

Community Auditing Program Courses Fall 2017-2018

DEPARTMENT OF AFRICAN AMERICAN STUDIES

AAS 245 Harlem Renaissance and Black Arts Movements

Professor: Chika O. Okeke-Agulu

Description: This course surveys important moments in 20th-Century African American art from the Harlem Renaissance in the 1920s to the 1960s Black Arts movement. Our close studies of the work of major artists will be accompanied by examination of influential theories and ideologies of blackness during two key moments of black racial consciousness in the United States. We shall cover canonical artists and writers such as Aaron Douglas, James van der Zee, William H. Johnson, Jacob Lawrence, Romare Bearden, Faith Ringgold, Betye Saar, W. E. B. Du Bois, Alain Locke, James Porter and Jeff Donaldson.

Schedule: 11:00 am - 12:20 pm T Th

AAS 367 African American History Since Emancipation

Professor: Joshua B. Guild

Description: An analysis of the social, political, legal, and cultural dimensions of the African American experience in the United States throughout critical historical moments such as Reconstruction, suffrage, the Great Migration, war, the Great Depression, the New Deal, the Civil Rights era, the black power movement, and contemporary racial politics.

Schedule: 11:00 am - 11:50 am T Th

PROGRAM IN AMERICAN STUDIES

AMS 390 American Legal Thought

Professor: Hendrik A. Hartog

Description: This course surveys American legal thought and the practices of American lawyers. Along the way, it questions the notion of distinctive "schools," as well as the distinctive legality and the distinctive Americanness of legal thought. It offers an intellectual history of 20th century American law, with an emphasis on core controversies and debates.

Schedule: 1:30 pm - 2:50 pm T

AMS 399 In the Groove: Technology and Music in American History, From Edison to the iPod

Professor: Emily Thompson

Description: When Thomas Edison invented the

phonograph in 1877, no one, including Edison, knew what to do with the device. Over the next century Americans would engage in an ongoing dialogue with this talking machine, defining and redefining its purpose. This course will track that trajectory, from business tool to scientific instrument to music recorder to musical instrument. By listening to the history of the phonograph, and by examining the desires and experiences of phonograph users, students will perceive more generally the complex relationships that exist between a technology and the people who produce, consume, and transform it.

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

ANTHROPOLOGY

ANT 201 Introduction to Anthropology

Professor: Naomi S. Stone

Description: This course provides an introduction to core anthropological modes of inquiry into being human across space and time. Engaging key concepts of culture as lenses on contemporary phenomena, we will explore universalism and variation across societies. How do communities express difference and identity, make meaning, transmit knowledge, circulate objects and power, live, love, wish and dream? Case-studies vary, from women's piety movements in Cairo to the role of mosquitos, germs, and machines in making lives and worlds. We will also consider anthropology's colonial origins, examining intersections between knowledge and domination.

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

ANT 309A Forensic Anthropology and Epigenetics in Urban America

Professors: Jeffrey D. Himpele, Janet M. Monge

Description: Forensic anthropology involves medico-legal cases where human remains have lost "personhood" (an individual cannot be identified due to decomposition or destruction of unique personal features). We will explore techniques of analysis that biological anthropologists apply to forensic cases. We will blend the sub-disciplines of social and biological anthropology by tracing the intertwined physiological and social factors that shape human variation and life experience in an urban setting. We weigh and consider epigenetic mechanisms by which external variables may bring about heritable molecular changes in the expression of genetic phenotypes.

Schedule: 11:00 am - 12:20 pm M W

SCHOOL OF ARCHITECTURE

ARC 203 Introduction to Architectural Thinking

Professor: Julian M. Rose

Description: The objective of this course is to provide a broad overview of the discipline of architecture: its history, theories, methodologies; its manners of thinking and working. Rather than a chronological survey, the course will be organized thematically, with examples drawn from a range of historical periods as well as contemporary practice. Through lectures, readings, and discussions every student will acquire a working knowledge of key texts, buildings and architectural concepts.

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

ARC 308 History of Architectural Theory

Professor: Lucia Allais

Description: This course offers a history of architectural theory, criticism, and historiography from the Renaissance to the present, emphasizing the texts, media and institutions that have supported architecture's claim to modernity since the late 17th Century. Architectural thought is examined in its social and cultural context as it relates both to the Western philosophical tradition and to design method and practice.

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

ART AND ARCHAEOLOGY

ART 100 An Introduction to the History of Art: Meanings in the Visual Arts

Professor: Andrew Hamilton

Description/Objectives: Introduction to the history of art and to the discipline of art history. Not a comprehensive survey but a sampling of arts -- painting, sculpture, architecture, photography and prints -- and artistic practices from diverse historical periods, regions, and cultures. The course balances consideration of historical developments with attention to individual works of art. Faculty members of the Department of Art and Archaeology lecture in their fields of expertise;

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

ART 204 Greek Archaeology: The Classical Period

Professor: Nathan T. Arrington

Description: A survey of the material culture of the Greek world, from the Persian invasions until the death of Alexander the Great (ca. 500-323 BC). Works analyzed in their social, political, and archaeological contexts. Topics include: urbanism and

the Greek house; the concept of the artist in antiquity; the archaeology of death; the divine image. Study of monuments, artifacts, and sites integrated with the reading of primary literary sources. Frequent hands-on experience with artifacts in the Princeton University Art Museum.

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

ART 217 The Arts of Japan

Professor: Andrew M. Watsky

Description: ART 217 surveys the arts of Japan from the pre-historic period through the present day. Painting, sculpture, and architecture form the core of study, though we will also examine the critical role of other forms, including calligraphy, lacquer, and ceramics. Throughout the course we will take close account of the broader cultural and historical contexts in which art was made. Our topics include the ongoing tension in Japanese art between the foreign and the indigenous, the role of ritual in Japan's visual arts, the re-uses of the past, the changing loci of patronage, and the formats and materials of Japanese art.

Schedule: 1:30 pm - 2:20 pm M W

ART 228 Art and Power in the Middle Ages

Professor: Charlie Barber

Description: In twelve weeks this course will examine major art works from the twelve centuries (300-1500 CE) that encompass the European Middle Ages. Presenting works from Europe and the Middle East, the course will introduce students to the art of Catholicism and Orthodoxy, Judaism and Islam; the great courts of the Eastern- and Holy Roman Empires, and the roving Vikings, Celts and Visigoths. Students will not only be invited to consider how art can represent and shape notions of sacred and secular power, but will also come to understand how the work of 'art' in this period is itself powerful and, sometimes, dangerous.

Schedule: 12:30 pm - 1:20 pm M W

ART 272 Rage against the Machine: Art and Politics in America

Professor: Rachael Z. DeLue

Description: From the toppling of a statue of King George in New York in 1776 to the super PAC "For Freedoms" founded by artists in 2016, art and politics in America have gone hand in hand, and understanding the history of American art requires a deep dive into the history of American politics. With the current political landscape as both backdrop and incitement, this course considers the history of intersections between art and politics in the United States, from the revolutionary era to the present, and examines how artists have engaged the political sphere and produced political art in order to express critique,

accommodation, resistance, and rage.

Schedule: 10:00 am - 10:50 am T Th

ASTROPHYSICAL SCIENCES

AST 205 Planets in the Universe

Professor: Gaspar Bakos

Description: This is an introductory course in astronomy focusing on planets in our Solar System, and around other stars (exoplanets). First we review the formation, evolution and properties of the Solar system. Following an introduction to stars, we then discuss the exciting new field of exoplanets; discovery methods, earth-like planets, and extraterrestrial life. Core values of the course are quantitative analysis and hands-on experience, including telescopic observations. This STN course is designed for the non-science major and has no prerequisites past high school algebra and geometry. See www.astro.princeton.edu/planets for important changes

Schedule: 1:30 pm - 2:50 pm T Th

AST 301 General Relativity

Professor: Jeremy J. Goodman

Description: An introduction to general relativity and its astrophysical applications, including black holes, cosmological expansion, and gravitational waves.

Schedule: 3:00 pm - 4:20 pm M W

CHEMICAL AND BIOLOGICAL ENGINEERING

CBE 245 Introduction to Chemical and Biochemical Engineering Principles

Professor: Mark P. Brynildsen

Description: Introduction to chemical engineering analysis and computations. Course starts with unit conversions and conventions for representing processes and process variables in engineering calculations. Continues with methods for generating flow sheets and analyzing mass balances both with and without chemical reactions. Rules associated with energy conservation and energy balance calculations in non-reacting and reacting systems are also covered. Ultimately, full process calculations, including chemical reactions with energy changes and multiphase systems are covered.

Schedule: 9:00 am - 9:50 am M W F

CBE 260 Ethics and Technology: Engineering in the Real World

Professor: Jay B. Benziger

Description: This course examines engineering as a profession and the responsibilities of that profession to society. Professional responsibilities of engineers are compared to those of lawyers, doctors, scientists and businessmen. Ethical theories are introduced as frameworks to guide decisions of technology implementation. Simple quantitative decision making concepts, including risk-benefit analysis, are introduced as a method for engineers to make ethically optimal choices.

Other information: There will be movies relevant to technology development, e.g. "Who Killed the Electric Car", "The Day After Trinity", "China Syndrome". These will be available for viewing on Blackboard.

Schedule: 10:00 am - 10:50 am T Th

CBE 262 Fundamentals of Bioengineering

Professor: Celeste M. Nelson

Description: Cloned cats. Genetically modified organisms. Pacemakers. Insulin pumps. Bioengineering is by nature an interdisciplinary field focused on understanding and improving the human condition. This course will provide a hands-on applications-based introduction to the field for both engineering and non-engineering students.

