HISTORY OF SCIENCE AND
TECHNOLOGY

http://host.jhu.edu/

The Department of the History of Science and Technology offers an undergraduate program leading to the degree of Bachelor of Arts with a major in science, medicine, and technology, and a graduate program leading to the degree of Doctor of Philosophy.

The department offers a variety of courses that deal with the history of the conceptual and technical development of the sciences, as well as the cultural and social impact of science and technology on civilization. These courses are open to all undergraduates in the Schools of Arts and Sciences and Engineering. A few of the courses require some background in an appropriate science, but most are accessible to those with no specialized knowledge who want to understand the part science has played in shaping modern culture. Students who have concerns about their technical competence for a given course should consult the professor involved.

Major in History of Science, Medicine, and Technology

Offered in cooperation with the Institute of the History of Medicine, this major allows students to combine substantive work in science with study of the social and historical context of modern science, medicine, and technology. The aim of the program is to produce graduates who are scientifically literate and technically competent, and who at the same time understand science and medicine not as static, autonomous enterprises but rather as modes of thought that have developed in specific social contexts.

The major is appropriate for any student planning a career in medicine or other areas of the health care industry. It is also flexible enough to serve as a basis for a variety of careers where an informed knowledge of science and technology and their impact on society is important. Such careers include broad areas of business and industry, journalism, teaching, museum work, and specialized areas of law and public policy.

Requirements for the B.A. Degree

Also see Requirements for a Bachelor’s Degree. (http://e-catalog.jhu.edu/undergrad-students/academic-policies/requirements-for-a-bachelors-degree)

- Sciences: Students are required to have a total of 30 credits in science, engineering, and mathematics courses coded (E, N, or Q), of which at least nine credits must be above the 100-level. Laboratory courses in science count toward this requirement. Calculus I is strongly recommended.
- History of Science, Medicine and Technology: A total of 24 credits of course work in the history of science, medicine and technology are required. These must include at least two survey courses and four additional courses above the 100-level.
- Students in their senior year may take graduate courses with permission.
- A minimum grade of C- is necessary in all courses applied toward the requirements of the major and requirements may not be taken satisfactory/unsatisfactory. Each course must be at least 3 credits.

Sample Program

A typical program might include the following sequence of courses:

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<tr>
<th>Freshman</th>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
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<tr>
<td>AS.140.1xx</td>
<td>3</td>
<td>Freshman</td>
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<tr>
<td>Seminar or other AS.140.xxx elective</td>
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<td>Any level N,Q,E course</td>
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<td>Any level N,Q,E course</td>
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<tr>
<td>Survey course like</td>
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<td>AS.140.105 or AS.140.321</td>
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<tr>
<td>200 level or above N,Q,E course</td>
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<th>Junior</th>
<th>Credits</th>
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<tr>
<td>AS.140.xxx HSMT elective above 100 level</td>
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<tr>
<td>AS.140.xxx HSMT elective above 100 level</td>
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<tr>
<td>Any level N,Q,E course</td>
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<th>Senior</th>
<th>Credits</th>
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<tr>
<td>AS.140.411 Senior Research Seminar (Optional)</td>
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Two Survey Courses (select from the following): 6
- AS.140.105 History of Medicine
- AS.140.106 History of Modern Medicine
- AS.140.301 History of Science: Antiquity To Renaissance
- AS.140.302 Rise Of Modern Science
- AS.140.321 Scientific Revolution

Additional History of Science, Medicine & Technology Courses **
- Two history of science, medicine & technology courses at any level 6
- Four 200-400 level history of science, medicine & technology courses 12

Science, Math, or Engineering Courses (N, Q, or E)
- Nine credits of 200-level or higher N, Q, or E courses 9
- Twenty-one credits of N, Q, or E courses at any level 21

Total Credits 54

* Other courses might serve to fulfill the survey course requirement with permission of the director of undergraduate studies.
** The courses AS.140.411 Senior Research Seminar and AS.140.412 Research Seminar may not be used towards this requirement.
Honors in the Major
Students who demonstrate excellence in course work are eligible to write an honors thesis (AS.140.411 Senior Research Seminar and AS.140.412 Research Seminar) in their final year for additional credits. Students must have outstanding recommendations from two department members to be eligible for the thesis. Departmental honors are conferred if a student has a GPA of 3.5 or better in major requirements and receives a grade of A- or better on the thesis.

Minor in the History of Science, Medicine and Technology
The department offers a minor which may be combined with other science, social science, or humanities majors. To complete the requirements for the minor, students must have a total of 18 credits in the history of science, medicine, or technology, including at least one survey course. A minimum grade of C- is necessary in all courses applied toward the requirements of the major and requirements may not be taken satisfactory/unsatisfactory. Each course must be at least 3 credits.

One Survey Course (select from the following):* 3
- AS.140.105 History of Medicine
- AS.140.106 History of Modern Medicine
- AS.140.301 History of Science: Antiquity To Renaissance
- AS.140.302 Rise Of Modern Science
- AS.140.321 Scientific Revolution

Additional History of Science, Medicine & Technology Courses
Five history of science, medicine & technology courses at any level 15

Total Credits 18

* Another course might serve to fulfill the survey course requirement with permission of the director of undergraduate studies.

Ph.D. in the History of Science and Technology
The graduate program in the history of science and technology leads to the Ph.D. degree. Although an M.A. degree is granted, candidates who seek only that degree are not ordinarily admitted. The object of the Ph.D. program is to provide the rigorous training necessary for a scholarly career in teaching and research; consequently, the focus of the student's activity will be the research seminars of the department. Faculty from the Institute of the History of Medicine in the School of Medicine also participate in the program.

Admission
Application deadline is January 15. All official supplemental materials (official transcripts, official GRE scores, and, when applicable, official TOEFL scores) should be sent directly to the Graduate Admissions Office at:

Johns Hopkins University
Full-time Graduate Studies in Arts, Sciences, and Engineering
Graduate Admissions Office
Shriver Hall 28

3400 North Charles Street
Baltimore, Maryland 21218

For further information on our faculty and programs, please visit our website at: http://host.jhu.edu.

