

HISTORY AND PHILOSOPHY OF SCIENCE

Courses offered by the Program in History and Philosophy of Science are listed under the subject code HPS on the (<http://explorecourses.stanford.edu/CourseSearch/search/?view=catalog&catalog=&page=0&q=HPS&filter-catalognumber-HPS=on>) Stanford Bulletin's (<http://explorecourses.stanford.edu/CourseSearch/search/?view=catalog&catalog=&page=0&q=HPS&filter-catalognumber-HPS=on>) ExploreCourses web site (<http://explorecourses.stanford.edu/CourseSearch/search/?view=catalog&catalog=&page=0&q=HPS&filter-catalognumber-HPS=on>).

The Program in History and Philosophy of Science (HPS) teaches students to examine the sciences, medicine and technology from a number of perspectives, conceptual, historical and social. The community of scholars includes core faculty and students in History and Philosophy and affiliated members in Classics, Anthropology, English, Political Science, Communication, and other disciplines. Together, they draw upon the multiple methods of their disciplines to study the development, functioning, applications, and social and cultural engagements of the sciences.

Stanford's Program in History and Philosophy of Science is a collaborative enterprise of the departments of History and Philosophy. Each department has its own undergraduate and graduate degree programs in this area, but these overlap and interact through the structure of requirements, advising, team-taught courses, an active graduate student community and a shared colloquium series (<http://HPS.stanford.edu/colloquia.html>).

The program's courses span from antiquity to the late 20th century, with emphasis on:

- ancient science
- Renaissance science
- the Scientific Revolution
- Enlightenment and transatlantic science
- history of medicine and the body
- history and philosophy of biology
- history and philosophy of modern physics
- history of the philosophy of science from the early modern period to the present
- central issues in contemporary philosophy of science
- gender, science, and technology

Undergraduate Degrees

HPS offers undergraduates the opportunity to study science, medicine and technology by combining scientific and humanistic perspectives in a single program. Students can pursue HPS through the two departments (History and Philosophy) that coordinate this interdisciplinary program.

The HPS Program offers students an in-depth understanding of the nature and evolution of scientific ideas, practices, and institutions; their contemporary significance to intellectual life; and their material transformation of the modern world.

The Department of History offers an interdisciplinary track in History of Science, and Medicine (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/history/#bachelorstext>). This track is especially well suited to students who wish to combine history and science, or who are interested in studying the history of science and medicine in combination with premed science requirements in preparation for a future career in medicine and public health.

The Department of Philosophy offers a special program in History and Philosophy of Science (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/philosophy/#bachelorstext>). This program is especially well suited to students who want to combine their concentration in Philosophy with the study of science and its history.

Students interested in HPS should contact the faculty advisors (in 2020-21 Paula Findlen for History and Michael Friedman for Philosophy) to discuss the undergraduate program.

Graduate Degrees

Graduate students in the Program in History and Philosophy of Science can pursue a Ph.D. either in History, through its Ph.D. concentration in History of Science, Medicine, and Technology, or in Philosophy, through its Ph.D. subplan in History and Philosophy of Science. Diplomas will be issued by the respective departments, but the HPS study will not be noted on the transcript nor on the diploma.

Graduate students in the Program in History and Philosophy of Science that wish to pursue a Ph.D. in Philosophy must fulfill Departmental degree requirements (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/philosophy/#doctoralstext>) and the following requirements:

1. HPS colloquium series attendance
2. One of the following graduate level Philosophy of Science courses: 263, 264, 264A, 265, 265C, 266, 267A or 267B
3. One elective seminar in the history of science
4. One elective seminar (in addition to the course satisfying requirement 2) in philosophy of science

Philosophy Ph.D. students declaring the HPS subplan in Access will have it appear on the official transcript but is not printed on the diploma.

