Dietrich College Interdisciplinary Courses

Note on Course Numbers
Each Carnegie Mellon course number begins with a two-digit prefix which designates the department offering the course (76-xxx courses are offered by the Department of English, etc.). Although each department maintains its own course numbering practices, typically the first digit after the prefix indicates the class level: xx-1xx courses are freshmen-level, xx-2xx courses are sophomore level, etc. xx-6xx courses may be either undergraduate senior-level or graduate-level, depending on the department, xx-7xx courses and higher are graduate-level. Please consult the Schedule of Classes (https://enr-apps.as.cmu.edu/open/SOC/SOCServlet) each semester for course offerings and for any necessary pre-requisites or co-requisites.

Dietrich College Interdisciplinary Courses

66-102 DC Freshman Seminar: Issues in American Environmental History
Fall: 9 units
This seminar will focus on major issues in the evolution of the American environment. Much of America’s past environmental history has been beset with controversy, as scientists and engineers, health officials, politicians and the public debated about the cause and solution for various environmental problems. This seminar will examine some of the major environmental issues that have evolved over time through a combination of reading, discussion, and short papers.

66-103 DC Freshman Seminar: The Social Impact of War
Fall: 9 units
Wars and their effects are a continuing aspect of the human condition. This course will introduce students to the manner in which war is conceptualized in modern western societies, using readings from philosophy, literature, history and the social sciences to examine how warriors, belligerent societies and cultures describe the benefits and costs of war. The course will primarily focus on the American experience of war in the twentieth and twentieth-first century, from the Great War to the War on Terror, while also examining the Cold War and the antecedents to contemporary conflict. This course is open only to HSP students. This class fulfills the Freshman Seminar requirement for General Education requirements.

66-104 DC Freshman Seminar: Philosophy and Argument
Fall: 9 units
What makes me "me"? What is real? Is there a God? What is the mind, and how does it interact with the body? Can computers think? Are humans ultimately free? What makes our lives valuable? Should we try to make ourselves immortal? What should we do about climate change? These are some of the toughest, most pressing questions in philosophy today. Philosophers have addressed these questions by producing subtle, intricate, and often beautiful arguments. In this seminar, you will assess those arguments and produce your own. You will learn to think like a philosopher - to strip an argument presented in prose to its bare essentials and produce a visual representation that displays its structure plainly. Learning to visualize arguments in this way will improve the clarity and rigor of your own thinking and writing. It will put you in a position to make progress on hard questions such as those above. And it will improve your ability to crisply convey your ideas - an ability that will serve you well not just in your Carnegie Mellon classes, but also in the political, professional, and civic reasoning you employ for the rest of your life.

66-105 DC Freshman Seminar: Scientific Thinking: in Children, in Adults, in Scientists
Fall: 9 units
The aim of this course for you to learn how to provide a coherent answer to the question: “What does it mean to ‘do’ science?” You will discover that the answer depends on being able to define “the scientific method” and “scientific knowledge.” We will sample - a very tiny part of — the vast literature on Science. This will involve reading selected papers about scientific reasoning, creativity, invention, and discovery. You will learn something about what philosophers, historians, sociologists have written about how science is done, and you will also see what scientists themselves have to say about the matter. In one part of the course, we will read selected topics from a standard textbook on thinking and problem solving. You will have many tasks to do some psychology research of your own that reveals how people go about forming hypotheses and designing experiments to test them. In addition, we will look at studies and research papers about the cognitive psychology of science, and you will read several "primary sources": articles from journals in cognitive psychology that deal with the psychology of scientific reasoning. Finally, we will spend some time learning about research on teaching science in the early grades, and examine some of the current controversies about science.

66-106 DC Freshman Seminar: Applied Quantitative Social Science I
Fall: 9 units
The QSSS Freshman Seminar provides a fast-paced introduction to a range of methods in the quantitative social sciences. Organized around a set of case studies, the course introduces students to concepts from each of the six QSSS concentration areas: statistics and regression, econometrics, choice modeling, quantitative policy analysis, computational modeling, and psychometrics. This course is open to QSSS students only.

66-107 DC Freshman Seminar: Modeling Complex Systems
Fall: 9 units
Most of the major issues confronting humanity—such as climate change, financial collapse, ecosystem survival, terrorism, and disease epidemics— are the result of complex systems where the interactions of the pieces of the system create a whole that is rather different than any of its parts. Unfortunately, traditional scientific methods that focus on reducing systems to their parts and then analyzing each part provide little insight into such systems. This seminar explores the behavior of complex systems as well as how to model and understand them using both traditional tools and computer-based approaches.

66-108 DC Freshman Seminar: Statistical Paradoxes: When You Can’t Trust Your Own Eyes
Fall: 9 units
Humans are notoriously bad at probabilistic thinking. We’re crushed if our hometown team loses when it’s the favorite, and ecstatic when we win a lucky streak playing craps: we constantly see patterns in randomness. Even Paul Erdos, one of the greatest mathematicians of the last few centuries, was famously wrong about a deceptively simple probability puzzle. When it comes to statistics, we often run into trouble when we rely on intuition - we can’t trust our own eyes. In this class we will tease apart some entertaining but important statistical paradoxes and biases. For example: Why are better health outcomes reported when only medical screening improves? How could David Justice have a better batting average than Derek Jeter in both 1995 and 1996 separately, but not in 1995-1996 combined? Could most published research findings actually be false? Why should attorneys be forced to learn Bayes’ Theorem? Can we really know that smoking causes lung cancer? This course will help you answer these questions, teach you to think critically about research and news reports, or at least give you some entertaining anecdotes to tell at parties. We will also use the statistical software R for hands-on exploration.

