

History and Philosophy of Science and Medicine

Medical Sciences with History and Philosophy of Science and Medicine (HPSM)

Route Code UBIMEDWHPS011

AIMS & OBJECTIVES

History and Philosophy of Science and Medicine (HPSM) offers opportunities to explore fundamental questions about science, its methods, and its understanding of the world around us. It is a recently created iBSc programme which replaces “History of Medicine” and provides the opportunity to explore the wider origins and evolution of science, technology, and medicine

In the historical dimension of this stream, we aim to explore key periods in history of science, technology, and medicine. We also explore these as they were practiced in different places, and we explore the intercultural interactions that resulted when traditions of one community encountered others. This stream also makes space to discuss the nature of history itself and how institutions, such as museums, help us remember (or forget).

In the philosophical dimension of this stream, we aim to explore key questions about science as a form of inquiry. How do scientific methods relate one to another, and can they deliver what they promise in terms of objective understanding? We also explore classic problems in philosophy of science, such as the demarcation of science from other systems of thought, the nature of scientific evidence, explanation, and scientific revolutions, and the debate between realism and instrumentalism. This stream makes space for both practical and principled discussions of ethics in science, too. It also aims simply to create a space for pondering some timeless philosophical questions.

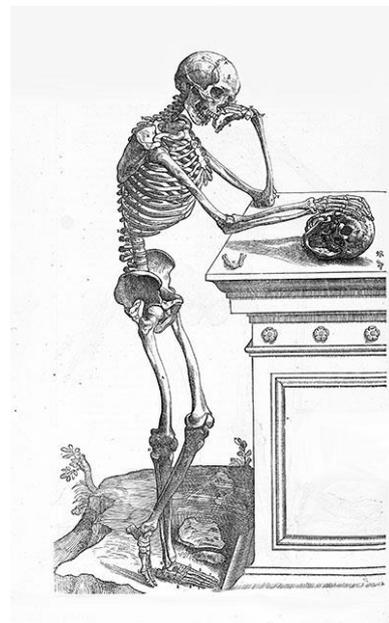
By the end of the HPSM programme, students should be able to:

- describe key concepts and knowledge in the fields of history and philosophy of science and medicine
- relate academic research in these areas to current practice in medical research and clinical practice
- demonstrate critical thinking and professional empathy
- demonstrate strong writing and engagement skills in a variety of formats
- undertake independent research in these areas
- reflect on their own strengths and weaknesses in these areas

HPSM integrates history and philosophy of science into a whole that is greater than the sum of its parts by using history to inform philosophical investigations and by using philosophy to prioritise historical questions. Advanced modules in ‘science and art’, the standing of the social sciences, and the study of causal language in medicine are good examples of the way we tie our different approaches together.

About UCL Department of Science and Technology Studies

This programme is located in UCL Department of Science and Technology Studies (STS). We are a closely-knit research and teaching department within the Faculty of Mathematics and Physical Sciences. We have 19 core academic staff, with award-winning teaching and an award-winning programme in public engagement. STS maintains its own student common room, and all staff offices are located in 22 Gordon Square.



STS values excellence in teaching and learning. We received 100% overall satisfaction in National Student Surveys three times (2017, 2014, 2013). We use a wide variety of teaching and assessment methods, appropriate to the task, and we promote independent, student-led research. Our intercalated degrees sit within a dynamic BSc teaching programme that includes two unique single-honours BSc degrees, two core streams within UCL's Natural Sciences degrees, and major contributions to UCL Human Sciences and UCL Arts and Sciences. This combines with MSc and PhD programmes. Our student-to-staff ratio for BSc/IBSc students is approximately 4:1.

Students on this programme complete a total of 120 credits, including three 15-credit compulsory modules and one 30-credit dissertation. The additional three modules are selected from a list of HPS options.