The Program in History and Philosophy of Science degree requirements for the Ph.D. in History of Science, Medicine and Technology, in addition to the general History Department Ph.D. degree requirements (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/history/#doctoralstext>), are:

1. HPS colloquium series attendance
2. the History Department core seminar in History of Science, Medicine and Technology
3. Four other courses in the history of science, technology and/or medicine
4. One course in the philosophy of science
5. Four additional courses in a given geographical or national field of research, one of which must be a core course

The courses described above must include two research seminars, at least one of which must be in the history of science, technology and/or medicine. Students are expected to write papers on substantially different topics for each seminar. You should also aim to present your research at the annual meeting of a professional society associated with the history of science, technology and/or medicine sometime during your third or fourth year. For more information, see the program's (<http://hps.stanford.edu/grad.html>) web site.

Bachelor of Arts Programs

HPS offers undergraduates the opportunity to study science, medicine and technology by combining scientific and humanistic perspectives in a single program. Students can pursue HPS through the two departments (History and Philosophy) that coordinate this interdisciplinary program.

The HPS Program offers students an in-depth understanding of the nature and evolution of scientific ideas, practices, and institutions; their contemporary significance to intellectual life; and their material transformation of the modern world.

The Department of History offers an interdisciplinary track in History of Science, and Medicine (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/history/#bachelorstext-histfielstuddegropti-hisscimcd>). This track is especially well suited to students who wish to combine history and science, or who are interested in studying the history of science and medicine in combination with premed science requirements in preparation for a future career in medicine and public health.

The Department of Philosophy offers a special program in History and Philosophy of Science (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/philosophy/#doctoraltext-doctphilphilphdsubhisphisci>). This program is especially well suited to students who want to combine their concentration in Philosophy with the study of science and its history.

Students interested in HPS should contact the faculty advisers (in 2020-21 Paula Findlen for History and Michael Friedman for Philosophy) to discuss the undergraduate program.

Course Sequences

The following courses are offered in 2020-21 in the area of History and Philosophy of Science.

Introductory

		Units
HPS/PHIL 60	Introduction to Philosophy of Science	5
HPS/PHIL 61	Philosophy and the Scientific Revolution	5

Science in History

This sequence is designed to introduce students to the history of Science from antiquity to the 20th century. Students are advised to take most or all of this sequence as a core foundation.

		Units
CLASSICS 197	Aristotle's Logic	3-5
HISTORY 40/140	World History of Science	3
HISTORY 40A/140A	The Scientific Revolution	3
HISTORY 42N	The Missing Link	4
HISTORY 44/144	Sex, Gender, and Intersectional Analysis in Science, Medicine, Engineering, and Environment	3
HISTORY 140	World History of Science	5
HISTORY 200D	Doing the History of Science and Technology	5
HISTORY 202B/302B	Coffee, Sugar, and Chocolate: Commodities and Consumption in World History, 1200-1800	4-5
HISTORY 203C/303C	History of Ignorance	5
HISTORY 234P	The Age of Plague: Medicine and Society, 1300-1750	5
HISTORY 235D	When Worlds Collide: The Trial of Galileo	4-5
HISTORY 240/340	The History of Evolution	4-5
HISTORY 342	Darwin in the History of Life	4-5
HISTORY 431	Early Modern Things	4-5
HISTORY 343C/243C	People, Plants, and Medicine: Colonial Science and Medicine	4-5
STS 200P	Leonardo's World: Science, Technology and Art	4-5

Medicine in History

This sequence is designed to introduce students to the history of medicine from antiquity to the 20th century.

		Units
AMSTUD 41Q	Madwomen and Madmen: Gender and the History of Mental Illness in the U.S.	3
HISTORY 234P	The Age of Plague: Medicine and Society, 1300-1750	5
HISTORY 243G/343G	Tobacco and Health in World History	4-5
HISTORY 244C	The History of the Body in Science, Medicine, and Culture	4-5

Philosophical Perspectives on Science, Medicine, and Technology

This sequence is designed to introduce students to the philosophy of science. Students are advised to take HPS 61 Philosophy and the Scientific Revolution above as a starting point, and combine a number of the electives listed below in conjunction with courses in the other concentrations that address their specific interests.

