HPS Undergraduate Courses
Spring 2026 (Term 2264)

HPS 0412 Newtonian Revolution (31121)
T TH 9:30 – 10:45
Marian Gilton

In this class we will investigate the transformation of scientific concepts by studying the historical,philosophical, and scientific issues raised by Newton's work in optics and mechanics. We will adopt the methods of integrated history and philosophy of science, whereby understanding is improved through a sustained dialogue between historical investigation and philosophical critical reflection upon the processes and products of a scientific enterprise. We will begin with looking at the traditional notion of a revolution in philosophy of science, and explore the applicability of this notion to the scientific context of sixteenth and seventeenth century England. We will then look closely at the stages in which Newton developed the theory of universal gravitation. This will provide the groundwork for studying the pivotal transformation of the concepts of force, attraction, and inertia, together with the invention of the concept of mass and the cultural reorientation surrounding the nature of the cosmos as a whole. We will then compare and contrast Newton's work in constructing the theory of universal gravitation with his experimental methods in optics. We will then explore the legacy of Newton's work in the subsequent experimental tests of Newtonian gravitation, the codification of modern scientific methodologies, and in the development of central topics in the philosophy of science.

HPS 0427 Myth and Science (31122)
M W 6:00-8:30
Kabir Bakshi

Is there any difference between science and myth? Is believe in modern science similar to believe in religious mythology? What makes myths powerful? What is the place of myth in our modern life? We will explore these (and neighboring) questions in the course by reading some philosophy (of science), some history (of science), and some literature and by watching a couple of movies and listening to some music. This is a reading intensive course and is broad in scope: geographically, temporally, and pedagogically.

HPS 0427 Myth and Science (31778)
T TH 4:00-5:15
Stamatina Mastorakou

This course explores the origins of philosophy and science in the Mediterranean world. While our main focus will be on ancient Greece, we will also examine material from Egypt and Mesopotamia. We will investigate different ways of approaching and understanding the world through mythology, philosophy, science, and religion. We will investigate the fundamental questions the ancients asked—and the answers they offered—and reflect on what distinguishes a scientific approach and how it relates to other ways of knowing. Throughout the course, we will uncover diverse worldviews and connect them to modern scientific perspectives, with particular attention to cosmology, philosophy, astronomy, and medicine.

HPS 0437 Darwinism and Its Critics (31123)
M 6:00 – 8:30
Eric Anderson
This course explores the development and reception of Charles Darwin's theory of evolution in the 19th century. We will critically examine Darwin's scientific, philosophical, religious, socio-political, economic, and environmental contexts. We will trace Darwin's scientific development from his education, to his service as naturalist aboard the H.M.S Beagle, to the origins and subsequent transformations of his theory. We will analyze the structure, logic, and strength of Darwin's argument in On the Origin of Species. Understanding the attitudes of Darwin's contemporaries, and their critical responses to his (and others') evolutionary ideas, will be a point of focus throughout this course. Finally, we will examine the scientific and social impacts of Darwinism, including subsequent developments in biology and the rise of social Darwinism and eugenics in the late 19th century. Through this exploration, students will become familiar with a rich cast of characters and the world they inhabited, gaining a nuanced understanding of the origins and impacts of biology's most important, and most provocative, theory.

HPS 0515 Magic, Medicine, and Science (31124)
Cross Listed with HIST 0089
T TH 8:00 – 9:15
Sameera Singh
This course introduces students from all backgrounds to humanistic ecology, an interdisciplinary method which combines the humanities with science. Humanistic ecology teaches how to integrate scientific rese philosophy, pedagogy, literature, and health in a holistic framework. Students will learn about classical fo transformation, healing, and knowing that will help them find original pathways to knowledge and wellbei

HPS 0517 Thinking About the Environment (32193)