Schedule: 11:00 am - 12:20 pm T Th

CIVIL AND ENVIRONMENTAL ENGINEERING

CEE 102A Engineering in the Modern World

Professor: Michael G. Littman

Description: Lectures and readings focus on bridges, railroads, power plants, steamboats, telegraph, highways, automobiles, aircraft, computers, and the microchip. Historical analysis provides a basis for studying societal impact by focusing on scientific, political, ethical, and aesthetic aspects in the evolution of engineering over the past two and a half centuries. The precepts and the papers will focus historically on engineering ideas including the social and political issues raised by these innovations and how they were shaped by society as well as how they helped shape culture.

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

CEE 207 Introduction to Environmental Engineering

Professor: Ian C. Bourg

Description: The course introduces the basic chemical and physical processes of relevance in environmental engineering. Mass and energy balance and transport concepts are introduced and the chemical principles governing reaction kinetics and phase partitioning are presented. We then turn our focus to the applications in environmental engineering problems related to water and air pollution.

Schedule: 1:30 pm - 2:50 pm M W

CEE 305 Environmental Fluid Mechanics

Professor: Elie R. Bou-Zeid

Description: The course starts by introducing the conservation principles and related concepts used to describe fluids and their behavior. Mass conservation is addressed first, with a focus on its application to pollutant transport problems in environmental media. Momentum conservation, including the effects of buoyancy and earth's rotation, is then presented. Fundamentals of heat transfer are then combined with the first law of thermodynamics to understand the coupling between heat and momentum transport. We then proceed to apply these laws to study air and water flows in various environmental systems, with a focus on the atmospheric boundary layer.

Schedule: 1:30 pm - 2:50 pm T Th

CEE 361 Matrix Structural Analysis

Professor: Maurizio Chiamonte

Description: The course introduces basic concepts of primal finite element methods. It begins with an overview of finite element methods for a one-dimensional model problem including the weak, Galerkin and matrix forms. Extension of the finite element to multiple dimensions are carried for second order scalar and vector valued equations. Applications in heat transfer, fluid and solid mechanics will be discussed. The course then concludes with the C⁰ approach to plates and beams. Element formulation, data structures, isoparametric interpolations, locking, analysis of error and convergence, constraints as well as variational crimes will all be discussed.

Schedule: 11:00 am - 12:20 pm T TH

CEE 439 Structural Health Monitoring

Professor: Branko Glisic

Description: This course introduces the topics with basic definitions of measurement and monitoring, monitoring activities and entities, and with various available and emerging monitoring technologies. The fundamental criteria for applications on concrete, steel and composite materials are elaborated, and basics on data interpretation and analysis for both static and

dynamic monitoring are presented. Finally, methods applicable to large spectrum of civil structures, such as bridges, buildings, geo-structures, and large structures are developed.

Schedule: 8:30 am - 9:50 am M W

UNIVERSITY CENTER FOR HUMAN VALUES

CHV 310 Practical Ethics

Professor: Peter A. Singer

Description: Should we be trying to live our lives so as to do the most good, and if so, what would that involve? Does a human embryo have a greater claim to protection than a chimpanzee? Should we be able to choose to end our own life, if we are terminally ill? Are we ethically required to limit our greenhouse gas emissions? What is an ethical diet? Are we justified in eating animals? Why should we act ethically, anyway? You will be encouraged to question your own ethical beliefs on these and other issues, and to explore the extent to which reason and argument can play a role in everyday ethical decision-making.

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

CLASSICS

CLA 212 Classical Mythology

Professor: Joshua H. Billings

Description: An introduction to the classical myths in their cultural context and in their wider application to human concerns (such as creation, sex and gender, identity, transformation, and death). The course will offer a who's who of the ancient imaginative world, study the main ancient sources of well-known stories, and introduce modern approaches to analyzing myths.

Schedule: 1:30 pm - 2:20 pm T Th

CLA 219 The Roman Empire, 31 B.C. to A.D. 337

Professor: Harriet I. Flower

Description: To study the Roman Empire at its height; to trace the transformation of government from a republican oligarchy to monarchy; to study the changes wrought by multiculturalism on the old unitary society; to trace the rise of Christianity from persecution to dominance; and to assess Rome's contributions in historical context.

Schedule: 2:30 pm - 3:20 pm M W

CLA 244 Greek Politics in Practice and Theory

Professor: Nino Luraghi

Description: This course will approach select classics

of Greek political thought (Plato's Statesman and Republic, Aristotle's Politics) through a scrutiny of Greek social and political institutions. Students will be introduced to basic principles such as the distinction between free and unfree, the social and political status of male and female, and the distribution of political power and access to political participation in the Greek polis, in order to be in a position to observe how the ideas of Greek political thinkers map onto this reality.

Schedule: 11:00 am - 11:50 am T Th

COMPARATIVE LITERATURE

COM 202 Introduction to Jewish Cultures

Professor: Lital Levy

Description: This introductory course focuses on the global diversity and the cultural syncretism of Jewish experience from the Bible to the present. It examines how Jewish culture has emerged through the interaction of Jews and non-Jews, engaging a wide spectrum of cultures throughout the Jewish world, and following representations of key issues such as sexuality, suffering, or mystical experience in different contexts and eras. Topics include Bible and Talmud, kabbalah, Zionism, Jewish cinema, music, food, modern literature, and comics. All readings and films are in English.

Schedule: 11:00 am - 12:20 pm M

COM 203 Passion

Professor: Thomas W. Hare

Description: Passion is a common word with a long, complicated history; the diverse meanings we associate with it range from our experience of the most ethereal and sublime to the most visceral and profane levels of human experience. This course studies a range of films from the past century with the aim of understanding how they represent their subjects, how they narrate and represent passion, and how they engage personal, social, and cultural issues in particular aesthetic and formal ways.

Other information: This course includes lectures and precepts, the film screenings are mostly projected DVD (or Blu-Ray). Some of the films we will study are: Almodóvar, "Women on the Verge of a Nervous Breakdown"; Bizet/von Karajan, "Carmen"; Dreyer, "The Passion of Joan of Arc"; Gibson, "The Passion of the Christ"; Kushner/Nichols, "Angels in America"; Shinoda, "Double Suicide"; Zhang, "Ju Dou".

Schedule: 1:30 pm - 2:20 pm M W

COM 205 The Classical Roots of Western Literature

Professor: Leonard Barkan

Description: A reading of some of the greatest works of literature in the Western tradition from Homer to the Renaissance. The course is also designed as an introduction to Comparative Literature -- that is, a reading of literary works across the boundaries of time, geography, and language. All works taught in English.

Schedule: 12:30 pm - 1:20 pm M W

COM 208 Urban Horror Cinema: Asian Cities Crisis

Professor: Erin Y. Huang

Description: This course examines "urban horror" and "capitalism" as the cinematic motifs in contemporary East and Southeast Asian films. From Beijing to Hong Kong, and Singapore to Inner Mongolia, Asian cities are harboring urban imaginations that challenge existing human comprehension. Through emptied city centers, inexplicable psychosis, and the dizzying display of accelerated traffic, urban horror cinema provides a space for understanding the relationship between capitalist and (post-)socialist urban transformations--zoning, demolition, real estate speculation, housing crisis, street protest--and the mental life in the region's mega-metropolises.

Schedule: 3:00 pm - 4:20 pm M W

COM 341 What is Vernacular Filmmaking? - Rhetoric for Cinema Studies

Professor: Erika A. Kiss

Description: We will study arthouse films that address global audiences while rooted in particular, local, vernacular sources of artistic creation and persuasion. We will contrast the formulaic (echo-chamber) rhetoric of Hollywood with the heuristic rhetoric of Italian Neorealism, the Danish Dogma '95 and French, Turkish, Iranian New Wave films. Our focus will be on the concept of physiognomic figuration viewed as the cinematic articulation of enthymemes (rhetorical arguments). This seminar invites a widely interdisciplinary approach.

Other information: All films are screened in the original language with English subtitles.

Schedule: 7:30 pm - 10:20 pm T

COM 351 Great Books from Little Languages

Professor: David M. Bellos

Description: For historical reasons most books that come into English are translated from just a few languages, creating a misleading impression of the

spread of literature itself. This course provides an opportunity to discover literary works from languages with small reading populations which rarely attract academic attention in the USA. It also offers tools to reflect critically on the networks of selection that determine which books reach English-language readers; the role of literature in the maintenance of national identities; the role of translation; and the concept of "world literature" in Comparative Literary Studies.

Schedule: 3:00 pm - 4:20 pm M

COMPUTER SCIENCE

COS 109 Computers in Our World

Professor: David P. Dobkin

Description: Computers are all around us. How does this affect the world we live in? This course is a broad introduction to computing technology for humanities and social sciences students. Topics will be drawn from current issues and events, and will include discussion of how computers work; what programming is and why it is hard; how the Internet and the Web work; security and privacy.

Schedule: 1:30 pm - 2:50 pm T Th

COS 126 Computer Science: An Interdisciplinary Approach

Professor: David I. August

Description: An introduction to computer science in the context of scientific, engineering, and commercial applications. The course will teach basic principles and practical issues, and will prepare students to use computers effectively for applications in computer science, physics, biology, chemistry, engineering, and other disciplines. Topics include: hardware and software systems; programming in Java; algorithms and data structures; fundamental principles of computation; and scientific computing, including simulation, optimization, and data analysis. No prior programming experience required. **This class will hold Video lectures.**

Schedule: 10:00 am - 10:50 am T Th

COS226 Algorithms and Data Structures

Professors: Maia Ginsburg, Ananda Gunawardena, Kevin Wayne

Description/Objectives: This course surveys the most important algorithms and data structures in use on computers today. Particular emphasis is given to algorithms for sorting, searching, and string processing. Fundamental algorithms in a number of other areas are covered as well, including geometric algorithms, graph algorithms, and some numerical algorithms. The course will concentrate on developing

implementations, understanding their performance characteristics, and estimating their potential effectiveness in applications.

Schedule: 11:00 am - 12:20 pm T TH

COS 318 Operating Systems

Professor: Jaswinder P. Singh

Description/Objectives: An introduction to operating systems. Emphasis is on the fundamentals of how to design and implement an operating system. Topics include operating system structure, processes, threads, synchronizations, concurrent programming, interprocess communications, virtual memory, I/O device management, and file systems.

