

HPSC Module Catalogue (Postgraduate Taught)

**2020-21
v2**

Please note that the information below is subject to change. We will notify you with any amendments that may affect your module selection.

Overview

This catalogue lists HPSC modules offered by UCL Department of Science and Technology Studies (STS) for the 2020-21 session. Detailed information, including sample syllabi, can be found on the department website: <https://www.ucl.ac.uk/sts/teaching>.

The information in this catalogue is correct at the date of publication (see headers) but may alter. Please check the latest edition of the module catalogue and the on-line timetable prior to formally registering on modules.

For quick filtering, our modules are catalogued by term and themes:

- Introductory module for both postgraduate programmes
- (HPS) emphasising knowledge and skills associated with history and philosophy of science
- (STS) emphasising knowledge and skills associated with contemporary studies of science, technology, and society

Owing to the rich interdisciplinary nature of our programmes, students can expect to find considerable crossing between themes in most modules.

Timetable information

STS uses the UCL online timetable, www.ucl.ac.uk/timetable. The online timetable provides official information about module times and locations. Students should continue to check class locations regularly using the online timetable as rooms are subject to change without prior notice.

Before formally registering, please ensure that you check for timetable clashes between modules. Clashes are not an acceptable excuse for missing classes. It is the student's responsibility to check carefully that they can attend all compulsory sessions for a module.

The UCL online timetable for the 2020-21 academic year will be published in August 2020.

Registering for HPSC modules

Students studying on other UCL postgraduate taught degree are welcome to register on most postgraduate HPSC modules, except HPSC0073 and HPSC0097.

This catalogue indicates where modules are not open to all UCL students. In some cases, prerequisites apply and queries regarding these should be directed to the module tutor. Otherwise, registration for students from other departments is on a 'first-come, first-served' basis by date selected in Portico.

STS students must discuss their selections with their personal tutor. Module selections must be approved by personal tutors before they will be confirmed in Portico. It is the student's responsibility to ensure their choices satisfy their degree requirements. These are found on the Moodle parent page for postgraduate taught students: <https://moodle.ucl.ac.uk/course/view.php?id=10563>.

Module tutors may be contacted directly: see <https://www.ucl.ac.uk/sts/staff>.

HPSC postgraduate modules at-a-glance

Click on the course code to jump to course information.

HPSC	Title	Tutor/Co-ordinator	Page
Term 1 (Autumn)			
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Term 2 (Spring)			
0059	Science, Art and Philosophy	Dr Chiara Ambrosio	7
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2020-21 Term 1

Compulsory module

HPSC0073 Introduction to Science and Technology Studies

This module introduces students to key episodes and themes in Science and Technology Studies and the methodological and critical perspectives required for their full understanding. This module is open for registration only to students in the STS or HPS MSc programmes, for which it is compulsory.

Module Co-ordinator:	Professor Joe Cain
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (4 x 1000 words) – 25% each
Teaching Session:	Term 1 – students attend 1 x 2-hour session per week
External Examiner:	Dr Ian Kidd – University of Nottingham

HPS-themed modules

HPSC0085 Knowledge, Explanation and Classification in Science

In this course, students will examine some of the core topics in contemporary philosophy of science. There are 3 core themes: (1) What counts as scientific knowledge. (2) What counts as a scientific explanation? (3) What role does classification play in science? These themes will be examined in the context of some working examples from scientific practice. These topics will be integrated with some of the other topics discussed in other courses, including models, representations, mechanisms, causality and evidence.

Module Leader:	Dr Emma Tobin
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (1000 words) – 20% and Coursework (4000 words) – 80%
Teaching Session:	Term 1 – students attend 1 x 2-hour session per week, one hour is a lecture and the other hour is a seminar.
External Examiner:	TBC

HPSC0087 Science in the Twentieth Century and Beyond

More science was done, and more scientists lived, in the twentieth century than in any other century of human history. Furthermore, there were major changes in the framing ideas and organisation of major disciplines. Physics, for example, grappled with the new ideas of quantum theory and relativity. The life sciences responded to genetics and molecular approaches to life science. Geology uncovered evidence for continental drift, while astronomy explored an expanding universe. Social science experimented with new methods to measure society and the individual within it. These intellectual developments were intimately connected to social, economic, political and cultural trends and events, not least global conflicts, ideological clashes and economic transformations. This course introduces and guides the student through accounts of these changes produced by historians and other commentators. The assessment is designed so that the student learns, develops and applies skills to explore primary sources (primarily archives of twentieth century science), relating interpretation to an understanding of context based on secondary sources.

