

Freshman Seminars Spring 2003

Sector I: Society

People of Modern Egypt **NEW**

Heather Sharkey, Assistant Professor for Asian and Middle Eastern Studies

During the past hundred years, Egypt has been the cultural and political pacesetter in the Middle East. It has been on the cutting edge of developments in Arabic literature, movies, and music, and has produced intellectual leaders ranging from feminists to Muslim activists. In the 1950s and '60s, the Egyptian president Gamal Abdel Nasser inspired the pan-Arab movement and at the same time made his country a central player in postcolonial Africa. Meanwhile, Egypt led the Arab countries in opposing the state of Israel until breaking ranks in 1978 to sign peace accords at Camp David. In this class, we will approach the history of twentieth-century Egypt through the lives of a spectrum of its peoples, including Muslims, Christians, and Jews; presidents and peasants; singers, writers, and radical thinkers. Along the way we will examine the social pressures that have inspired modern Egyptian revolutionaries and militants, and attempt to explain the reasons for the country's continuing prominence in the Arab and Muslim worlds. (Distribution I: Society)

AMES (465) 037.301 Tuesday 3:00 - 6:00

Women and Family in the Ancient Near East **NEW**

Tonia Sharlach, Lecturer in Asian and Middle Eastern Studies

History, especially ancient history, is often written as the deeds of kings and elite males. But how did the majority of the population, men and women, live in the ancient Middle East? What were the basic family units and where and how did they live? What were their legal rights and religious beliefs? How did institutions such as temples and palaces impact on their lives, and how much freedom did they have? In this class we will work from ancient texts in translation to follow ancient women and men through the course of their lives, from cradle to grave, and explore their experiences of life at work and at home, love, marriage, and divorce, until death and beyond. (Distribution I: Society)

AMES (465) 048.401 or WSTD(677) 048.401 Tuesday & Thursday 1:30 - 3:00

Popular Culture In Africa

Sandra T. Barnes, Professor of Anthropology

This course concentrates on popular culture in sub-Saharan Africa. It examines the way people reflect on and represent various aspects and issues in their daily lives, in public media and through a diverse range of performative and creative outlets. It explores the way cultural traditions are created, promulgated and perpetuated. It looks at the way popular culture deals with pleasure and pain; identity, difference and diversity; wealth and power; modernity and history; gender relations; suppression, resistance and violence; and local versus global processes. In short, popular culture will serve as a window through which to observe contemporary life. (Distribution I: Society)

ANTH (025) 018.401 or AFST (010) 018.401 | Wednesday | 2:00 - 5:00

Cultural Clash NEW

Paula Sabloff, Lecturer in Anthropology

This course is designed to introduce students to anthropological approaches to social issues such as cultural survival, economic survival, socialization into capitalism and sometimes poverty, racism, marginality, and gender relations. We will read social theory (e.g., Karl Marx, Adam Smith, Michel Foucault, Jean-Jacques Rousseau, Pierre Bourdieu) relevant to the assigned ethnographic accounts of communities in other parts of the USA and around the world (focus on the USA, Latin America and Asia) and will broaden our understanding of these communities and social issues through various media (film, museum collections, and archival and Web material). As part of the Center for Community Partnerships, the class requires students to combine community service with original anthropological research (students will receive help in finding proper placement in an organization if they want help). Student research will be used to help determine whether or not (and how) the social issues that we read about are occurring in Philadelphia. (Distribution I: Society)

ANTH (025) 115.301 Tuesday 1:30 - 4:30

Issues in American Democracy NEW

Henry Teune, Professor of Political Science

A discussion of persisting and new issues in American democratic theory and practice. The topics covered will include not only freedom vs. equality, society vs. government, and local vs. national Government but also recent shaped by global change. They are the decline in citizenship/voting, global constraints on democratic choice, and global democratic pressures to change U.S. policies on Criminal punishment, education, and the environment. Special consideration will be given to the idea of "American exceptionalism". Readings will be both classical and contemporary. (Distribution I: Society)

PSCI (505) 009.301 Monday 2:00 - 5:00

Fascism NEW

Eileen Kennedy, Associate Professor of Political Science

In the 1950s JL Austin published a little book called, *How to do Things with Words*, that has since become a classic. Ayers noted that speaking is effecting, that words have an effect beyond their literal sense, and distinguished "boo" words from "hurrah" words. The point had been made many centuries earlier by Aristotle in the *Rhetoric*.

