

History, Philosophy, and Social Studies of Science and Medicine (HIPS)

Director: Robert J. Richards, SS 205, 702-8391

Secretary: Betty Mackevich, SS 207, 702-8391

Program of Study

The B.A. program in the History, Philosophy, and Social Studies of Science and Medicine (HIPS) is designed for College students interested in studying science in terms of its historical development, conceptual structure, and social role. Students in the program must do sufficient work in one or more sciences to acquire a sound foundation for studying the nature of science. After securing this basis, they are expected to gain an understanding of how science arose and how the content of scientific thought has changed and is changing, because of both its own internal dynamic and its interaction with the larger society in which it is embedded.

The HIPS program is designed to make possible the study of a wide range of social, historical, and conceptual issues relating to science. Students completing the program follow a number of different careers. Some pursue graduate study in the history and philosophy of science or in some field of science. Others find the program valuable preparation for the study of medicine, law, public policy, or science journalism. More generally, the goal of the program is to provide students with a sound basis on which to interpret and evaluate science and science policy. Some students choose to construct a degree program combining the requirements for the HIPS concentration with those for a concentration in the physical or biological sciences. Others, having met the HIPS program requirements, use electives to broaden their liberal arts education.

HIPS Sponsor. The Morris Fishbein Center for the History of Science and Medicine sponsors the HIPS program. Further information can be obtained in the center's office (SS 207).

Program Requirements

Elements of the Curriculum. The curriculum of the program contains five principal elements:

1. **The Foundation.** All HIPS concentrators must:
 - a. complete the general education requirement for the biological sciences with Core Biology (BIOS 10100) plus a topics course (BIOS 10101-19999), or the first two courses of a Fundamental Sequence (BIOS 20180s or 20190s), or a score of 5 on the AP biology test;
 - b. complete the general education requirement in the physical sciences with a physics sequence (PHYS 12100-12200 or its equivalent), a

- chemistry sequence (CHEM 11101-11201/11102-11202 or 12100-12200), or a score of 5 on the AP chemistry or physics test;
- c. take a calculus sequence (MATH 13100-13200 or higher), or have earned a score of 5 on the AP Calculus BC test; and
 - d. take the three-quarter sequence surveying the growth of science in Western civilization: Science, Culture, and Society in Western Civilization (HIPS 17300 and 17400, and either 17501 or 17502).
2. **Advanced Science.** In addition to the science courses normally taken as part of the general education requirements, students are expected to take three courses in science or mathematics beyond the introductory level. They select these advanced courses according to their special aims, their area of concentration, and the subject of the bachelor's thesis.
 3. **Areas of Concentration.** All students in the program determine a particular major area of concentration in the history, philosophy, ethics, and/or social contexts of science and medicine. In consultation with the program director and their program adviser, students select five courses to constitute this concentration area. For example, some students may be particularly interested in the epistemological issues related to the growth of science; others may be especially concerned with the intellectual and social interactions between changing scientific knowledge and institutions, on the one hand, and evolving social institutions, on the other; a third group may wish to emphasize moral and political problems attending the employment of technology generated by advances in science.
 4. **Tutorials.** Each student takes two tutorial courses, usually early in his or her program. These tutorials are small classes (from three to ten students) that emphasize discussion and writing. Courses for the coming year are listed in the HIPS office.
 5. **Bachelor's Thesis and Senior Seminar.** Each student completes the program with a bachelor's thesis (HIPS 29900). Students should discuss their proposal for their bachelor's thesis in Spring Quarter of their third year with the program director. In consultation with the program director, students then sign up for a reading and research course with an appropriate faculty member. This research course should lead to a thesis integrating the students' academic studies and bringing them to bear on a significant question related to some historical, conceptual, ethical, or social aspect of science. During the senior year, students also enroll in a designated one-quarter seminar (HIPS 29800) that deals with general aspects of history, philosophy, and social studies of science.

Summary of Requirements

General Education	HIPS 17300-17400-17501/17502 CHEM 11101-11201/11102-11202 or higher†, or PHYS 12100-12200 or higher† MATH 13100-13200 or higher†
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Concentration	1	CHEM 11301/11302 or higher†, or PHYS 12300 or higher†
	1	MATH 13300 or higher†
	3	courses in science or math beyond the introductory level
	5	courses in major area of concentration
	2	HIPS 29400 to 29600 (tutorial courses)
	1	HIPS 29800 (senior seminar)
	<u>1</u>	HIPS 29900 (bachelor's thesis)
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† Credit may be granted by examination.

Honors. Students who meet the following criteria are considered for graduation with special honors: (1) overall GPA of 3.3 or higher, (2) completion of a bachelor's thesis of *A* quality, and (3) a majority vote by the faculty in favor of honors.