66-109 DC Freshman Seminar: Climate Change
Fall and Spring: 9 units
Climate change is considered by many the most serious social, political, and environmental issue of the 21st century. As human activities increase the level of greenhouse gases in the atmosphere, scientists have established the reality of climate change and have estimated its impacts on human society and the natural world. Despite the scientific consensus on its existence, causes, and consequences, a substantial number of Americans and citizens of other countries still question these conclusions and a small but vocal group of doubters continue to challenge the science and scientific consensus on climate change. In spite of some social division over these issues, governments at local, national, and international levels have made concerted efforts to craft policies to address climate change. These policies have shifted over time as the information, attitudes, and technology associated with climate change have evolved. In this course, we will explore the challenges and complexities of climate change by investigating the subject from a variety of angles: scientific, political, rhetorical, cultural, economic, technological, and ethical. Over the course of the semester, we’ll inquire: What is climate change? How do scientists know it is happening? Why is there public debate over it? What solutions are available? And what are the pros and cons of the different solutions?
66-161 DC Freshman Seminar: Artificial Intelligence and Humanity
Fall and Spring: 9 units
In 1965 British mathematician I. J. Good wrote, “An ultraintelligent machine could design even better machines; there would then unquestionably be an ‘intelligence explosion,’ and the intelligence of man would be left far behind.” As we enter an age where companies like Uber are testing driverless cars in Pittsburgh and innovative interfaces like IBM’s Watson can play jeopardy and learn techniques for medical diagnoses, how are we to negotiate an “intelligence explosion” that for many individuals might threaten the very notions of what it means to be human? The future of human-to-machine relationships will likely define our historical epoch and yet, many young technologists and humanists underestimate the downstream impact of technological innovations on human society. Presently, we have little choice but to attend to this rapidly anxiety-ridden question. This seminar will attend to the challenge of present existential questions on what it means to be human (read not machine) in the context of a rapidly advancing technological age. We will consider human narratives throughout history that examine how governments and individual citizens defined humanity in the context of slavery and colonialism as a framework for exploring and projecting what it means to be human in the age of rapidly advancing “intelligent” machines. We will trace the technological advancements of the recent five decades and identify historical precedents and speculative narratives that help us to consider issues like labor, economic disparity, negotiations of power, human dignity and ethical responsibility within the context of human relations with advancing technological tools that are now coined, artificial intelligence.

66-221 Topics of Law: Introduction to Intellectual Property Law
Intermittent: 9 units
Topics for this course vary, to include such foci as intellectual property, introduction to U.S. law, great American trials, and the U.S. Constitution. Topics and courses are designed to be broadly relevant and interesting for university undergraduates, and not narrowly tailored for students interested in law school.

66-307 Independent Study
All Semesters
This course is intended for students with a special interest in an interdisciplinary area in the humanities and/or social sciences not covered by a normal course. Readings and other works are developed by the student and an individual faculty member. The number of units will be assigned at the time of registration based on the number of hours to be completed (decided in advance with the sponsoring faculty member).

66-320 Internship
All Semesters
Internships-for-credit allow students to apply course-based knowledge in a non-classroom setting, under joint supervision and evaluation by an on-site supervisor and a faculty sponsor. Approved internships must conform to college guidelines for internships-for-credit, and are available by permission only arranged through the Associate Dean’s Office in Baker Hall 154.

66-501 H&SS Senior Honors Thesis I
Fall and Spring: 9 units
This sequence is open only to those seniors who have been admitted to the H&SS Senior Honors Program. This is the first semester of a two-semester sequence that culminates in an original, year-long independent research or creative project. Thesis topics are selected by faculty and students.

66-502 H&SS Senior Honors Thesis II
Fall and Spring: 9 units
This sequence is open only to those seniors who have been admitted to the H&SS Senior Honors Program. This second semester course is the culmination of an original, year-long independent research project. Research topics are selected by faculty and students.

General Dietrich College Courses

65-101 Humanities Scholar I
Fall: 9 units
The Social Impact of War. Tim Haggerty (director, Humanities Scholars Program) War is a continuing aspect of the human condition. This course will introduce students to the manner in which war is conceptualized in modern societies, using readings from philosophy, literature, history and the social sciences to examine how warriors, belligerent societies and cultures describe the benefits and costs of war. The course will focus on the experience of war in the twentieth and twenty-first century, from the Great War to the War on Terror, while also examining the Cold War and the antecedents to contemporary conflict. This class fulfills the Freshman Seminar requirement for GenEd.

Course Website: http://www.hss.cmu.edu/hsp/

65-103 QSSS Freshman Seminar
Intermittent: 9 units
The QSSS Freshman Seminar provides a fast-paced introduction to a range of methods in the quantitative social sciences. Organized around a set of case studies, the course introduces students to concepts from each of the six QSSS concentration areas: statistics and regression, econometrics, choice modeling, quantitative policy analysis, computational modeling, and psychometrics. Enrollment in the seminar is restricted to students in the QSSS program.

65-201 Humanities Scholars III
Fall: 9 units
TBA.

Course Website: http://www.hss.cmu.edu/hsp/

65-203 Applied Quantitative Social Science II
Spring: 9 units
Applied Quantitative Social Science II is the second course in the QSSS core sequence. Conducted in a seminar format, the course will feature guest lectures from a series of faculty at CMU. Students will discuss ongoing research across the social sciences, and over the course of the semester will develop a research project proposal. Seminar participation is limited to QSSS students.