This class is about the political theory, historical context and factual past of an idea, "fascism" which became one of the most important mass movements of the 20th century. It is notoriously a "boo" word, and to speak (or the names of its personae) is usually to close off access to its political understanding, and to foreclose access to the past when it was present. Our cases will include the most famous: Italy, Germany and France, but extend to the "minor" fascisms of the Balkans in the inter-war period. Students should have a good general grasp of European history (or if not, be prepared to read-up the subject before the semester begins) and it would be helpful to have any of the languages. Texts will include biographies, sociological studies, and of course the writings of the fascists and their contemporary opponents.

(Distribution I: Society)

PSCI (505) 009.302 Tuesday 2:00 - 5:00

Perspectives on Inequality

Jerry Jacobs, Professor of Sociology

This course will study social stratification primarily in contemporary societies. We will examine both the distribution of social rewards as well as processes for the allocation of these rewards. Research on social mobility will be emphasized. Topics include the influence on individual success of education, race and gender, and structural and organizational factors. Course requirements are: 1) active participation in class discussions, including presenting one of the supplemental readings for the class; 2) a midterm exam; 3) one short essay discussing the readings; and 4) one project proposal. (Distribution I: Society)
SOCI (589) 041.301 | Tuesday & Thursday | 10:30 - 12:00

Sector II: History & Tradition

The Meanings of Things: Material Culture and Human Experience

Bruce E. Routledge, Assistant Professor of Anthropology

Human beings live in a world of things made by and for themselves. As product and commodity, material culture is central to economic activity; as art, symbol and treasure, it is central to intellectual, aesthetic and religious practices. This seminar will explore material culture as something people make and use in meaningful ways, as well as something that “makes” people as part of the setting for their daily lives. Readings, videos and hands-on demonstrations will form the basis for discussions of topics that range from the role of tool-use in human cognitive evolution to the assessment of value in the antique market. This seminar is particularly relevant for those interested in anthropology, archaeology, museum studies, marketing, design, architecture, popular culture, art history or social psychology. (Distribution II: History and Tradition)

ANTH (025) 127.301 | Tuesday & Thursday | 10:30 - 12:00

Exploring the Silk Road

Fredrik T. Hiebert, Assistant Professor of Anthropology

This class focuses on the history and archaeology of the infamous trade route across Asia called the Silk Road. We will explore such issues as what sparked people to begin long distance trade between China and the West—what was traded and why, and how did this trade affect the cultures along this fabled trail in Central Asia? We will read and discuss 18th and 19th century travelers’ accounts and current archaeological reports, and weave these into a history of the region that is returning to global importance. This is a general honors seminar intended for students seeking a somewhat greater intellectual challenge. (Distribution II: History and Tradition)

ANTH (025) 131.301 | Wednesday | 2:00 - 5:00

Scandal and the Body Politic in Modern Europe

Jennifer Milligan, Mellon Fellow in History

This course will examine the affairs, scandals, and sensational events that rocked and intrigued Europe and its empire in the long 19th century. Central to our investigation will be the question of “scandal” and politics—what makes for a scandal, and how do these events resonate in and shape the body politic? Beyond the historical narratives of scandals of the time, we will examine major themes such as the blurry boundaries of the public and private sphere; the power of sex and gender in defining scandal and politics; representations of interests and identity; censorship and battles over “public morality;” the mobilization of “outrage” against slavery; the rise of mass media and its critics; the marketplace and the economy of scandal; literature, art, and the shock of the modern; and fears of the public and mass democracy. We will look at primary sources, such as newspaper reports, novels, trial transcripts and other documentary evidence as well as current scholarly debates over the power of scandal and sensation to shape (or distort) political practice and debate in this crucial period. (Distribution II: History and Tradition)
HIST (317) 102.301 | Wednesday | 2:00 - 5:00

History of Education in America

Anita Gelburd, Assistant to the Deputy Provost and Lecturer in History

This course will examine the history of education and educational institutions in the United States from the 1600’s to the present. We will look at elementary, secondary and post-secondary education, with an emphasis on higher education in the post-Civil War era. In particular, we will discuss the cultural environment in which educational institutions function at different points in American history, and see how policy decisions about education interact with other sociological trends. (Distribution II: History and Tradition)