Schedule: 11:00 am - 12:20 pm M W

COS 326 Functional Programming

Professor: David P. Walker

Description: An introduction to the principles of typed functional programming. Programming recursive functions over structured data types and informal reasoning by induction about the correctness of those functions. Functional algorithms and data structures. Principles of modular programming, type abstraction, representation invariants and representation independence. Parallel functional programming, algorithms and applications.

Schedule: 11:00 am - 12:20 pm M W

COS 333 Advanced Programming Techniques

Professor: Robert M. Dondero

Description: This is a course about the practice of programming. Programming is more than just writing code. Programmers must also assess tradeoffs, choose among design alternatives, debug and test, improve performance, and maintain software written by themselves & others. At the same time, they must be concerned with compatibility, robustness, and reliability, while meeting specifications. Students will have the opportunity to develop these skills by working on their own code and in group projects.

Schedule: 1:30 pm - 2:50 pm T Th

COS 340 Reasoning about Computation

Professor: Ran Raz

Description: An introduction to mathematical topics relevant to computer science. Combinatorics and probability will be covered in the context of computer science applications. The course will present a computer science approach to thinking and modeling through topics such as dealing with uncertainty in data and handling large data sets. Students will be introduced to fundamental concepts such as NP-

completeness and cryptography that arise from the world view of efficient computation.

Schedule: 1:30 pm - 2:50 pm M W

COS 418 Distributed Systems

Professor(s): Michael J. Freedman, Kyle A. Jamieson

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, security, 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

COS 429 Computer Vision

Professor: Olga Russakovsky

Description: This course is an introduction to the concepts of 2D and 3D computer vision. It surveys a wide range of topics from level-level vision to high-level recognition. We will discuss concepts such as filtering and edge detection; cameras and shape reconstruction; segmentation and clustering; optical flow and tracking; object recognition; motion recognition; statistical modeling of visual data, etc. Throughout the course, there will also be examination of aspects of human vision and perception that guide and inspire computer vision techniques.

Schedule: 3:00 pm - 4:20 pm T Th

COS 432 Information Security

Professor: Edward W. Felten

Description: Security issues in computing, communications, and electronic commerce. Goals and vulnerabilities; legal and ethical issues; basic cryptology; private and authenticated communication; electronic commerce; software security; viruses and other malicious code; operating system protection; trusted systems design; network security; firewalls; policy, administration and procedures; auditing; physical security; disaster recovery; reliability; content protection; privacy.

Schedule: 3:00 pm - 4:20 pm M W

COS 436 Human-Computer Interface Technology

Professor: Marshini Chetty

Description/Objectives: Creating technologies that fit

into people's everyday lives involves more than having technically sophisticated algorithms, systems, and infrastructure. It involves understanding how people think and behave and using this info. to design user-facing interfaces that enhance and augment human capabilities. You will be introduced to the field of human-computer interaction and the tools, techniques, and principles that guide research on people. Design and implement user-facing systems that bring joy rather than frustrate the user and put these skills into practice in a semester long group project involving the creation of an interactive system.

Schedule: 8:30 am - 9:50 am T Th

COS 451 Computational Geometry

Professor: Bernard Chazelle

Description: This course introduces the basic concepts of geometric computing, illustrating the importance of this field for a variety of applications areas, such as computer graphics, solid modeling, robotics, database, pattern recognition, and statistical analysis. Algorithms are presented and analyzed for a large number of geometric problems, and an array of fundamental techniques are discussed (e.g., convex hulls, Voronoi diagrams, intersection problems, multidimensional searching).

Schedule: 1:30 pm - 2:50 pm M W

COS 487 Theory of Computation

Professor: Gillat Kol

Description: Introduction to computability and complexity theory. Topics will include models of computation such as automata, and Turing machines; decidability and decidability; computational complexity; P, NP, and NP completeness; others.

Schedule: 1:30 pm - 2:50 pm T Th

ECONOMICS

ECO 100 Introduction to Microeconomics

Professor: Henry S. Farber

Description: Economics is the study of how people and societies deal with scarcity. This course focuses on the advantages and disadvantages of market systems for allocating scarce resources.

Schedule: 2:30 pm - 3:20 pm T Th

ECO 101 Introduction to Macroeconomics

Professor: Elizabeth C. Bogan

Description: The theory of the determination of the level of national income and economic activity, including an examination of the financial system. Emphasis on economic growth and such economic

problems as inflation, unemployment and recession, and on appropriate policy responses. Some attention is also paid to international issues.

Schedule: 11:00 am - 11:50 am T Th

ECO 302 Econometrics

Professor: Kirill Evdokimov

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: 1:30 pm - 2:50 pm M W

ECO 324 Law and Economics

Professor: Thomas C. Leonard

Description: An introduction to the economics of law. Application of price theory and welfare analysis to problems and actual cases in the common law - property, contracts, torts - and to criminal and constitutional law. Topics include the Coase Theorem, intellectual property, inalienable goods, product liability, crime and punishment, and social choice theory.

Schedule: 11:00 am - 12:20 pm T Th

ECO 353 International Monetary Economics

Professor: Iqbal Zaidi

Description: This course studies topics in open-economy macroeconomics and international finance. Topics include Exchange Rates, Current Account Imbalances, Inflation, Sovereign Debt, and Open Economy Macroeconomics. The course will include economic theory as well as several applications.

Schedule: 11:00 am - 12:20 pm M W

ECO 372 Economics of Europe

Professor: Silvia Weyerbrock

Description: Europe is at a crossroads. Political and economic integration in the European Union (EU) exceeds levels reached in the rest of the world. Economic integration not only affects trade but also migration, agriculture, competition, regions, energy, and money. Most euro area economies have been struggling with interlocking crises involving debt, banking and growth. The EU is facing a migration crisis. The UK voted for Brexit, and other countries may follow. This course studies economic integration and the ongoing crises. It uses economic analysis to study policy issues.

Schedule: 8:30 am - 9:50 am T Th

ECO 418 Strategy and Information

Professor: Faruk R. Gul

Description: Explores basic themes in modern game theory and information economics. Non-cooperative solution concepts for games will be developed and applied in a variety of contexts including auctions, bargaining, repeated games dynamic interaction in oligopolistic industries, and reputation formation.

Schedule: 11:00 am - 12:20 pm M W

ECOLOGY AND EVOLUTIONARY BIOLOGY

EEB 211 Life on Earth: Chaos and Clockwork of Biological Design

Professors: Daniel I. Rubenstein, Katherine M. Sullivan

Description: An examination of how life evolved and how organisms function. Design--'intelligent' and otherwise--will provide a unifying theme. Why do some microbes produce slime and others do not? Why are males brightly colored in some species, but in others females are the showy sex? Why do humans have knees that fail whereas horses and zebras do not? These and other 'why is it so' questions related to the origin and history of life, genetic code, biochemistry, physiology, morphology and body plans, sex and reproduction, cooperation, and ecosystems will be explored. This course is required of all EEB majors and fulfills a requirement for medical school.

Schedule: 11:00 am - 12:20 pm M W

EEB 309 Evolutionary Biology

Professor: Bridgett M. vonHoldt

Description: All life on Earth has, and continues to, evolve. This course will explore evolution within two frameworks: conservation genetics and species interactions. In the first half of the course, we will explore fundamental processes that work together to shape biodiversity and viability, both at the organismal and molecular levels. We then will examine how species interactions can be the driver of change, from sexual selection to predation and pathogens. Overall, this course will provide you with the basic tools to understand how evolution continues to shape contemporary ecological and the phenotypic traits we observe on our planet.

Schedule: 11:00 am - 12:20 pm M W

EEB 313 Behavioral Ecology

Professor: Christina P. Riehl

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: 1:30 pm - 2:50 pm T Th

EEB 327 Immune Systems: From Molecules to Populations

Professor: Andrea L. Graham

Description: How do immune systems work, and why do they work as they do? Why is there so much immunological polymorphism in animal populations? To address these questions, students will examine immunology across multiple biological scales. At the molecular and cellular scales, students will learn mechanisms by which animals recognize and kill parasites. At the population scale, students will investigate causes of the tremendous immunological heterogeneity exhibited by animals. Both the clinical relevance and the evolutionary basis of polymorphisms will be emphasized.

Schedule: 8:30 am - 9:50 am T Th

ENGINEERING

EGR 151 Foundations of Engineering: Mechanics, Energy, and Waves

Professor: Claire F. Gmachl

Description: This course covers mechanics, energy, waves, and introductory thermodynamics within the framework of understanding and developing engineering solutions to grand global challenges; i.e. the focus is on the role an engineer plays in responding to grand challenges and the physics foundations that are at their disposal. A full-length laboratory comprises projects designed especially for the engineering-minded student, focusing on design and building, problem solving, and entrepreneurship. This course can be used to satisfy BSE freshman year requirements.

Schedule: 11:00 am - 12:20 pm MW

EGR 475 Building and Operating Complex and Regulated Ventures

Professor: Shahram Hejazi

Description: Starting and operating a complex venture in a regulated market is often faced with tremendous challenges in developing and validating the idea to attract investors and industry partners. With an initial perspective of what it takes to attract

funding, the course will focus on teaching three main skills 1) What makes a complex business initially fundable through private and public resources, 2) Identifying the problem and validating the solution in a regulated, multi-stakeholder market 3) Launching the business and developing the operational plan post launch.

Other: please submit to mastro@princeton.edu your reason for wanting to take this course and your background. Due to a small numbers of seats available, Prof. Hejazi has requested that this course be available only to those who have not taken a course with him in the past.

Schedule: 1:30 pm - 4:20 pm F

ELECTRICAL ENGINEERING

ELE 206 Contemporary Logic Design

Professor: Sharad Malik

Description: Introduction to the basic concepts in logic design that form the basis of computation and communication circuits. Logic gates and memory elements. Timing methodologies. Finite state systems. Programmable logic. Basic computer organization.