Programme tutor in 2021-22: Dr Erman Sozudogru (erman.sozudogru@ucl.ac.uk)

Compulsory modules	(HPSM students take these)	credits
HPSC0053	Research Project	30
HPSC0002	Disease in History	15
HPSC0109	Philosophy of Medicine	15
HPSC0110	History of Medicine	15
Option modules	(select three of these modules – note the available modules vary from year to year)	
HPSC0012	Policy Issues in the Life Sciences	15
HPSC0017	Science and Ethics	15
HPSC0022	Science and Religion	15
HPSC0035	Science and Empire	15
HPSC0039	Science, Warfare, and Peace	15
HPSC0044	Science and the Publishing Industry	15
HPSC0047	Science in the Twentieth Century	15
HPSC0048	Science in the Age of Newton	15
HPSC0049	History of Astronomy and Cosmology	15
HPSC0050	Philosophy of Natural Sciences	15
HPSC0051	Research-led History and Philosophy of Science	15
HPSC0055	Medieval Science	15
HPSC0062	Science, Politics, and the State in Russia and the Soviet Union	15
HPSC0063	History of Social Sciences	15
HPSC0064	Philosophy of Cognitive Science	15
HPSC0065	Philosophy of Information	15
HPSC0067	Science in the Ancient World	15
HPSC0069	Science in Nineteenth Century London	15
HPSC0070	Eugenics in Science and Culture	15
HPSC0071	Nature, Technology and the Environment	15
HPSC0111	Science, Art, and Philosophy	15
HPSC0114	Philosophy of Social Science	15
HPSC0117	Philosophy of Biological Sciences	15

Please note: Not all modules are taught every year. Check our website for updates: <https://www.ucl.ac.uk/sts/hpsc-modules>.

COMPULSORY MODULES**HPSC0002: Disease in History****15 credits****Noemi Tousignant and Cristiano Turbil****Assessment: one 3,500-word essay (80%), one 800-word essay (20%)**

What is disease? How has our understanding of disease, and people's experiences of disease, changed over time? This course will give you some new and challenging ways to think about these questions. We will take specific diseases such as cholera, tuberculosis, smallpox, plague, malaria and AIDS, and examine their social and medical impact during the past couple of centuries. In doing so, we will trace the interplay of scientific, clinical, social and moral judgments invested in 'framing' a disease.

HPSC0053: Research Project**30 credits****Cristiano Turbil****Assessment: presentation (work-in-progress) 20 minutes (20%); dissertation (10,000 words) (80%)**

Students undertake an independent research project of their own design in the field of science and technology studies. An appropriate supervisor is selected in consultation with the module tutor.

Discussion of research is undertaken during regular tutorials.

Past titles include:

- Responses of Jewish Scientists to Scientific Anti-Semitism and the Pathologisation of the Jewish Male Body
- 'The Disease of Stigma?': A Study of the British Attitudes Towards Leprosy, 1900-1950 (winner of the Dacre Prize 2014-5)
- The Tuskegee Syphilis Study: Race, Society and Medicine in the American South
- Prediction, Explanation, and 'Self-Caused Explanations' (winner of the HAB Simons Project Prize 2011-2)
- Benefits of Pluralism: A Perspectival Articulation. Focussing on the Stories of Paul Feyerabend (winner of the HAB Simons Project Prize 2010)
- Lister's Anatomy Between Artistic And Scientific Representative Practices
- Securing Secrets: British Cypher Security in the Second World War
- Compromising on Evidence: When Patients Are Too Sick to Wait for a Clinical Trial
- Belief in the Health Care Provider and Treatment Outcome
- A Critique of the Current Criteria for Involuntary Hospitalisation of Patients with Mental Disorder
- History of Yoga as a Medical Treatment in the UK
- The Feminisation of British Health Care

HPSC0109: Philosophy of Medicine**15 credits****Erman Sozudogru****Assessment: one 3,000-word essay (100%), 1000-word essay plan (formative)**

This module provides students with an overview of the exciting field of philosophy of medicine. Based on case-studies drawn from contemporary medical practice, the module will engage with six conceptual issues of major importance to medicine. In brief, these are the question of discovery (of diseases and treatments), with causation, with modelling, with complexity, with classification, and with evidence-based medicine. The teaching will be a mixture of lectures, giving topic overviews, critical reading of philosophical and medical sources, and seminar activities, intended to allow students to autonomously develop their analytical skills.

HPSC0110: History of Medicine**15 credits****Cristiano Turbil****Assessment: one 2,000-word essay (60%), one 1000-word essay (40%)**

This course addresses the changes and developments in Western medicine from the Ancient Greek world to 1700. The course will discuss the varieties of theory and practice of medicine, the

understandings of the body and illness, and the historical contexts in which medicine can be understood in the pre-modern world, including classical Greek and Roman society, medieval Islamic and Western cultures, and Renaissance and early modern periods.

OPTION MODULES

Select three of these modules. Note that not all modules are offered every year.

