SCIENCE, TECHNOLOGY & SOCIETY
(AS) {STSC}

SM 062. American Way of War. (M) Hersch.

SM 069. Computer Worlds. (C) Voskuhl.

SM 077. Voyages of Discovery. (M) Petrie.

Across the nineteenth century, voyages of sail and steam made possible the creation of empires and a globalized world, through the transportation of people and commodities. Similarly, this course is a voyage of discovery based on the study of actual ship's logs held in Penn's Rare Book collection. We will use these accounts to guide our investigation into the science, technology, medicine, economic and environmental history of life at sea and in the ports of call for these ships around the Indian and Atlantic Oceans. Collectively, the seminar will produce an online exhibition built on logs, diaries and other sources held at Penn, in other local collections and gleaned from archives around the world.

L/R 168. Environment anbd Society. (M) Humanities & Social Science Sector. Class of 2010 & beyond. Benson.

This course examines contemporary environmental issues such as energy, waste, pollution, health, population, biodiversity and climate through a historical and critical lens. All of these issues have important material, natural and technical aspects; they are also inextricably entangled with human history and culture. To understand the nature of this entanglement, the course will introduce key concepts and theoretical frameworks from science and technology studies and the environmental humanities and social sciences.

169. (ENVS169) Engineering Planet Earth. (C) Etienne Benson.

203. (HSOC203) Science, Medicine and Technology in Africa. (M)

SM 208. Science and Religion: Global Perspectives. (M) Harun Kucuk.

This survey course provides a thematic overview of science and religion from antiquity to the present. We will treat well-known historical episodes, such as the emergence of Muslim theology, the Galileo Affair and Darwinism, but also look beyond them. This course is designed to cover all major faith traditions across the globe as well as non-traditional belief systems such as the New Age movement and modern Atheism

SM 217. Science, Technology and Development in South and Southeast Asia. (M) Petrie.

SM 231. (HSOC231) Insect Epidemiology Pests, Pollinators and Disease Vectors. (M)

Malaria, Dengue, Chagas disease, the Plague--some of the most deadly and widespread infectious diseases are carried by insects. The insects are also pernicious pests; bed bugs have returned from obscurity to wreak havoc on communities, invasive species decimate agricultural production, and wood borers are threatening forests across the United States. At the same time declines among the insects on which we depend--the honeybees and other pollinators--threaten our food security and ultimately the political stability of the US and other nations. We will study the areas where the insects and humans cross paths, and explore how our interactions with insects can be cause, consequence or symptom of much broader issues. This is not an entomology course but will cover a lot about bugs. Its not a traditional epidemiology course but will cover some fascinating epidemiological theory originally developed for the control of disease vectors. Its not a history cour but will cover past epidemics and infestations tha have changed the course of the history of cities a reversed advancing armies. Assignments will includ essays and presentations.

SCIENCE, TECHNOLOGY & SOCIETY (AS) {STSC}

SM 261. (HIST231) TOPICS IN US HISTORY. (C) Greene.

Topics vary

SM 279. (ENVS279, HIST320, HSOC279) Nature's Nation: Americans and Their Environment. (M) Greene.

The United States has been described as "nature's nation. The presence of enormous, resource-rich and sparsely settled continent has been a component of American identity, prosperity and pride--it has even been described as the source of the democratic political system. From the beginning, Americans transformed their natural environment, even as, over time, they grew to value environmental preservation and protection. This course traces the interaction of Americans and the natural world in, studying how Americans changes the natural environment over time, in order to understand why environmental change occurred and occurred in the manner it did. What have Americans believed about the nature of the nation's nature, and what attidues and policies have followed from these ideas? After surveying American environmental history from the 17th to the 20th century, we will examine specific topics and problems in the long relationship between Americans and their environment. (Possible topics: national parks and wilderness preservation, environmental politics, chemical pollution, invasive species). This seminar fulfills the researcj requirement for the History major because students will complete a 20 page paper of original research.

SM 308. Science, Technology and Global Capitalism. (C) Staff.

Modern capitalism has been defined by the circulation of commodities, from gold in the 16th century to sugar in the 17th, tobacco in the 18th, cotton in the 19th, oil in the 20th, and financial derivatives in the 21st. But the world is always messy and complex, rather than neatly divided into products and goods. How, why, and for whose benefit do we divide nature into the abstractions of the marketplace? Who holds power over where, why, and how that happens? In this seminar, we?ll use a wide range of scholarship from the humanities, social sciences, and the sciences, along with primary texts and other sources, in order to understand the close links among global capitalism, science and technology, and the natural world.??

SM 310. Futurology. (M) Adams.Prerequisite(s): STSC 001,STSC 110.