Schedule: 1:30 pm - 2:50 pm T Th

ELE 341 Solid-State Devices

Professor: Antoine Kahn

Descriptions: The physics and technology of solid state devices. Review of electronic structure of semiconductors, energy bands and doping, followed by discussion of carrier transport by drift and diffusion and recombination/generation. Detailed analysis of p-n junctions, bipolar transistors and field effect transistors. Survey of a wide range of devices, including photodetectors, solar cells, light-emitting diodes and semiconductor lasers, highlighting contemporary concepts such as thin film electronics and 2D semiconductors.

Schedule: 3:00 pm - 4:20 pm T Th

ELE 382 Statistical Signal Processing

Professor: Yuxin Chen

Description: A wide spectrum of engineering applications require efficient procedures to describe, process, analyze, and infer the signals/data of interest, which are often accomplished by imposing proper statistical models on the objects under consideration. This course introduces the fundamental statistical 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: 1:30 pm - 2:50 pm M W

ELE 396 Introduction to Quantum Computing

Professor: Andrew Houck

Description: This course will introduce the matrix form of quantum mechanics and discuss the concepts underlying the theory of quantum information. Some of the important algorithms will be discussed, as well as physical systems which have been suggested for quantum computing.

Schedule: 11:00 pm - 12:20 pm M W

ELE 441 Solid-State Physics I

Professor: Mansour Shayegan

Description: An introduction to the properties of solids. Theory of free electrons--classical and quantum. Crystal structure and methods of determination. Electron energy levels in a crystal: weak potential and tight-binding limits. Classification of solids--metals, semiconductors and insulators. Types of bonding and cohesion in crystals. Lattice dynamics, phonon spectra and thermal properties of harmonic crystals.

Schedule: 11:00 am - 12:20 pm M W F

ELE 453 Optical Electronics

Professor: Hakan E. Türeci

Description: Fundamentals of light-matter interactions, waveguides and resonators, nonlinear optics and lasers.

Schedule: 11:00 am - 12:20 pm T Th

ELE 454 Photonics and Light Wave Communications

Professor: Paul R. Prucnal

Description: This course provides a working knowledge of the components comprising fiber-optic networks, which form the backbone of today's communication networks, including the global internet, 4G wireless, home access and data center networks. The operation of lasers, fiber optics and optical routers will be discussed, as will current applications such as fiber to the home, the broadband wireless-optical interface, all-optical switching, signal processing and computing, and security in fibers. The course will also provide lab demonstrations and visits to the Lightwave Communications Research Lab.

Schedule: 8:30 am - 9:50 am T Th

ELE 462 Design of Very Large-Scale Integrated (VLSI) Systems

Professor: Naveen Verma

Description: Analysis and design of digital integrated

circuits using deep sub-micron CMOS technologies as well as emerging and post-CMOS technologies (Si finFETs, III-V, carbon). Emphasis on design, including synthesis, simulation, layout and post-layout verification. Analysis of energy, power, performance, area of logic-gates, interconnect and signaling structures.

Schedule: 11:00 am - 12:20 pm T Th

ELE 470 Smartphone Security and Architecture

Professor: Ruby B. Lee

Description: Smartphones are the de-facto computing and communications devices of tomorrow. They can access any information in cyberspace and perform any computations through cloud computing and locally. We study smartphone design and security through an architectural perspective. Topics include smartphone system architecture; System-on-Chip design; heterogeneous and multicore processors; sensors, multimedia, communications and storage subsystems; basic security concepts; hardware and software security in smartphones; security vulnerabilities; use and abuse of built-in sensors; associated wearables and Internet-of-Things; and security improvements.

Schedule: 3:00 pm - 4:20 pm T Th

ENERGY STUDIES

ENE 273 Renewable Energy and Smart Grids

Professor: Minjie Chen

Description: This course explores broadly renewable energy systems and smart grids. Technical and operational principles of the modern electric grids will be introduced, followed by an overview of various energy sources from fossil-fuel generators to photovoltaic systems. The intermittency of renewable energy systems and its impact on the electric grid will be discussed together with its potential solutions: energy storage systems and demand response techniques. Emerging techniques, such as micro-grids and plug-in-electric vehicles will be reviewed. Economics and public-policy issues will be explored.

Schedule: 11:00 am - 12:20 pm M W

ENE 431 Solar Energy Conversion

Professor: Barry P. Rand

Description: Principles and design of solar energy conversion systems. Sustainability of solar energy. Physics of solar energy conversion: solar excitation, capture of excited energy, and energy excitations or electronic charge. Conversion methods: thermal, wind, photoelectric, photovoltaic, photosynthetic, biomass. Solar energy storage and high temperature conversion. Storage of solar energy. Conversion efficiency, systems cost, and

lifecycle considerations.

Schedule: 3:00 pm - 4:20 pm T Th

ENGLISH

ENG 206 Reading Literature: Fiction

Professor: Sarah A. Chihaya

Description: The making and interpretation of fictions are among our everyday activities, whether or not we realize it; however, we don't always consider what "fiction" is, or what it means. This course will introduce students to the diverse and specific forms fiction takes in literature, with emphasis on the novel and film. We will interrogate the act of creating fictions, and the impact a fictional world can make on a reader. Along the way, we will continually consider two deceptively simple questions: what does fiction do to us? What can fiction do for us?

Schedule: 11:00 am - 11:50 am T Th

ENG 207 Reading Literature: Drama

Professor: Robert N. Sandberg

Description: This course is designed to teach students how to read plays as literature written for performance. Key assumptions are that every act of reading is an act of interpretation, that a good reader of dramatic literature engages in an activity nearly identical to that of a good director or actor or designer, and that a reader might learn from theater practitioners how to make critical choices based on close reading and a knowledge of theatre history.

Schedule: 10:00 am - 10:50 am T Th

ENG 215 Introduction to Science Fiction

Professor: Alfred Bendixen

Description: An exploration of the ideas, issues, and aesthetic values that mark the development of science fiction from the 18th century to the present, with particular attention to the ways specific texts confront the philosophical questions underlying scientific inquiry and invention, travel in time and space, the creation of life, robots and robotics. The ways in which this genre reframes the basic question of what it means to be human will be the foundation of our analysis of contemporary short stories and representative novels.

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

ENG 308 American Cinema

Professor: Diana J. Fuss

Description: This film genre course addresses the cultural heritage of our national cinema. How has

cinema shaped American culture, and how has American culture shaped cinema? We will focus on iconic figures in American film: robbers, tycoons, immigrants, cowboys, gangsters, detectives, lovers, monsters, cyborgs, survivors. Each week will pair an early film with a later one to trace a given genre's evolution; for example, the week on westerns might pair John Ford's "The Searchers" (1956) with Ang Lee's "Brokeback Mountain" (2005). The course studies commercial Hollywood films that serve as important barometers of their times.

Schedule: 10:00 am - 10:50 am T Th

ENG 320 Shakespeare I

Professor: Bradin T. Cormack

Description: The first half of Shakespeare's career, with a focus on the great comedies and histories of the 1590s.

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

ENG 345 19th-Century Fiction

Professor: Jeff Nunokawa

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: 2:30 pm - 3:20 pm M W

ENG 357 Topics in American Literature - Henry James and William Faulkner

Professor: Lee C. Mitchell

Description/Objectives: This course examines the careers of two of America's most accomplished novelists. Manifest differences aside, both authors were obsessed with the ensnaring effects of plot, prompting both to imagine fictional realms that are as much "designs" on the reader as on characters.

Schedule: 11:00 am - 11:50 am T Th

ENG 390 The Bible as Literature

Professor: Donald Vance Smith

Description: This course will study what it means to read the Bible in a literary way: what literary devices does it contain, and how has it influenced the way we read literature today? What new patterns and meanings emerge? This course will examine the structures and modes of the Biblical books; the formation of the canon and the history of the apocryphal or deuterocanonical books; questions authorship; its literary genres; histories of exegesis, interpretation, and commentary; the redaction,

division, and ordering of biblical texts; the cultural, political, and intellectual worlds within which these texts were written.

Schedule: 1:30 pm - 2:20 pm T Th

ENG 416 Topics in Literature and Ethics - Modern Evil

Professor: Simon E. Gikandi

Description: This is a course on the problem of evil in the modern world as it is represented in works of literature and film. What is the nature of evil and how is it imagined? How can the noble ideas that define the modern world--justice and human rights, for example--be reconciled with the terrible events of the twentieth century: genocide, racial violence, and war? Why do good people do terrible things to others? What can reading books on evil in distant places teach us about ourselves? The course will explore how evil functions as a form of deep ethical violation and challenges how we understand the world and our relationship to others.

Schedule: 1:30 pm - 2:20 pm M W

GEOSCIENCES

GEO 102A Climate: Past, Present, and Future

Professor: Daniel M. Sigman

Description: Which human activities are changing our climate, and does climate change constitute a significant problem? We will investigate these questions through an introduction to climate processes and an exploration of climate from the distant past to today. We will also consider the implications of climate change for the global environment and humans. Intended to be accessible to students not concentrating in science or engineering.

Schedule: 11:00 am - 12:20 pm T Th

GEO 203 Fundamentals of Solid Earth Science

Professor: Jessica Irving

Description: A quantitative introduction to Solid Earth system science, focusing on the underlying physical and chemical processes and their geological and geophysical expression. Through the course we investigate the Earth starting from its basic constituents and continue through its accretion, differentiation and evolution and discuss how these processes create and sustain habitable conditions on Earth's surface. Topics include nucleosynthesis, planetary thermodynamics, plate tectonics, seismology, geomagnetism, petrology, sedimentology and the global carbon cycle.