Requirements for the Ph.D. Degree
Before candidates begin full-time research on their dissertations, they must prepare themselves adequately in the appropriate fields of knowledge, become skilled in the techniques of historical research, and be able to carry out a sustained piece of historical analysis and writing.

In the first year of the program students are introduced to the methods and techniques of research and complete a year-long survey course in the history of science or the history of medicine. Students in their second year of study present a research paper to the department. In the second and third years of study, students prepare a field in history and two specialized fields in the history of science, medicine, or technology. The fields are individually arranged and satisfied. The fields entail broad and intensive reading and the passing of a comprehensive examination and/or presentation of a major research paper. Before being admitted for formal candidacy for the degree, the student must also demonstrate a reading knowledge of two foreign languages. The final requirement for the Ph.D. degree is the completion of a dissertation that is an original contribution to historical knowledge and of a standard suitable for publication.

The History of Science and Technology is by its nature interdisciplinary, and students are encouraged to undertake study in related areas such as history, philosophy, and the natural and medical sciences.

Facilities
The Eisenhower Library and the Welch Medical Library contain about two million volumes, including the special collections of the Institute of the History of Medicine in Baltimore. These research facilities are supplemented by the rare book holdings at Evergreen House, the Pratt Library, and the Peabody Library.

Other important research collections are available to students. In Philadelphia, collections include the Chemical Heritage Foundation, the American Philosophical Society, and the Academy of Natural Sciences. The Hagley Museum and Library’s collections in the history of American science and technology are within easy distance of campus, as are the incomparable holdings of the Smithsonian Institution, the Library of Congress, the National Library of Medicine, and other governmental agencies in Washington, D.C.

Financial Aid
The department has several graduate fellowships and teaching assistantships. Students may also be eligible for federal financial support through the National Science Foundation. Information on these and other fellowships can be obtained through the fellowship advisor at the student’s college, or from the Fellowship Office of the National Academy of Sciences, National Research Council, Washington, D.C. 20025. In the recent past, doctoral candidates have also won support for their research in the United States and abroad through such sources as the Smithsonian Fellowships, the Fulbright-Hays grants, the Spencer Foundation, and the Deutscher Akademischer Austauschdienst (DAAD) Fellowship.
For current faculty and contact information go to http://host.jhu.edu/people/

Faculty

Chair
Maria Portuondo
Associate Professor: History of science, science and exploration, science and technology in Latin America, early modern Spanish and Latin American Cosmography and geography.

Professors
Robert H. Kargon
Willis K. Shepard Professor of the History of Science: history of physics; science and social change; science in America.

Sharon Kingsland
History of biology, especially ecology, genetics and behavioral biology; science in America.

Stuart W. Leslie
History of technology, history of science-based industry.

Lawrence M. Principe
Drew Professor of the Humanities, history of chemistry and alchemy, early modern science, science and religion.

Assistant Professors
Yulia Frumer
History of science, Japanese history.

Joris Mercelis
History of modern technology, especially technology related to chemical industries.

Affiliated Faculty School of Medicine
Nathaniel C. Comfort
Professor: history of biology, especially genetics, molecular biology, and biomedicine; history of recent science, oral-history and interviewing. Current project: History of human and medical genetics in America.

Mary E. Fissell
Professor: European health care and popular medicine, 17th and 18th centuries; early modern gender and the body.

Jeremy Greene
Elizabeth Treide and A. McGehee Harvey Chair in History of Medicine, Associate Professor: 20th century clinical medicine, therapeutics, pharmaceuticals, global health, history of disease.

Marta Hanson
Associate Professor: history of East Asian Medicine; History of Chinese science and medicine; history of epidemics and disease in China.

Graham Mooney
Assistant Professor: history of public health, 19th and 20th centuries; historical epidemiology; historical demography; disease surveillance and risk.

Randall M. Packard
William H. Welch Professor of History of Medicine: history of disease; public health; and medicine, health, and disease in Africa.

Professor: medieval and Renaissance European medicine; natural history; Italy; history of history and of scholarship.

Daniel P. Todes
Professor Emeritus: history of Russian medicine and science, social relations of scientific thought, history of biomedical sciences.

For current course information and registration go to https://sis.jhu.edu/classes/

Courses

AS.140.105. History of Medicine. 3.0 Credits.
Course provides an overview of the medical traditions of six ancient cultures; the development of Greek and Islamic traditions in Europe; and the reform and displacement of the Classical traditions during the Scientific Revolution.
Instructor(s): G. Pomata; S. LeJacq
Area: Humanities, Social and Behavioral Sciences.

AS.140.106. History of Modern Medicine. 3.0 Credits.
The history of Western medicine from the Enlightenment to the present, with emphasis on ideas, science, practices, practitioners, and institutions, and the relationship of these to the broad social context.
Instructor(s): N. Comfort
Area: Humanities, Social and Behavioral Sciences.

AS.140.111. Freshman Seminar. 3.0 Credits.
This Freshmen Seminar explores instances of first contact between different world cultures and western science (16th-20th c.). Some cases considered include Jesuits in the Chinese imperial court, Spanish missionaries and the Maya, etc.
Instructor(s): M. Portuondo
Area: Humanities, Social and Behavioral Sciences.