This seminar will explore past attempts by scientists and visionaries to predict the future. After exploring the nature and methodological problems inherent in prognostication that have caused most such attempts to fail, we will focus on a series of interesting essays, stories, and visionary works that seem to have successfully foreseen aspects of the world we live in, and attempt to analyze what they got right, what they got wrong, and why. We will conclude with critical, historically informed analysis of some current scientific prognostications about our short, intermediate, and longer term destiny. Grading will be based on class participation, student reports, several short papers, and a final research paper.

SM 314. (ARCH314) Cosmopolitan Urbanism: Rio de Janeiro. (M) Barber and Tresch.

SM 316. Science, Technology and Society in Modern East Asia. (M)

The course aims to survey the history of science and technology in East Asian countriesChina, Japan and Koreasince the late 19th century. Since Japan was the only nation in East Asia that succeeded in modernizing itself by adopting Western science, technology and politics, it will be studied first. The Chinese and Korean cases then will be reviewed with different angles. The course will emphasize the mutual influence between science & technology and society to answer how these countries became major industrial powers in the 21st century.

SCIENCE, TECHNOLOGY & SOCIETY (AS) {STSC}

SM 328. What is Prediction?. (M) Kucuk.

This course is an investigation into the notion of prediction from antiquity to the present. By looking closely at key practices from Homeric divination to modern acturial science and from early modern astrology to contemporary climate models, the course seeks to historicize the way we engage with the future. As part of the course, students also explore the role that methodology, models, causation and big data have played in predictive practices. The readings include a mixture of primary sources, modern scholarship and journalism.

SM 340. (HSOC340) The Curing Machine: Hospitals in Time. (M) Gina Greene.

SM 363. Technology & Democracy. (M) Voskuhl.

What is the relationship between technology and politics in global democracies? This course explores various forms of technology, its artifacts and experts in relation to government and political decision-making. Does technology "rule' or "run" society, or should it? How do democratic societies balance the need for specialized technological expertise with rule by elected representatives? Topics will include: industrial revolutions, factory production and consumer society, technological utopias, the Cold War, state policy, colonial and post-colonial rule, and engineers' political visions.

SM 364. (HIST305) Technologies of Research: Digital Methods in Action. (M)

This course asks three questions: What is technology? What is research? And how does technology aid research? These three questions beg a fourth: how can we spend a semester on three questions? Well, the answers to each of these questions may seem apparent, but think about them for more than a few seconds and youll be hard pressed to offer a satisfactory answer. The term technology conjures images of recent, micro-processors, robots, or the Internet. But think deeper about the terms meaning for a moment and youll see that such ancient, elemental things as mathematics and the alphabet are technologies, too. Likewise, youll find that something we have all done beforeresearchis an opaque and contestable term. The question of research gets at the very processes through which knowledge is produced.

SM 371. Emerging Techmologies. (M) Roberts.

SM 411. (HSOC411) Sports Science Medicine Technology. (M)

Why did Lance Armstrong get caught? Why do Kenyans win marathons? Does Gatorade really work? In this course, we won't answer these questions ourselves but will rely upon the methods of history, sociology, and anthropology to explore the world of the sport scientists who do. Sport scientists produce knowledge about how human bodies work and the intricacies of human performance. They bring elite (world-class) athletes to their laboratories-or their labs to the athletes. Through readings, discussions, and original research, we will find out how these scientists determine the boundary between "natural" and "performance-enhanced," work to conquer the problem of fatigue, and establish the limits and potential of human beings. Course themes include: technology in science and sport, the lab vs. the field, genetics and race, the politics of the body, and doping. Course goals include: 1) reading scientific and medical texts critically, and assessing their social, cultural, and political origins and ramifications; 2) pursuing an in-depth

The course fulfills the Capstone requirement for the HSOC/STSC majors. Semester-long research projects will focus on "un-black-boxing" the metrics sport scientists and physicians use to categorize athletes' bodies as "normal" or "abnormal." For example, you may investigate the test(s) used to define whether an athlete is male or female, establish whether an athlete's blood is "too" oxygenated, or assess whether an athlete is "too" fast (false start). Requirements therefore include: weekly readings and participation in online and in-class discussions; sequenced research assignments; peer review; and a final 20+page original research paper and presentation.

SCIENCE, TECHNOLOGY & SOCIETY
(AS) {STSC}

SM 436. (HSOC436) Biopiracy: Medicinal Plants and Global Power. (M) Mukharji.