Schedule: 3:00 pm – 4:20 pm T TH

GEO 255A Life in the Universe

Professor: Christopher F. Chyba , Michael H. Hecht , A. James Link , Tullis C. Onstott , Edwin L. Turner

Description: This course introduces students to a new field, Astrobiology, where scientists trained in biology, chemistry, astronomy and geology combine their skills to discover life's origins and to seek extraterrestrial life. Topics include: the origin of life on Earth; the prospects of life on Mars, Europa, Enceladus and extra-solar planets. Students will also compete in class to select landing sites and payloads for the next robotic missions to Mars and Europa. 255A is the core course for the Planets and Life certificate.

Schedule: 11:00 am - 12:20 pm T TH

GEO 361 360 Earth's Atmosphere

Professor: Stephan A. Fueglistaler

Description: This course discusses the processes that control Earth's climate - and as such the habitability of Earth - with a focus on the atmosphere and the global hydrological cycle. The course balances overview lectures (also covering topics that have high media coverage like the 'Ozone hole' and 'Global warming', and the impact of volcanoes on climate) with selected in-depth analyses. The lectures are complemented with homework based on real data, demonstrating basic data analysis techniques employed in climate sciences.

Schedule: 11:00 am - 12:20 pm T Th

GEO 422 Data, Models, and Uncertainty in the Natural Sciences

Professor: Frederik J. Simons

Description: No more being puzzled by dots on a graph! This course is for those who want to turn observations into models and subsequently evaluate their uniqueness and uncertainty. Three main topics are elementary inferential statistics, heuristic time series analysis, and model parameter estimation via matrix inverse methods. While the instructor's and textbook examples will be derived mostly from the physical sciences, students are encouraged to bring their own data sets for classroom discussion. Problem sets and MATLAB computer programming exercises form integral parts of the course. Prior programming experience is helpful but not required

Schedule: 11:00 am - 12:20 pm T Th

HISTORY

HIS 201 A History of the World

Professor: Jeremy I. Adelman

Description: An introduction to the history of the

modern world, this course traces the global processes that connected regions with each other from the time of Genghis Khan to the present. The major themes of the course include the environmental impact of human development, the role of wars and empires in shaping world power, and the transformations of global trade, finance, and migration.

Other information:

Students will be required to view **two lectures online per week**. There will also be one live town hall forum per week with Prof. Adelman.

Schedule: 11:00 am - 11:50 am W

HIS 270 Asian American History

Professor: Beth Lew-Williams

Description: This course introduces students to the multiple and varied experiences of people of Asian heritage in the United States from the 19th century to the present day. It focuses on three major questions:

(1) What brought Asians to the United States? (2) How did Asian Americans come to be viewed as a race? (3) How does Asian American experience transform our understanding of U.S. history? Using newspapers, novels, government reports, and films, this course will cover major topics in Asian American history, including Chinese Exclusion, Japanese internment, transnational adoption, and the model minority stereotype.

Schedule: 1:30 pm - 2:20 pm T Th

HIS 294 What is the Scientific Revolution?

Professor: Jennifer M. Rampling

Description: Something "happened" to science between 1450-1750. The sun replaced the earth at the center of the cosmos, Europeans encountered new worlds and new peoples, and heaven and earth shook to the impact of new technologies like telescopes and heavy artillery. Yet how much was really new? Did all these changes merge into one phenomenon that we can call "the scientific revolution"? And were there many such revolutions or could the very idea be a modern invention? From optics and anatomy to alchemy and magic, this course will ask exactly how natural knowledge was shaped, challenged and exploited between the late Middle Ages and the Enlightenment. No electronics permitted in class.

Schedule: 1:30 pm - 2:20 pm M W

HIS 303 Colonial Latin America to 1810

Professor: Vera S. Candiani

Description: This course begins with the origins and consolidation of the Aztec, Inca and Iberian polities and ends with the severance of colonial ties. It combines an overview of the political economy of the region over three centuries with a study of how social

groups interacted among themselves and with imperial rule over time through accommodation and conflict. We pay special attention to comparisons and contrasts -- centers and frontiers of settlement, urban and rural life, indigenous and African populations, religion and transgression, Portuguese and Spanish models of rule - - and to long-term processes and implications of environmental change.

Schedule: 11:00 am - 11:50 am T Th

HIS 314 Precolonial Africa

Professor: Emmanuel H. Kreike

Description: The course explores the rich history of the African continent before colonial occupation during the 19th century. It concentrates on people and civilizations indigenous to Africa, focusing on ancient civilizations as well as on the expanse of Islam and the Atlantic slave trade. Travelers' accounts, epics, and archaeological evidence reveal diversity of African culture.

Schedule: 11:00 am - 12:20 pm T Th

HIS 343 The Civilization of the Early Middle Ages

Professor: Helmut Reimitz

Description: This course will survey the "Dark Ages" from the end of the Roman Empire to the end of the first millennium (ca. 400-1000 AD), often seen as a time of cultural and political decline, recently even labelled as the "end of civilization". The complex political and social landscape of the Roman Empire, however, had more to offer than just to end. This course will outline how early medieval people(s) in the successor states of the Roman Empire used its resources to form new communities and will suggest to understand the "Dark Ages" as a time of lively social and cultural experimentation, that created the social and political frameworks of Europe.

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

HIS 359 Modern Jewish History: 1750-Present

Professor: Yaacob Dweck

Description: This course explores the breadth of Jewish history from the Enlightenment to the 20th century, tracing the development of Jewish communities in Europe, the Middle East, and the United States against the background of the Holocaust. The lectures focus on themes such as the evolution of Jewish identity, the creation of modern Jewish politics, the impact of anti-semitism, and the founding of the State of Israel.

Schedule: 11:00 am - 12:20 pm M W

HIS 364 France and its Empire from the Renaissance to Napoleon, 1500-1815

Professor: David A. Bell

Description: A survey of France and its colonial empire during centuries in which this country dominated the Western world. Major topics include the sixteenth-century Wars of Religion, the absolute monarchy, colonization and slavery in North America and the Caribbean, the Enlightenment, eighteenth-century social and cultural change, the French Revolution and the Terror, the Haitian Revolution, and the Napoleonic Empire.

Schedule: 1:30 pm - 2:50 pm T Th

HIS 373 Democracy and Slavery in the New Nation
Professor: Robert S. Wilentz

Description: An interpretive history of the United States from the ratification of the Constitution to the coming of the Civil War. The course will cover politics and social development, while emphasizing focused reading of primary documents. Topics will include the debate over the Federal Constitution, the presidency of Thomas Jefferson, the rise of cotton slavery, Jacksonian democracy and the growth of political parties, antislavery and reform, westward expansion, and the growing social and political divisions between North and South.

Schedule: 10:00 am - 10:50 am T Th

HIS 380 U.S. Foreign Relations
Professor: Joseph M. Fronczak

Description: This course covers the history of US foreign relations from the American revolution to the present day. Lectures take up questions of diplomacy, foreign policy, ideology and culture, empire and anti-imperialism, and revolution and counterrevolution. Precepts emphasize primary sources, from the writings of Tom Paine, George Washington, William Jennings Bryan, Ho Chi Minh, Phyllis Schlafly, Elaine Scarry, and more.

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

HIS 383 The United States, 1920-1974
Professor: Kevin M. Kruse

Description: The history of modern America, with particular focus on domestic political and social changes. Topics include the Roaring 20s; the Great Depression and the New Deal; the homefront of World War II and the Cold War; the civil rights movement and the Great Society; the Vietnam War; the sexual revolution; the Silent Majority, the Nixon administration, and Watergate.

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

HIS 388 Unrest and Renewal in Urban America
Professor: Alison E. Isenberg

Description: For centuries cities have embodied U.S. hopes and fears, symbolizing ideals of democratic melting pots and cultural innovation, as well as urban "problems" and crisis. Urban life distilled extremes like rich and poor; parks and skyscrapers; philanthropy and greed; racial and ethnic divides; violence and hope; center and suburb. By producing contrasts and conflicts, cities brokered transformation, rebellion and renewal. Course covers social life, politics, economy, revolutionary ideologies, culture, race, gender, and the built environment--from the colonial era to the present.

Schedule: 11:00 am - 11:50 am T Th

ITALIAN

ITA 303 Dante's "Inferno"
Professor: Simone Marchesi

Description: Intensive study of the "Inferno", with major attention paid to poetic elements such as structure, allegory, narrative technique, and relation to earlier literature, principally the Latin classics. Course conducted in English.

Schedule: 1:30 pm - 3:20 pm M

ITA 311 Topics in 19th-Century Italian Literature - Risorgimento, Opera, Film
Professor: Gaetana Marrone-Puglia

Description: This course will explore the ways in which national identity was imagined and implemented within Italian literature, culture, and cinema before, during, and after the period of Italian unification in the mid-XIX century. Examples are drawn from a wide range of literary, artistic and cultural media.

Schedule: 12:30 pm - 1:20 pm Th

PROGRAM IN LINGUISTICS

LIN 201 Introduction to Language and Linguistics
Professor: Christiane D. Fellbaum

Description: 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. Topics include the biological basis of language, language and cognition, the neurology of language and language disorders, and first and second language acquisition.

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

LIN 250 Language in Its Contexts
Professor: Laura Kalin

Description: This course investigates language in its social, cultural, political, and historical contexts. Does your native language influence your perception, your behavior, and your culture? How does your identity influence properties of your language? What happens when unrelated languages come into contact for prolonged periods? How are new languages born? Why isn't English the official language of the United States, and should it be? We will explore these questions (and more) by engaging with the often contradictory opinions of specialists and the public, as well as with the empirical realities behind these different language situations.

Schedule: 3:00 pm - 4:20 pm T Th

LIN 302 Syntax

Professor: Byron T. Ahn

Description: Syntax is the aspect of human language involved in building phrases out of words. How do words combine - like beads on a string? Are words the smallest building blocks of phrases? How can we make predictions about what is possible and impossible in these structures? This course aims to answer these questions while focusing on the methods linguists use to analyze natural language expressions. Explorations of some universal properties of language structures, as well as the ways in which those structures can vary. Strong emphasis on building and testing hypotheses on the basis of both language data and foundational principles of the field.