AS.140.113. Freshmen Seminar. 3.0 Credits.
Instructor(s): D. Todes
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.115. Freshman Seminar: Artificial Humans. 3.0 Credits.
Looking at the history of attempts to augment or construct human beings, the course will explore the role of technology in molding human existence and shaping the definition of humanity.
Instructor(s): Y. Frumer
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.117. Freshman Seminar: Writing about Science and Medicine. 3.0 Credits.
Scientific literature is not an oxymoron. Doctors and scientists write, sometimes beautifully. How? Why? We will both dissect and emulate classics of this genre and discuss how literary skill can inform both patient care and laboratory practice, and how it can shape the role of science in society. Freshmen Only.
Instructor(s): N. Comfort
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.
AS.140.123. Johns Hopkins: The Idea of a University. 3.0 Credits.
Who was Ira Remsen and why is he interred in the building bearing his name? Was the School of Medicine’s best surgeon really a life-long drug addict? This freshman seminar will explore the history of our university since its founding in 1876, including its schools of medicine, public health, nursing, the Applied Physics Laboratory and SAIS. We’ll look carefully at the archives and develop a thematic class exhibit. Research and writing intensive.
Instructor(s): S. Leslie
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.129. Freshman Seminar: Johns Hopkins Medicine. 3.0 Credits.
Learn how Hopkins reinvented medical education, public health, and hospital care and meet the people behind the famous names.
Instructor(s): S. Leslie
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.144. Freshmen Seminar: Culture, Communication and Technology. 3.0 Credits.
This seminar traces the evolution and impact of oral transmission, writing, print, photography, film, and electric and electronic media.
Instructor(s): R. Kargon
Area: Humanities, Social and Behavioral Sciences.

AS.140.146. History of Public Health in East Asia. 3.0 Credits.
This course examines the history of disease, epidemics, and public health responses in East Asia from the 17th-20th centuries. This public health history emphasizes the interactions, connections, and comparisons among China, Japan, Korea, and Taiwan.
Instructor(s): M. Hanson
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.147. Chinese Medicine: Tradition and Modernity. 3.0 Credits.
Examine Chinese Medicine’s practical application as a therapy of increasing global popularity. While also examining its theoretical frameworks from antiquity to the present, healing methods such as acupuncture and herbal medicine are highlighted.
Instructor(s): J. Flowers
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.148. From Materia Medica to Mobile Phones: The History of Global Health Technologies, 16th Century to the Present. 3.0 Credits.
This course explores case studies of technologies used in different iterations of ‘global health’ to understand their relationship to medical knowledge and broader historical and geographic context.
Instructor(s): K. Moore-Sheeley
Area: Humanities, Social and Behavioral Sciences.

AS.140.154. Freshman Seminar: Picture This: A Photographic History of Johns Hopkins University. 3.0 Credits.
Every picture tells a story, if you know how to read it. This freshman seminar will explore the history of Hopkins through images, creating interactive timelines of important themes in the university’s history.
Instructor(s): S. Leslie
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.163. Jungle Doctors: Medical Missions in Africa from David Livingstone to Paul Farmer. 3.0 Credits.
Freshman seminar using a variety of primary and secondary sources, students will explore the motivations and activities of expatriates practicing medicine in Africa from the 19th century to the present.
Instructor(s): J. Cummiskey
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.165. Enlightenment Science Through Brilliant Books. 3.0 Credits.
Course explores the brilliant scientific and philosophic achievements of the 18th-century intellectual movement known as the Enlightenment through the reading of a selection of key authors (Voltaire, Franklin, the great Encyclopedists...). Includes introduction to research method and writing in the humanities.
Instructor(s): J. Richard
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.167. Technology and Global Health: A History from the 19th century to the Present. 3.0 Credits.
This course explores the intersection of technology and health through three historical periods: colonial medicine (19th. c.), international health (post-War era), and global health (late 20th century to present).
Instructor(s): H. Morefield
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.213. Topics in Biomedicine. 3.0 Credits.
What are some of the main issues and fields that defined medical research and practice after 1945? What were the new physical, technological, and conceptual tools that defined the postwar era of medicine? How did new technologies and research endeavors configure new ways of diagnosing disease, monitoring patients, and delivering medical care and therapies? As students consider the rise of genetics and genetic therapy and organ transplantation as well as the broad implementation of electronics and digital computers after 1945, they will also consider the cultural, social, ethical, and policy-related implications of these various innovations that make up the rise of biomedicine. One main goal of the course is to give students an historical understanding—at least from the last eighty years—of why medical care and therapeutic possibilities are what they are today.
Instructor(s): N. Anderson
Area: Humanities, Social and Behavioral Sciences.

AS.140.226. Aviation in America. 3.0 Credits.
This course surveys manned flight in America, with particular emphasis on how technological changes and sociocultural events have influenced one another in the development of aircraft.
Instructor(s): L. Karafantis
Area: Humanities, Social and Behavioral Sciences.

AS.140.301. History of Science: Antiquity To Renaissance. 3.0 Credits.
The first part of a three-part survey of the history of science. This course deals with the origins, practice, ideas, and cultural role of scientific thought in Graeco-Roman, Arabic/Islamic, and Medieval Latin/Christian societies. Interactions across cultures and among science, art, technology, and theology are highlighted.
Instructor(s): G. Ferrario; L. Principe
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.
AS.140.302. Rise Of Modern Science. 3.0 Credits.
Survey of major scientific advances from 18th to 20th century, from
Newtonian science to the age of Big Science.
Instructor(s): J. Mercelis
Area: Humanities, Social and Behavioral Sciences.

AS.140.304. Medicine for and by Women in Early Modern Europe. 3.0
Credits.
This course will examine women's role in early modern European
medicine through the reading of early modern medical texts written for
or by women. The course is meant for students interested in women's
history, the history of medicine, European history.
Instructor(s): J. Portuondo
Area: Humanities, Social and Behavioral Sciences

AS.140.305. From the Compass to Androids: History of Science,
Technology, and Medicine in Asia. 3.0 Credits.
The course explores the history and cultural context of science, medicine,
and technology in East Asia, from the ancient Chinese science to the
latest scientific and technological developments in Japan.
Instructor(s): Y. Frumer
Area: Humanities, Social and Behavioral Sciences.

AS.140.311. Ecology, Health, and the Environment. 3.0 Credits.
Explores diverse problems linking ecological, environmental and public
health themes, with focus on Chesapeake region. Students' research
projects can be outside Chesapeake region.
Instructor(s): S. Kingsland
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.315. Spaceflight and Society: Exploring the History of the Final
Frontier. 3.0 Credits.
This course explores the history of spaceflight, emphasizing its civil
component, but also including national security and commercial
activities, and the interactions among all components of spaceflight
around the world.
Instructor(s): R. Launius
Area: Humanities, Social and Behavioral Sciences.