		Units
PHIL 125/225	Kant's First Critique	4
PHIL 162	Philosophy of Mathematics	4
PHIL 164/264	Central Topics in the Philosophy of Science: Theory and Evidence	4
PHIL 165/265	Philosophy of Physics: Space and Time	4
PHIL 167A/267A	Philosophy of Biology	4
PHIL 167B/267B	Philosophy, Biology, and Behavior	4
PHIL 224	Kant's Philosophy of Physical Science	2-4
PHIL 224A	Mathematics in Kant's Philosophy	4
PHIL 263	Significant Figures in Philosophy of Science: Einstein	4
PHIL 265	Philosophy of Physics: Space and Time	4
PHIL 265C	Philosophy of Physics: Probability and Relativity	4
PHIL 266	Probability: Ten Great Ideas About Chance	4
PHIL 324	Kant's System of Nature and Freedom	4
PHIL 326	Kant's Transcendental Deduction	4
PHIL 327	Scientific Philosophy: From Kant to Kuhn and Beyond	2-4
PHIL 361	Social Dimensions of Scientific Knowledge	4
PHIL 362	Grad Seminar on Philosophy of Science	4
PHIL 365	Seminar in Philosophy of Physics	2-4
PHIL 374F	Science, Religion, and Democracy	4

Advanced Course Sequences

Contemporary Perspectives on Science, Medicine and Technology

The following courses focus on contemporary cultural and social science approaches to science, technology, and medicine.

		Units
HPS 199	Directed Reading	1-15
HPS 299	Graduate Individual Work	1-15
HISTORY 44	Sex, Gender, and Intersectional Analysis in Science, Medicine, Engineering, and Environment	3
HISTORY 203F	Racial Justice in the Nuclear Age	5
HISTORY 204D	Advanced Topics in Agnotology	4-5

HISTORY 243S/443A	Human Origins: History, Evidence, and Controversy	4-5
HISTORY 302	Technopolitics: Materiality, Power, Theory	4-5
HISTORY 344F	Innovations in Inclusive Design in Tech	4-5
HISTORY 403A	Materialities of Power, Part I	4-5
HISTORY 403B	Materialities of Power, Part II	4-5
HISTORY 444	Graduate Research Seminar: Gender in Science, Medicine, and Engineering	5

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Graduate students in the Program in History and Philosophy of Science that wish to pursue a Ph.D. in Philosophy must fulfill Philosophy Department Ph.D. requirements (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/philosophy/#doctoraltext-doctphilphilphdsubhisphisci>) and the following requirements:

1. HPS colloquium series attendance
2. One of the following graduate level Philosophy of Science courses: 263, 264, 264A, or 266
3. One elective seminar in the history of science
4. One elective seminar (in addition to the course satisfying requirement 2) in philosophy of science

Philosophy Ph.D. students declaring the HPS subplan via the Declaration or Change to a Field of Study form (<http://studentaffairs.stanford.edu/sites/default/files/registrar/files/grad-subplan-change.pdf>) will have it appear on the official transcript but is not printed on the diploma.

The Program in History and Philosophy of Science degree requirements for the Ph.D. in History of Science, Medicine and Technology, in addition to the general History Department Ph.D. degree requirements (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/history/#doctoraltext-doctphilhist-requirements>), are:

1. HPS colloquium series attendance
2. The History Department core seminar in History of Science, Medicine and Technology
3. Four other courses in the history of science, technology and/or medicine
4. One course in the philosophy of science
5. Four additional courses in a given geographical or national field of research, one of which must be a core course

The courses described above must include two research seminars, at least one of which must be in the history of science, technology and/or medicine. Students are expected to write papers on substantially different topics for each seminar. You should also aim to present your research at the annual meeting of a professional society associated with the history of science, technology and/or medicine sometime during your third or fourth year. For more information, see the program's (<http://HPST.stanford.edu/grad.html>) web site.

Course Sequences

See the Bachelor's tab for all History and Philosophy of Science courses offered in this academic year.