*Note this module can also be considered an STS module

Module information and syllabi are available at: <https://www.ucl.ac.uk/sts/teaching>.

Module Co-ordinator:	Professor Jon Agar
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (2500 words) – 50%, Coursework (2500 words) – 50%
Teaching Session:	Term 1 – students attend 1 x 2-hour session per week
External Examiner:	TBC

HPSC0095 Special Topics in Science, Technology and Society

The topic for 2020/21 is Industrial physics and insurgent futures and this course is concerned with the co-production of modern physics and racial capitalism. The first half traces the transformation of physics from a science of colonial surveillance, through its reorganisation around factory and prison discipline, to a science of energy, where the central concept of energy was fundamentally defined by the powerhouse of capitalist extraction: the steam engine. Where the first half introduced the debt of physics to industrial innovation, the second half explores the debt of this industrial innovation to the superior metallurgy and engineering of free, enslaved, and Maroon Africans in the Atlantic system. In showing the co-production this course poses a question: might alternative, insurgent histories of industry and innovation offer an alternative physics and, with it, an alternative future?

Module Co-ordinator:	Dr Jenny Bulstrode
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (5000 words) – 100%
Teaching Session:	Term 1 – students attend 1 x 2-hour session per week
External Examiner:	Dr Angela Cassidy – University of Exeter

STS-themed modules

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*Note this module can also be considered an HPS module

Module Co-ordinator:	Professor Jon Agar
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (2500 words) – 50%, Coursework (2500 words) – 50%
Teaching Session:	Term 1 – students attend 1 x 2-hour session per week
External Examiner:	TBC

HPSC0092 Responsible Science and Innovation

Science, technology and innovation are some of the most powerful shapers of social order known. They have huge potential for both benefit and harm. With power should come responsibility, but history is littered with cautionary tales that suggest that innovation is a form of ‘organised irresponsibility’. Are there ways to steer and improve technologies while they are still emerging? We will look at contemporary technologies that are reshaping the world and we will look back to when established technologies were new. Case studies include geoengineering, gene editing, AI and self-driving cars and we will use ideas from ethics, sociology of science, philosophy of technology and science policy studies.

Module Leader:	Dr Jack Stilgoe
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (2500 words) – 50% and Coursework (2500 words) – 50%
Teaching Session:	Term 1 – students attend 1 x 2-hour session per week
External Examiner:	Dr Angela Cassidy – University of Exeter

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Module Co-ordinator:	Dr Jenny Bulstrode
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (5000 words) – 100%
Teaching Session:	Term 1 – students attend 1 x 2-hour session per week
External Examiner:	Dr Angela Cassidy – University of Exeter

HPSC0127 Engaging the Public with Science

This module focuses on the many different ways in which publics engage with science in face-to-face contexts. Teaching will particularly focus on direct interactions such as science festivals and other more informal activities, and on how specific public groups, such as patient and citizen groups get involved, and engage with, scientific and medical research. Alongside gaining a practical understanding of how to organize such activities, students will also critically reflect on the theory and context that underpins such activities such as models of publics and audiences, rationales for engagement in different contexts and the wider policy contexts and historical trends.

Module Leader:	Dr Stephen Hughes
Credits:	15 (contributing 15/180 to degree)
Assessment:	Online Group Presentation (20 minutes) – 30%, Group Coursework (2000 words) – 30% and Individual Coursework (2000 words) – 40%
Teaching Session:	Term 2 – students attend 1 x 2-hour session per week
External Examiner:	TBC

2020-21 Term 2

HPS-themed modules

HPSC0059 Science, Art and Philosophy

This course 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”.