HIST (317) 104.301 | Tuesday & Thursday | 10:30 - 12:00

Epidemics in History

David Barnes, Associate Professor of History and Sociology of Science

Dramatic, deadly and terrifying in their brutal immediacy, outbreaks of epidemic disease have devastated and transformed human societies since the beginnings of recorded history. From the Black Death to cholera to aids, epidemics have wrought profound demographic, social, political and cultural change all over the world. Such is the power of their mystery and horror that while thousands die everyday in the United States from mundane illnesses such as heart disease or lung cancer, panic grips the land at the thought of a handful of deaths from seemingly exotic afflictions such as West Nile encephalitis and “weaponized” anthrax. Through a detailed analysis of specific historical outbreaks, this seminar will investigate the causes and effects of epidemic disease, and will examine the ways in which different societies in different eras have responded in times of crisis. (Distribution II: History and Tradition)

HSSC (321) 108.301 or HSOC (320) 108.301 | Tuesday | 1:30 - 4:30

Introduction to Philosophy

Toomas Puhvel, Lecturer in Philosophy

An introduction of such topics as our knowledge of the material world, the relation of mind and body, the existence of God, the nature of morality. Readings from historical and contemporary

sources. (General Requirement II: History and Tradition)
PHIL (493) 001.301 | Tuesday & Thursday | 12:00 - 1:30

Introduction to Philosophy

Kok-Chor Tan, Lecturer in Philosophy

An introductory survey of some central philosophical issues, including: Is there a God?, What is the relationship between the mind and the body?, Are free will and determinism incompatible?, Are there objective moral standards? Readings will be taken from both contemporary and historical sources. (General Requirement II: History and Tradition)
PHIL (493) 001.302 | Monday & Wednesday | 3:00 - 4:30

Introduction to Philosophy

Toomas Puhvel, Lecturer in Philosophy

An introduction of such topics as our knowledge of the material world, the relation of mind and body, the existence of God, the nature of morality. Readings from historical and contemporary sources. (General Requirement II: History and Tradition)
PHIL (493) 001.303 | Tuesday & Thursday | 3:00 - 4:30

Introduction to Philosophy

Lecturer in Philosophy

An introductory examination of four important philosophical topics: free will and determinism, arguments for and against the existence of God, skepticism and the nature of scientific reasoning and moral relativism. (General Requirement II: History and Tradition)
PHIL (493) 001.304 | Tuesday & Thursday | 1:30 - 3:00

Major Western Religious Thinkers: Muhammad

Barbara von Schlegell, Assistant Professor of Religious Studies

For Muslims, the Prophet Muhammad is the genealogical and spiritual heir to Abraham, the founder of Monotheism. He was chosen to bring the final revelation, the Qur'an, to the world. His life inspires millions with its perfections.

Secular historians look at the conditions of the Middle East in the 7th – 9th centuries. For them, the Qur'an and the teachings of Muhammad combined with unprecedented political and military successes to produce an Islamic world empire that then shaped the way Muhammad's life story would be told. In modern times Muhammad has been fashioned as the exemplar for a variety of movements: revolutions, democratic state formation, rationalistic religion, mysticism, even feminism. This seminar is an examination of translated sources and biographies from Muslim and non-Muslim observers of Muhammad and his mission. We also read recent critical academic studies of "the historical Muhammad." Guided discussion questions on the readings, occasional short response papers, and one long paper. (Distribution II: History and Tradition)

RELS (541) 113.401 or ames (465) 133.401 | Monday | 2:00 - 5:00

India in the Traveller's Eye: Encounters and Discoveries

Aditya Behl, Associate Professor of Religious Studies

This course is intended to introduce entering students to the motivations and experiences through which travelers have arrived at a knowledge of India, and thereby to interrogate the role of travel, trade and exploration in the discovery and colonization of India. It is also designed to train first-year students to read texts critically and to produce coherent arguments about them. The course is organized in five sections: 1) Ancient Travelers; 2) The World of the Indian Ocean; 3) Life at Court; 4) Colonial Encounters; and 5) Post-colonial Discoveries. We will begin with ancient travelers such as the Greeks and Fa-Hsien, then look at the marvelous accounts of Arab sailors and merchants in the India and China Seas, and then examine early European accounts of voyages to the Indies. We will examine the writings of colonial wanderers in search of the Indian picturesque, as well as the “great game” of empire and the complex liaisons and encounters between Indians and Europeans. We will end with Jawaharlal Nehru’s nationalist account of the discovery of India, as well as several post-colonial accounts of encounter and rediscovery.

