

# PROGRAM IN HISTORY AND PHILOSOPHY OF SCIENCE

*Chair:* Timothy Lenoir

*Committee-in-Charge:* Barton Bernstein (History), Joe Corn (History), Paula Findlen (History), Michael Friedman (Philosophy), Sarah Jain (Cultural and Social Anthropology), Timothy Lenoir (History), Reviel Netz (Classics)

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*Assistant Professors:* Sarah Jain (Cultural and Social Anthropology), Reviel Netz (Classics), Jessica Riskin (History), Michael Strevens (Philosophy)

*Senior Lecturer:* Joseph Corn (History)

*Lecturer:* Michael J. Gorman (Science, Technology and Society)

*Affiliated Faculty:* John Bender (English), C. Francis Everitt (Hansen Lab), Hans Gumbrecht (French and Italian), Michael Riordan (SLAC), Charles A. Taylor (Mechanical Engineering, Surgery)

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Courses in History and Philosophy of Science have the subject code HPS. For a complete list of subject codes, see Appendix B.

The Program in History and Philosophy of Science (HPS) is an interdisciplinary, non-degree program focusing on the historical and contemporary aspects of science, medicine, and technology. The program offers graduate degrees through the departments in which core faculty teach, principally Classics, Cultural and Social Anthropology, History, and Philosophy. Undergraduate degrees are offered through the departments of History and Philosophy, and through the Program in Human Biology. The program works cooperatively with other departments and programs in the administration of undergraduate majors and graduate degrees. Its undergraduate and graduate courses span the period from antiquity to the late 20th century, with special emphasis on ancient and Islamic science; Renaissance science; the scientific revolution; history of medicine and the body; history and philosophy of biology; history and philosophy of modern physics; history of computers and information sciences; and gender, science, and technology. These courses are designed both for students looking for a humanistic perspective on the sciences and for students trying to understand the relationship of the sciences to humanistic knowledge.

Stanford has unique resources for the history and philosophy of science. Situated in the heart of Silicon Valley at an institution with a long and distinguished tradition in many sciences, the University is surrounded by archives for the recent history of science and technology. Stanford University Libraries has rich holdings in Special Collections for the Scientific Revolution, as well as the modern and contemporary study of science and technology. The University is in close proximity to some of the most interesting public science museums in the country: the California Academy of Sciences, the Exploratorium, the Computer History Museum, and the Tech Museum. Graduate students can take advantage of faculty, classes, and archives at UC Berkeley through Stanford's exchange program. The core of the community is the colloquium series which brings together faculty and students several times a quarter to discuss the work of invited speakers on topics of broad concerns to science and technology studies.

## UNDERGRADUATE DEGREES

Students who wish to pursue the history and philosophy of science and technology should major in the Department of History, which offers an interdisciplinary major in History and Science, in the Department of Philosophy, which offers a specific degree in History and Philosophy of Science, or in the Program in Human Biology, which offers a concentration in history of science and medicine. A concentration in the anthropology of science or in ancient science can be arranged with the departments of Cultural and Social Anthropology and Classics respectively. Alternatively, students may consult with a member of the Committee-in-Charge to construct an individually designed major. The major must conform to the requirements for Individually Designed Majors (see the "Individually Designed Majors" section of the bulletin).

## GRADUATE DEGREES

Students can pursue either an M.A. or a Ph.D. in history and philosophy of science through departments in which appropriate faculty members teach. Students interested in pursuing a graduate degree should consult with the appropriate faculty members in order to determine which departmental degree best meets their needs. Applications for admission should be sent to the appropriate department.

## COURSES

### INTRODUCTORY

**HPS 60. Introduction to Philosophy of Science**—(Same as PHIL 60.) Survey of 20th-century views on the nature of scientific knowledge. Logical positivism and Popper; the problem of induction; Kuhn, Feyerabend, and radical philosophies of science; subsequent attempts to rebuild moderate empiricist and realist positions. GER:3a  
5 units, Spr (Godfrey-Smith)

### SCIENCE IN HISTORY

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

**HPS 100. Invention of Science**—(Enroll in CLASSGEN 133.)  
3-4 units, Aut (Netz)

**HPS 101. Science and Technology in the Islamic World**—(Enroll in HISTORY 290/390.)  
5 units, Aut (Dallal)

**HPS 102. The Scientific Revolution**—(Enroll in HISTORY 213/313.)  
5 units, Win (Findlen)

**HPS 103. The Darwinian Revolution**—(Enroll in HISTORY 133/333.)  
4 units, Aut (Lenoir)

**HPS 104. The Quantum Century: A History of 20th-Century Physics**—(Enroll in HISTORY 140/340.)  
3-5 units, Win (Riordan)

### MEDICINE IN HISTORY

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

**HPS 121. The Emergence of Modern Medicine**—(Enroll in HISTORY 13.)  
5 units (Findlen) not given 2002-03

**HPS 122. The Rise of Scientific Medicine**—(Enroll in HISTORY 33A.)  
4-5 units (Lenoir) not given 2002-03

## PHILOSOPHICAL PERSPECTIVES ON SCIENCE, MEDICINE, AND TECHNOLOGY

This sequence is designed to introduce students to fundamental aspects of the philosophy of science. Students concentrating in the philosophy of science are advised to take HPS 60 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.

