electricity/magnetism, nuclear and atomic theory. These are treated quantitatively with an
emphasis on problem solving. The laboratory is intended to give students an opportunity to observe physical phenomena and to gain "hands-on" experience with apparatus and instruments.

**Schedule:** 12:30 PM - 01:20 PM TH

**POLITICS**

**American Political Thought**  
**POL 321**  
**Professor:** Ryan, Alan

**Description:** This course surveys the history of American political thought, with an emphasis on both recurring themes, such as liberal individualism and religiosity, and resurgent conflicts such as over the scope of government power and the meaning of political equality. Topics include the Puritan heritage, the Constitutional founding, the Hamiltonian, Jeffersonian, Jacksonian, and Whig visions, the slavery conflict, Populism, Progressivism, feminism, New Deal/Great Society liberalism, the Civil Rights, Black Power, and student revolts of the 1960s, and the conservative ascendency of the 1980s.

**Schedule:** pre-recorded lectures

**Chinese Politics**  
**POL 362**  
**Professor:** Truex, Rory

**Description:** This course provides an overview of China's political system. We will begin with a brief historical overview of China's political development from 1949 to the present. The remainder of the course will examine the key challenges facing the current generation of CCP leadership, focusing on prospects for democratization and political reform. Among other topics, we will examine: factionalism and political purges; corruption; avenues for political participation; village elections; public opinion; protest movements and dissidents; co-optation of the business class; and media and internet control.

**Schedule:** 03:30 PM - 04:20 PM M W

**Civil Liberties**  
**POL 316**  
**Professor:** George, Robert Peter

**Description:** An inquiry into the value of liberty and of particular civil rights and liberties. The course considers competing theoretical justifications for rights and liberties generally, as well as particular problems concerning freedom of speech and the press, religion, sexuality, abortion, and discrimination. Supreme Court opinions regarding the constitutionality of legislation in each of these areas will be discussed and criticized.

**Schedule:** 11:00 AM - 12:20 PM T
International Political Economy
POL 385
Professor: Ahmed, Faisal Zahiruddin

Description: This course examines how politics affects the international economy and vice-versa. The course will apply theories and tools of political economy to explore some of the following questions: who wins and loses from international trade and finance? How does globalization affect domestic politics (e.g., the 2016 election, regulations, inequality, environment) in developed and developing countries? Who sets the 'rules' under which the global economy operates? How influential are international organizations like the WTO and the IMF? These issues are explored with reference to economic and political theories, history, and contemporary events.

Schedule: 02:30 PM - 03:20 PM M W

Modern Political Theory
POL 303
Professor: Beitz, Charles R.

Description: A study and critique of the philosophical foundations of modern democratic liberalism based on a close reading and analysis of texts by theorists such as Hobbes, Locke, Hume, Rousseau, Mill, Marx and Rawls.

Schedule: 11:00 AM - 11:50 AM M W

Policy Making in America
POL 329
Professor: Cameron, Charles M.

Description: This course provides a realistic introduction to how public policy is made in the United States. It examines how people and political institutions come together to create and implement public policy. The course combines cutting edge social science with cases, simulations, and role playing exercises to provide students with concrete skills and practical tools for actual policy making.

Schedule: 09:00 AM - 09:50 AM M W

Race and Politics in the United States
POL 344
Professor: White, Ismail K.

Description: This course examines various political controversies that surround the role of race and ethnicity in American society. These controversies and issues affect public opinion, political institutions, political behavior, and salient public policy debates. Thus this course will assess and evaluate the role of race in each of these domains while also examining historical antecedents. The first half of the course will focus on historical antecedents such as the civil rights movement and the Black Power movement. The second half of the course will focus on the nature of contemporary racial attitudes, in the 2008, 2012 and 2016 presidential elections.
**The Politics of Development**  
**POL 351**  
**Professor:** Kohli, Atul

**Description:** This course will focus on the state's role in promoting economic growth and distribution in the developing world. The core organizing question for the course is: why have some regions of the developing world been more successful at industrialization and/or poverty alleviation than other regions. The students will learn about the patterns of development in Asia, Africa and Latin America, with special attention to such countries as China, India, South Korea, Nigeria and Brazil. General challenges that face all developing countries - globalization, establishing democracy and ethnic fragmentation - will also be analyzed.

