

History, Philosophy, and Social Studies of Science and Medicine

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);

- 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 equivalent), 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 17300-17400-17501 (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 (or 17502) CHEM 11101-11201/11102-11202 or equivalent†, or PHYS 12100-12200 or higher† MATH 13100-13200 or higher†
Concentration	1	CHEM 11301/11302 or equivalent†, 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)
	14	

† Credit may be granted by examination.

Honors. Students who meet the following criteria are considered for graduation with honors in the concentration: (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 quality 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, 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 21400. Introduction to Medical Ethics
 HIPS 21600. Advanced Medical Ethics
 HIPS 27300. Medicine and Culture

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

Foundation Sequence

HIPS 17300-17400-17501 (or 17502). Science, Culture, and Society in Western Civilization I, II, III. (=HIST 17300-17400-17501-17502) *This sequence meets the general education requirement in civilization studies. R. Richards, Autumn; N. Swerdlow, Winter; A. Johns, 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. Johns. 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 20100. Introduction to the Philosophy of Science. (=CHSS 33300, PHIL 20000) *A. Stone. Autumn.*

HIPS 20500. Intermediate Logic I. (=CHSS 33600, PHIL 29400/39600) *T. Bays. Winter.*

HIPS 20501. Intermediate Logic II: Incompleteness. (=CHSS 34000, PHIL 29000/39700) *M. Kremer. Spring.*

HIPS 20601. Modal Logic. (=CHSS 32500, PHIL 22400/32400) *T. Bayes. 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. (=ISHU 29200, PHIL 21000) *M. Green. Spring.*

HIPS 21100. The Practice of Anthropology: Celebrity and Science in Paleoanthropology. (=ANTH 21406/38300) *R. Tuttle. Not offered 2003-04; will be offered 2004-05.*

HIPS 21200. Big Science and the Birth of the National Security State. (=ANTH 22400/34900) *J. Masco. Not offered 2003-04; will be offered 2004-05.*

HIPS 21301. The Anthropology of Science. (=ANTH 22100/32300) *J. Masco. Not offered 2003-04; will be offered 2004-05.*

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

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

HIPS 21701. History of Public Health in the United States. (=BIOS 29291) *D. S. Lauderdale. Spring.*

HIPS 22201. Science and Culture in Twentieth-Century Japan. (=EALC 24800, JAPN 24800) *PQ: EALC 10900. G. Golley. Spring.*

HIPS 23000. The Organization of Knowledge. (=BPRO 23500) *PQ: Third- or fourth-year standing. H. Sinaiko, W. Sterner. Spring.*

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

M. Arsel. Spring.

HIPS 23500. Comparative Primate Morphology. (=ANTH 28300/38200, EVOL 38200) *This course carries 200 units of credit. R. Tuttle. Spring.*

HIPS 23600. Classical Readings in Anthropology: History and Theory of Human Evolution. (=ANTH 21102/38400, EVOL 38400) *R. Tuttle. Winter.*

HIPS 23700. Apes and Human Evolution. (=ANTH 28600/38600, EVOL 38600) *R. Tuttle. Spring. Not offered 2003-04; will be offered 2004-05.*

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 or consent of instructor. Core background in evolution and genetics strongly recommended. For information on when course will be offered, call Margot Browning at 702-5657. W. Wimsatt, S. Mufwene.*

HIPS 24000. Evolution of the Hominoidea. (=ANTH 28100/38100, EVOL 38100) *This course carries 200 units of credit. R. Tuttle. Not offered 2003-04; will be offered 2004-05.*

HIPS 24101. Genetics in Evolutionary Perspective. (=BIOS 29288, PHIL 32201) *PQ: Completion of the general education requirement in the biological sciences. W. Wimsatt. Spring.*

HIPS 24200. Science and Religion. (=BPRO 24100, PHIL 24500) *PQ: Third- or fourth-year standing. J. Kraemer, R. Perlman. Not offered 2003-04.*

HIPS 24401. Freud and Psychoanalysis: The Lectures and Case Studies. (=FNDL 23001, HUDV 28500/38500, PSYC 28501/38501) *B. Cohler. Spring.*

HIPS 24501/24502. A Philosophical Introduction to Freud and Psychoanalysis I, II. (=FNDL 22604/22607) *PQ: Advanced standing. Open to students from all concentrations. J. Lear. Winter, Spring.*

HIPS 24801. Perspectives on Imaging. (=ARTH 26900/36900, BIOS 29207, CMST 27300/37300) *B. Stafford, P. La Riviere. Winter.*

HIPS 25300. History of Photography, 1850 to 1950. (=ARTH 26400, COVA 26300) *J. Snyder. Winter.*

HIPS 25400. Philosophy of Mind and Science Fiction. (=PHIL 23400, ISHU 23000) *W. Wimsatt. Spring.*

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 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. C. Larmore. Winter.*

HIPS 26700. Intellectual Property and Piracy from Guttenberg to Gates. (= HIST 23000/33000) *A. Johns. Winter.*

HIPS 26801. German Romanticism. (=CHSS 42400, GRMN 47000, HIST 25401/35401, PHIL 30700) *PQ: Third- or fourth-year standing and consent of instructor. R. Richards. Autumn.*

HIPS 26901. History and Philosophy of Psychology. (=CHSS 36901, HIST 25302/35302, PHIL 32810) *PQ: Third- or fourth- year standing and consent of instructor. R. Richards. Winter.*

HIPS 27300. Medicine and Culture. (=ANTH 24300/40300, GNDR 24300/40300, RLST 27500) *J. Comaroff. Not offered 2003-04; will be offered 2004-05.*

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

HIPS 28001. Astronomy in Antiquity. (=ASTR 38300) *N. Swerdlow. Winter.*

HIPS 28201. Foundations of Scientific Investigations. (=BIOS 20248) *W. Epstein. Autumn.*

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