Biopiracy has emerged as the name of conflict between multinational pharmaceutical companies attempting to get genetic patents on medicinal plants and indigenous communities in the Global South who have long known and used these plants for medicinal purposes. Today the story of Biopiracy is an unfolding story of plants, patents and power. The extraction and commercial exploitation of plants and knowledge about them from the Global South however is not new. It has been happening at increasing pace for at least the last two centuries. Both the anti-malarial drug quinine and the cancer drug vincristine for instance have their plant-origins in the Global South where local communities used them medicinally long before their discovery by biomedicine. This course will put the current debates around Biopiracy in context and explore how the entanglements of plants and power have changed or not changed.

SM 442. (HSOC442) Hospital as Curing Machine. (M) Gina Greene.

This course examines the technological, scientific, and spatial evolution of the modern hospital from the miasmatic, vermin-infested medieval European hospital-as-alms house, to the late twentieth-century ideal of the modern hospital as a condenser of sophisticated technologies, scientific expertise, and Taylorist efficiencies. In so doing, we will see how designers of hospital space, consciously or not, have striven to realize the mechanized, technological vision of the hospital as curing machine a phrase first invoked by 18th century French surgeon and anatomist Jacques Tenon. While the early nineteenth-century hospital had been a locus for fears about contagion, death, and disease in a pre-germ theory world, through its eventual integration of antiseptic practices, spatially produced zones of medical expertise (the operating suite, the laboratory, pediatric and maternity wards), novel technologies (incubators, hyperbaric chambers, x-rays, ultrasounds) and factory-like efficiencies the hospital came into its own as the epitome of rational modernist space. But, over the course of its evolution, the modern ho other change as well: as an incubator for super-bugs, as an engine for projects o and renewal, and as a site for the cultural transformation of the meaning of birth, death, and health itself.

SM 443. Science and the Senses: Visual Culture, Material Objects. (M) Carin Berkowitz.

Using various types of readings, podcasts, and visits to area museums and centers of research, this course examines the relationships between seeing, sensing, and knowing in science. What roles do the senses and the material objects they observe play in production of science, and how has that changed historically? Are the senses reliable and standardize able, and if so, how can we talk about them with a common vocabulary? Are some more important than others? We will begin to answer those questions historically, following the role of the senses in science from the early modern period up to the present. We will look at ways in which vision was constructed as the primary sense during the Enlightenment and at ways in which it was made objective and instrumentalized in the modern period. We will also look at objects themselves. How do museum displays, illustrations jarred specimens, photographs, and movies make and convey knowledge

SCIENCE, TECHNOLOGY & SOCIETY (AS) {STSC}

SM 461. (HSOC461) The Child in the City. Gina Greene.

This course examines the problem of the child in urban space in 19th and 20th century European and American discourses. This course does not propose to recover the subjective experience of the child but, rather, views the child as an object around which numerous adult anxieties connected to industrialization, urbanization, and modernity itself cohered. Discourses on public health, environmental pollution, sexuality, criminality, and racial degeneration all focused their attention, anxieties, and energies on how to deal with the unique vulnerability of the child in modern urban space. This interdisciplinary course focuses specifically on atmospheres, environments, and architectures in urban settings as diverse as Chicago, New York, Paris, and London. We will examine how the built environment was envisioned as part of a set of critical technologies for resolving the threat that urban space posed to the child. We will explore objects and envir as diverse as tenement babycages, war-time floating hospitals, open-air schools, adventu playgrounds in post-WWII London, car-less communities in Radburn, NJ, and American chil books about urban blight and renewal.

SM 462. Technological & Business Innovation: Historical Perspectives. (M) Gross.

This course will explore the relationship between technolgical innovation and business history. By looking at a series of case studies of technolgically driven firms -- both U.S and international -- we will develop a more sophicticated and historically informed model of the relationship between technological, economic, legal and political developments in the late 19th and 20th centuries.

SCIENCE, TECHNOLOGY, & SOCIETY (STSC)

L/R 001. (HSOC001) Emergence of Modern Science. (A) May be counted toward the Hum/SocSci or NatSci/Math Sectors. Class of 2010 Adams.

During the last 500 years, science has emerged as a central and transformative force that continues to reshape everyday life in countless ways. This introductory course will survey the emergence of the scientific world view fromthe Renaissance through the end of the 20th century. By focusing on the life, work and cultural contexts of those who created modern science, we will explore their core ideas and techniques, where they came from, what problems they solved, what made them controversial and exciting and how they related to contemporary religious beliefs, politics, art, literature, and music. The course is organized chronologically and thematically. In short, this is a "Western Civ" course with a difference, open to students at all levels.

L/R 002. (HIST036, HSOC002) Medicine in History. (A) History & Tradition Sector. All classes. Barnes.