**HPS 140. Popper, Kuhn, and Lakatos**—(Enroll in EDUC 214, PHIL 156.)

3 units, Spr (Phillips)

**HPS 142. Central Topics in The Philosophy of Science: Scientific Explanation**—(Enroll in PHIL 164/264.)

4 units, Win (Strevens)

**HPS 143. Philosophy of Physics**—(Enroll in PHIL 165/265.)

4 units, Spr (Tanona)

**HPS 144. Philosophy of Biology**—(Enroll in PHIL 167A/267A.)

4 units, not given 2002-03

**HPS 145. Philosophy, Biology, and Behavior**—(Enroll in PHIL 167B/267B.)

4 units, Win (Godfrey-Smith)

**HPS 146. Plato's Ontology and Math**—(Enroll in PHIL 116/216.)

4 units, Win (Moravcsik, Netz)

## ADVANCED

### HISTORICAL PERSPECTIVES ON SCIENCE

The following classes focus on specific episodes in or approaches to the history of science.

**HPS 152. New Worlds, Imaginary Worlds**—(Enroll in HISTORY 213A/313A.)

5 units (Findlen) not given 2002-03

**HPS 153. Science, Technology, and Art: The Worlds of Leonardo**—(Enroll in STS 102, HISTORY 14/314.)

5 units, Aut (Gorman)

**HPS 154. When Worlds Collide: The Trial of Galileo**—(Enroll in HISTORY 216/316.)

5 units (Findlen) not given 2002-03

**HPS 155. The Prehistory of Computers**—(Enroll in HISTORY 204B/304B.)

3-5 units (Riskin) not given 2002-03

**HPS 157. The History of Artificial Life**—(Enroll in HISTORY 203D/303D.)

5 units, Spr (Riskin)

**HPS 158. A History of Vision: Between Art and Science**—(Enroll in STS 121A.)

5 units, Spr (Gorman)

### CONTEMPORARY PERSPECTIVES ON SCIENCE, MEDICINE, AND TECHNOLOGY

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

**HPS 160. Science and High Technology in the Silicon Valley, 1930-1980**—(Enroll in HISTORY 262S/462.)

4-5 units, Win (Lenoir)

**HPS 161. Bodyworks: Medicine, Technology, and the Body in Late 20th-Century America**—(Enroll in HISTORY 274A/374A, ENGLISH 274B, COMPLIT 274A/374A.)

5 units (Lenoir, Bender) not given 2002-03

**HPS 162. Virtuality**—Stanford Introductory Seminar. (Enroll in HISTORY 34Q.)

5 units (Lenoir) not given 2002-03

**HPS 163. History of Computer Game Design: Technology, Culture and Business**—(Same as STS 145.) The developing culture and technology of computer and video game design. Historical contexts include entertainment media, computing technology, applications of gaming technology, and business history. Topics: play in human culture, early computer games from chess to Spacewar, the role of artificial intelligence research, the history of computer graphics and sound technology, the evolution of techniques and genres of computer game design, video game machines, games and the microcomputer revolution, networked gaming, gadgets and games as factors in the evolution of software and hardware, marketing, gendering of games and game play, virtual worlds, simulation, video and computer game industries, and technology transfer such as military simulations. Enrollment limited to 90.

4-5 units, Win (Lowood)

**HPS 164. Science, Technology, and Gender**—(Enroll in CASA 132.)

5 units, Spr (Jain)

**HPS 165. The Anthropology of Disasters**—(Enroll in CASA 383.)

5 units (Jain) not given 2002-03

**HPS 166. The Wired Historian**—(Enroll in HISTORY 201P/301P, STS 230.)

3 units, Spr (Gorman)

**HPS 167. Health Care as Seen Through Medical History, Literature, and the Arts**—(Enroll in HUMBIO 175.)

4 units, Aut (Zaroff)

**HPS 168. Trials of the 20th Century: Technology, Law, and Culture**—(Enroll in CASA 85.)

5 units (Jain) not given 2002-03

**HPS 170. Car Culture**—(Enroll in CASA 181, STS 150.)

5 units, Spr (Jain)

**HPS 171. The History of Women and Medicine in the U.S.**—(Enroll in HISTORY 264.)

5 units, Aut (Horn)

**HPS 175. Technology, Body and Work**—(Enroll in STS 175.)

4 units, Win (Aneesh) not given 2002-03

**HPS 199. Directed Reading**

1-15 units, any quarter (Staff)

**HPS 200. Senior Colloquium**—Reading/discussion of key analytical and theoretical texts treating the natures and interplay of science, technology, and society. Only STS majors writing senior honors theses may take for 2 units. Prerequisite: STS major with senior standing and four STS core courses, or consent of the instructor.

2-4 units, Win (Aneesh), Spr (Riskin)

**HPS 299. Graduate Individual Work**

1-15 units, any quarter (Staff)

## OVERSEAS STUDIES

Courses approved for the Education major and taught overseas can be found in the "Overseas Studies" section of this bulletin, or in the Overseas Studies office, 126 Sweet Hall.

## OXFORD

**HPS 102V. History of Science in Oxford**

4-5 units