Environmental Ethics  TR 9:30-10:45 (Drummond)

This course will focus on different aspects of environmental ethics, including broader ethical questions surfacing as a result of climate change and questions around sustainability and development, as well as the Gaia hypothesis. We will also discuss more specific examples of habitat destruction, species loss, species invasion, food ethics, and associated animal ethics, ecological restoration and genetically modified organisms.

The primary focus of this course will be on the philosophical and theological interrogation of these matters at a local and global level, rather than the factual basis of the problems, though the scientific basis for the issues under discussion will also be considered in order to provide an adequately informed background to this approach. Plans are also underway to include a field trip to a local organic farm. We will also discuss the impact of public theology in matters relating to environmental concern, and the different strategies used by different theologians, including the impact of Roman Catholic social teaching.

HPS 83100
Colloquium  T 4:15-5:30 (Brading)

Group Discussion by the HPS faculty and students of a prominent recent work in the history and philosophy of science and research presentation by visiting scholars.
Required course for HPS students in first and second years of program.

HPS 83608
Historical Epistemology  TR 9:30-10:45 (Stapleford)
Crosslist: HIST 93988

What would it mean to approach intellectual history not as the study of ideas per se but as the study of underlying changes that made the emergence of new concepts possible? Such is the task of historical epistemology. We will explore this perspective through the work of some of its key practitioners and intellectual ancestors, including Georges Canguilhem, Michel Foucault, Alistair Crombie, Ian Hacking, and Lorraine Daston, among others.

HPS 93641
Problem of (Non) Modernity: Knowledge, Belief, and Science in Melville's America  T 11:00-1:30 (Walls)
Crosslist: ENGL 90607

This seminar will use selected literary texts to explore two related theoretical questions: How do we read literatures in a world dominated by the methods, knowledge’s, and technologies of the sciences? And how does learning to read afresh—“deliberate” reading, in Thoreau’s phrase—teach us how to renew the “liberal arts” (which surely include the sciences) at a time when they are newly on the defensive? Our starting premises will be that this problem is generated by modernity and is brought to a particular point of
productive tension in the nineteenth-century United States, where democratic theory was pitched against modern industrial capitalism; and that returning to this moment, the alpha to our own omega, can suggest pathways for future critical work. For literary studies today are in the early stages of a theoretical breakthrough that will move beyond the binaries of modernity—"science and literature," "nature and culture," "subject and object"—to new, nonmodern modes of reading and praxis that draw on all sides of the traditional dualisms. In hopes of contributing to this project, we will experiment with reading as a practice of mobility across a variety of boundaries (both geographic and disciplinary), and across scale levels from local to planetary, arrayed in panarchic rather than hierarchic relationships. We will focus on a limited number of literary works, all of which engage literature and exploration science—including Thoreau's Walden and one or two other of his writings, Melville's Moby-Dick, and Poe's Narrative of Arthur Gordon Pym—and use them to explore a somewhat wider range of theoretical works drawn from ecocriticism, posthumanism, science studies, earth systems and resilience theory, spatial theory, critical cosmopolitanism, and animal studies, including such authors as Derrida, Foucault, Michel Serres, Bruno Latour, Isabelle Stengers, Donna Haraway, Cary Wolfe, and J.M. Coetzee.

Requirements: Students will, in addition to weekly response papers, write a substantive essay in which they test our theoretical explorations through a "deliberate" reading of text of their choice, possibly, but not necessarily, drawn from nineteenth-century American literature. That is, the crossing of both national and disciplinary boundaries will be encouraged. Note that this course is crosslisted with English.

HPS 93761
Problems & Themes in the History of Technology Science Revolution to 1900 (HOPOS) M 9:30-12:00 (Hamlin)
Crosslist: HIST 93985

This is a systematic survey of the historiography of technology. Topics include the status of the history of technology as a discipline; the thesis of technological determinism; the science-technology relationship; retrospective technoscientific reconstructions; critiques of technology from Marx to Mumford and beyond; versions of social constructivism in technology (including actor-network theory); the internal (technical) history of technology; cultural histories of technology; design and invention; technology transfer and diffusion; technology policy and technological state building; technology, labor and gender; the history of the engineering professions; and modeling in the history of technology. Students will be asked to explicate texts on a weekly basis and to prepare a detailed historiographic/pedagogical essay on a particular aspect of the field. Alternatively, with instructor's permission, students may use course as a framework for a research paper.

