Guide to the Focus in Technology, Information and Society
For History and Science Concentrators
Science and Society Track
Honors Eligible

This focus requires 12 courses for non-honors (5 courses in science, 5 courses in history of science, and two units of tutorial), 13 courses for the non-thesis honors option (involving an additional graduate-level course normally taken in the senior year), and 14 courses for the thesis honors option (involving an additional two semesters of HISTSCI 99ab).

Every concentrator choosing this focus will take History of Science 100 (Knowing the World: An Introduction to the History of Science*)*, normally in the fall semester of the sophomore year. In addition, every concentrator will take one semester of sophomore tutorial (in the spring) and one semester of junior tutorial (fall). Students wishing to write a senior thesis will take HISTSCI 99ab in their senior year.

A. Science Component (5 courses)

All students who choose this focus will take five courses in computer science or an area of engineering taught in the College (bioengineering, electrical engineering, mechanical engineering, environmental science and engineering). Normally, students will begin with a foundational course recommended by the relevant science department and then take a minimum of four additional courses. Note that Math 1a and Math 1b would NOT normally count for concentration credit, even if these courses are prerequisites for some of the courses students might wish to take. We will work closely with each individual student to develop a robust and sensible cluster of science courses that suits individual interests.

For example, a student might take a sequence of science courses that are all taught in the Computer Science department, such as the following:
COMPSCI 50: Introduction to Computer Science (Foundation course)
COMPSCI 121: Introduction to Theoretical Computer Science
COMPSCI 124: Data Structures and Algorithms
COMPSCI 141: Computing Hardware
COMPSCI 146: Computer Architecture

An alternative path for a student interested in (say) the intersection of computer science and artificial intelligence might, in contrast, draw on a mix of science courses from several relevant departments:
COMPSCI 50: Introduction to Computer Science (Foundation course)
ENG-SCI 159: Introduction to Robotics
COMPSCI 181: Machine Learning
COMPSCI 182: Artificial Intelligence
NEURO 140: Biological and Artificial Intelligence

A student interested in combining coursework in (say) electrical engineering courses with history of science and technology courses might take a mix of science courses like these:
ENG-SCI 50: Introduction to Electrical Engineering
ENG-SCI 51: Computer-Aided Machine Design
ENG-SCI 151: Applied Electromagnetism
ENG-SCI 156: Signals and Communications
COMPSCI 141: Computing Hardware

B. History of Science and Technology Component (5 half courses)

In addition to HISTSCI 100: Knowing the World, An Introduction to the History of Science, students will take a minimum of four courses designed to allow them to study the larger historical, ethical, and social implications of technology, engineering, and information in the modern world. Two of these may be Gen Ed or foundational (e.g., a freshman seminar), but at least two should normally be at least 1000-level courses in the Department of the History of Science. One of the courses may be in an area within the history of science or medicine that is outside the primary focus on technology.

By way of example, a student might take a sequence of courses that are all taught in the Department of the History of Science, such as the following:
HISTSCI 100: Knowing the World, An Introduction to the History of Science
HISTSCI 1435: A History of Biotechnology
HISTSCI 1825: Open Minds, Wired Worlds: Computers and Cyberculture
HISTSCI 1885: Communicating Science
HISTSCI 272: Big Data: Past, Present, Future

An alternative path for a student interested (say) in the intersection of history of biotechnology and ethics might, in contrast, draw on a mix of courses from several relevant departments:
HISTSCI 100: Knowing the World, An Introduction to the History of Science
HISTSCI 1435: A History of Biotechnology
HISTSCI 2953/IGA 515: Bioethics, Law, and the Life Sciences
SCRB 60: Ethics, Technology, and the Future of Human Nature
COMPSCI 108: Intelligent Systems: Design and Ethical Challenges

A student with interests in intersections between engineering and the environment might take a mix of classes like the following:
HISTSCI 100: Knowing the World, An Introduction to the History of Science
HIST 1610: East Asian Environments: China, Japan, Korea
HISTSCI 231: Transforming Technologies: Science, Technology, and Social Change
ESPP 77: Technology, Environment and Society
ESPP 90s: The Technology, Economics, and Public Policy of Renewable Energy

Required Original Research

In addition to this coursework, all students will take two tutorials (HISTSCI 97 and HISTSCI 98). Honors-eligible students will take an additional year-long tutorial in their senior year (HISTSCI 99ab) or take a graduate-level course to be eligible for non-thesis honors.

HISTSCI 98, the junior tutorial, is an intensive research tutorial required of all concentrators, and all students pursuing the Technology, Information, and Society focus will be expected to produce an original 25-page research paper that investigates some area to do with modern computer science, technology, or engineering.

Honors candidates for all levels of honors will be additionally expected to produce a senior thesis that undertakes more sustained research in one of these areas. Honors candidates for the basic level of honors will be expected to take an additional graduate-level course to be eligible for non-thesis honors.

Other Examples of Curricular Offerings Appropriate for this Focus

The focus in Technology, Information and Society is supported by a depth of curricular offerings in both the Department of the History of Science and beyond. Courses that students might choose to take to fulfill the social science requirements of this focus include (but are not limited to):

HISTSCI 1385. Water: The Politics and Uncertain Futures of Drought and Climate Change
HISTSCI 1430. Diagnostic Technologies in Medicine: From the Stethoscope to Artificial Intelligence
HISTSCI 1435: A History of Biotechnology
HISTSCI 180: Science, Technology, and Society in Modern East Asia
HISTSCI 1820: An American Way of War: Technology and Warfare
HISTSCI 1821: Humans in Space: Past, Present, Future
HISTSCI 1825: Open Minds, Wired Worlds: Computers and Cyberculture
HISTSCI 1829: The World We Made: Technology and Society
HISTSCI 1833: Engineering East Asia: Technology, Society, and the State
HISTSCI 184: Technology and Capitalism
HISTSCI 1885: Communicating Science
HISTSCI 1887: Information: History, Politics, and Ethics
HISTSCI 1970: Burning Books, Fighting Facts: How and Why Individuals and Institutions Resist and Reject Knowledge
HISTSCI 2480. Food, Science, and the Invention of Global Hunger
HISTSCI 2812. China in the History of Science and Technology
HISTSCI 2843. Sources and Methods in the History of Technology
HISTSCI 2848. The Digital Age: Sources and Methods
HISTSCI 2953/IGA 515. Bioethics, Law, and the Life Sciences
HISTSCI 2985/IGA 513. Science, Power, and Politics
HIST 1993: Introduction to Digital History
ESPP 77: Technology, Environment and Society
ESPP 78: Environmental Politics
SCRB 60: Ethics, Biotechnology, and the Future of Human Nature
SOCIOL 1180/IGA-516: Law, Science, and Society in America

Cross Registration at MIT

Some students may also wish to cross-register for relevant courses (normally, no more than two for concentration credit) offered in our sister program at MIT; for example, the following courses could be among those they might consider taking:
STS.001: Technology in American History
STS.005: Data and Society
STS.012: Science in Action: Technologies and Controversies in Everyday Life
STS.022: Energy, Environment, and Society
STS.075: Technology and Culture
STS.082: Science, Technology, and Public Policy
STS.085: Foundations of Information Policy
STS.086: Cultures of Computing

Advising Resources

Professor Matthew Hersch, a professor in the History of Science Department who specializes in the history of technology, is available for general advising on this focus, and may also be available for advising on research projects and other special opportunities.

Director of Undergraduate Studies, Rebecca Lemov, and Manager of Student Programs, Allie Belser, are both available for advising and assistance on this focus, and in navigating through the undergraduate program.