HPSC0012: Policy Issues in the Life Sciences

15 credits

Brian Balmer

Assessment: one 1,500-word book review (40%), one 2,500-word essay (60%)

Provides a critical overview of policy issues arising from developments in the biological sciences. The module covers a variety of issues, including: medical research policy, biotechnology and public policy, debates about the social acceptability of recombinant DNA research, biology and its publics, controlling biological weapons research and animal experimentation.

HPSC0017: Science and Ethics

15 credits

Sarah Edwards and Rory Jubber

Assessment: one 3,500-word essay (100%)

An exploration of ethical challenges arising in recent scientific activity. Some challenges will focus on the results of research. Others will concern the process of research itself and science's efforts at self-regulation. This is a practical, issues-based course. Emphasis also will be on current events and fundamental principles.

HPSC0022: Science and Religion

15 credits

Andrew Gregory

Assessment: one 3,000-word essay (100%)

Examines the relations between science, religion and progress. Topics will include the relation between science and religion in the ancient world, in Islam and in China, the role of Christianity in the scientific revolution of the seventeenth century and some issues in the relation of religion and science today.

HPSC0035: Science and Empire

15 credits

Simon Werrett

Assessment: one 3,500-word essay (50%), one 3-hour exam (50%)

This module provides an introduction to the relationship between the sciences, exploration and empire in history. It will approach the subject topically through key issues such as the role of science in governance, overseas trade and collecting, the development of navigation and cartography, slavery, and the circulation of knowledge. Participants will consider how the sciences made empire possible, and how imperial expansion reshaped the sciences in turn.

HPSC0039: Science, Warfare and Peace

15 credits

Brian Balmer

Assessment: one 3,000-word essay (70%), one 800-word essay (30%)

This module aims explore the relationships between science, war and the prevention of war. It will place military and security technologies within social, political, and historical contexts. There is particular emphasis on the twentieth and twenty-first centuries and on weapons usually designated as 'unconventional' or 'weapons of mass destruction'. In addition to thinking about how science, technology and warfare have shaped each other, this module also considers the changing role of the scientist in relation to the state, and considers broader themes such as the arms control, disarmament, ethics, and popular culture in relation to war.

HPSC0044: Science and the Publishing Industry

15 credits**Joe Cain****Assessment: one 3,000-word coursework (book proposal) (60%), one 5-minute presentation (project pitch) (20%), and one 1,500-word coursework (book production) (20%)**

The publishing industry is enormous. It shapes science communication in fundamental ways. This module investigates publishing. How does it work? How does it enable, constrain, and challenge science communication? The module covers a wide range of outputs: trade books, textbooks, peer review journals, and ancillary products. It examines topics every publisher needs to know about, as well as contexts key for interpreting trends. How does marketing and selling shape communication products? What careers are available in science publishing? In recent years, major changes in the industry have been nothing short of revolutionary: open access, print-on-demand, automated translations, tablet reading, and more. The module also will integrate key STS themes to the subject: how do they help us better understand science publishing. The module will ask students to develop practical projects, including a book proposal, a product pitch, and a print-ready book manuscript, which could be published. They also will have opportunities to meet professionals in the industry.

HPSC0047: Science in the Twentieth Century**15 credits****Jon Agar****Assessment: one 2,500-word essay (50%), one 3-hour exam (50%)**

This module provides intensive study of the sciences during the twentieth century. The development of science will be considered in its social, political and cultural contexts. Topics include science in different national contexts, science and war, the development of key new disciplines (such as quantum physics, relativity, genetics, particle physics) as well as the development of older ones. Emphasis will be on the physical and life sciences, with some comparative consideration of the social sciences.

HPSC0048: Science in the Age of Newton**15 credits****Andrew Gregory****Assessment: two 2,500-word essays (50% each)**

This module surveys the history of science during the seventeenth and early eighteenth centuries.

HPSC0049: History of Astronomy and Cosmology**15 credits****Andrew Gregory****Assessment: one 2,500-word essay (50%), one 2-hour exam (50%)**

Charts mankind's changing conception of the universe from the ancient world to the current day. Issues examined will include the origins and development of astronomy, theories of the origin of the universe and of the nature of the universe, ideas of mankind's place within the universe.