AS.140.320. Modernity on Display: Technology and Ideology at World's
Fairs. 3.0 Credits.
Seminar focuses on ideological at World's Fairs over technological
modernity with special emphasis upon World War II and the Cold War.
Instructor(s): A. Mollela; R. Kargon
Area: Humanities, Social and Behavioral Sciences.

AS.140.321. Scientific Revolution. 3.0 Credits.
Explore how the Western understanding of nature changed between
1500 and 1720 through the works of astronomers and astrologers,
naturalists and magi, natural philosophers and experimentalists, doctors
and alchemists & others.
Instructor(s): M. Portuondo
Area: Humanities, Social and Behavioral Sciences.

AS.140.324. Commercializing Science: Academic Entrepreneurs from
Kelvin to Venter. 3.0 Credits.
From the nineteenth-century physicist William Thomson (Lord Kelvin)
to contemporary geneticists such as Walter Gilbert and Craig Venter,
academic scientists and engineers across a broad range of disciplines
have created their own companies. This course examines the motives
behind these entrepreneurial ventures, the strategies employed, and the
factors influencing their success.
Instructor(s): J. Mercelis
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.327. Science and Utopia. 3.0 Credits.
Semen examines the changing role of science in planning the ideal
community from the 17th century to the present. Readings include works
by Campanella, Bellamy, H.G. Wells, Orwell, B.F. Skinner and Walt Disney.
Instructor(s): R. Kargon
Area: Humanities, Social and Behavioral Sciences.

AS.140.328. Science and Technology in Slave Regimes. 3.0 Credits.
What does science and technology look like in slave regimes? This
seminar explores this question from a trans-national perspective by
comparing cases in the Antebellum US, Cuba, Brazil and other countries.
Instructor(s): M. Portuondo; R. Kargon
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.331. Mind, Body and Society: The History of Psychology. 3.0
Credits.
We will explore various modern approaches to the relationship of
mind, body and society; to the nature of scientific psychology and its
realtionship to human values.
Instructor(s): D. Todes
Area: Humanities, Social and Behavioral Sciences.

AS.140.333. The Idea of the Artificial Human in History. 3.0 Credits.
Course examines the concept of the artificial human as a mirror of
changing world-views from late middle ages through the twentieth
century. Readings include Mary Shelley, Wells, Capek, Piercy.
Instructor(s): R. Kargon
Area: Humanities, Social and Behavioral Sciences.

AS.140.343. What it Means to be Human: Perspectives in the History of
Anthropology, 1860-1995. 3.0 Credits.
This course explores the changing scientific, social, and cultural ideas
that shaped how anthropologists and other scholars approached the
study of human beings from the mid-nineteenth through the twentieth
centuries.
Instructor(s): A. Link
Area: Humanities, Social and Behavioral Sciences.

AS.140.344. Rejected Knowledge? Alchemy and Astrology in Early
Modern European Science and Medicine. 3.0 Credits.
This course surveys the rise and fall of alchemy and astrology in early
modern Europe. Topics include chemical and astrological medicine,
prognostication, and the quest for the Philosopher's Stone.
Instructor(s): J. Rivest
Area: Humanities, Social and Behavioral Sciences.
AS.140.345. Animal Minds: Beyond the Black Box. 3.0 Credits.
How do migratory birds and fish find their way home? Do honeybees communicate using a "dance language"? Do chimpanzees have mental lives akin to those of human beings? How do scientists attempt to answer such questions, and why was the "animal mind" a taboo for over 50 years in American science? Focusing on ethology and psychology from Darwin to the present, this course examines the history of the study of animal cognition and behavior. A major emphasis throughout the course will be on the question of animal consciousness from the late-19th through the 20th century.
Instructor(s): R. Nash
Area: Humanities, Social and Behavioral Sciences.

AS.140.346. History of Chinese Medicine. 3.0 Credits.
Students will study the most recent anthropological, philosophical, and historical scholarship on medicine in traditional and modern Chinese society. They will approach the topic from several angles including medical pluralism, the range of healers, domestic and literate medicine, gender, emergence of new disciplines, public health and the history of disease. The course relies on secondary sources and primary sources in English translation. Cross-listed with East Asian Studies.
Instructor(s): M. Hanson
Area: Humanities, Social and Behavioral Sciences Writing Intensive.

AS.140.347. History Of Genetics. 3.0 Credits.
Intellectual and social history of the gene concept, including Mendelism, eugenics, medical genetics, DNA, genomics, and personalized medicine.
Instructor(s): N. Comfort
Area: Humanities, Social and Behavioral Sciences Writing Intensive.

AS.140.350. Disability in 20th century America: Rights, Restrictions, Reproduction. 3.0 Credits.
Is disability a biological fact or determined by culture? This class discusses different ideas of difference in the context of disability rights, professional power, reproductive technology and bioethics. Cross-listed with Studies of Women, Gender, and Sexuality.
Instructor(s): M. Schmidt
Area: Humanities, Social and Behavioral Sciences Writing Intensive.

AS.140.351. Seminar in the History of Life Sciences. 3.0 Credits.
Students do research projects with faculty supervision, on topics of their choice in the history of biological or biomedical sciences. Projects are presented to class at end of semester.
Instructor(s): S. Kingsland
Area: Humanities, Social and Behavioral Sciences Writing Intensive.

AS.140.352. Who Wants to be a Billionaire?: High Tech & the American University. 3.0 Credits.
Long before Facebook, faculty and students were creating startups on campus. This course examines college entrepreneurship from its 19th-century origins to today: the potential perils, profits, and promise for entrepreneurs and universities alike.
Instructor(s): S. Morris
Area: Humanities, Social and Behavioral Sciences.

AS.140.353. Women, Health, and Medicine in Modern America. 3.0 Credits.
This course explores women's interactions with science, medicine, and health in the late-19th and 20th century United States. It is framed by an interest in medicalization, sex/gender, and feminism. Cross-listed with Studies of Women, Gender, and Sexuality.
Instructor(s): D. Stillwell
Area: Humanities, Social and Behavioral Sciences.