This course surveys the history of medical knowledge and practice from antiquity to the present. No prior background in the history of science or medicine is required. The course has two principal goals: (1)to give students a practical introduction to the fundamental questions and methods of the history of medicine, and (2)to foster a nuanced, critical understanding of medicine's complex role in contemporary society. The couse takes a broadly chronological approach, blending the perspectives of the patient,the physician,and society as a whole--recognizing that medicine has always aspired to "treat" healthy people as well as the sick and infirm. Rather than history "from the top down"or "from the bottom up,"this course sets its sights on history from the inside out. This means, first, that medical knowledge and practice is understood through the personal experiences of patients and caregivers. It also means that lectures and discussions will take the long-discredited knowledge and treatments of the past seriously,on their own terms, rather than judging them by todays's standards. Required readings consist largely of primary sources, from elite medical texts to patient diaries. Short research assignments will encourge students to adopt the perspectives of a range of actors in various historical eras.

SCIENCE, TECHNOLOGY & SOCIETY (AS) {STSC}

003. (HSOC003, SOCI033) Technology and Society. (B) Society Sector. All classes. Staff.

Technology plays an increasing role in our understandings of ourselves, our communities, and our societies, in how we think about politics and war, science and religion, work and play. Humans have made and used technologies, though, for thousands if not millions of years. In this course, we will use this history as a resource to understand how technolgoeis affect social relations, and coversely how the culture of a society shapes the technologies it produces. Do different technolgoeis produce or result from different economic systems like feudalism, capitalism and communism? Can specific technologies promote democratic or authoritarian politics? Do they suggest or enforce different patterns of race, class or gender relations? Among the technologies we'll consider will be large objects like cathedrals, bridges, and airplanes; small ones like guns, clocks and birth control pills; and networks like the electrical grid, the highway system and the internet.

SM 013. The Scientific Revolution. (C) Adams.

The Scientific Revolution of the sixteenth and seventeenth centuries created the intellectual, philosophical, social, and institutional foundations of modern science, fundamentally changing the way we see the universe and our place within it. In this seminar we will take a biographical approach, exploring that revolution by examining the lives, ideas and achievements of some of the period's most renowed and consequential thinkers, among them Copernicus, Kepler, Galileo, Bacon, Descartes, and Newton. In the course of our biographical explorations, we will also consider the rise of scientific societies, the "scientific method," "experimental philosophy," the impact of new technologies (including the telescope and the microscope), and the politial and religious implications of the new scientific world view.

SM 021. From Darwin to DNA. (M) Lindee.

026. (PHIL026) Relativity and the Philosophy of Space and Time. (A) Natural Science & Mathematics Sector. Class of 2010 and beyond. Domoter. Also fulfills General Requirement in Science Studies for Class of 2009 and prior

This course will present a detailed introduction to Einstein's special and general theories of relativity and will examine their historical development and philosophical significance. No previous physics or philosophy will be presupposed, and only high school mathematics will be used.

SM 028. (HIST025, HSOC025, RELS116) Western Science, Magic and Religon 1600 to the present. (C) History & Tradition Sector. All classes. Kuklick.

Throughout human history, the relationships of science and religion, as well as of science and magic, have been complex and often surprising. This course will cover topics ranging from the links between magic and science in the seventeenth century to contemporary anti-science movements.

SM 032. (HSOC032) Risky Business. (M) Schwartz.

SM 079. Animal City: Humans & Animals in Urban America 1850-present. (C) Greene.

SCIENCE, TECHNOLOGY & SOCIETY (AS) {STSC}

SM 107. (HSOC107) Science, Technology & Medicine in Colonial India. (C) P. Mukharji.

What is the relationship between science and empire? Is colonial science somehow different from science more generally? These are some of the questions this course seeks to explore. By focussing on the history of British India? which included India, Pakistan, Bangladesh, Sri Lanka and Myanmar? the course examines in depth the role and nature of science within colonial societies. In so doing, the course also explores the specific histories of botany, medicine, telegraphy, agronomy, anthropologu, physics and statistics. While attending to the specific people, practices and ideas involved in these sciences in the colonies, the course is also interested in locating specific colonial histories within the larger history of science.

SM 108. (COML224, PHIL225) Introduction to Philosophy of Science. (M) Domotor.

A discussion of some philosophical questions that naturally arise in scientific research. Issues to be covered include: The nature of scientific explanation, the relation of theories to evidence, and the development of science (e.g., does science progress? Are earlier theories refuted or refined?).

L/R 110. (COML074, ENGL075, HIST117, HSOC110) Science and Literature. (B) Arts & Letters Sector. All Classes. Adams.