HPS 93812
History of the Philosophy of Science from the Scientific Revolution to 1900 (HOPOS) MW 1:30-2:45 (Joy)
Crosslist: PHIL 93812

Much of the history of philosophy from the early modern period through the nineteenth century can be written as the history of philosophically reactions to the development of modern science, especially the physics of Newton and Maxwell, but also the chemistry, biology, psychology, and sociology that came into their own in the nineteenth century. What was the epistemic basis of this new scientific knowledge? What was the proper method of science? What were the scope and limits of this new science? Philosophers whose work we will discuss include: Newton, Hume, Kant, Mill, Whewell, Helmholtz, Mach, and Duhem.

Requirements: Seminar requirements include short class presentations and two medium-length papers.
HPS 93816
Newton’s Principia II  W 6:30-9:00 (Brading)
Crosslist: PHIL 93816

This is the second semester of Professor George Smith’s famous two-semester Newton course, live and interactive via videolink from Tufts University. This semester, we read the Principia cover-to-cover, and end the semester with a look at some of the reaction that followed publication of the Principia. George Smith knows Newton’s Principia inside-out (every proposition, every corollary, no kidding). Principia is not an easy book to read, and this opportunity to join the small group of people who have actually read it and understood it may be one that you will never get again.

Pre-requisite: Newton's Principia I.
Those taking this course for 3-credit hours must also register for a directed reading with Katherine Brading (philosophy of science) or Robert Goulding (history of science) or Tom Stapleford (history of science).

HPS 93826
Forbidden Knowledge: The Social Construction and Management of Ignorance  MW 5:00-6:15 (Kourany)
Crosslist: PHIL 93826

Although many speak of ours as a “knowledge society,” ignorance seems to flourish all around us. Even in the United States, considered one of the most advanced countries of the world, the content of the news varies with the sources consulted, more information is kept secret every year than is revealed, and millions question some of the most established results of science (such as evolution, global warming, and the benefits of childhood immunization) even as they overlook genuine problems (such as conflict of interest) in other results of science. And the problem, some say, is growing worse. Still, despite its alarming proportions, all this ignorance is ignored by traditional epistemology and philosophy of science. As a result, within the last 10 years historians of science such as Robert Proctor, Londa Schiebinger, Peter Galison, and Naomi Oreskes, have been promoting a new area of enquiry-Proctor calls it agnotology, the study of ignorance—which they suggest is of as much relevance to philosophers and scientists and others as it is to historians. Indeed, the suggestion is that agnotology offers a new approach to the study of knowledge, an approach at least as complex and important as its more established philosophical sisters.

In this course, after briefly considering the ways traditional epistemology and philosophy of science conceptualize ignorance, we shall explore agnotology’s approach: ignorance as active social construction. Here we will investigate not only the kinds of issues dealt with by the above historians of science—such as ignorance produced through government secrecy and censorship and the commercial shaping of scientific research—but also issues dealt with by others, by scientists and philosophers and historians alike—such as ignorance produced through cognitive bias and cultural prejudice. We shall also investigate the social production of “virtuous ignorance,” for example, the kind of ignorance that ensues when socially damaging research is not pursued. We shall then be in a position to assess this new area of agnotology and map out its relationship with epistemology and philosophy of science.

The style of this course will be discussions rather than lectures, and these will be led by members of the seminar.

Requirements: Will include class presentations as well as one (longer) or two (shorter) papers aimed at preparing students for presentations at scholarly meetings or submissions to journals.

HPS 93872
History of Foundations of Quantum Theory  TR 2:00-3:15 (Howard)
Crosslist: PHIL 93872

This course is a historically organized survey of major issues in the philosophical foundations of quantum mechanics. Working with a mix of primary and secondary texts, we will first survey the development of the quantum theory through the emergence of wave and matrix mechanics in the 1920s, the aim being to understand the context in which Bohr’s complementarity interpretation and debates about it first arose. A careful study of the Bohr-Einstein debate over the completeness of quantum mechanics will be followed by a review of the major controversies over interpretation in the second half of the twentieth century, including
the measurement problem, hidden variables theories, and Bell’s theorem. The course will include with a look at new questions of interpretation unique to the context of quantum field theory. The course will not assume advanced training in physics.

HPS 78599  
**Thesis Direction** (Brading)  
Thesis direction for terminating Master's students.

HPS 96697  
**Directed Readings**

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HPS 98699
Research and Dissertation (Brading)

HPS 98700
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