**Schedule:** 09:00 AM - 09:50 AM T TH

**The Politics of Crime and Punishment**  
**POL 339**  
**Professor:** Kastellec, John

**Description:** Why has the U.S. witnessed the rapid rise in mass incarceration? What roles have politicians, judges, prosecutors, and voters played in the astonishing growth in the incarceration rate over the past 40 years? What explains the racial disparities that exist in prosecutions and sentence length? This course will examine these and other questions related to crime and punishment by introducing students to historical and current debates surrounding the politics of criminal justice, criminal law, and state punishment. The course will emphasize cutting-edge research on crime and punishment in the social sciences, particularly political science.

**Schedule:** 09:00 AM - 09:50 AM M W

**Topics in American Statesmanship**  
**POL 332**  
**Professor:** Franck, Matthew James

**Description:** Examines the scholarly and political career of Woodrow Wilson - Class of 1879, professor and president of Princeton University, and president of the United States. Wilson is the only president to have a Ph.D. in political science, and we will read prominent examples of his scholarly work, as well as studying his speeches and actions as a political candidate and as president, with a view to understanding his enduring impact as a progressive leader. Topics will include Wilson's racial views, which have caused the University to remove his name from the School and the residential College once named for him.

**Schedule:** 02:30 PM - 03:20 PM T TH

**PSYCHOLOGY**

**Foundations of Psychological Thought**  
**PSY 210**  
**Professor:** Sugarman, Susan L.
Description: An exploration of original texts in the history of thought about the workings of the human mind starting in Antiquity and leading to the development of the empirical discipline of psychology in the 19th century and some of its modern trends. Subsequent developments, including the child study movement, are explored through 20th century writings, culminating with Sartre's philosophical psychology and sources in Eastern thought to put the Western trajectory in perspective.

Schedule: pre-recorded

Health Psychology
PSY 317
Professor: Avena, Nicole M.

Description: The objectives of this course are to understand the bio-psycho-social/processes that influence health-related behaviors, health and wellness, and health-care delivery. Topics to be examined are the psycho-physiological and socio-cultural bases of health and illness; pain; adaptation to chronic illness; stress; personality and illness; death, dying, and grief; substance use; obesity and nutrition; health promoting behaviors; patient adherence; physician-patient communication; and health care utilization.

Schedule: 03:30 PM - 04:20 PM T TH

Psychology of Language
PSY 309
Professor: Goldberg, Adele E.

Description: The cognitive processes underlying the use and understanding of language, and in learning to speak. Topics include speech production and perception, grammar and meaning, knowledge and words, and pragmatic aspects of language.

Schedule: 01:30 PM - 02:50 PM T TH

Psychopathology
PSY 207
Professor: Spokas, Megan Elizabeth

Description: Survey of different types of abnormal behaviors and different models of explanation. Students will come to understand the conflicting viewpoints and treatment approaches that characterize the clinical field, and will understand what is presently known and not known about abnormal functioning.

Schedule: 11:00 AM - 11:50 AM M W

RELIGION

Christianity in the Roman Empire
REL 251
Professor: Larsen, Matthew
Description: How did Jesus' earliest followers interpret his life and death? What were secret initiation rites and love feast gatherings about? How did women participate in leadership? How did the Roman government react to this movement and why did Jesus' followers suffer martyrdom? How did early Christians think about the end of the world, and what did they do when it did not happen? This course is an introduction to the Jesus movement in the context of the Roman Empire and early Judaism. We examine texts in the New Testament (the Christian Bible) and other relevant sources, such as lost gospels, Dead Sea scrolls, and aspects of material culture.

Schedule: 11:00 AM - 11:50 AM M W

The Religions of China
REL 226
Professor: Teiser, Stephen F.

Description: A thematic introduction to Chinese religion, ranging from ancient to contemporary. The first half focuses on classics of Chinese thought (Book of Changes, Analects of Confucius, Daoist classics, etc.). The second half utilizes journalism, ethnography, and history to consider topics such as contemporary China, state control of religion, cosmology, gods and saints, divination, gender, and ritual.

Schedule: 10:00 AM - 10:50 AM M W

SLAVIC LANGUAGES AND LITERATURES

Leo Tolstoy, War and Peace: Writing as Fighting
SLA 415
Professor: Vinitsky, Ilya

Description: We start with Tolstoy's artistic stimuli and narrative strategies, explore the author's provocative visions of war, gender, sex, art, social institutions, death, and religion. The emphasis is placed here on the role of a written word in Tolstoy's search for truth and power. The main part is a close reading of his masterwork <i>The War and Peace</i> (1863-68) - a quintessence of both his artistic method and philosophical insights. Each student will be assigned to keep a "hero's diary" and speak on behalf of one or two major heroes of the epic (including the Spirit of History). The roles will be distributed in accordance with the will of fate.