This course will explore the emergence of modern science fiction as a genre, the ways it has reflected our evolving conceptions of ourselves and the universe, and its role as the mythology of modern technological civilization. We will discuss such characteristic themes as utopias, the explortion of space and time, biological engineering, superman, robots, aliens, and other worlds--and the differences between European and American treatment of these themes.

SM 123. (HSOC123) Darwin's Legacy: The Evolution of Evolution. (B) Living World Sector. All classes. Adams.

Darwin's conceptions of evolution have become a central organizing principle of modern biology. This lecture course will explore the origins and emergence of his ideas, the scientific work they provoked, and their subsequent re-emergence into modern evolutionary theory. In order to understand the living world, students will have the opportunity to read and engage with various classic primary sources by Darwin, Mendel, and others. The course willconclude with guest lectures on evolutionary biology today, emphasizing currentissues, new methods, and recent discoveries. In short, this is a lecture course on the emergence of modern evolutionary biology--its central ideas, their historical development and their implications for the human future.

SM 135. (HIST035) Emergence of Modern Biology. (C) Natural Science & Mathematics Sector. Class of 2010 and beyond. Adams.

This course covers the history of biology in the 19th and 20th centuries, focusing on the development of evolutionary biology, cell biology, embryology, genetics, and molecular biology. We will have three main goals: first, to delineate the content of the leading biological theories and experimental practices of the past two centuries; second, to situate these theories and practices in their historical context, noting the complex interplay between them and the dominant social, political, and economic trends; and, third, to critically evaluate various methodological approaches to the history of science. The course is intended for students with some background in the history of science as well as in biology, although no specific knowledge of either subject in required.

SCIENCE, TECHNOLOGY & SOCIETY
(AS) {STSC}

L/R 145. (HIST146, HSOC145) Comparative Medicine. (A) History & Tradition Sector. All classes. Mukharji.

This course explores the medical consequences of the interaction between Europe and the "non-West." It focuses on three parts of the world Europeans colonized: Africa, South Asia, and Latin America. Today's healing practices in these regions grew out of the interaction between the medical traditions of the colonized and those of the European colonizers. We therefore explore the nature of the interactions. What was the history of therapeutic practices that originated in Africa or South Asia? How did European medical practices change in the colonies? What were the effects of colonial racial and gender hierarchies on medical practice? How did practitioners of "non-Western" medicine carve out places for themselves? How did they redefine ancient traditions? How did patients find their way among multiple therapeutic traditions? How does biomedicine take a different shape when it is practiced under conditions of poverty, or of inequalities in power? How do today's medical problems grow out of this history? This is a fascinating history of race and gender, of pathogens and conquerors, of science and the body. It tells about the historical and regional roots of today's problems in international medicine.

152. (HSOC157) Chinese Science. (C) Staff.

This course explores the social, cultural and political contexts of scientific knowledge in China over the course of two millennia, through a diverse cast of historica actors spanning emperors and midwives, Buddhist monks and Jesuits, eminent authorities and everyday people. We will examine the evoliutio of various learned traditions (astronomy, alchemy, medicine, natural history) that sought to define and understand the heavens, the earth and the body - and the manner in which those forms of knowledge could be deployed for the good of state, society or individual. In the process, we will compare Chinese experience to other cultures and evaluate the status and dynamics of Chinese traditions in the modern era of Western political and scientific dominance. No prior knowledge of Chinese history is assumed. Class discussion will be a part of each meeting.

160. (SOCI161) The History of the Information Age. (C) Humanities & Social Science Sector. Class of 2010 & beyond. Staff.

Certain new technologies are greeted with claims that, for good or ill, they must transform our society. The two most recent: the computer and the Internet. But the series of social, economic and technological developments that underlie what is often called the Information Revolution include much more than just the computer. In this course, we explore the history of information technology and its role in contemporary society. We will explore both the technologies themselves--calculating machines, punched card tabulators, telegraph and telephone networks, differential analyzers, digital computers, and many others--and their larger social, economic and political contexts. To understand the roots of these ideas we look at the prehistory of the computer, at the idea of the post-industrial or information society, at parallels with earlier technologies and at broad historical currents in the United States and the world.

SM 162. (HSOC152) Technology and Medicine in Modern America. (L) Staff.

Medicine as it exists in contemporary America is profoundly technological; we regard it as perfectly normal to be examined with instruments, to expose our bodies to many different machines; and to have knowledge produced by those machines mechanically/electronically processed, interpreted and stored. We are billed technologically, prompted to attend appointments technologically, and often buy technologies to protect, diagnose, or improve our health: consider, for example, HEPA-filtering vacuum cleaners; air-purifiers; fat-reducing grills; bathroom scales; blood pressure cuffs; pregnancy testing kits; blood-sugar monitoring tests; and thermometers. Yet even at the beginning to the twentieth century, medical technologies were scarce and infrequently used by physicians and medical consumers alike. Over the course of this semester, we will examine how technology came to medicine's center-stage, and what impact this change has had on medical practice, medical institutions and medical consumers - on all of us!