Module Leader	Dr Chiara Ambrosio
Credits	15 (contributing 15/180 to degree)
Assessment	Coursework (1000 words) – 20% and Coursework (4000 words) – 80%
Teaching Session:	Term 2 – students attend 1 x 2-hour session per week
External Examiner:	Dr Ian Kidd – University of Nottingham

HPSC0080 Early Modern Science

The early modern period, from c.1400 to 1800, experienced a radical transformation in Europeans' understanding of the natural world. We explore these changes through a series of signal moments in the history of early modern science, including the trial of Galileo, Newton's experiments on light and gravity, Hooke's studies with the microscope, and the creation of the first map of India. The course will examine these episodes through critical perspectives developed in recent history of science. These include studies of patronage; the place of magic and alchemy in science; the role of collecting and museums in the development of science; relations of science and art; and the connections between early modern science and religion. Throughout we will also pay attention to the value of STS approaches for better understanding early modern science. We will examine issues of trust, gender, science as practice and culture, science and social order, and the public understanding of science in the early modern period.

Module Co-ordinator:	Dr Simon Werrett
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (5000 words) – 100%
Teaching Session:	Term 2 – students attend 1 x 2-hour session per week
External Examiner:	Dr Rebekah Higgitt – University of Kent

HPSC0081 Science in the Nineteenth Century

The 19th century 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.

Module Co-ordinator:	Dr Jenny Bulstrode & Professor Joe Cain
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Module information and syllabi are available at: <https://www.ucl.ac.uk/sts/teaching>.

Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (5000 words) – 100%
Teaching Session:	Term 2 – students attend 1 x 2-hour session per week
External Examiner:	Dr Rebekah Higgitt - University of Kent

HPSC0084 Causality, Mechanism and Evidence in Science

Much of science aims to find and use causes. Does penicillin cure bacterial infection? How big a dose and how often should we give it for it to be effective? Mechanisms are most obviously important in the biomedical sciences, but are relevant far beyond them. For example, we seek to explain how penicillin cures bacterial infection by describing the mechanism by which it kills bacteria in the body. So finding evidence of causes and mechanisms is a core problem of science. Further, our fundamental view of the world we live in has been profoundly affected by the kinds of causes and mechanisms we discover. This module explores the most important views of causality and mechanisms and how we seek evidence for them, and examines how they affect our view of the world around us.

Module Leader:	Dr Phyllis Illari
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (1000 words) – 20% and Coursework (4000 words) – 80%
Teaching Session:	Term 2 – students attend 1 x 1 hour lecture, 1 x 1 hour seminar per week
External Examiner:	Dr Ian Kidd – University of Nottingham

HPSC0086 Special Topics in History and Philosophy of Science

This module investigates specific episodes and themes in History and Philosophy of Science. The aim is to provide an environment for intensive, research-led study of specialised topics within a collaborative community of scholarship. The topic chosen for 2020/21 is, broadly speaking, pandemics. Further information about the scope of the module will be provided in due course.

Module Leader:	Dr Erman Sozudogru & Dr Cristiano Turbil
Credits:	15 (contributing 15/180 to degree)
Assessment:	abstract (500 words) – 20%, essay (3500 words) – 50%, public engagement piece (1000 words) – 30%
Teaching Session:	Term 2 – students attend 1 x 2 hour session per week
External Examiner:	Dr Ian Kidd – University of Nottingham

STS-themed modules

HPSC0089 Curating Science and Technology

This module is designed around a simple question: how is the museum a different environment for historical and interpretative work compared with a university or a library? It opens access to the Science Museum's galleries, reserve collections and curators, revealing the ways that the history of science and technology are preserved, researched, and displayed in a national museum. The module commences with a consideration of collections 'in the raw', as kept at the Museum's West London store, and with general museological questions about how to use objects in historical work. The remainder of the course discusses how different topics and kinds of objects feature in the museum's work, from acquisition through to being placed on display.

Module Leader:	Dr Tim Boon
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Credits:	15 (contributing 15/180 to degree)
Assessment:	Presentation (10 minutes) – 20%, Coursework (4000 words) – 80%
Teaching Session:	Term 2 – students attend 1 x 2-hour session per week
External Examiner:	TBC

HPSC0093 Science Policy in an Era of Risk and Uncertainty

This module aims to bring together key thinkers, debates, and cutting-edge research on how society has, currently, and may engage with environmental uncertainty and risk. In addition a number of relevant research methodologies and interdisciplinary skills will be applied in a series of practicals to demonstrate the challenges we face in these large, global complex problems. This module aims to discuss the challenges of integrating interdisciplinary data sets, and the role of more deliberative and participatory engagement for stakeholders. The module will consist of lectures and seminars and will adopt a problem-based learning approach, whereby a topic of interest can be selected so to apply the knowledge learnt to the selected case study. Contemporary case studies will be explored throughout the course.