Schedule: 1:30 pm - 2:50 pm M W

LIN 310 Intonation: Melody in Language

Professor: Byron T. Ahn

Description: What is intonation? How can we measure it, transcribe it, and analyze it? This class focuses on American English melodic patterns, addressing questions such as: What is the difference between Mandarin-style tone and English-style intonation? Do all questions have the same intonation? How do you pronounce a comma? What does it mean to stress a word? Students learn how to analyze prosodic data (intonation, phrasing, and prominence) using laboratory methods, computer software, and standard annotation conventions. After analyzing the American English intonational system, we compare it to melodic systems of other languages of the world.

Schedule: 3:00 pm - 4:20 pm M W

MECHANICAL AND AEROSPACE ENGINEERING

MAE 221 Thermodynamics

Professors: Daniel M. Nosenchuck, Michael

Vocaturro

Description: Heat and work in physical systems. Concepts of energy conversion and entropy, primarily from a macroscopic viewpoint. Efficiency of different thermodynamic cycles, with applications to everyday life including both renewable and classical energy sources. In the laboratory, students will carry out experiments in the fields of analog electronics and thermodynamics.

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

MAE 223 Modern Solid Mechanics

Professor: Andrej Kosmrlj

Description: Fundamental principles of solid mechanics: equilibrium equations, reactions, internal forces, stress, strain, Hooke's law, torsion, beam bending and deflection, and analysis of stress and deformation in simple structures. Integrates aspects of solid mechanics that have applications to mechanical and aerospace structures (engines and wings), as well as to microelectronic and biomedical devices (thin films and artificial hearts). Topics include stress concentration, fracture, plasticity, and thermal expansion. The course synthesizes descriptive observations, mathematical theories, and engineering consequences.

Schedule: 11:00 am - 12:20 pm T Th

MAE 228 Energy Technologies in the 21st Century

Professor: Jay B. Benziger

Description: This course will deal with issues of regional and global energy demands, sources, carriers, storage, current and future technologies and costs for energy conversion, and their impact on climate and the environment. Students will learn to perform objective cost-efficiency and environmental impact analyses from source to end-user on both fossil fuels (oil, coal, and natural gas), and alternative energy sources (bio-fuels, solar energy, wind, batteries, and nuclear). We will also pay particular attention to energy sources, technologies, emissions, and regulations for transportation. The course will also include tours to energy research labs.

Schedule: 11:00 am - 12:20 pm M W

MAE 305 Mathematics in Engineering I

Professor: Howard A. Stone

Description: A treatment of the theory and applications of ordinary differential equations with an introduction to partial differential equations. The objective is to provide the student with an ability to solve standard problems in this field.

Schedule: 11:00 am - 11:50 am M W F

MAE 321 Engineering Design**Professor:** Glenn A. Northey

Description: This course introduces the technical foundations and basic processes of Mechanical Design, which are appropriate for the design of both mechanical systems, and components. The emphasis is on designing for the complete product life-cycle. Topics in parametric design and design optimization are also presented. Basic techniques in Computer Aided Design (CAD) and Manufacturing (CAM) are first introduced in the classroom, and then reinforced and expanded in the laboratory.

Schedule: 10:00 am - 10:50 am M W F**MAE 324 Structure and Properties of Materials****Professor:** Craig B. Arnold

Description: Relates to the structures, properties, processing and performance of different materials including metals, alloys, polymers, composites, and ceramics. This course also discusses how to select materials for engineering applications. This course satisfies the MAE departmental requirement in materials as well as the MSE certificate core requirement.

Schedule: 1:30 pm - 2:50 pm M W**MAE 345 Robotics and Intelligent Systems****Professor:** Robert F. Stengel

Description/Objectives: This course provides students with a working knowledge of methods for design and analysis of robotic and intelligent systems. Particular attention is given to modeling dynamic systems, measuring and controlling their behavior, and making decisions about future courses of action. Topics include system modeling and control, principles of decision-making, Monte Carlo evaluation, genetic algorithms, simulated annealing, neural networks, and expert systems.

Schedule: 3:00 pm - 4:20 pm T Th**MAE 423 Heat Transfer****Professor:** Daniel M. Nosenchuck

Description: This course will cover fundamentals of heat transfer and applications to practical problems in energy conversion and conservation, electronics, and biological systems. Emphasis will be on developing a physical and analytical understanding of conductive, convective, and radiative heat transfer, as well as design of heat exchangers and heat transfer systems involving phase change in process and energy applications. Students will develop an ability to apply governing principles and physical intuition to solve multi-mode heat transfer problems.

Schedule: 8:30 am - 9:50 am T Th**MAE 433 Automatic Control Systems****Professor:** Michael G. Littman, Jonathan D. Prevost, Clarence W. Rowley

Description: To develop an understanding of feedback principles in the control of dynamic systems, and to gain experience in analyzing and designing control systems in a laboratory setting.

Schedule: 11:00 am - 12:20 pm T Th**MATHEMATICS****MAT 203 Advanced Vector Calculus****Professor:** Hansheng Diao

Description: Vector spaces, limits, derivatives of vector-valued functions, Taylor's formula, Lagrange multipliers, double and triple integrals, change of coordinates, surface and line integrals, generalizations of the fundamental theorem of calculus to higher dimensions. More abstract than 201 but more concrete than 218.

Schedule: 12:30 am - 1:20 am M W F**MAT 321 Numerical Methods****Professor:** Nicolas Boumal

Description: Introduction to numerical methods with emphasis on algorithms, applications and numerical analysis. Topics covered include solution of nonlinear equations; numerical differentiation, integration, and interpolation; direct and iterative methods for solving linear systems; numerical solutions of differential equations; two-point boundary value problems; and approximation theory. Lectures are supplemented with numerical examples using MATLAB.

Schedule: 1:30 pm - 2:50 pm T Th**MAT 340 Applied Algebra****Professor:** Christine J. Taylor

Description: An applied algebra course that integrates the basics of theory and modern applications for students in MAT, APC, PHY, CBE, COS, ELE. This course is intended for students who have taken a semester of linear algebra and who have an interest in a course that treats the structures, properties and application of groups, rings, and fields. Applications and algorithmic aspects of algebra will be emphasized throughout.

Schedule: 3:00 pm - 4:20 pm T Th

MOLECULAR BIOLOGY

MOL 214 Introduction to Cellular and Molecular Biology

Professor(s): Zemer Gitai, Daniel A. Notterman, Heather A. Thieringer

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

Schedule: 11:00 am - 12:20 pm M W

MOL 345 Biochemistry

Professor: Frederick M. Hughson

Description: Fundamental concepts of biomolecular structure and function will be discussed, with an emphasis on principles of thermodynamics, binding and catalysis. A major portion of the course will focus on metabolism and its logic and regulation.

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

MOL 433 Biotechnology

Professor: Jane Flint

Description: This course will consider the principles, development, outcomes and future directions of therapeutic applications of biotechnology, with particular emphasis on the interplay between basic research and clinical experience. Topics to be discussed include production of hormones and other therapeutic proteins, gene therapy, oncolytic viruses, and stem cells. Reading will be from the primary literature.

Schedule: 1:30 pm - 2:50 pm M W

MOL 459 Viruses: Strategy and Tactics

Professor: Lynn W. Enquist

Description: Viruses are unique parasites of living cells and may be the most abundant, highest evolved life forms on the planet. The general strategies encoded by all known viral genomes are discussed using selected viruses as examples. The first half of the course covers the molecular biology (the tactics) inherent in these strategies. The second half introduces the biology of engagement of viruses with host defenses, what happens when viral infection leads to disease, vaccines and antiviral drugs, and the evolution of infectious agents and emergence of new viruses.

Schedule: 11:00 am - 11:50 am M W F

MUSIC

MUS 103 Introduction to Music

Professor: Greg Smith

Description/Objectives: Music 103 is an introduction to Western Art Music (works from 1100 to the present). The course defines the basic elements of music - pitch, rhythm, melody, harmony, and form - and the historically significant styles and genres of composition. Emphasis is placed on significant premiere performances, music and politics, and music and the other arts (film, dance, literature).

Schedule: 1:30 pm - 2:20 pm M W

MUS 240 Musical Modernism 1890-1945

Professor: Simon A. Morrison

Description: This course is an overview of modernism in European and Euro-American art music, including movements such as symbolism, expressionism, and neoclassicism. We will listen to music of- among others- Bartok, Berg, Copland, Debussy, Ives, Mahler, Milhaud, Satie, Schoenberg, Scriabin, Stravinsky, and Varèse. Topics will include introduction to a wide variety of musical languages and forms, as well as different cultural contexts for music making (music and ethnicity, music's relation to other art forms such as dance and visual art, music and politics).

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

NEAR EASTERN STUDIES

NES 201 Introduction to the Middle East

Professor: Michael A. Cook

Description: A sweep through Middle Eastern history, globally contextualized. Weeks 1-6 treat the rise of Islam, the Caliphate, the Ottoman Empire, 19th-century reforms, European imperialism, and globalization in the region. Weeks 7-12 focus on state-society relations, ideologies and cultures, and foreign actors in the 20th/21st centuries. You will come away with a basic grasp of the region's past and present and its mix of idiosyncrasies and global links.

Schedule: 11:00 am - 11:50 am T Th

NES 240 Muslims and the Qur'an

Professor: Muhammad Q. Zaman

Description: A broad-ranging introduction to pre-modern, modern, and contemporary Islam in light of how Muslims have approached their foundational religious text, the Qur'an. Topics include: Muhammad and the emergence of Islam; theology, law and ethics; war and peace; mysticism; women and gender; and modern debates on Islamic reform. We shall examine

the varied contexts in which Muslims have interpreted their sacred text, their agreements and disagreements on what it means and, more broadly, their often competing understandings of Islam and of what it is to be a Muslim.