(Distribution II: History and Tradition)

SARS (593) 010.401 or RELS (541) 010.401 | Monday | 2:00 - 5:00

Indians Overseas: A Global View

Surendra Gambhir, Senior Lecturer in South Asia Regional Studies

This course is about the history of Indian immigration into different parts of the world. The course will consist of readings, discussions, observations, data collection and analysis. The topics will include cultural preservation and cultural change through generations, especially in North America, the Caribbean, the United Kingdom and the African continent.

The course will encourage organized thinking, observations and analysis of components of culture that immigrant communities are able to preserve in the long run and cultural components that undergo change or get reinterpreted. In this context, we will look at entities such as religion, food, language and family. The course will include immigrants’ success stories, their contributions, their relationship with other groups in the new society and the nature and extent of their links with India. The course will also address conflict with other sections of the host society, including discrimination against and victimization of immigrants. Other issues will include new social and cultural concerns of immigrants and the rise of new community organizations such as temples and cultural organizations to address those issues. The course will benefit from the study of other immigrant communities around the world. This broader literature would allow students to see what is common across different immigrant groups and what might be specific to the East Indian communities. This course aims at involving students in discussions, enlightening them about different components of culture and drawing some general conclusions.

(Distribution II: History and Tradition)

SARS (593) 012.301 | Monday & Wednesday | 3:00 - 4:30

Crime and Punishment

Eric Schneider, Adjunct Associate Professor of History

How have definitions of crime and forms of punishment changed over time? What have been the uses and legacy of extra-legal violence? How have the forms of crime and punishment reflected the structure of American society? Using both historical and contemporary texts, this seminar will explore these and other questions and in the process analyze the development of juvenile

justice, the organization of corrections, the application of the death penalty and the rise of the drug economy. (Distribution II: History and Tradition)
URBS (657) 110.301 | Tuesday & Thursday | 3:00 - 4:20

Sector III: Arts & Letters

Architecture Today

Witold Rybczynski, Professor of Urbanism

Why do buildings by different architects look so different? The Getty Museum in Los Angeles, for example, is quite different from the Bilbao Guggenheim; Rem Koolhaas' proposed library in Seattle is worlds apart from Tom Beeby's Harold T. Washington Library in Chicago. In addition to site, function and construction, architecture is affected by style, and today there are many different stylistic approaches. Style is neglected in most discussions of architecture yet it is central to the design and appreciation of buildings. This seminar will examine the role that style plays in the work of prominent contemporary architects (e.g. Frank Gehry, Robert Venturi, Robert A., M. Stern, Norman Foster, Jean Nouvel) both in the United States and abroad. Selected readings will form the basis for written assignments that will include two 5-page papers and one 10-page term paper. (Distribution III: Arts and Letters)

ARCH (029) 102.001 | Monday & Wednesday | 3:00-4:30

Mediating Spaces

Shannon Mattern, Mellon Fellow in History of Art

If it hasn't already, the internet is bound to transform our physical bodies and environments into 0's and 1's and electrical impulses—or so say many cyberculture theorists. Over a century before the internet, Victor Hugo proclaimed in his *Notre-Dame de Paris* that “this will kill that”—that the book will kill the building. Yet we have not traded in our physicality for virtuality—nor have we exchanged all of our brick-and-mortar schools, churches and communities for virtual versions. In fact, many architectural theorists, sociologists, psychologists, geographers and scholars in related disciplines argue that as our media have become ever more virtual, the design and development of our physical spaces—through architecture, landscape design, and urban and regional planning—have become even more important.

This course examines the dynamic and complex relationship between media and architecture. We will look at architecture as media, symbols and embodiments of particular ideas and values, and at the impact that communication media have had on the practice of architecture and the way we experience our environments. We will trace the contemporaneous development of media and architecture from the scribal era in the Middle Ages, before the birth of the book, to the digital era of today and tomorrow. In the process, we will examine how our schools, libraries, civic and commercial spaces, homes, cities and geographies have evolved—and how the way we inhabit those spaces has changed. In our survey, we will make use of weekly readings, multimedia presentations, guest speakers and fieldtrips. (Distribution III: Arts and Letters)

ARTH (033) 100.301 | Monday | 2:00 - 5:00

Books That Make You Cry: Print and Sensibility in the 18th Century

Jennifer Snead, Lecturer in English

You may have shed tears over a textbook while studying for an exam, but why would a book or a poem want to make you cry? And why would you seek out a book or poem that would do such a thing to you? This class takes print as the primary medium through which the later 18th century's cultural preoccupation with affective responses ("sensibility") was fostered and spread.