T 1:00 – 3:30
Dana Matthiessen
In this course we will investigate the relationship between humans, non-human creatures, ecosystems, and the broader natural world from a philosophical and historical perspective. To begin, we critically examine common assumptions about notions like "nature," "naturalness," and "wilderness." We then survey the history of the environment and environmental thinking in America. Throughout we will attend to the differences between conceptions of nature and relations to the natural world descending from colonial European and indigenous American ways of living. From there, we turn to more contemporary conceptual and ethical issues in ecology and environmentalism, including the role of human values in environmental science, the goals of ecological management and restoration, environmental justice, and the ethical implications of climate change. Students will develop skills needed to historically situate and critically evaluate environmental and ethical arguments, to engage with differing viewpoints about these pressing issues, and to better understand their own lived relationship to the environment as inhabitants of Pittsburgh.

HPS 0605 The Nature of the Emotions (32112)
T TH 9:30 – 10:45
Madeleine Potoskie
This course will examine selected historically important theories and portrayals of the human emotions and passions.

HPS 0611 Principles of Scientific Reasoning (25342)
H 6:00 – 8:30
Hung Hui Choi
The primary goal of this course is to give you an introduction to the *nature* of science. We will begin with the big question "*what is the scientific method*?", where we will discover that while there are many proposals, all of them are beset by counterexamples and none of them have gained universal acceptance. Nevertheless, some of these proposals—for example, hypothetico-deductivism, falsificationism, Bayesian confirmation—do seem to capture what goes on in large portions of science even if they fail to be universal criteria. We will explore the pros and cons of these *principles* of science. Special attention will be paid to *statistical hypothesis testing*, a method widely used in the social sciences and medicine but also often condemned (e.g., as a cause of psychology's replication crisis). There will also be an emphasis on formal methods, including deductive logic. Along the way, we will be asking questions that are especially pertinent to the current anti-science climate, including: Who *funds* science? Who *conducts* science? What are the *aims* of

science? It may surprise you that these seemingly straightforward questions have unexpected answers.

HPS 0611 Principles of Scientific Reasoning (32396)
T TH 4:00 – 5:15
Kyra Salomon
The course will provide students with elementary logic skills and an understanding of scientific arguments. Ours is an increasingly scientific and technical society. In both our personal life decisions and in our work we are daily confronted by scientific results which influence what we do and how we do it. Basic skills in analyzing the structure of arguments in terms of truth and evidence are required to make this type of information accessible and useful. This course is designed to aid the student in making sense of a variety of elementary logic skills in conjunction with the application of those skills to actual cases.

HPS 0612 Mind and Medicine
M W 3:00 – 4:15 (27418)
T TH 4:00 – 5:15 (31126)
T TH 2:30 – 3:45 (26497)
Amanda Evans
Mind and medicine deals with fundamental problems and questions that arise in considering the nature of mental health, mental illness, and branches of medicine that aim to promote mental health and treat mental illness. We will begin by considering the concepts of 'health', 'disease' and 'illness' in general, and several different models of medicine. From there we will move on to a consideration of the nature of explanation in medicine generally. We will examine some explanatory successes in the domain of physical health and disease, and consider how those successes were achieved. In the second half of the course we will look at controversies over the question of whether there is such a thing as mental illness, and if so, how one is to define, diagnose and treat it. In order to better understand what is at stake, we will explore these controversies by focusing on a specific mental illness, schizophrenia. Looking at recent research on schizophrenia will allow us to see the extent to which the kind of understanding we have achieved in physical medicine is or is not to be expected with serious mental illness. Students who successfully complete this course will be able to identify and analyze different philosophical approaches to selected issues in medicine and psychiatry; have gained insight into how to read and critically interpret philosophical arguments; and have developed skills that will enable them to think clearly about foundational questions as future or current health care providers, policy makers, and consumers. This course is also part of a core sequence leading to certification in the Conceptual Foundations of Medicine Certificate Program,

and is a companion course to HPS 0613 (Morality and Medicine) but may be taken independently. The course is of particular interest to pre-medical and pre-health care students.