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

NEUROSCIENCE

NEU 201 Fundamentals of Neuroscience

Professor: Lisa M. Boulanger

Description: An intensive introduction to fundamental topics in neuroscience, including neuronal excitability, synaptic physiology, neural networks, and circuits that mediate perception, action, emotion, and memory. We will examine neuroscience at scales ranging from single neurons, to the activity of small sets of neurons, to the organization of brain and behavior. The course will address broad questions including: How does information enter the brain? What neural pathways transmit these signals? How is information processed and used to construct an internal model of reality? How does the brain choose and execute the correct behavioral response?

Schedule: 1:30 pm - 2:50 pm T Th

OPERATIONS RESEARCH AND FINANCIAL ENGINEERING

ORF 245 Fundamentals of Statistics

Professor: Jianqing Fan

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 and classification. Applicability and limitations of these methods will be illustrated using a variety of modern real world data sets and manipulation of the statistical software R.

Schedule: 3:00 pm - 4:20 pm M W

ORF 363 Computing and Optimization for the Physical and Social Sciences

Professor: Amir Ali Ahmadi

Description: An introduction to several fundamental and practically-relevant areas of modern optimization and numerical computing. Topics include computational linear algebra, first and second order descent methods, convex sets and functions, basics of linear and semidefinite programming, optimization for statistical regression and classification, and techniques for dealing with uncertainty and intractability in optimization problems. Extensive hands-on

experience with high-level optimization software. Applications drawn from operations research, statistics and machine learning, economics, control theory, and engineering.

Schedule: 1:30 pm - 2:50 pm T Th

ORF 405 Regression and Applied Time Series

Professor: Rene A. Carmona

Description/Objectives: Regression: linear, nonlinear, nonparametric. Quantile regression. Time series: classical linear models, univariate and multivariate; elements of spectral analysis; stochastic volatility models (ARCH, GARCH,); dynamic factor models

Schedule: 3:00 pm - 4:20 pm M W

ORF 435 Financial Risk Management

Professor: John M. Mulvey

Description/Objectives: This course covers the basic concepts of modeling, measuring and managing financial risks. Topics include portfolio optimization in the mean-variance and expected utility sense, interest rate risk, credit risk, risk measures, systemic risk. Algorithms from machine learning are introduced and linked to the stochastic planning models.

Schedule: 1:30 pm - 2:50 pm T Th

ORF 455 Energy and Commodities Markets

Professor: Ronnie Sircar

Description: This course is an introduction to commodities markets (energy, metals, agricultural products) and issues related to renewable energy sources such as solar and wind power, and carbon emissions. Energy and other commodities represent an increasingly important asset class, in addition to significantly impacting the economy and policy decisions. Emphasis will be on the term structure of commodity prices: behavior, models and empirical issues

Schedule: 1:30 pm - 2:50 pm F

ORF 467 Transportation Systems Analysis

Professor: Alain L. Kornhauser

Description: Studied is the transportation sector of the economy from a technology and policy planning perspective. The focus is on the methodologies and analytical tools that underpin policy formulation, capital and operations planning, and real-time operational decision making within the transportation industry. Case studies of innovative concepts such as "value" pricing, real-time fleet management and control, GPS-based route guidance systems, automated transit systems and autonomous vehicles will provide a practical focus for the methodologies. Class project in lieu of final exam focused on major

issue in Transportation Systems Analysis.

Schedule: 1:30 pm - 2:50 pm M W

PHILOSOPHY

PHI 203 Introduction to Metaphysics and Epistemology

Professor: Gideon A. Rosen

Description/Objectives: An introduction to central questions of philosophy. Topics include: The rationality of religious belief, our knowledge of the external world, freedom of the will and the identity of persons over time.

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

PHI 306 Nietzsche

Professor: Alexander Nehamas

Description: An examination of Nietzsche's central views, including the role of tragedy, the place of science, the eternal recurrence, the will to power, and the primacy of the individual. We will also examine Nietzsche's ambiguous attitude toward philosophy and his influence on literature and criticism.

Schedule: 1:30 pm - 2:20 pm T Th

PHI 319 Normative Ethics

Professor: Johann D. Frick

Description: Normative ethics is the systematic study of what is morally right or wrong, good or bad, and why. In Part 1 of this course, we will examine a number of rival moral theories that provide answers to these questions. We will contrast consequentialist moral theories with various non-consequentialist alternatives, and investigate their respective strengths and weaknesses. In Part 2, we will look at a number of practical issues, often connected to the broader theoretical debates examined in Part 1. These will include: liberty and paternalism; the value of distributive equality; the ethics of risk imposition; and the moral status of future persons.

Schedule: 11:00 am - 11:50 am T Th

PHI 337 Relativism

Professor: Charles M. Harm

Description: The various kinds of relativism: cultural beliefs concerning matters of fact; epistemic relativism, deriving from claims about the existence of distinct and, perhaps, incompatible conceptions of truth; something called "epistemic relativism"; the relativism of various kinds of truth. The common structure of the various relativisms--and explore whether relativism in any of these domains is

plausible.

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

PHI 340 Philosophical Logic

Professor: John P. Burgess

Description: An introduction to non-classical formal logics: temporal, modal, conditional, relevantistic, intuitionistic.

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

PHI 380 Explaining Values

Professor: Michael Smith

Description: This course will examine the way in which evaluations permeate our understanding of human action, agency, and responsibility, and what exactly such evaluations amount to. We will approach these issues primarily from a philosophical perspective, but where appropriate this will be augmented by scientific and social scientific perspectives. Topics to be covered include self-control, addiction, weakness of the will, and obedience to authority.

Schedule: 3:30 pm - 4:20 pm M W

POLITICS

POL 220 American Politics

Professor: Paul Frymer, Sarah L. Staszak

Description: An introduction to the institutions and political processes of American government and democracy. Topics will include the Constitution and American political tradition, federalism, political institutions, elections and representation, interest groups and social movements, civil rights and liberties, and the politics of public policy.

Schedule: 10:00 am - 10:50 am T Th

POL 301 Ancient and Medieval Political Theory

Professor: Giovanni Giorgini

Description: A study of the great works of political theory in four periods: ancient Greece, including Athenian democracy, Thucydides, Plato and Aristotle; ancient Rome from republic to empire, including Polybius, Cicero, Seneca, and Marcus Aurelius; medieval Christian political thought in Augustine, Aquinas, Marsilius, and others; and a brief survey of Renaissance meditations on classical themes. Fundamental topics are examined, including nature and convention; constitutional analysis, including democracy, oligarchy, tyranny, kingship, and the mixed constitution; property, virtue, law, and republicanism; church and state; consent and representation.

Schedule: 11:00 am - 11:50 am T Th

POL 313 Global Justice

Professor: Charles R. Beitz

Description: What, if any, norms of justice apply to the institutions and practice of world politics? Topics may include "political realism" and skepticism about global morality; just wars and justice in warfare; ethics of humanitarian intervention; the nature and basis of human rights; world poverty and global distributive justice; climate change; democracy and accountability in global institutions. Readings chosen from recent works in political philosophy.

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

POL 315 Constitutional Interpretation

Professor: Robert P. George

Description: A study of the structure of the American constitutional system and of the meaning of key constitutional provisions. Students will critically evaluate competing theories of, and approaches to, constitutional interpretation.

Schedule: 11:00 am - 12:20 pm T

POL 319 History of African American Political Thought

Professor: Desmond D. Jagmohan

Description: This course explores central themes and ideas in the history of African American political thought: slavery and freedom, solidarity and sovereignty, exclusion and citizenship, domination and democracy, inequality and equality, rights and respect. Readings will be drawn, primarily, from canonical authors, including Harriet Jacobs, Frederick Douglass, Martin Delany, Booker T. Washington, Anna Julia Cooper, Ida B. Wells, W. E. B. Du Bois, Marcus Garvey, Ralph Ellison, Kwame Ture and Charles Hamilton, and Martin Luther King, Jr. This is an introductory course, which emphasizes both thematic and historical approaches to political theory.

Schedule: 2:30 pm - 3:20 pm M W

POL 327 Mass Media and American Politics

Professor: Andrew Guess

Description: This course considers the role of the mass media in American politics and the influence of the media on Americans' political attitudes, beliefs, and behaviors. We will examine the nature of news and news making organizations, the role of the news media in electoral campaigns, how the media shape the behavior of politicians once in office, political advertising, and the impact of the media on Americans' political attitudes.

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

POL 345 Introduction to Quantitative Social Science

Professors: Marc Ratkovic, Matthew J. Salganik

Description: Would universal health insurance improve the health of the poor? Do patterns of arrests in US cities show evidence of racial profiling? What accounts for who votes and their choice of candidates? This course will teach students how to address these and other social science questions by analyzing quantitative data. The course introduces basic principles of statistical inference and programming skills for data analysis. The goal is to provide students with the foundation necessary to analyze data in their own research and to become critical consumers of statistical claims made in the news media, in policy reports, and in academic research.

Schedule: 3:30 pm - 4:20 pm M W

POL 349 Political Economy

Professor: German S. Gieczewski

Description: Examines the role of political institutions in facilitating or hindering economic prosperity. We start with the basic tools of political economy - collective action, elections, and delegation. These tools are then applied to the problems of controlling rulers, and the persistence of inefficiency.

Schedule: 9:00 am - 9:50 am T Th

POL 351 The Politics of Development

Professor: Jennifer A. Widner

Description: This course investigates the key political drivers of economic development and human welfare. It explores the effects of geography, historical legacies, policy, incentive design, and institutional capacity on standards of living, including vulnerability to disease and climate risk. Uses theory, comparison, and case studies to motivate discussion.