"Sensibility" represented the 18th century's efforts to conceptualize the emotive manifestations of sensory perception—in other words, the body's effects upon the mind—and its symptoms became both fetishized and satirized. Why was 18th-century society so preoccupied with blurring the boundaries between body and mind, feeling and reason, books and bathos? What impact did it have on contemporary understandings of gender?

Of the printed word itself as an expression of intangible things like thoughts and emotions? The course investigates these and related questions through literary representations and invocations of sensibility in the works of 18th-century writers on both sides of the Atlantic, like Sterne, Goldsmith, Smith, Temple and Austen, among others. Regular weeping in class is recommended but not required. This class is affiliated with Writing Across the University and counts towards 1/2 of the College Writing Requirement. (Distribution III: Arts and Letters)

ENGL (197) 016.301 | Tuesday & Thursday | 3:00 - 4:30

Early Modern Spectacle and Theories of Enlightenment

Geoffrey Turnovsky, Mellon Fellow in Romance Languages and Literatures

This course studies the central role of spectacle and entertainment (what Pascal called "divertissement") in the cultural life of 17th and 18th-century France. We will explore the varieties of spectacle in the theatre and official festivals at Versailles with attention to their multimedia, performative aspects. Film reconstructions of life at the Court of Louis xiv as well as performances of plays will provide opportunities to consider what might be left out when we discover, say, 17th-century French literature exclusively through the written texts of Racine and Molière.

We will consider the importance of spectacle and "divertissement" for social and political life: how did the King use festivals and rituals to project, exercise and maintain his political power? How did early modern Society cohere through such seemingly frivolous activities as conversation and salon games? The course then turns to the importance of a critique of spectacle for the Enlightenment. Rejecting the passivity of the courtier, 18th century philosophers explored new ideas about society, individuality and citizenship. In this framework, we will extend our discussions to consider the implications of these issues for contemporary life: what is the importance today of spectacle, entertainment and its critique?

Readings (in English) will include plays of Corneille, Racine, Molière; selections from the letters of Sévigné, and from works by Lafayette, Montesquieu, Diderot and Rousseau. In addition, we will watch performances of 17th century tragedy and comedy, as well as films such as *Prise de pouvoir de Louis xvi*, *Vatel* and *Ridicule*. (Distribution III: Arts and Letters)

FREN (220) 207.301 | Tuesday and Thursday | 3:00 - 4:30

Italian History Through Drama

Frank Pellicone, House Dean, Harrison College House and Lecturer in Italian

This course will look at the origins of theater in Italy from antiquity through modernity.

Beginning with the early comedies of Plautus and ending with the works of Dario Fo, we will

consider the ways playwrights have responded to social, political, cultural, and aesthetic changes throughout the Italian peninsula from antiquity through the Renaissance, Italian unification and into modernity. Other playwrights to be considered will also include: Machiavelli, Ariosto, Bruno, Goldoni, Alfieri, D'Annunzio and Pirandello. (Distribution III: Arts and Letters)
ITAL (349) 217.301 | Monday, Wednesday & Friday | 2:00 - 3:00

Killing Time, Killing the Reader, Killing the Author: Old Habits in the New Media

Robert Romanchuk, Mellon Fellow in Slavic Languages and Literatures

This course opens and closes with two important contemporary novels: Umberto Eco's *The Name of the Rose* and Milorad Pavic's *Dictionary of the Khazars*. Both are "novels of ideas" set in the middle-ages; both feature monks, mayhem and a book that kills those who come too close. But while Eco's novel has the dubious honor of a Hollywood adaptation, Pavic's has been the inspiration for cutting-edge performance, music and multimedia.

What do these books and their adaptations tell us about present-day habits of reading and managing information, in the West and East? And why do both books kill not only their compilers and readers, but "kill time," turning back the clock to the middle-ages?