HPSC0050: Philosophy of Natural Sciences**15 credits****Emma Tobin****Assessment: Presentation (formative) one 3,000-word essay (50%), one 2-hour exam (50%)**

This course explores topics in the philosophy of the natural sciences. In the philosophy of physics, we will address how quantum mechanics has changed our view of physical reality; and how particle physics has had an impact on philosophical debates about realism and antirealism in science, such as recent literature on structural realism. We will interrogate the philosophical literature on mechanisms and causality by considering astrophysical mechanisms. In the philosophy of chemistry, we will assess the periodic table as a system of classification and particular philosophical problems presented by molecular structure and shape and biomolecular visualisation. We will also discuss problems common to both physics and chemistry such as problems of data, simulation and modelling.

HPSC0051: Research-led History and Philosophy of Science**15 credits****TBC****Assessment: one 4,000-word essay (80%) and one 15-minute presentation (20%)**

Detailed investigation of episodes, themes or problems in the history and philosophy of science, or science and technology studies. Topics vary.

HPSC0055: Medieval Science**15 credits****TBC****Assessment: two 2,500-word essays (50% each)**

This course studies the history of medieval Islamic and western Christian science from a comparative perspective and focuses on the transfer of knowledge from the ancient Greek world to the Arabic and then to the Latin West from the ninth to the fifteenth centuries. Approaching the subject thematically, we will consider the following fields of scientific knowledge: geography, cosmology, astrology, technology, medicine and their connections with religion, broadly construed. In the process, we will examine the underlying political, social, cultural, institutional and intellectual structures of these societies as well as the intercultural interactions.

HPSC0062: Science, Politics, and the state in Russia and the Soviet Union**15 credits****Simon Werrett****Assessment: essay plan (formative), one 3,500-word essay (80%), one critical review essay or write up of class presentation (20%)**

How are science and politics related? What role does science play in governance, and how is science itself best governed? Is scientific knowledge apolitical, and if it is politically-informed, what consequences does this have? This module explores the interactions of science, politics, and the state through a study of science in Imperial Russia and the Soviet Union. From the reign of Peter the Great (1696-1725) to the time of Perestroika (1980s), Russian science always operated close to the state. Using cases from Russian and Soviet history, we explore approaches for understanding relations of science, politics, and the state.

HPSC0063: The Social Sciences of Inequality**15 credits****Tiago Mata****Assessment: one 15-minute presentation (20%) and one 3,500-word essay (80%)**

This module is an historical examination of the social sciences in the long twentieth century. Although we know much about the history of individual disciplines - psychology, economics, sociology, political science -, we know comparatively little about how the sciences of society have cooperated and competed in both public and political spheres. This module investigates how social scientists sought to redraft the architectures of the state, of organizations and of mass culture. To guide our itinerary of twentieth century social science, we examine the problem of "inequality" has been conceptualized across time and across disciplines. Inequality has been understood as having racial, cultural, or political economic dimensions. These competing conceptions have animated programs of social change of lasting legacy to the present day. In this course we will also pay special attention to the social sciences of statistics and eugenics as developed at UCL.

HPSC0064: Philosophy of Cognitive Science**15 credits****Phyllis Illari****Assessment: one 3,000-word essay (50%), one 3-hour exam (50%)**

There has been enormous growth in various sciences of the brain in recent decades. This course will focus on philosophical issues of cognitive science, although it will relate those to similar issues in philosophy of psychology and philosophy of neuroscience. Thus the course will examine topics such as what it means to treat the brain as an information-processor, how we understand consciousness and cognition, whether the brain is really 'modular', what emotions are, and whether cognition 'extends' beyond the boundaries of skull and skin.

HPSC0065: Philosophy of Information**15 credits****Phyllis Illari**

Assessment: one 3,000-word essay (100%)

Information is now a vitally important scientific concept, while changes in information and communication technologies have rapidly altered our personal and working lives. This course examines these changes. It looks at philosophical approaches to information, and the implications of the 'information revolution' for such issues as society, personal identity, and scientific knowledge.

HPSC0067: Science in the Ancient World**15 credits****Andrew Gregory****Assessment: one 2,500-word essay (50%), one 1000-word essay (50%)**

This course examines the activities of the ancients in attempting to understand, predict and control the world around them. The main focus is the Greek 'investigation concerning nature' and its philosophical, religious and social context. We look at the study of the heavens, including theories of how the world came into being, medicine, mathematics and technology. We also look at how the Greeks thought of disciplines such as astrology and alchemy and how their activities related to magic. While the main focus is the Greeks, we also look at the Babylonian, Egyptian and Roman cultures, their medicine, technology and how they conceived of the world around them.