SCIENCE, TECHNOLOGY & SOCIETY
(AS) {STSC}

179. (ENVS179, HSOC179) Environmental History. (M) Greene.

The field of environmental history studies human history in the context of the biological and physical setting we call "nature" or "the environment." It focuses on the interactions between natural actors (landscapes, weather, plants, animals, microorganisms) and human actors. Just as human actors have shaped the biological and physical world, so actors from the biological and physical world have shaped human history. This course explores the history of American environmental change as a set of questions about how and why the natural world have changed over time. Topics include: European encounters with the Americas, industralization, conservation of natural resources, preservation of wilderness and wildlife, urban pollution and health, the rise of environmentalism, and the impact of warfare. In each case we will ask how natural actors and Americans' ideas about nature interacted with political institutions, economic arrangements, social groups and cultural values, in order to explain the course of environmental change. We will explore the multiple, shifting meanings of "nature," trace changes in environmental use and impact, and evaluate past events in light of current ideas about sustainability.

182. (GSWS182) Social Science and American Culture. (C) Staff.

This course examines the role of social science in the United States during the 20th century. there have been popular social scientific theories since the early 19th century, when the craze spread for interpreting individuals' character by feeling the bumps on their heads. But popular social science is really a 20th century phenomenon. And popular culture influenced academic research. Our coverage cannot be comprehensive. We have insufficient time to treat all human sciences equally. For example, there is enormous popular interest in paleoanthropology and archaeology, but we will not discuss these in class-although you mibht choose to write your research paper for the course on a spcific aspect of one of these disciplines.

201. Hist Phys Sci 19th & 20th Century. (M) Ashrafi.

Over the last two centuries, scientists have produced a broad range of knowledge about the physical world, from light to electromagnetism to atoms to nuclei, facilitating or explaining an ever increasing mastery over the natural world. Becuse of their success, these developments played an important role in forming our views of how to effectively generate knowledge of the natural world. This course will examine some of the major developments in the physical sciences during the 19th and 20th century, asking how that knowledge and the means by which it was produced related to institutions, technical practices and broader cultural knowledge and knowledge production to explore how past practices have, or have not, left their traces in later science. The course will meet twice a week for lecture and discussion. Readings will consist of Pursuing Power and Light: Technology and Physics from James Watt to Albert Einstein by Bruce J. Hunt When Physics Became King by Iwan Rhys Morus Night Thoughts of a Classical Physicist by Russel McCormmach as well as articles from a course reader. Students will produce three short papers (about three pages) and a term paper (about ten pages)

L/R 212. (HSOC212) Science Technology and War. (M) Humanities & Social Science Sector. Class of 2010 & beyond. Lindee.

In this survey we explore the relationships between technical knowledge and war in the nineteenth and twentieth centuries. We attend particularly to the centrality of bodily injury in the history of war. Topics include changing interpretations of the machine gun as inhumane or acceptable; the cult of the battleship; banned weaponry; submarines and masculinity; industrialized war and total war; trench warfare andmental breakdown; the atomic bomb and Cold War; chemical warfarein Viet nam; and "television war" in the 1990s.

SCIENCE, TECHNOLOGY & SOCIETY (AS) {STSC}

L/R 253. (COML253, ENGL240, GSWS252, HSOC253) Freud: The Invention of Psychoanalysis. (M) Humanities & Social Science Sector. Class of 2010 & beyond. Weissberg. All readings and lectures in English General Requirement VII: Science Studies

No other person of the twentieth century has probably influenced scientific thought, humanitistic scholarship, medical therapy, and popular culture as much as Sigmund Freud. This seminar will study his work, its cultural background, and its impact on us today.

SM 260. (ANTH260, SOCI260) Cyberculture. (C) Staff.

Computers and the internet have beome critical parts of our lives and culture. In this course, we will explore how people use these new technologies to develop new conceptions of identify, build virtual communities and affect political change. Each week we'll see what we can learn by thinking about the internet in a different way, focusing successively on hackers, virtuality, community, sovreignty, interfaces, algorithms and infrastructure. We'll read books, articles, and blogs about historical and contemporary cultures of computing, from Spacewar players and phone phreaks in the 1970s to Google, Facebook, World of Warcraft, WikiLeaks, and Anonymous today. In addition, we'll explore some of these online communities and projects ourselves and develop our own analyses of them.

SM 269. Computers, Ethics, and Social Values. (M) Staff.