We will explore the possibility that many qualities of "new media" were already present in medieval texts, and that medievals may have conceptualized reading in ways that now seem closer to the postmodern. We will seek the origins of "bookish" and "hypertextual" styles of reading, currently struggling for dominance, in the middle ages and even before. We will watch film and video, read 20th and 21st-century novels and stories on paper and on cd-rom, and get our hands dirty with the information-managing practices of the middle ages to better understand those of our own age.

Evaluation is based on discussion, responses in an online "open book" of the course, six short writing activities, and the in-class presentation of a hypertext of your own devising. All readings are in English. (Distribution III: Arts and Letters)

SLAV (569) 106.301 | Tuesday & Thursday | 3:00 - 4:30

Introduction to Acting

Rose Malague, Senior Lecturer of English and Theatre Arts

Acting "looks" easy. Audiences see actors portraying characters, but often remain unaware of the intellectual, emotional, physical, and technical skills required to create vivid theatrical behavior.

What makes an actor effective? This course is an introduction to acting theory and practice, with primary emphasis on Stanislavsky-based techniques. Combining practical experience (exercises, improvisations, scene work) with intellectual exploration (theoretical readings, script analysis, writing assignments), the class culminates in the performance of a scene from the modern repertoire. Introduction to Acting also serves as an ideal introduction to the practical aspects of Penn's Theatre Arts major, with guest artist/teachers and trips to theatrical productions. Students considering a theatre major are especially encouraged to enroll. (Distribution III: Arts and Letters)

THAR (641) 120.303 | Tuesday & Thursday | 3:00 - 4:30

The English Bible

Robert Kraft, Professor of Religious Studies

This course is intended as a general introduction to the “English Bible” as a phenomenon in western culture its overall makeup and constituent parts, the cultural settings it represents or assumes, the basic contents, and its interpretations and influences through the ages to the present. Students will be expected to read representative portions of Jewish scriptures (also known as Old Testament among Protestant Christians), the Jewish Apocrypha (also known as “deutero-canonical” writings), and the Christian New Testament in various English versions, and to understand problems associated with their origins and transmission as well as their acquired significance. No prior knowledge is assumed and discussions will include such matters as: Where did this stuff come from?; Who put it all together?; Why have people thought it important?; and What value can it bring for me? The focus will be especially historical and “secular” (this will not be a Sunday school type class), but without ignoring literary and religious perspectives. The course aims at providing the students with a good basis for subsequent investigation in related areas and with an awareness of the problems inherent in all such historical and literary research. (Distribution III: Arts and Letters)
RELS (541) 015.401 or ENGL (197) 073.401 | Tuesday & Thursday | 10:30 - 12:00

Sector V: The Living World

Conservation Biology

Danny Gustafson, Lecturer in Biology

The current widespread loss of species, genetic variability and entire biological communities has caused serious concern within the scientific community and among the general public. Conservation biology is a multidisciplinary science that addresses the issues related to this crisis and makes connections between evolutionary ecology theory, environmental economics, ethics, law and social sciences. The potential topics that could be discussed are: 1) endangered species and their relevance to ecosystem function, 2) environmental ethics or economics running environmental policy, 3) fire ecology and social or economic costs within fire dependent ecosystems, 4) genetic diversity vs. species diversity, 5) genetically modified organisms in natural systems, 6) my exotic species may be your pretty plant/pet, 7) biological control of exotic species—throwing gas on a fire, 8) how to design a preserve system for maintaining species diversity and 9) how important is biodiversity—ecological support or esthetics. The course would start with an organizational meeting and a few guest lectures from members of the biology department, followed by student presentations for the duration of the semester. (This course has been submitted to the General Requirement Committee for review and possible inclusion in Sector V: Living World.)

BIOL (053) 010.301 | Monday | 2:00 – 4:00 | plus one other hour tbd with professor

Language and Cognition

David Embick, Assistant Professor of Linguistics

Humans have the ability to create and understand an infinite number of sentences which they have never heard before. This ability is unique among all the species of the world, although the exact ways in which human language differs from animal communication systems is a matter of ongoing discussion. Correlated with this ability is the fact that children seem to automatically acquire the language spoken in the community into which they are born. This ability has led to the hypothesis that parts of the human brain are specifically designed for language, and to the

investigation of linguistic ability in a number of related disciplines, such as linguistics, psychology, cognitive neuroscience and computer science.