HPS 0612 Mind and Medicine (31128)
T TH 4:00 – 5:15
Dana Matthiessen
Mind and medicine deals with fundamental problems and questions that arise in considering the nature of mental health, mental illness, and branches of medicine that aim to promote mental health and treat mental illness. We will begin by considering the concepts of 'health', 'disease' and 'illness' in general, and several different models of medicine. From there we will move on to a consideration of the nature of explanation in medicine generally. We will examine some explanatory successes in the domain of physical health and disease, and consider how those successes were achieved. In the second half of the course we will look at controversies over the question of whether there is such a thing as mental illness, and if so, how one is to define, diagnose and treat it. In order to better understand what is at stake, we will explore these controversies by focusing on a specific mental illness, schizophrenia. Looking at recent research on schizophrenia will allow us to see the extent to which the kind of understanding we have achieved in physical medicine is or is not to be expected with serious mental illness. Students who successfully complete this course will be able to identify and analyze different philosophical approaches to selected issues in medicine and psychiatry; have gained insight into how to read and critically interpret philosophical arguments; and have developed skills that will enable them to think clearly about foundational questions as future or current health care providers, policy makers, and consumers. This course is also part of a core sequence leading to certification in the Conceptual Foundations of Medicine Certificate Program, and is a companion course to HPS 0613 (Morality and Medicine) but may be taken independently. The course is of particular interest to pre-medical and pre-health care students.

HPS 0612 Mind and Medicine (CGS) (24934)
TH 6:00 – 8:25
Dana Matthiessen
Mind and medicine deals with fundamental problems and questions that arise in considering the nature of mental health, mental illness, and branches of medicine that aim to promote mental health and treat mental illness. We will begin by considering the concepts of 'health', 'disease' and 'illness' in general, and several different models of medicine. From there we will move on to a consideration of the nature of explanation in

medicine generally. We will examine some explanatory successes in the domain of physical health and disease, and consider how those successes were achieved. In the second half of the course we will look at controversies over the question of whether there is such a thing as mental illness, and if so, how one is to define, diagnose and treat it. In order to better understand what is at stake, we will explore these controversies by focusing on a specific mental illness, schizophrenia. Looking at recent research on schizophrenia will allow us to see the extent to which the kind of understanding we have achieved in physical medicine is or is not to be expected with serious mental illness. Students who successfully complete this course will be able to identify and analyze different philosophical approaches to selected issues in medicine and psychiatry; have gained insight into how to read and critically interpret philosophical arguments; and have developed skills that will enable them to think clearly about foundational questions as future or current health care providers, policy makers, and consumers. This course is also part of a core sequence leading to certification in the Conceptual Foundations of Medicine Certificate Program, and is a companion course to HPS 0613 (Morality and Medicine) but may be taken independently. The course is of particular interest to pre-medical and pre-health care students.

HPS 0613 Morality and Medicine
M W 12:00 – 12:50 (20616)
M W 1:00 – 1:50 (28966)
M W 2:00 – 2:50 (31130)
Nina Atanasova
Ethical dilemmas in the practice of health care continue to proliferate and receive increasing attention from members of the health care profession, ethicists, policy makers, and the general public as health care consumers. In this course we will examine a number of ethical issues that arise in the context of contemporary medical practice and research by analyzing articles and decision scenarios. Topics to be covered typically include the physician-patient relationship; informed consent; medical experimentation; termination of treatment; genetics; reproductive technologies; euthanasia; resource allocation; and health care reform. Students who successfully complete this course will be able to identify and analyze different philosophical approaches to selected issues in medical ethics; have gained insight into how to read and critically interpret philosophical arguments; and have developed skills that will enable them to think clearly about ethical questions as future or current health care providers, policy makers, and consumers. This course is part of a core sequence leading to Certification in the Conceptual Foundations of Medicine Certificate Program, and is a companion course to HPS 0612 (Mind and Medicine) but may be taken

independently. The course is of particular interest to pre-medical and pre-health care students.