COVID-19 Policies

On July 30, the Academic Senate adopted grading policies effective for all undergraduate and graduate programs, excepting the professional Graduate School of Business, School of Law, and the School of Medicine M.D. Program. For a complete list of those and other academic policies relating to the pandemic, see the "COVID-19 and Academic Continuity (<http://exploreddegrees.stanford.edu/covid-19-policy-changes/#tempdeptemplatetabtext>)" section of this bulletin.

The Senate decided that all undergraduate and graduate courses offered for a letter grade must also offer students the option of taking the course for a "credit" or "no credit" grade and recommended that deans, departments, and programs consider adopting local policies to count courses taken for a "credit" or "satisfactory" grade toward the fulfillment of degree-program requirements and/or alter program requirements as appropriate.

The Program in History and Philosophy of Science refers students to the policies of the Department of History (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/history/#covid19policiestext>) and the Department of Philosophy (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/philosophy/#covid19policiestext>) for COVID-19 policies related to their degree programs.

Co-chairs: Paula Findlen (History), Michael Friedman (Philosophy)

Directors of Graduate Studies: Paula Findlen (History), Michael Friedman (Philosophy)

Committee-in-Charge: Paula Findlen (History), Michael Friedman (Philosophy), Helen Longino (Philosophy), Reviel Netz (Classics), Robert Proctor (History), Jessica Riskin (History), Thomas Ryckman (Philosophy)

Program Committee: Paula Findlen (History), Michael Friedman (Philosophy), Helen Longino (Philosophy), Tom Mullaney (History), Reviel Netz (Classics), Robert Proctor (History), Jessica Riskin (History), Thomas Ryckman (Philosophy), Londa Schiebinger (History)

Professors: Keith Baker (History), Paula Findlen (History), Michael Friedman (Philosophy), Gabrielle Hecht (CISAC, History), David Holloway (History, Institute for International Studies, Political Science), Helen Longino (Philosophy), Reviel Netz (Classics), Robert Proctor (History), Jessica Riskin (History), Londa Schiebinger (History), Fred Turner (Communication), Richard White (History), Caroline Winterer (History)

Associate Professors: Thomas Mullaney (History), Sarah Jain (Anthropology), Priya Satia (History)

Professor (Teaching): Thomas Ryckman (Philosophy)

Professor (Research): Rega Wood (Philosophy, emerita)

Senior Lecturer: Paul Edwards (STS)

Other Affiliation: Henry Lowood (Stanford University Libraries), Larry Lagerstrom (UAR)

Visiting Scholars: Adrienne Mayor (Classics)

Overseas Studies Courses in History and Philosophy of Science

The Bing Overseas Studies Program (<http://bosp.stanford.edu>) (BOSP) manages Stanford international and domestic study away programs for Stanford undergraduates. Students should consult their department or

program's student services office for applicability of Overseas Studies courses to a major or minor program.

The BOSP course search site (<https://undergrad.stanford.edu/programs/bosp/explore/search-courses/>) displays courses, locations, and quarters relevant to specific majors.

For course descriptions and additional offerings, see the listings in the Stanford Bulletin's ExploreCourses (<http://explorecourses.stanford.edu>) or Bing Overseas Studies (<http://bosp.stanford.edu>).

Due to COVID-19, all BOSP programs have been suspended for Autumn Quarter 2020-21. All courses and quarters of operation are subject to change.

Units

explorecourses:OSP hps

Courses

HPS 60. Introduction to Philosophy of Science. 5 Units.

This course introduces students to tools for the philosophical analysis of science. We will cover issues in observation, experiment, and reasoning, questions about the aims of science, scientific change, and the relations between science and values.

Same as: PHIL 60

HPS 61. Philosophy and the Scientific Revolution. 5 Units.

Galileo's defense of the Copernican world-system that initiated the scientific revolution of the 17th century, led to conflict between science and religion, and influenced the development of modern philosophy.

Readings focus on Galileo and Descartes.

Same as: PHIL 61

HPS 199. Directed Reading. 1-15 Unit.

May be repeated for credit.

HPS 299. Graduate Individual Work. 1-15 Unit.

May be repeated for credit.