This course examines several topics in the study of language and its relation to cognition. Because of its apparently species-specific nature, language is central to the study of the human mind. We will pursue an interdisciplinary approach to such questions in this course, moving from the structures of language as revealed by linguistic theory to connections with a number of related fields that are broadly referred to as the cognitive sciences. A number of specific topics will be addressed from these related fields. The structures of language and its role in human cognition will be set against the background of animal communication systems. We will examine the question of how children acquire extremely complex linguistic systems without explicit instruction, drawing on psychological work on the language abilities of children. Additional attention will be focused on the question of how language is represented and computed in the brain, and correspondingly, how this is studied with brain-imaging techniques. (General Requirement V: Living World)

LING (381) 058.301 | Tuesday & Thursday | 3:00 - 4:30

Sector VI: The Physical World

The Big Bang and Beyond

Vijay Balasubramanian, Assistant Professor of Physics

An introductory course for freshmen who do not intend to major in a physical science or engineering, covering theories of the Universe ranging from the ancient perspective to the contemporary hot big bang model, including some notions of Einstein's special and general theories of relativity. Topics will include the solar system, stars, black holes, galaxies and the structure, origin and future of the Universe itself. Elementary algebra is used. (General Requirements IV: Quantitative Data Analysis and vi: Physical World)

ASTR (037) 007.301 | Tuesday & Thursday | 9:00 - 10:30

Structural Biology and Genomics

Ponzy Lu, Professor of Chemistry

Structural biology is the scientific method of describing, predicting and changing the properties of living organisms, including humans, based on complete genome structures and 3-dimensional structures of cellular components. It is a direct outgrowth of the intellectual and technical revolutions that occurred during the last decade. It has become a most powerful approach to understanding biology and solving problems in medicine.

We will discuss how macroscopic biological properties, such as reproduction, locomotion and viral infection, are determined by chemical properties of proteins and nucleic acids. Changes in biological function, such as those that accompany hereditary diseases like cystic fibrosis or sickle cell anemia, result from minute changes in individual proteins. Much larger changes in genome and protein structure are often tolerated without apparent consequence. This selectivity and tolerance provides opportunities for the biotechnology industry to alter biological functions in ways thought to guarantee profits.

A portion of the spring semester will address current fads/fashions in molecular research. We will also examine how research results in structural biology are presented in various

audiences. The broad range of medical, social and political problems associated with the advances will be considered.

This is a continuation of the fall semester seminar with 0.5 course unit each semester. (General Requirement VI: Physical World)

CHEM (081) 022.301 | Tuesday & Thursday | 8:00 - 9:00

Molecules in Motion **NEW**

Robin Hochstrasser, Professor of Chemistry

The course will discuss exciting recent research discoveries that are providing us with ways of visualizing chemical reactions and other structural changes. The course will provide some highlights of laser chemistry and other new technologies focused on structure determination and real time measurements of chemical change that are making an impact on our ability to visualize molecular processes and manipulate molecules. Applications will be both chemical and biological. The course is intended for those excited by scientific discovery who are also science majors with at least a High School AP course in chemistry, and ideally AP physics. There will be no specific textbook. Readings will be original comments and papers from the scientific literature. (General Requirement VI: Physical World)

CHEM (081) 024.301 Tuesday & Thursday 10:30 - 12:00

The Ups and Downs of Temperature

Gino Segre, Professor of Physics and Astronomy

Using temperature as both a guide and a connecting theme this course is a tour of many of the 20th century's great scientific advances in understanding the origins of life, of the Earth, the Sun and the universe. Of common measurements such as length and time, temperature is the subtlest. Yet it plays a major role in our understanding these questions as we will see. The course explores both the measurements and the concept in many scientific disciplines including astronomy, biology, chemistry, ecology, geology, physics and physiology.

The course is basically divided into six segments, beginning with a study of how temperature is regulated in humans and other animals as well as the problems that occur when that regulation breaks down. Part two discusses the origins of how temperature came to be measured and the underlying principles that explain what temperature means in terms of molecular motion. Part three deals with the determination and variation of the Earth's temperature as set by the Sun, the oceans, the air and the Earth's own internal heat. This segment will also address briefly the history, the science and the politics of global warming. Part four describes the role of temperature in the origins of life, thermophilic bacteria and the related possibility of extraterrestrial life. Part five deals with the temperature of the Sun, both on its surface and interior, the temperature associated with radiation in outer space and ultimately with the origin of the universe. The final section of the course addresses the 19th century quest to reach the absolute zero of temperature and how this subject has come to be seen and modified in the 20th century because of quantum mechanics.