Admission. To be admitted, students should have completed at least two of the four foundation course sequences listed in the preceding section and should have maintained a 3.2 GPA or higher in previous course work. Admission is completed when students have taken the remaining foundation courses and have formulated a plan of study; this is normally done prior to the third year. Application for admission should be made to the director of the program, who advises students about the requirements, arranges a preliminary plan of study, and discusses scheduling conflicts and special cases. Thereafter, a student chooses, in consultation with the director, a permanent adviser from the staff.

Grading. Courses may be taken on a *P/N* or *P/F* basis except that students concentrating in HIPS must receive letter grades in all courses aimed at meeting the requirements of the concentration.

Advisers. The faculty for the HIPS program is drawn from many parts of the University. The following have direct responsibility for admitting students, formulating curriculum, and advising.

Faculty

J. Comaroff, A. Davidson, D. Garber, A. D. Goldblatt, A. Johns, J. Lantos, R. Richards, L. Ross, G. Stocking, Jr., N. Swerdlow, W. Wimsatt, A. Winter

Examples of Area Concentrations and Sample Curricula for Those Areas. The following are meant to illustrate the kinds of concentrations students might choose. They are not prescriptive, only suggestive. Students should consult with the director of the program and examine this course catalog and the quarterly *Time Schedules* for the particular courses that might constitute their area of concentration.

History and Philosophy of Biological Science

HIPS 22700. Philosophy of Biology
 HIPS 23600. History and Theory of Human Evolution
 HIPS 23700. Apes and Human Evolution

HIPS 23900. Biological and Cultural Evolution
 HIPS 25800. Darwin's Romantic Biology

Philosophy of Science

HIPS 22000. Philosophy of Science
 HIPS 22300. Philosophy of Social Sciences
 HIPS 22700. Philosophy of Biology
 HIPS 24900. Natural Philosophy, 1200 to 1800
 HIPS 25400. Philosophy of Mind and Science Fiction

History of Medicine and Medical Ethics

HIPS 15000. Science and Medicine Today
 HIPS 21000. Introduction to Ethics
 HIPS 21600. Advanced Medical Ethics
 HIPS 26600. Ethical Issues in Biology and Medicine
 HIPS 27300. Medicine and Culture

Courses

Foundation Sequence

HIPS 17300-17400-17501/17502. Science, Culture, and Society in Western Civilization I, II, III. (=HIST 17300-17400-17501/17502)
Autumn, Winter, Spring.

Tutorials

HIPS 29400-29500-29600. Tutorial. *Autumn, Winter, Spring.*

Seminar and Research

HIPS 29700. Readings and Research in History, Philosophy, and Social Studies of Science and Medicine. *Autumn, Winter, Spring.*

HIPS 29800. Senior Seminar: My Favorite Readings in the History and Philosophy of Science. *R. Richards, A. Winter. Winter.*

HIPS 29900. Bachelor's Thesis. *Autumn, Winter, Spring.*

Concentration Courses

Courses other than those included in the preceding sample curricula or in the list that follows may be appropriate concentration courses; consult the quarterly Time Schedules for possible additions.

HIPS 20500. Intermediate Logic. (=CHSS 33600, PHIL 29400/39600) *M. Kremer. Winter.*

HIPS 20700. Elementary Logic. (=CHSS 33500, MAPH 38000, PHIL 20100/30000) *J. Bridges. Autumn.*

HIPS 20800. Evolutionary Processes. (=BIOS 29306, CHSS 34800, ECEV 31000, EVOL 31000) *PQ: Consent of instructor. L. Van Valen. Autumn.*

HIPS 21000. Introduction to Ethics. (=GSHU 29200, PHIL 21000) *M. Green. Spring.*

HIPS 21100. The Practice of Anthropology: Celebrity and Science in Paleoanthropology. (=ANTH 21406/38300) *R. Tuttle. Winter, 2003.*

HIPS 21200. Big Science and the Birth of the National Security State. (=ANTH 22400/34900) *J. Masco. Not offered 2002-03.*

HIPS 21400. Introduction to Medical Ethics. (=BIOS 29281) *PQ: Second-year standing or higher. L. Ross. Winter.*

HIPS 21500. Cultural Evolution and Dimensions of Globalization. (=BIOS 02800, BPRO 24000, CHSS 35000, LING 11200, NCDV 27500, PHIL 32600) *PQ: Third- or fourth-year standing. Core background in evolution and genetics strongly recommended but not required. W. Wimsatt, S. Mufwene, Staff. Winter. Not offered 2002-03.*

HIPS 21600. Advanced Medical Ethics. (=BIOS 29282) *PQ: BIOS 29281 or 29296, or other prior ethics course. L. Ross. Spring.*

HIPS 22000. Philosophy of Science. (=CHSS 33300, PHIL 22000/32000) *PQ: Fourth-year standing and advanced knowledge of philosophy. J. Haugeland. Autumn.*