This course will explore the various social implication of information technology: social, cultural, political and economic. Topics will include technology policy, organizational change, globalism and the digital divide, intellectual property rights, Linux and the free software movement, cyber libertarianims, and the rise and fallof the dot.com economy.

SM 272. (ENVS272) Energy in America. (M) Greene.

Energy is at the center of many discussions of today's world. How central is an apparently unlimited supply of energy to a helthy economy? What is the importance of sources of energy supply to national security? How can we expend the energy we need to foster human life as we know it without allowing climate change to disrupt the existing global environments that sustain the lives of humans and other living species in accustomed ways? How crucial is the current level of energy use to patterns of American consumption, and how willing are Americans to alter their consumption habits in order to reduce energy use? What is the connection between various sources of energy and the relationships of social, economic, and political power tht exist in the U.S. today. This course will examine changes in energy sources, energy use, and energy technolgoeis across American history in order to help students understand how the U.S. and the world arrived at its present situation with regard to energy and to understnad the complex technological, environmental, social, eocnomic, and political challenges implicit in any effort to modify the current trajectories of energy use.

SM 288. (SOCI282) Knowledge and Social Structure. (C) Humanities & Social Science Sector. Class of 2010 & beyond. Staff.

Throughout human history, the relationships of science and religion, as well as of science and magic, been omplex and often surprising. This course we cover topis ranging from the links between magic and science in the seventeenth century to contemporary anti-science movements.

299. Independent Study. (C)

SCIENCE, TECHNOLOGY & SOCIETY (AS) {STSC}

SM 307. (HSOC307) Globalization & Medicine in Colonial & Postcolonial South Asia. (C) P. Mukharji.

This seminar will explore a wide range of themes at the intersection of globalization and therapeutic cultures in South Asia and amongst South Asian diasporas. To begin with the course understands 'supraterritoriality' as the key feature of globalization and proceeds to interrogate the myriad ways in which this supraterritoriality was produced, consumed, used an dabused within the theraeutic cultures that have been, and on occasion still are, available inSouth Asia-both in reality and symbolically. Each week, through a specific case study, framed by a few theoretical readings, we will attempt to deepen and problematize the simple definition of globalization with which we start the course. Throughout the course there will be a strong emphasis on combining case study-based empirical material and theoretical interventions in Cultural Theory and Postcolonial Studies.

SM 312. (HSOC312) Weapons of Mass Destruction. (C) Lindee.

The course explores the historical development of traditional weapons of mass destcruction such as chemical, nuclear and biological agents, in addition to newer and seemingly non-traditional weapons such as land mines and civilian aircraft that can also be employed to cause large numbers of injuries and deaths among civilian and military populations. Through case studies in technology and public health, students will evaluate the medical, scientific, environmental, and cultural ramifications of these weapons and their effect on human heal and society by analyzing the rise of the military-industrial-academic-complex in twentieth century America.

SM 318. Experiment in the Modern Life Sciences. (M) Staff.

Experients on living material are now controversial for ethical reasons (think stem cells, animal experimentation and animal rights, etc), but the scientific merit of experimenting onthe living is rarely challenged. We tend to take for granted that experiments are the best way to understand biology, but inthe nineteenth century, the opposite was true. Why has this changed, and what are he implications of the change? Is the appearance of consensus around the role of experiment in biology simply a false impression? These are the sorts of questions that this course will explore through popular, scientific, and historical literature.

SM 322. (ENGL248) Edgar Allan Poe's Science. (C) Tresch.

You proabably read Poe first in junior high, and his works are often treated as juvenile: cheap thrills, campy horror,self-indulgent longing. But Poe also engaged with the most serious issues faced by his period, from politics and philosphy to industralization and science. His works dealt with these concerns in a variety of ways, while reflecting all along about the conditions of literature in a newly commercialized marketplace. This seminar will look at Poe's literary innovations through the lens of the developing technology and science of the early republic. It will examine the political importance of new institutions for research and diffusion as well as various emerging venues for popular science, including the journals in which Poe wrote as an early science reporter. The course thus explores the peculiar situtation of science and technology in the early USA, at the same time as it reveals the varied and complex literary production of Poe in a new and revealing light.

SM 329. (GSWS330) Gender and Science. (M) Lindee.

This course explores the gendered nature of science as social endeavor, intellectual construct and political resource. We consider the rise of gentlemanly science, masculinity and the arms race, the notion of a "Successor science" grounded in feminist theory, and the historical role of gender in defining who can do science and what counts as scientific data. We also explore how science has interpreted male-female differences. Our goal is to understand the profound impact of social place in the history of science, and thereby to understand the social nature of scientific knowledge.