HPSC0069: Science in Nineteenth-Century London**15 credits****Joe Cain****Assessment: one essay plan (formative), one 4,000-word essay (100%)**

The 19thC experienced a tremendous expansion of science. This module explores that expansion through the lens of popularisation, public engagement, and presentation. We cover a variety of settings, including museums, lecture halls, publishing devices, parlours, and private collections. We also cover a variety of communities and types of activities, including professional societies, amateur clubs, working men's clubs, and ephemeral consumer activity. How did the many venues intertwine? How do historians relate science in public to science done elsewhere? Do STS analytical tools and concepts help us understand historical activity related to science in public? This module includes visits to some of the surviving attractions of 19thC science.

HPSC0070: Eugenics in Science and Culture**15 credits****Joe Cain****Assessment: one 3,500-word essay (100%)**

Eugenics combined science and politics to create social policies intent on "improving the stock" of some human groups at the expense of others. This module investigates eugenics as a history of science and technology operating in cultures around the world. It considers eugenics as a history of people creating, interpreting, rejecting, and suffering from decisions grounded in scientific (and pseudo-scientific - this boundary is important) practices supported by eugenics campaigners. Importantly, this module presents eugenics through the intersection of categories such as gender, race/ethnicity, ableism, class, nationalism, and political philosophy. Eugenics is a subject with strong local (UCL) connections, and it is a subject with diverse global involvements and impacts. Ultimately, this module explores the history of eugenics to better answer far-reaching questions about the role of science in policy development, about the power of science in public understanding, and about rival approaches to expertise in the knowledge economy.

HPSC0071: Nature, Technology, and the Environment**15 credits****Jon Agar****Assessment: two 2,500-word essays (50% each)**

This course explores the intersection of history of technology and environmental history. This is the history of the material world, both natural and artificial. It explores historiography – what are the methods for exploring and interpreting this intersection – and it examines and discusses case studies. Topics may include: large-scale technological systems and the environment; invasive species in history; commodity history with respect to nature and technology; pollution; hybridities; the anthropocene; artificial life; nature and bureaucracy; war and nature.

HPSC0111: Science, Art and Philosophy**15 credits****Chiara Ambrosio****Assessment: one A0 poster (40%), 2,500-word magazine article (40%), presentation based on article and poster (20%)**

This module explores the interactions between science and art from the mid-nineteenth century to the present. Its philosophical focus is the notion of "representation", conceived as a crucial common link between scientific and artistic visual practices. Integrating the history and philosophy of scientific and artistic representations, the course will address a broad range of issues. These will include questions on the nature and role of visual representations in scientific and artistic practice, what counts as "objective" and "accurate" representation, when and how images count as "evidence", and whether the relations between science and modernism contribute to overturn the common sense view that "art invents, science discovers".

HPSC0114: Philosophy of Social Science**15 credits****Emma Tobin****Assessment: one 3,000-word essay (50%), one 3-hour exam (50%)**

What is the method of social science (e.g. anthropology, economics, sociology, psychology etc.)? Do all social sciences use the same scientific method and how does this compare to natural science? Should we even aspire to using the so called scientific method for investigating the social world, given its shortcomings in the value laden social sphere? Is there a compromise or must we renege on objectivity when faced with inquiry into the social world? These questions will be examined against the background of general topics in the philosophy of the social sciences including the explanation and interpretation of action; naturalist and hermeneutic social theory; reductionism and methodological individualism; rational choice theory and relativism. More general topics in philosophy of science, such as theories of scientific explanation, causation and laws will also be discussed in relation to social science.

HPSC0117: Philosophy of Biological Sciences**15 credits****Joe Cain****Assessment: one 3,000-word essay (50%), one 3-hour exam (50%)**

Introduction to some fundamental problems in the philosophy of biology and biomedicine and key topics at the interface between philosophy and biology. Attention focuses on issues in evolution, natural selection, molecular biology, and biodiversity.

CONTACT DETAILS

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STS Admissions Tutor for Integrated BSc Programmes, 2021-22

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<https://www.ucl.ac.uk/sts/sts-admissions/undergraduate-degrees/medical-sciences-integrated-degrees-ibsc>

Disclaimer: STS reviews its curriculum annually, with special attention to assessment. Information presented here is accurate at the time of printing, but some provision may change. The most up-to-date source of information is UCL's Portico. Do check the STS module catalogues for notes on any changes: <https://www.ucl.ac.uk/sts/sites/sts/files/sts-module-catalogue-hpsc-modules-undergraduate-bsc.pdf> .