This seminar fulfills Category 3 of the Pilot Curriculum General Requirement. It has also been submitted to the General Requirement Committee for review and possible inclusion in Sector VI: The Physical World.

COLL (115) 003.301 | Tuesday & Thursday | 1:30 - 3:00

Earth and Life Through Time

Hermann Pfefferkorn, Professor of Earth and Environmental Science

This course will consider the origin of Earth, continents, and life. Continental movements, changing climates, and evolving life. Students must register for both the lecture and a recitation. The recitation listed below is restricted to freshmen and is led by Professor Pfefferkorn. (General Requirement VI: Physical World)

GEOL (289) 125.001 (lec) | Monday & Wednesday | 11:00 - 12:00

GEOL (289) 125.201 (rec) | Monday | 1:00 - 2:00

Freshman Recitation: Oceanography

Andrea Grottoli, Assistant Professor of Earth and Environmental Science

A study of the two-thirds of the Earth covered by water. Composition, structure, motions and effects of ocean water. The ocean bottom, including seafloor spreading and continental drift. Marine biology and geology. Ocean resources. Web-based recitations use real-time data to solve contemporary quantitative problems. Students must register for both the lecture and a recitation. The recitation listed below is restricted to freshmen and is led by Professor Grottoli. (General Requirement VI: Physical World)

geol (289) 130.001 (lec) | Tuesday & Thursday | 10:30 - 12:00

geol (289) 130.201 (rec) | Tuesday | 3:00 - 4:00

Honors Physics II: Electromagnetism and Radiation

Alan Johnson, Associate Professor of Physics and Astronomy

This course parallels and extends the content of phys 151 at a somewhat higher mathematical level. It is the second semester of a small-section two-semester sequence for well-prepared students in engineering and the physical sciences, and particularly for those planning to major in physics. Topics will include electric and magnetic fields; Coulomb's, Ampere's, and Faraday's laws; Maxwell's equation; emission, propagation and absorption of electromagnetic radiation; and geometrical and physical optics. Prerequisite: Successful completion of phys 170 or permission of the instructor. Students must register for the lecture and the lab. This is a general honors seminar. (General Requirement VI: Physical World)

PHYS (497) 171.301 (lec) | Monday, Wednesday & Friday | 10:00 – 11:00 | Monday 2:00 – 3:00

PHYS (497) 171.302 (lab) | Wednesday | 1:00 – 3:00 | Thursday | 5:00 – 6:00

Sector VII: Science Studies

Knowledge and Social Structure

Henrika Kuklick, Professor of History and Sociology of Science

How does knowledge gain cultural authority? This course is designed to consider that question, with special attention to the status of scientific knowledge and the role of scientists in modern Western society. We will assess these issues through readings in science studies, as well as through the analysis of episodes such as the recent debates surrounding the teaching of evolutionary science. (General Requirement VII: Science Studies)

HSSC (321) 270.301 | Tuesday & Thursday | 12:00 - 1:30

Quantitative Data Analysis

Freshman Seminars in Mathematics

Freshman seminars in the Department of Mathematics at Penn aim to give the student an early exposure to the creative side of mathematics, with an emphasis on discovery, reasoning, proof and effective communication. Small class sizes permit an informal, discussion-type atmosphere, and often the entire class works together on a given problem. Homework is intended to be thought provoking, rather than skill sharpening.

Each seminar meets for one-and-a-half hours per week, and an entire year counts for one course unit. Students may register for one or both semesters. It is recommended that math majors take both semesters.

One or the other of these seminars is required for the math major, but both are open to all students interested in mathematics. The best time to take these seminars is in the freshman or sophomore year. This course does not satisfy the General Requirement; however, virtually all students who take it will also take calculus; which does satisfy the Quantitative Data Analysis Requirement.

Introduction to Mathematical Analysis (has a calculus flavor)

Craig Sutton, Lecturer in Mathematics

MATH (409) 201.301 | Tuesday | 12:00 - 1:30

MATH (409) 201.302 | Thursday | 12:00 - 1:30

Introduction to Modern Algebra (has a more algebraic flavor)

Lynnell Matthews, Lecturer in Mathematics

MATH (409) 205.301 | Tuesday | 1:30 - 3:00

MATH (409) 205.302 | Thursday | 1:30 – 3:00