Module Leader:	Dr Carina Fearnley
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (5000 words) – 100%
Teaching Session:	Term 2 – students attend 1 x 2 hour session per week
External Examiner:	Dr Angela Cassidy – University of Exeter

HPSC0094 Political Economy of Science

Science is big money. Scientific and technological research lead the development of new processes and products, creating new industries and markets. Science is integral to the production of value and wealth in contemporary capitalism.

Science's direction and practice has long been shaped by agendas that go beyond the pursuit of disinterested truth. In this module we will trace out this entanglement of actors and interests. You will examine how transformations in the political economy such as the rise of the corporation, the building up of national government bureaucracies and the expansion of financial markets have transformed how science is administered and commodified. You will examine the origins of the corporate research lab, the science park and the entrepreneurial University. You will interrogate the likely consequences of neoliberal knowledge regimes, the advent of philanthrocapitalism and of open science. The meetings will comprise of a short lecture follow by class discussions on a weekly set of readings.

Module Leader:	Dr Tiago Mata
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (5000 words) – 100%
Teaching Session:	Term 1 – students attend 1 x 2-hour session per week
External Examiner:	Dr Angela Cassidy – University of Exeter

HPSC0122 Science Journalism

A practical course in communicating science considering various genres of output for different audiences and on different platforms. Students learn how to write short news stories, profiles, and reportages for broadsheet newspapers and popular science magazines, targeting a range of audiences from educated adults to school children with an interest in science. They write blog posts and produce other kind of contents for social media such as short captioned videos. They interview scientists on their work and present their interviews in writing as well as through podcasting. Issues in the public communication of science are discussed from this practical standpoint. This module is time intensive and requires substantial group work. It rests on the idea that the only way to learn how to

write is to write as much as possible. The assessment for the module is a mix of formative and summative assessment and assignments.

Module Leader:	Dr Jean-Baptiste Gouyon
Credits:	15 (contributing 15/180 to degree)
Assessment:	Portfolio (5000 words) – 100%
Teaching Session:	Term 2 – students attend 1 x 1-hour lecture and 1 x 2-hour IT skill session per week
External Examiner:	Dr Emma Weitkamp – University of the West of England, Bristol

HPSC0126 Research Methods in Data Analysis in Science and Technology Studies

This course introduces students to the theory and practice of research methods in STS and social science more generally, comprising both qualitative and quantitative methods. It will cover research design; qualitative and quantitative methods; research management and ethics; and the epistemology of social research. The course is strongly recommended for any students wanting to undertake empirical social science research for their dissertation, and for students who want to familiarise themselves with how social scientists (particularly within STS) undertake research. In addition, for those wishing to apply for ESRC +3 PhD funding, it is designed to cover the core training requirements specified within Annex I of the [ESRC Postgraduate Training and Development Guidelines \(2009\)](#).

Module Leader:	Dr Melanie Smallman
Credits:	15 (contributing 15/180 to degree)
Assessment:	Coursework (1000 words) – 20%, Coursework (4000 words) – 80%
Teaching Session:	Term 1 – students attend 1 x 2-hour session per week
External Examiner:	Dr Angela Cassidy – University of Exeter

2020-21 Term 3 and Summer

Compulsory module

HPSC0097 Research Project

The Master's degree culminates in a research project of the student's own design, and this project is documented by a research report or a dissertation. The student's work is guided by an academic supervisor. It also is supported by a variety of key skill programmes. Students are expected to construct a research project that includes original research, clear methodological choices, and relevance to significant conversations within the discipline. The dissertation is the capstone of the Master's programme. It should represent the very best research and analysis a student can produce.

Pre-requisites: HPSC0073 Introduction to Science and Technology Studies

Module Leader: All STS academic staff serve as supervisors.

Credits: 60 (contributing 60/180 to degree)

Assessment: Research Proposal – 15% and Dissertation (10,000 words) – 85%

Teaching Session: Term 3 and Summer

External Examiner: All STS External Examiners