HPS 0613 Morality and Medicine (28968)
T TH 1:00 – 1:50
Laura Matthews

Ethical dilemmas in the practice of health care continue to proliferate and receive increasing attention from members of the health care profession, ethicists, policy makers, and the general public as health care consumers. In this course we will examine a number of ethical issues that arise in the context of contemporary medical practice and research by analyzing articles and decision scenarios. Topics to be covered typically include the physician-patient relationship; informed consent; medical experimentation; termination of treatment; genetics; reproductive technologies; euthanasia; resource allocation; and health care reform. Students who successfully complete this course will be able to identify and analyze different philosophical approaches to selected issues in medical ethics; have gained insight into how to read and critically interpret philosophical arguments; and have developed skills that will enable them to think clearly about ethical questions as future or current health care providers, policy makers, and consumers. This course is part of a core sequence leading to Certification in the Conceptual Foundations of Medicine Certificate Program, and is a companion course to HPS 0612 (Mind and Medicine) but may be taken independently. The course is of particular interest to pre-medical and pre-health care students.

HPS 0620 Science and Religion (REL DEPT) (21199)
T TH 9:30-10:45
Brock Bahler

Are science and religion at odds or harmonizable? Do they coincide or represent completely separate discourses? This course examines the relationship between science, rationality, faith, and religion. Special attention will be given to ancient creation narratives and their interpretation, historical dialogues regarding faith and reason in the Western monotheist faiths (Christianity, Judaism, Islam), the scientific revolution, and various approaches to evolutionary theory. We will also consider practical, contemporary issues such as neuroscience and religious practice, ecology and faith, and scientific views toward gender and race.

HPS 0626 Development of Modern Biology (32397)
M W 3:00 – 4:15
Michael Dietrich

This course will consider major episodes in the history of biology in the 19th and 20th centuries. Beginning with the Charles Darwin's theory of evolution and ending with contemporary genomics, we will place the major milestones of modern biology in their wider social, political, and cultural context. Topics may include Darwinism and its controversial reception, eugenics and the control of heredity, experimentation as a hallmark of twentieth century biology, the impact of molecular biology, and the rise of genomics and big data in biology.

HPS 1612 Philosophy of 20th Century Physics (30705)
T 6:00 – 8:30
Brett Park
Modern physics rests on three pillars: quantum mechanics, relativity, and statistical mechanics. Despite the enormous successes of each of these theories, it remains unclear what they tell us about what the world is like and our place in it. There exist many outstanding questions about how to best formulate and interpret these theories. All proposals to understand them require us to accept some deeply counterintuitive ideas about reality. In this course, we will consider metaphysical and epistemological questions that arise from quantum mechanics, relativity, and statistical mechanics. These include questions about the nature of space and time, the relation between matter and spacetime, the quantum measurement problem, 'interpretations' of quantum mechanics, quantum non-locality, the nature of probability, and the relationship between physical theories. The discussion will take place at a largely conceptual level. There are no prerequisites. All the relevant physics and philosophy will be covered as the course develops.

HPS 1616 Artificial Intelligence and Philosophy of Science (31134)
M W 4:30 – 5:45
Dzintra Ullis

This course investigates the problem of mechanizing reasoning. For the case of deductive inference, it draws on work in symbolic logic and computation theory. For the case of inductive inference, it draws on work in confirmation theory from philosophy of science and learning theory.

HPS 1623 Death and Healthcare Professions (REL DEPT) (30083)
M 6:00 – 8:30
Jonathan Weinkle
The American culture of the 20th and 21st centuries has been called, not death-defying, but death-denying. It is often said that America is the only place in the world that treats

death as optional. Once upon a time, we couldn't have open, public conversations about breast cancer, because the word could not be uttered aloud. In many places, it is just as hard today to have an open, public conversation about death and dying. This phenomenon is not just a social more; it affects the practice of many professions and entire segments of our economy and society. This course will explore our individual and cultural reactions to mortality, the ways in which dying in today's America is different from dying throughout history or elsewhere in the world, and the responses of a variety of professions, both within the field of healthcare and beyond, to their encounters with people in the various stages of dying. Students will be asked, at turns, to be scientific, philosophical, clinical, analytical, and emotional in encountering the concepts and material presented here. This should be a true interdisciplinary experience.