Schedule: 11:00 AM - 12:20 PM T TH

The Great Russian Novel and Beyond
SLA 220
Professor: Chances, Ellen Bell

Description: An examination of significant trends in Russian literature from the 2nd half of the 19th century to the Russian Revolution and a bit beyond. The course focuses on many masterpieces of 19th & 20th-century Russian literature. The works (mostly novels) are considered from a stylistic point of view and in the context of Russian historical and cultural developments. The course also focuses on questions of values and on the eternal "big questions" of life that are raised in the literature. Authors read include Turgenev, Dostoevsky, Tolstoy, Chekhov, Bely,
Nabokov, and Kharms.

**Schedule:** 01:30 PM - 02:20 PM M W

**SOCIOLOGY**

**Introduction to Sociology**  
SOC 101  
**Professor:** Nelson, Timothy J.

**Description:** This course will introduce students to the discipline of sociology (the systematic study of human groups, institutions and societies). Students will learn the major theoretical approaches within the field as well as the diverse research methods used in sociological investigations. These tools will be applied to a wide variety of special topics studied by sociologists, including family, work, education, religion and social movements, as well as dynamics of class, gender, race and ethnic inequalities within and across countries.

**Schedule:** 10:00 AM - 10:50 AM T TH

**The Western Way of War**  
SOC 250  
**Professor:** Centeno, Miguel Angel  
**Description:** A historical and analytical overview of war focusing on the origins and consequences of organized violence, the experience of battle, the creation and behavior of warriors, and the future of such conflicts.

**Other Information:**  
Students will watch a pre-recorded lecture from Coursera. We will 'meet' for a weekly town hall via zoom to discuss lectures and readings (and students will submit questions). We will also have optional 'movie nights' where we will watch a movie or fragments thereof and discuss via zoom.

**Schedule:** 11:00 AM - 11:50 AM W

**Urban Sociology**  
SOC 210  
**Professor:** Fernández-Kelly, Patricia

**Description:** By taking a comparative approach, this course examines the role of social, economic, and political factors in the emergence and transformation of modern cities in the United States and selected areas of Latin America. We consider the city in its dual image: both as a center of progress and as a redoubt of social problems, especially poverty. Attention is given to spatial processes that have resulted in the aggregation and desegregation of populations differentiated by social class and race.

**Schedule:** 10:00 AM - 10:50 AM M W
SCHOOL OF PUBLIC & INTERNATIONAL AFFAIRS

International Trade
SPI 301
Professor: Grossman, Gene Michael

Description: This course examines the causes and consequences of international trade. We investigate why nations trade, what goods they export and import, and who gains and loses from trade. We then focus on economic and political motives for countries to regulate international trade and examine the economic effects of effective trade policies. Topics will include the connection between globalization and wage inequality, the effects of the "China Shock" on the U.S. economy and politics, the implications of global value chains, the motivation for trade agreements, and the consequences of recent events such as the US-China Trade War, BREXIT, and COVID-19.

Schedule: 11:00 AM - 11:50 AM T TH

Prejudice: Causes, Consequences, Cures
SPI 345
Professor: Sinclair, Stacey A.

Description: Prejudice is one of the most contentious topics in modern American society. There is debate regarding its causes, pervasiveness, and impact. This goal of this course is to familiarize students with the psychological research relevant to these questions. We will review theoretical perspectives on prejudice to develop an understanding of its cognitive, affective, and motivational underpinnings. We will also discuss how these psychological biases relate to evaluations of, and behavior toward, members of targeted groups. In addition, research-based strategies for reducing prejudice will be discussed.

Schedule: 11:00 AM - 11:50 AM M W

PROGRAM IN URBAN STUDIES

Introduction to Urban Studies
URB 201
Professor: Boyer, M. Christine

Description: This course will examine different crises confronting cities in the 21st century. Topics will range from informal settlements, to immigration, terrorism, shrinking population, sprawl, rising seas, affordable housing, gentrification, smart cities. The range of cities will include Los Angeles, New Orleans, Paris, Logos, Caracas, Havana, New York, Hong Kong, Dubai among others.

Schedule: 01:30 PM - 02:50 PM W