AS.140.355. History of Modern Astronomy: Expanding Universes and Space Telescopes. 3.0 Credits.
Astronomy today, in its tools, techniques, practices and tempers, bears little resemblance to astronomy in 1900. This course will cover how scientists expanded the universe in the past century and how the universe of astronomical practice expanded as well: as a profession, as an avocation, and as a cultural resource.
Instructor(s): D. DeVorkin
Area: Humanities, Social and Behavioral Sciences.

AS.140.356. Man vs. Machine: Resistance to New Technology since the Industrial Revolution. 3.0 Credits.
This course analyzes different episodes of "luddism" in the history of science and technology, from the destruction of textile machinery in the early 1800s up to recent controversies about biotechnology and ICT.
Instructor(s): J. Mercelis
Area: Humanities, Social and Behavioral Sciences.

AS.140.357. Science Fiction Movies in the East and West. 3.0 Credits.
What is a science fiction (SF) movie? How did SF movies and developments in science and technology influence each other during the twentieth century? What is the use of SF movies for societies? And why are SF movies much more popular in some countries than in others? By watching and analyzing classic and contemporary SF movies from the US, the Soviet Union, Japan, China, and other countries, we will search for answers to these questions. Special emphasis will be given to analyzing how historical, political, and cultural environments in different countries have influenced the production and acceptance of SF movies.
Instructor(s): D. Kim
Area: Humanities, Social and Behavioral Sciences Writing Intensive.

AS.140.362. The Communications Revolution. 3.0 Credits.
Investigates the nature and impact of phenomenal changes in transportation and communication since the 19th-century, including iconic developments such as the Panama Canal, Brooklyn Bridge, airplanes, automobiles, television, wireless communication and the internet.
Instructor(s): S. Morris
Area: Humanities, Social and Behavioral Sciences.

AS.140.365. From Colonial to Global Health: Health, Healing and European Expansion, 1500-1950. 3.0 Credits.
This course traces the impact of European expansion on health, medicine and disease control from the Age of Exploration to the emergence of international and global health in the early twentieth century. Dean's Teaching Fellowship course.
Instructor(s): K. Arner
Area: Humanities, Social and Behavioral Sciences Writing Intensive.
AS.140.368. Technological Transformations. 3.0 Credits.
The course explores the historical development of revolutionary technologies and their transformations of the individual and society. Focus on computing, biotech, consumer goods, warfare, manufacturing, agriculture, imaging, energy, transportation, and sustainability.
Instructor(s): M. Portuondo
Area: Humanities, Social and Behavioral Sciences.

AS.140.370. History of Mental Illness and Psychiatry in Modern West. 3.0 Credits.
This course will be an introduction to the history of "madness" in modern Europe and America. In particular, it will examine the ideas that have shaped perceptions of madness, insanity, and mental illness; the changing experiences of those afflicted; the development of those professions designed to look after those deemed mad, insane, and mentally ill, and the social and cultural assumptions behind treatments, policies, and public opinions.
Instructor(s): J. Ballenger
Area: Humanities, Social and Behavioral Sciences.

AS.140.371. The History of Forensic Medicine: Medicine and the Law in Western Society, 1500-2000. 3.0 Credits.
This course explores the history of forensic medicine from some of its earliest roots to the present day, investigating everything from witchcraft trials to DNA profiling.
Instructor(s): S. Lejaqc
Area: Humanities, Social and Behavioral Sciences.

AS.140.376. A Second World Within the World of Nature: The History of Geographic Thought. 3.0 Credits.
This course traces the development of the science of geography from antiquity through the mid-nineteenth century. Readings explore the legal, political, cultural and theological resonances of geography during this period.
Instructor(s): M. Franco
Area: Humanities, Social and Behavioral Sciences.

AS.140.379. Health and the City: Urban Public Health In Historical Perspective. 3.0 Credits.
This course examines the history of cities as spaces of public health concern since the nineteenth century, and seeks to understand how social, political, and economic contexts have shaped urban public health interventions.
Instructor(s): E. Anders
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.381. History of Reproduction. 3.0 Credits.
This course investigates the history of reproduction in American medicine, science, politics, and culture. It explores changing ideas about reproductive bodies, sexuality, and the family as well as practices of contraception, conception, and childbirth.
Instructor(s): B. Gurtler
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.382. Plagues and Societies in World History. 3.0 Credits.
This course examines some of the most notable epidemics in world history from the Black Death to Ebola in 2014. Topics include the origins of epidemic diseases; the relations between epidemics and warfare, empires, and trade; and the sociocultural underpinnings of disease response.
Instructor(s): K. Arner
Area: Humanities, Social and Behavioral Sciences.

AS.140.390. Science and Technology in Latin America. 3.0 Credits.
The course surveys the development of western science and technology in Hispanic America (1492 to the present). We begin studying the hybridization of scientific practices between European and Native American cultures during the early colonial era and end with the transfer of technologies and industrialization of the 20th century. We emphasize the role on science and technology in state formation, the acculturation of foreign ideas in colonial and postcolonial societies, and the role of intellectual elites in modernization programs.
Instructor(s): M. Portuondo
Area: Humanities, Social and Behavioral Sciences.

AS.140.398. Godzilla and Fukushima: Japanese Environment in History and Films. 3.0 Credits.
Juxtaposing Japanese environmental history and its reflection in popular media, the course will explore the intersection between technology, environment, and culture. The course will be accompanied by relevant movie screenings.
Instructor(s): Y. Frumer
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.411. Senior Research Seminar. 2.0 Credits.
Instructor(s): M. Portuondo; Y. Frumer
Area: Humanities, Social and Behavioral Sciences.

AS.140.412. Research Seminar. 2.0 Credits.
Departmental Majors Writing a Senior Thesis Only
Instructor(s): R. Kargon; S. Kingsland
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.413. The White Plague: History of Tuberculosis. 3.0 Credits.
Examination of interrelated scientific, medical, social, and cultural dimensions of tuberculosis from early modernity to the present in various geographical and cultural settings. Extensive reading, research based on primary sources. Juniors and Seniors only. Instructor’s permission for all others. Cross-listed with History and Anthropology.
Instructor(s): D. Todes
Area: Humanities, Social and Behavioral Sciences
Writing Intensive.