SCIENCE, TECHNOLOGY & SOCIETY (AS) {STSC}

SM 368. (GRMN239) Sustainability & Utopianism. (M) Wiggin.

This seminar explores how the humanities can contribute to discussions of sustainability. We begin by investigating the contested term itself, paying close attention to critics and activists who deplore the very idea that we should try to sustain our, in their eyes, dystopian present, one marked by environmental catastrophe as well as by an assault on the educational ideals long embodied in the humanities. We then turn to classic humanist texts on utopia, beginning with More's fictive island of 1517. The "origins of environmentalism" lie in such depictions of island edens (Richard Grove), and our course proceeds to analyze classic utopian tests from American, English, and German literatures. Readings extend to utopian visions from Europe and America of the nineteenth and twentieth centuries, as well as literary and visual texts that deal with contemporary nuclear and flood catastrophes. Authors include: Bill McKibben, Jill Kerr Conway, Christopher Newfield, Thomas More, Francis Bacon, Karl Marx, Henry David Thoreau, Robert Owens, William Morris, Charlotte Perkins Gilman, Ayn Rand, Christa Wolf, and others.

SM 379. (HSOC379) Animals in Science Medicine Technology. (C) Greene.

This course examines different ways of knowing about animals, categorizing animals and relating to animals, through the sciences, medicine, and technological practices. It will explore the history of animals in human society, changes over time in human-animal relationships, and different sites of human-animal relationships and of knowledge production about animals. Topics may include: domestication, animal breeding, work animals and pets, animal archaeology, veterinary medicine, zoos, wildlife science and management and animal welfare. This is a seminar that will include visiting speakers, workshop exercises, films, and on-campus field trips. Student will write several short papers and a research project

SM 388. Who Owns the Past. (M) Staff.

Stories told about the past have long been understood as moral lessons. And historical narratives have also been susceptible to different readings by opposed parties. But the strength of appeals to the past is not a constant: historical experience has at some times and in some places been seen as irrelevant to practical action. Today, in the United States as well as in many other parts of the world, appeals to historical precedent carry considerable weight, and are made for many purposes. For example, the dissolution of Yugoslavia, has been explained as a result of centuries-old ethic tensions, yet when Yugoslavia was created at the end of World War I, objections were countered with the anthropological judgment that the new nation's ethnic divisions were not really significant. Or consider the debate over the ownership of the bones of so-called "Kennewick Man," which pitted Native Amerians against scientists over questions of identity and legal claims. Or, historical generalizations in biology over the value of Darwin's theory, resulting in political debates in local and school board elections and presidential contests. This course will discuss the uses of history in contemporary and past situations, drawing examples from the United States, Europe, the Midfle East, and Africa.

SM 400. Undergraduate Seminar in Science Technology and Society. (B) Staff.

This is a capstone seminar for STSC maors, and a required seminar for any STSC junior who wishes to write a senior thesis for honors in the major. It is designed to provide the tools necessary to undertake original research by guiding students through the research and writing process. Students will produce either a polished proposal for a senior thesis project, or a completed research paper by the end of the term. Although each student will work on a different topic, the class will focus on general aspects of historical, and social scientific research and guide students through a close reading of key texts in science and technology studies.

SCIENCE, TECHNOLOGY & SOCIETY (AS) {STSC}

SM 410. Science Fiction. (M) Adams.

An exploration of the interface between science and literature, including: the role of genre, narrative form, metaphor, and style in science; the depiction of science and scientists in fiction; the role of popular culture in reflecting--and creating--the social meaning of science and technology; and the use of science fiction in teaching the history of science, technology and medicine. Themes will include utopias, robots, supermen, aliens, time travel, alternate histories, and future histories.

SM 413. (HSOC413) Perfect Bodies. (C) Linker.

SM 426. (PHIL426) Philosophy of Psychology. (M) Hatfield.

Is there a science of psychology distinct from physiology? If there is, what is its subject matter? What is the relationship between scientific psychology and traditional philosophical investigation of the mental? Examination of these questions is followed by analysis of some concepts employed in cognitive psychology and cognitive science, particularly in the fields of perception and cognition.

SM 471. (HSOC471) Guns and Health. (A) Sorenson.

The purpose of this course is for students to gain an understanding of the role of guns in health, and population and prevention approaches to violence. The course will include a focus on policies and regulations related to firearms, the primary mechanism by which violence-releated fatalities occur in the U.S. We will address the life span of a gun, from design and manufacture through to use. In addition, we will address key aspects of the social context in which firearms exist and within which firearm policy is made.

498. Honors Thesis. (A) Staff.

499. Undergraduate Independent Study. (C)

Available with all members of the department faculty subjects ranging from the history of anthropology to the sociology of institutions.