HPS 1670 Philosophy of Neuroscience (31140)
T TH 2:30 – 3:45
Laura Matthews

How can neuroscience explain my subjective experiences? How are the mind and brain connected? Do neuroscience and psychology even relate? Is there a problem of consciousness? Can we read minds? These are some of the questions now occupying the minds of both philosophers of neuroscience and many neuroscientists. However, approaching such questions empirically does not reveal the underlying assumptions one might incorporate into one's thinking when formulating questions, developing experiments, and interpreting results. This course will couple metaphysical theories of mind with contemporary research in both cognitive neuroscience and neurobiology. Throughout the class, we will try to answer some of the questions that popularly occupy contemporary philosophy of neuroscience debates, as well as interrogate and identify, philosophically, where and how these questions, including the research they prompt, arose in the first place. Finally, as neuroscience is a largely tool-driven discipline, students will learn about a range of neurotechnologies and explore whether or not these technologies are likely to get us any closer to reading the mind from the brain. Background in neuroscience is not required.

HPS 1671 Philosophical Foundations of Cognitive Science (27434)
W 6:00 – 8:30
Mara McGuire

An overview of the rise of cognitive science as an interdisciplinary field, and the fundamental debates it has engendered. Cognitive science emerged in the twentieth century as a paradigm for studying the mind. Since its beginning, cognitive science has drawn upon formal developments in philosophy, logic, mathematics, and computer science in order to establish various frameworks for generating and testing theories of cognition. It has sought to integrate, as well as further, the empirical findings of psychology, linguistics, anthropology, and neuroscience. The premises behind this ambitious approach have given rise to significant philosophical discussion. The first half of the course will introduce students to philosophical and empirical developments within the individual disciplines related to cognitive science and will show how they interrelate. The second half of the course is devoted to the central debates: classical computationalism versus connectionism; nativism versus empiricism; representationalism versus anti-representationalism; bottom-up versus top-down approaches; the rationality wars; and so on.

1702 Jr/Sr Seminar for HPS Majors (10755)
1703 Practicum (10756)
M 9:30-11:50
Paolo Palmieri
The goal of this seminar (HPS 1702) will be to introduce you to the cutting-edge research in history and philosophy of science. The seminar is designed to complement the knowledge you have acquired about the classic debates in history and philosophy of science. We will focus on the recent debates in contemporary philosophy of science and on some debates in the history of science that are relevant for philosophy. We will read articles that have been published in the last ten years in the major philosophy of science and history of science journals. We will also read some classic papers that provide a background for the current debates.

This seminar is intended to be a "capstone" experience for majors in history and philosophy of science. So far, each of you have taken an array of courses that specialize in one of other aspect of HPS. The purpose of this seminar is to give you a more advanced understanding of both history of science and philosophy of science than you may have had in your introductory classes. It will also give you direct experience of how someone with a background in HPS synthesizes their history of science and their philosophy of science. The early parts of the seminar will present you with case studies of how historical and philosophical analysis of science can be combined. They are intended to be exemplars, for the only way to learn to create HPS is by doing it. As the seminar proceeds, you will carry out a series of assignments in history and in philosophy of science that will build and combine into a final, term paper project in which you will synthesize history and philosophy of science. The historical part will arise through your researching of some episode in history of science that both interests you and promises to interact in an interesting way with a philosophical topic of interest to you. You will also present your results in a poster. Learning how to present material is an essential skill for scholars in HPS. The use of posters was once uncommon in HPS, but their use is becoming frequent.

This writing workshop (HPS 1703) is designed to introduce HPS majors to the methods and standards of good scholarly writing in History and Philosophy of Science. It will be offered to HPS majors only in conjunction with HPS 1702, JR/SR Seminar. Evaluation will be based on two short papers that will be rewritten on the basis of the instructor's comments.
This Writing Workshop is for HPS Undergrad Majors in Junior or Senior Year.

Updated 1/9/2026