AS.140.445. Mixing It Up: Interdisciplinarity in Science. 3.0 Credits.
Many landmark discoveries in science, such as the discovery of the double helix, were achieved through an interdisciplinary approach. Our course explores how institutions of research and education have advanced science through the promotion of interdisciplinarity. Case studies examine important problems in physical and biological sciences whose solutions required interdisciplinary approaches. Research paper required.
Instructor(s): R. Kargon; S. Kingsland
Area: Humanities, Social and Behavioral Sciences.

AS.140.447. Science and the City. 3.0 Credits.
This seminar explores the nature and growth of urban scientific communities from Victorian Manchester, through geographic growth clusters such as Silicon Valley and Route 128, to new eco-cities in China and Abu Dhabi.
Instructor(s): J. Merceis; R. Kargon; S. Leslie
Area: Humanities, Social and Behavioral Sciences.

AS.140.501. Independent Study. 3.0 Credits.
Instructor(s): S. Kingsland; Y. Frumer.

AS.140.502. Independent Study. 0.0 - 3.0 Credits.
Instructor(s): G. Mooney; M. Fissell; S. Kingsland; S. Leslie.
AS.140.597. Research - Summer. 3.0 Credits.
Instructor(s): Staff.

AS.140.598. Summer Internship. 1.0 Credit.
Instructor(s): S. Leslie.

AS.140.599. Independent Study-Summer. 3.0 Credits.
Instructor(s): M. Portuondo, S. Leslie.

An introductory course at the graduate level to the interpretation of historical evidence; to the social, intellectual, and political analysis of historical data; and to contemporary methods in the history of science, medicine, and technology.
Instructor(s): M. Hanson.

AS.140.618. Seminar in the History of Life Sciences.
For graduate students preparing fields in history of science.
Instructor(s): S. Kingsland.

AS.140.626. Advanced Seminar.
Seminar designed for Ph.D. students currently working on their dissertation thesis.
Instructor(s): R. Kargon; Y. Frumer.

AS.140.641. Departmental Colloquium.
Reports by faculty, students, and invited speakers.
Instructor(s): S. Kingsland.

AS.140.642. Colloquium.
Reports by faculty, students, and invited speakers.
Instructor(s): S. Kingsland.

AS.140.655. Early Modern Science in France.
This seminar examines 17th- and 18th-century French science and medicine and their social, political, and institutional contexts. Participants will write a paper or dissertation chapters for discussion. Reading knowledge of French required.
Instructor(s): L. Principe.

AS.140.659. Looking Back at Science of Tomorrow.
The course will look at the history of science through the lens of science fiction, and explore the role of scientific imagination in the development of sciences.
Instructor(s): Y. Frumer.

AS.140.662. Research Seminar in the History of Science: The Laboratory in Theory and Practice since the 17th century.
This seminar traces the evolution and impact of the laboratory in the natural and social science 1600-2000.
Instructor(s): L. Principe; R. Kargon.

AS.140.663. Crossing Boundaries: Studies in Comparative History.
Course takes a comparative look at how scientific ideas, practices, methods, technologies are translated across disciplinary, institutional, and national borders.
Instructor(s): R. Kargon; S. Kingsland.

AS.140.665. History of Science and Technology in Asia.
Graduate level discussion of major historiography of science and technology in East Asia.
Instructor(s): Y. Frumer.

AS.140.666. Special Topics in the History of Physics.
This seminar will focus upon the history of electromagnetism, heat and energy, mechanics and the transition to modern physics, 1800-1920.
Readings, discussion, papers.
Instructor(s): R. Kargon.

AS.140.668. Technology in Context.
The course will explore topics in the history of technology focusing on a variety of methodologies pertinent to the subject.
Instructor(s): J. Greene; Y. Frumer.

AS.140.669. Special Topics in the History of the Physical Sciences.
This seminar will focus upon the history of the physical sciences.
Readings, discussion, papers.
Instructor(s): R. Kargon.

AS.140.670. Special Topics in the History of Physics in Higher Education.
This seminar will focus upon the history of the establishment of physics in US higher education 1870-1940. Readings, discussion, papers.
Instructor(s): R. Kargon.

AS.140.673. The Modern Synthesis in Historical Perspective.
Research seminar in history of evolutionary biology.
Instructor(s): S. Kingsland.

AS.140.674. Science and Medicine in Early Modern Atlantic World Culture.
How were changes in scientific and medical ideas reflected in cultural products of the early modern Atlantic world? We will study these ideas as they appeared in literary genres such as poetry, utopias, natural histories and travel narratives. Likewise, we will examine the visual culture of the Atlantic space for clues about changing conceptions about the natural world. Our expedition will encompass Anglophone, French and Hispanic regions, and will pay careful attention to hybrid cultural products that reflect the interaction between indigenous cultures and the (changing) European understanding of the natural world.
Instructor(s): M. Portuondo.

Seminars will examine the development of an industrial culture in the early 20th century. Topics will include the role of science in the second Industrial Revolution, culture and industrial spirit, the impact of technology and science on the arts and representations of science and technology in museums and popular culture.
Instructor(s): R. Kargon.

AS.140.705. History of Science: Antiquity To Renaissance.
The first part of a three-part survey of the history of science. This course deals with the concepts, practice, and the cultural roles of scientific thought from classical antiquity to the time of Copernicus. Topics include the pre-Socratics, the systems of Plato and Aristotle and their continuing influence, Islamic science, Latin medieval scholasticism and the universities, and Renaissance hermeticism/natural magic. Interactions across science, art, technology, and theology are highlighted. Lecture meets with AS.140.301.
Instructor(s): L. Principe.

Seminar on major scientific developments from 18th-20th century.
Weekly readings, discussion and class presentations. Students may attend lectures for 140.302.
Instructor(s): J. Mercelis; R. Kargon; S. Kingsland.