HIPS 22200. Europeans and their Environment: A Cultural History, 500 to 1800. (=ENST 23300, HIST 20800) *B. Naddeo. Winter.*

HIPS 22700. Philosophy of Biology. (=CHSS 37600, PHIL 22700/32700) *W. Wimsatt. Winter.*

HIPS 23000. The Organization of Knowledge. (=BPRO 23500) *PQ: Third- or fourth-year standing. H. Sinaiko, W. Booth. Not offered 2002-03.*

HIPS 23400. Is Development Sustainable? (=BPRO 23400, ENST 24400, NCDV 27300, PBPL 24400) *PQ: Third- or fourth-year standing. T. Steck, L. Raymond. Spring.*

HIPS 23500. Comparative Primate Morphology. (=ANTH 38200, EVOL 38200) *PQ: Consent of instructor. R. Tuttle. Spring. Offered 2003-04; not offered 2002-03.*

HIPS 23600. Classical Readings in Anthropology: History and Theory of Human Evolution. (=ANTH 21102/38400, EVOL 38400) *R. Tuttle. Autumn. Offered 2003-04; not offered 2002-03.*

HIPS 23700. Apes and Human Evolution. (=ANTH 28600/38600, EVOL 38600) *R. Tuttle. Spring, 2003.*

HIPS 23800. Technology and Environment in History. (=ENST 23700, HIST 25200) *A. Gugliotta. Spring.*

HIPS 23900. Biological and Cultural Evolution. (=BIOS 29286, BPRO 23900, CHSS 37900, LING 11100, NCDV 27400, PHIL 22500/32500) *PQ: Third- or fourth-year standing. Core background in evolution and genetics strongly recommended but not required. W. Wimsatt, S. Mufwene. Winter, 2003.*

HIPS 24000. Evolution of the Hominoidea. (=ANTH 38100, EVOL 38100) *PQ: Third- or fourth-year standing, and consent of instructor. R. Tuttle. Autumn, 2002.*

HIPS 24200. Science and Religion. (=BPRO 24100, PHIL 24500) *PQ: Third- or fourth-year standing. D. Garber, J. Kraemer, R. Perlman. Not offered 2002-03.*

HIPS 24300. Foucault and the History of Sexuality. (=CHSS 41900, GNDR 24900, PHIL 24800/34800) *PQ: Prior philosophy course or consent of instructor. A. Davidson. Autumn.*

HIPS 24500. Introduction to Freud and to Psychoanalysis. (=MAPH 31400, MAPS 33800, PHIL 23800/33800, SCTH 41600) *J. Lear. Winter.*

HIPS 25000. History of Philosophy I: Ancient Philosophy. (=ANST 23200, CLCV 32000, PHIL 25000) *PQ: Completion of the general education requirement in humanities required; PHIL 25000 helpful. R. Barney. Autumn.*

HIPS 25100. Anthropology as Science: Genetics and Reconfiguring Social Imaginaries. (=ANTH 22100) *N. Abu El-Haj. Not offered 2002-03.*

HIPS 25600. History of Statistics. (=CHSS 32900, STAT 26700/36700) *PQ: Prior statistics course. S. Stigler. Spring.*

HIPS 25900. Darwinian Medicine. (=BIOS 22257) *PQ: Completion of the general education requirement in the biological sciences. R. Perlman, W. Wimsatt. Autumn.*

HIPS 25901. Evolution of Mind and Morality: Nineteenth to Twenty-First Centuries. (=CHSS 35900, HIST 25500/35500, PHIL 24300/34300, PSYC 28200/38200) *PQ: Third- or fourth-year standing. R. Richards. Winter.*

HIPS 26000. History of Philosophy II: Medieval and Early Modern Philosophy. (=PHIL 26000) *PQ: Completion of the general education requirement in humanities required; PHIL 25000 helpful. D. Garber. Winter.*

HIPS 26500. Continental Rationalism. (=CHSS 36400, PHIL 26500/36500) *D. Garber. Spring.*

HIPS 27200. Philosophy of History: Historical Explanation. (=CHSS 37200, HIST 25000/35000, PHIL 20600/30600) *PQ: Third- or fourth-year standing. R. Richards. Autumn.*

HIPS 27300. Medicine and Culture. (=ANTH 24300/40300, GNDR 24300/40300) *J. Comaroff. Autumn, 2002.*

HIPS 27501. Freud: Human Development and Personality. (=HUDV 27800/31300) *PQ: Consent of instructor. D. Orlinsky. Autumn.*

HIPS 28501. Neurology and Kant's Theory of Knowledge. (=BIOS 29283) *PQ: Third- or fourth-year standing. S. Schulman. Autumn, Spring.*

HIPS 28900. Kepler's Astronomy. (=ASTR 38900, CHSS 38900) *PQ: Consent of instructor. N. Swerdlow. Winter.*