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

POL 362 Chinese Politics

Professor: Rory Truex

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: 10:00 am - 10:50 am T Th

POL 385 International Political Economy

Professor: Faisal Z. Ahmed

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: 2:30 pm - 3:20 pm M W

POL 387 International Intervention and the Use of Force

Professor: Melissa M. Lee

Description: This lecture course examines the politics of armed international intervention. Because the United States is uniquely positioned to intervene abroad militarily, the course approaches intervention primarily from an American lens. The aims of the course are threefold. First, we will discuss the domestic and international determinants of the decision to use force, as well as different justifications for intervention abroad. Second, we will assess the record of intervention in several post-Cold War cases. Third, we will consider the criteria for thinking about when the United States should intervene with military force.

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

PSYCHOLOGY

PSY 101 Introduction to Psychology

Professor: Joel Cooper

Description: The study of human nature from the viewpoint of psychological science. Topics range from the biological bases of human perception, thought and action to the social-psychological determinants of individual and group behavior. This course can be used to satisfy the science and technology with laboratory general education requirement.

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

PSY 207 Psychopathology

Professor: Megan E. Spokas

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: 10:00 am - 10:50 am M W

PSY 309 Psychology of Language

Professor: Adele E. Goldberg

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: 11:00 am - 12:20 pm M W

PSY 340 Neuroeconomics

Professor: Nathaniel D. Daw

Description: Decision-making is ubiquitous to everyday life and crucial to survival. Good choice is subject to evolutionary selection; poor choice accompanies many neurological and psychiatric disorders. But theoretical understanding of a function is needed to manipulate and measure it experimentally. Recently, this has led scientists studying choice to seek insights from economics. This course explores how humans and animals make decisions, focusing on how psychological and neural mechanisms implement, or fail to implement, economic theories of choice. We consider choice in many sorts of tasks; eg, in animal foraging and human competitive interactions.

Schedule: 11:00 am - 12:20 pm T Th

PSY 345 Sensation and Perception

Professor: Jonathan W. Pillow

Description: This course will provide an introduction to the scientific study of sensation and perception, the biological and psychological processes by which we perceive and interpret the world around us. We will undertake a detailed study of the major senses (vision, audition, touch, smell, taste), using insights from a variety of disciplines (philosophy, physics, computer science, neuroscience, psychology) to examine how these senses work and why. We will begin with physical bases for perceptual information (e.g., light, sound waves) and proceed to an investigation of the structures, circuits, and mechanisms by which the brain forms sensory percepts.

Schedule: 10:00 am - 10:50 am T Th

RELIGION

REL 225 The Buddhist World of Thought and Practice

Professor: Jacqueline I. Stone

Description: This course surveys the development of Buddhism from its beginnings in India through some of its later forms in East Asia, Tibet, and the West. Attention will be given to continuity and diversity within Buddhism, its modes of self-definition as a religious tradition, the interplay of its practical and trans-worldly concerns, and its transformations in specific historical and cultural settings.

Schedule: 1:30 pm - 2:20 pm M W

REL 252 Jesus: How Christianity Began

Professor: Elaine H. Pagels

Description: How did the movement that began with a few followers of Jesus of Nazareth become a world religion? We will investigate the earliest primary sources, gospels and historical accounts, Jewish and Roman, showing what was known about Jesus--including secret gospels; letters written to and from Roman emperors about whether to kill Christians in order to stop the movement; trial accounts, prison diaries, and martyrdoms; what Jesus and Paul said about sexual practices and gender; what converts said about why they chose Christianity, despite the dangers; how emperor Constantine--and his allies shaped Christianity as we know it today.

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

REL 271 "Cult" Controversies in America

Professor: Judith Weisenfeld

Description: In this course we examine a variety of new religious movements that tested the boundaries of acceptable religion at various moments in American history. We pay particular attention to government and media constructions of the religious mainstream and margin, to the politics of labels such as "cult" and "sect," to race, gender, and sexuality within new religions, and to the role of American law in constructing categories and shaping religious expressions. We also consider what draws people to new religions and examine the distinctive beliefs, practices, and social organizations of groups labeled by outsiders as "cults."

Schedule: 10:00 am - 10:50 am T Th

REL 293 The Theology of Thomas Aquinas

Professor: Denys A. Turner

Description: The course is to serve as an introduction to the theology of one of the greatest minds in the Western Christian tradition, Thomas Aquinas (1224/5-1274). Based on his most systematic work, the Summa Theologiae as the main source, the course will cover

some of the central themes of his theology, mainly through readings of the primary source itself, and some secondary readings. Thomas Aquinas has in recent decades become a source common to most of the mainstream Christian theological traditions. Aquinas is an essential resource for any who simply want to study a dominating intellectual force within the wider cultures of the Western middle ages.

Schedule: 12:30 pm - 1:20 pm T Th

SLAVIC LANGUAGES AND LITERATURES

SLA 219 Pushkin, Gogol, Dostoevsky: Introduction to the Great Russian Novel

Professor: Michael A. Wachtel

Description: A study in English of masterpieces of Russian literature from the late eighteenth to the mid-nineteenth century. The focus of the course is on close readings of individual works. At the same time, we will pay close attention to the way a distinctively Russian national tradition is created, in which writers consciously respond to the works of their predecessors. No previous knowledge of Russian language, history, or culture is expected.

Schedule: 1:30 pm - 2:20 pm T Th

SOCIOLOGY

SOC 210 Urban Sociology: The City and Social Change in the Americas

Professor: Patricia Fernandez-Kelly

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

SOC 211 Sociology of Religion

Professor: Margarita A. Mooney

Description/Objectives: The sociology of religion asks questions about what people believe, how religion is organized, and how religion affects various aspects of social life. Understanding religion's changing role in society, along with all of its diverse manifestations, represents the central purpose of this class. Along the way, we will explore religion from a

variety of different vantage points within the social sciences, and consider the influence of religion in different areas of social life including the family, race, immigration, and politics.

Schedule: 2:30 pm - 3:20 pm T Th

SOC 227 Race and Ethnicity

Professor: Patricia Fernandez-Kelly

Description: Our goal in this course is (a) to understand various definitions of race and ethnicity from a theoretical perspective and in a plurality of contexts and (b) to account for the rise of ethnicity and race as political and cultural forces in the age of globalization. Why are ethnic and racial delimitations expanding in areas of the world where such distinctions were formerly muted? Is race and racial discrimination all the same regardless of geographical region? What are the main theories and methodologies now available for the study of race and ethnicity from a comparative point of view? These are among the questions our course aims to answer.

Schedule: 10:00 am - 10:50 am T Th

SOC 300 Claims and Evidence in Sociology

Professor: Adam M. Goldstein

Description: This is a course on the logic and practice of social research. We explore how sociologists apply a specific approach of inquiry we call 'science' to explain social behavior. Students will learn to formulate tractable research questions and answer them using various combinations of theory, methods, and data. Topics include macro-comparative analysis, field experiments, text analysis, structured interviews, decomposition, simulation, and event studies. We will also grapple with conceptual issues including levels of analysis, causality, respondent reliability, model sensitivity, scope conditions, and inductive vs deductive modes of inquiry.

Schedule: 1:30 pm - 2:20 pm T Th

PROGRAM IN SPANISH

SPA 350 Topics in Latin American Cultural Studies: Spectacles of Nature: Patagonia and the Tropics

Professor: Maria Gabriela Nouzeilles

Description: What is nature? How is it perceived, modified, destroyed, and represented in history and culture? This course explores these questions in relation to the location of Latin American nature in modernity, through travelogues, literature, photography, and film. Focusing on legendary Patagonia and the Tropics, we'll examine the interplay between the two opposite images that have dominated

modern perceptions of 'extreme' nature (and the peoples associated with it): the idea of nature as a monstrous being that has to be tamed for the sake of progress, and the idea of nature as the lost object of modern nostalgia and environmental ethos.

Note: This course is taught in Spanish.

Schedule: 1:30 pm - 2:50 pm M

PROGRAM IN URBAN STUDIES

URB 200 Urbanism and Urban Policy

Professor: Douglas S. Massey

Description: Introduces students to social scientific thinking on cities and urbanism and then builds on this base to consider and evaluate various approaches to urban policy.

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

WOODROW WILSON SCHOOL

WWS 302 International Development

Professor: Jeffrey Hammer

Description: This course will focus on less developed countries and will consider topics such as economic growth and personal well-being; economic inequality and poverty; intra-household resource allocation and gender inequality; fertility and population change, credit markets and microfinance; labor markets and trade policy. The course will tackle these issues both theoretically and empirically.

Schedule: 11:00 am - 12:20 am M W

WWS 307 Public Economics

Professor: Elizabeth C. Bogan

Description: The role of government in promoting efficiency and equity in the U.S. economy. Conditions when markets fail to be efficient. Problems with government allocation of resources. Economic analysis and public policies regarding health care, education, poverty, the environment, financial regulations and other important issues.

Schedule: 3:30 pm - 4:20 pm T Th

WWS 340 The Psychology of Decision Making and Judgment

Professor: Eldar Shafir

Description: An introduction to the logic and research findings underlying decision-making and judgment under uncertainty. The focus is on the contrast between the normative theory of judgment and choice, and the psychological principles that guide decision

behavior, often producing biases and errors. Among other topics, we will consider political, medical, and financial decision-making, poverty, negotiations, and the law, along with the implications of the findings for the rational agent model typically assumed in economics, throughout the social sciences, and in policy making.

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

WWS 370 Ethics and Public Policy

Professor: Stephen J. Macedo

Description: The course examines major moral controversies in public life and differing conceptions of justice and the common good. It seeks to help students develop the skills required for thinking and writing about the ethical considerations that ought to shape public institutions, guide public authorities, and inform the public's judgments. The course will focus on issues that are particularly challenging for advanced, pluralist democracies such as the USA, including justice in war, terrorism and torture, paternalism, markets and distributive justice, immigration, the law of marriage and the place, if any, of religious arguments in politics.

Schedule: 11:00 am - 11:50 am T Th