AS.140.710. Scientific Revolution.
Reading intensive seminar that studies the events and ideas that transformed western science from Medieval natural philosophy to the experimental sciences (1500-1720s). Lecture meets with AS.140.321.
Instructor(s): M. Portuondo.

Instructor(s): R. Kargon.
AS.140.802. Directed Readings & Diss.
Instructor(s): R. Kargon.

AS.140.803. Independent Study-Summer.
Instructor(s): S. Kingsland.

Instructor(s): S. Kingsland.

AS.140.812. Directed Readings & Diss.
Instructor(s): S. Kingsland.

Instructor(s): S. Leslie.

AS.140.832. Directed Readings & Diss.
Instructor(s): S. Leslie.

Instructor(s): L. Principe.

AS.140.836. Directed Readings & Diss.
Instructor(s): L. Principe.

Instructor(s): M. Portuondo.

AS.140.842. Directed Readings & Diss.
Instructor(s): M. Portuondo.

AS.140.843. Directed Reading & Dissertation.
Instructor(s): Y. Frumer.

AS.140.844. Directed Reading & Dissertation.
Instructor(s): Y. Frumer.

AS.140.845. Directed Readings and Dissertation.
Instructor(s): J. Mercelis.

Instructor(s): J. Mercelis.

Instructor(s): R. Packard.

AS.140.854. Directed Readings & Diss.
Instructor(s): R. Packard.

AS.140.863. Directed Reading and Dissertation.
Instructor(s): G. Pomata.

AS.140.864. Directed Readings and Dissertation.
Instructor(s): G. Pomata.

Instructor(s): N. Comfort.

AS.140.874. Directed Readings & Diss.
Instructor(s): N. Comfort.

Instructor(s): M. Hanson.

AS.140.876. Directed Reading & Dissertation.
Instructor(s): M. Hanson.

AS.140.877. Directed Reading & Dissertation.
Instructor(s): J. Greene.

AS.140.878. Directed Readings and Dissertation.
Instructor(s): J. Greene.

Instructor(s): D. Todes.

AS.140.892. Dir Rdg & Dissertation.
Instructor(s): D. Todes.

Instructor(s): M. Fissell.

AS.140.894. Directed Readings & Diss.
Instructor(s): M. Fissell.

Instructor(s): G. Mooney.

AS.140.896. Directed Readings & Diss.
Instructor(s): G. Mooney.

Cross Listed Courses
History of Art
AS.010.233. Art and Astrology in the Middle Ages. 3.0 Credits.
This course explores the relationship between art and astrology from the early Middle Ages to the early Renaissance. We look at a wide range of media—mosaic, painting, metalwork, manuscripts, and sculpture—that speak to the central place of astrology in medieval systems of knowledge, and the practical uses of astrology for medicine and politics. Readings and discussions cover a variety of themes, including the transmission of astrological knowledge, the emergence of large-scale astronomical mural programs, the use of precious stones and amulets, and the ways in which artworks probe the tensions between astrology and Christian theology. A recurring topic will be principle of “celestial influence”—the idea that the stars emit rays that affect people and events on earth—and its implications for artistic production and reception, as well as how art objects could even predict, or represent predictions of, future events. Primary sources (in English translation) include Albertus Magnus, Abu Ma'shar, al-Kindi, Roger Bacon, and others. Secondary readings include Aby Warburg, Erwin Panofsky, Fritz Saxl, Michael Camille, Georges Didi-Huberman, and others.
Instructor(s): M. Hauknes
Area: Humanities.

AS.010.302. The World as Image: Art and Knowledge in the Middle Ages. 3.0 Credits.
This class will explore the relationship between art and knowledge in the Middle Ages (600-1400 CE). In particular, we will examine the ways in which medieval painters, sculptors, and architects engaged with the cultural phenomenon of “encyclopedism” by creating artworks that sought to capture all the world’s knowledge in a single visual program. In our exploration of this topic we will consider a wide range of works, from medieval maps and scientific manuscripts to large-scale tapestries and the architectural programs of the great Gothic cathedrals. Central themes include text-image relationships and the role of pictorial techniques, such as allegory, personification, and analogy for visualizing complex ideas. We will also examine the representation of knowledge in medieval poetry and see how medieval authors employed ekphrasis to create visual artworks within their texts to serve as placeholders for encyclopedic learning.
Instructor(s): M. Hauknes
Area: Humanities.
AS.010.420. Leonardo da Vinci: Between Art and Science. 3.0 Credits.  
This course will explore the life and work of Leonardo da Vinci using an interdisciplinary approach that seeks to create a dialogue between the material more often studied in “traditional” art historical courses (his paintings, drawings, sculptures, architectural designs) and Leonardo’s exploration of various scientific subjects (optics, anatomy, engineering, geometry). Students will discover the common intellectual threads that link Leonardo’s dizzying array of intellectual pursuits, and why he is often described as the original “Renaissance man.” Topics include his designs for a submarine, steam engine, helicopter, tank, parachute, self-propelling wagon, bicycle, as well as more “traditional” art historical subjects including his most famous paintings, from the Mona Lisa to the Last Supper. Open to students from any major or background.  
Instructor(s): E. Bernick  
Area: Humanities.

AS.010.707. Therapies of Art and Literature in Early Modern Europe.  
This seminar examines the myriad ways art and literature in Early Modern Europe addressed itself to its audiences as a form of therapy. Taking as our point of departure Petrarch’s neo-Stoic therapy of the passions, the revival of consolatio literature, and the development of new Christian “wisdom” genres aimed at ethical self-cultivation, we consider how artists participated in the care of the body, the soul, and the self, innovating therapies that were at once sacramental and philosophical, spiritual and ethical. Intersections with the history of medicine will prompt us to inquire into the transposition of physiological and psychological theories, practices, and metaphors into the arena of ethical-spiritual therapy.  
Instructor(s): M. Merback  
Area: Humanities, Social and Behavioral Sciences.

Anthropology  
AS.070.352. Evolution, Ecology, Becoming. 3.0 Credits.  
The concept of evolution is central to social theory. Originating in the question of the species, it has moved into questions of human ecology, cultural forms and modes of thought. While it remains a deeply contested, often criticized concept, particularly in its neo-Darwinian manifestation, it orients anthropological thinking in ways that are as yet to be examined. Reaching into the archives of anthropology and other cognate disciplines, this course will examine the writings of Lyell, Darwin, Marx, Morgan, Boas, Steward, Bateson, Ingold among others. Co-listed with AS.070.610  
Instructor(s): A. Goodfellow; N. Khan  
Area: Humanities, Social and Behavioral Sciences.

The concept of evolution is central to social theory. Originating in the question of the species, it has moved into questions of human ecology, cultural forms and modes of thought. While it remains a deeply contested, often criticized concept, particularly in its neo-Darwinian manifestation, it orients anthropological thinking in ways that are as yet to be examined. Reaching into the archives of anthropology and other cognate disciplines, this course will examine the writings of Lyell, Darwin, Marx, Morgan, Boas, Steward, Bateson, Ingold among others. Co-listed with AS.070.352  
Instructor(s): A. Goodfellow; N. Khan  
Area: Humanities, Social and Behavioral Sciences.

Near Eastern Studies  
AS.130.259. Ancient Science. 3.0 Credits.  
A survey of scientific practices and technological innovations in the ancient world, including astronomy, medicine, law, and divination. Special attention will be devoted to the relationship between magic and science during the periods covered.  
Instructor(s): P. Delnero  
Area: Humanities, Social and Behavioral Sciences.

Political Science  
AS.190.471. The University and Society. 3.0 Credits.  
In the 20th century, American universities became the envy of the world, leading in most categories of scholarly productivity and attracting students from every nation. In recent years, though, American higher education has come to face a number of challenges including rapidly rising costs, administrative bloat, corporatization and moocification. We will examine the problems and promises of American higher education, the political struggles within the university and the place of the university in the larger society. Upper classes and Grad Students only.  
Instructor(s): B. Ginsberg; R. Kargon  
Area: Social and Behavioral Sciences.

German Romance Languages Literatures  
What is personal memory? This course offers both an in-depth journey through Proust’s Recherche and a way of tracing major scientific questions about the formation of memory in connection with autobiography and medical history. The process of human remembering -- with its counterpart, forgetting -- has emerged over the last thirty years as an extraordinarily rich field of investigation as well as of creative endeavors in the arts. Poised between literature and science, this course offers both an in-depth introduction to Proust’s ground breaking modern work on human time, A la recherche du temps perdu, and an investigation into a modern history of memory (a history that unfolds in the nineteenth and early twentieth century, and has made a surprising return in our contemporary understanding of remembrance). That Proust’s petite madeleine should have turned, in recent years, into the magical token of autobiographical recollection and provided, at the same time, an immensely productive clinical and neuro-scientific model of how memory works serves as our point of departure. That human memory is an experience and not merely a biological function -- its existence depending on language -- will be our running thread. Proust’s book, filled with immensely learned and complex descriptions of mnemonic processes, serves as our case-study. Proust’s investigations into remembering reveal fascinating aspects of the 19th century advances into the psychology and nosography of memory. These will in turn prompt us to read his work in light of present controversies in scientific research, as for example on the construction of memory, on “body-memory,” the interface between cognition and emotion, and the mind/brain debate. As it prompts many questions on the relation between fiction and experience, this journey through major themes of Proust’s quest for memory will invite a broader reflection on the relation between literary and philosophical investigations. Requirements: Short oral presentation and final research paper. Taught in English, reading knowledge of French desirable but not required. Most readings are available in English.  
Required for this course are vol. I, V, VI of In Search of Lost Time in the 2003 Modern Library edition (ISBN 978-0-375-75154 – 1 and 4 and 7). For a copy of the syllabus, with a list of main recommended readings, available in mid-June, please write to e.ender@jhu.edu  
Instructor(s): E. Ender  
Area: Humanities.
On April 2, 2013, President Obama unveiled the Brain Activity Map Project, a 100 million dollar investment to map the single-celled neurons composing the human brain. Scientific in its aim, the project is culturally significant as well. Popular websites lumosity.com and neuronetlearning.com offer brain-exercises to boost intelligence, while the emergent academic fields neurophilosophy, neuroethics, and neurohistory borrow from the brain sciences. The interaction between the brain and society, however, is by no means new. In this course, we will investigate the origins of brain maps and trace their reception in nineteenth-century European and American literature, philosophy, and politics. Topics include phrenology, the nervous system, psychopathology, and brain localization, and these fields’ resonance in German Idealism, Victorian literature, French anthropology, and American fiction. The course is reading intensive.

Instructor(s): L. McGrath
Area: Humanities, Social and Behavioral Sciences.

Focusing on earthquake science and earthquake lore, radioactive mutation and nuclear decimation, this course will consider the relationship between technological culture and large-scale cataclysm. In addition to treating a broad array of written, graphic, and filmic representations of Japan’s past and potential catastrophes, we will also be keeping a close and careful eye on present developments in Japan’s 2011 earthquake/tsunami/nuclear disaster.

Instructor(s): R. Sayre
Area: Humanities, Social and Behavioral Sciences.

Part public history, part introduction to museum practices, this hands-on course explores how heritage areas and museums serve communities through interpretation. Each year, students partner with a community to develop research-based, visitor-centered interpretive material, in the 2015 Baltimore National Heritage Area. Field trips and community meetings will be a significant part of the course. Cross-listed with History and History of Science. M&S practicum course. Class usually meets 1:30 - 3:50 except for days with field trips.

Instructor(s): E. Maloney
Area: Humanities, Social and Behavioral Sciences.

JHU pioneered the concept of the modern research university in the United States, but what does that mean for the everyday experiences of its students, faculty, staff and friends? Excavate the history of this place through the things collected, made and used here since the university’s founding in 1876. Students research the material culture of Hopkins and present their findings on an interactive website: collectionsweb.jhu.edu. Course includes digital media labs. Cross-listed with History and History of Science. M&S practicum.

Instructor(s): J. Kingsley
Area: Humanities, Social and Behavioral Sciences.