UNDERGRADUATE SUBJECTS

Tier I Subjects

STS.001 Technology in American History
Prereq: None
U (Spring)
3-0-9 HASS-H; CI-H
A survey of America’s transition from a rural, agrarian, and artisan society to one of the world’s leading industrial powers. Treats the emergence of industrial capitalism: the rise of the factory system; new forms of power, transport, and communication; the advent of the large industrial corporation; the social relations of production; and the hallmarks of science-based industry. Views technology as part of the larger culture and reveals innovation as a process consisting of a range of possibilities that are chosen or rejected according to the social criteria of the time.

M. R. Smith

STS.003 The Rise of Modern Science
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: U (Fall)
3-0-9 HASS-H; CI-H
Covers the development of major fields in the physical and life sciences, from 18th-century Europe through 20th-century America. Examines ideas, institutions, and the social settings of the sciences, with emphasis on how cultural contexts influence scientific concepts and practices.

Staff

STS.004 Intersections: Science, Technology, and the World
Prereq: None
Acad Year 2014–2015: U (Spring)
Acad Year 2015–2016: Not offered
3-0-9 HASS-H
Introduces students to multidisciplinary studies in Science, Technology, and Society (STS), using four case studies to illustrate a broad range of approaches to basic principles of STS studies. Case studies vary from year to year, but always include a current MIT event. Other topics are drawn from legal and political conflicts, and arts and communication media. Teaching modes include guest presenters, discussion groups, field activities, visual media, and a practicum style of learning. Enrollment limited.

R. H. Williams

STS.006J Bioethics
(Stame subject as 24.06J)
Prereq: None
U (Spring)
3-0-9 HASS-H; CI-H
See description under subject 24.06J.

V. Urbanek, N. Schüll

STS.007 Technology in History
Prereq: None
U (Fall)
3-0-9 HASS-H; CI-H
Covers theories of the interactions between historical and technological change; relations between the histories of science and of technology; purported turning points such as the Neolithic, Industrial, and Information Revolutions; case studies from a wide range of times and places; and connections across time and space. Lectures supplemented by student presentations. Frequent writing, rewriting, and small group work. Enrollment limited.

C. Mavhunga

STS.008 Technology and Experience
Prereq: None
U (Spring)
3-0-9 HASS-S; CI-H
Introduction to the “inner history” of technology: how it affects intimate aspects of human experience from sociological, psychological and anthropological perspectives. Topics include how the internet transforms our experience of time, space, privacy, and social engagement; how entertainment media affects attention, emotion, and creativity; how medical technologies alter the experience of illness, reproduction, and mortality; how pharmaceuticals reshape identity, mood, pain, and pleasure. In-class discussion of readings, short written assignments, final project. Enrollment limited.

N. Schüll

Tier II Subjects

STS.023J Science, Caste and Gender in India
(Stame subject as WGS.226J)
Prereq: None
U (Spring)
3-0-9 HASS-H
See description under subject WGS.226J.

A. Sur

STS.009 Evolution and Society
Prereq: None
Acad Year 2014–2015: U (Fall)
Acad Year 2015–2016: Not offered
3-0-9 HASS-H; CI-H
Provides a broad conceptual and historical introduction to scientific theories of evolution and their place in the wider culture. Examines historical, scientific and anthropological/cultural perspectives grounded in relevant developments in the biological sciences since 1800 that are largely responsible for the development of the modern theory of evolution by natural selection. Students read key texts, analyze key debates (e.g. Darwinian debates in the 19th century, and the creation controversies in the 20th century) and give class presentations.

J. Durant

STS.010 Neuroscience and Society
Prereq: None
U (Fall)
3-0-9 HASS-S; CI-H
Explores social relevance of neuroscience, considering how emerging areas of brain research reflect and reshape social attitudes and agendas. Topics include brain imaging and popular media; neuroscience of empathy, trust, and moral reasoning; new fields of neuroeconomics and neuromarketing; ethical implications of neurotechnologies such as cognitive enhancement pharmaceuticals; neuroscience in the courtroom; and neuroscientific recasting of social problems such as addiction and violence. Guest lectures by neuroscientists, class discussion, and weekly readings in neuroscience, popular media, and science studies.

N. Schüll
Global survey of the great transformation in history known as the "Industrial Revolution." Topics include origins of mechanized production, the factory system, steam propulsion, electrification, mass communications, mass production and automation. Emphasis on the transfer of technology and its many adaptations around the world. Countries treated include Great Britain, France, Germany, the US, Sweden, Russia, Japan, China, and India. Includes brief reflection papers and a final paper.

M. R. Smith

STS.026 History of Manufacturing in America (New)  
(Subject meets with STS.425)  
Prereq: None  
Acad Year 2014–2015: U (Fall)  
Acad Year 2015–2016: Not offered  
3-0-9 HASS-H

Introductory survey of fundamental innovations and transitions in American manufacturing from the colonial period to the mid-twentieth century. Primary emphasis on textiles and metalworking, with particular attention to the role of the machine tool industry in the American manufacturing economy. Students taking graduate version are expected to explore the material in greater depth.

M. R. Smith

STS.027J The Civil War and the Emergence of Modern America: 1861–1890  
(Subject meets with STS.427)  
Prereq: Permission of instructor  
Acad Year 2014–2015: U (Spring)  
Acad Year 2015–2016: Not offered  
3-0-9 HASS-H

Using the American Civil War as a baseline, considers what it means to become "modern" by exploring the war's material and manpower needs, associated key technologies, and how both influenced the United States' entrance into the age of "Big Business." Readings include material on steam transportation, telegraphic communications, arms production, naval innovation, food processing, medicine, public health, management methods, and the mass production of everything from underwear to uniforms — all essential ingredients of modernity. Students taking graduate version complete additional assignments.

M. R. Smith

STS.032 Energy, Environment, and Society  
Prereq: None  
Acad Year 2014–2015: U (Spring)  
Acad Year 2015–2016: Not offered  
3-0-9 HASS-H; CI-H

Examines national and global energy debates, namely energy security, climate change, and energy access. Explores technological, market, environmental, cultural and political "fixes" to the energy question, as well as a wide variety of energy forms and stakeholders. Evaluates development, nuclear security, environment ethics, and conflicts between energy and food security. Includes debates, presentations, group projects (in class and in the Cambridge community), grant-writing, and individual written assignments. Enrollment limited.

C. Mavhunga

STS.034 Science Communication: A Practical Guide  
Prereq: None  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: U (Fall)  
3-0-9 HASS-H; CI-H

Develops students' abilities to communicate science effectively in a variety of real-world contexts. Covers strategies for dealing with complex areas like theoretical physics, genomics and neuroscience, and addresses challenges in communicating about topics such as climate change and evolution. Projects focus on speaking and writing, being an expert witness, preparing briefings for policy-makers, writing blogs, giving live interviews for broadcast, and creating a prospectus for a science exhibit in the MIT Museum. Enrollment limited.

D. I. Kaiser

STS.035 Exhibiting Science  
Prereq: One CI-H/CI-HW subject, permission of instructor  
U (Spring)  
2-2-8 HASS-A

Project-based seminar covers key topics in museum communication, including science learning in informal settings, the role of artifacts and interactives, and exhibit evaluation. Students work on a term-long project, organized around the design, fabrication, and installation of an original multimedia exhibit about current scientific research at MIT. Culminates with the project's installation in the MIT Museum's Mark Epstein Innovation Gallery. Limited to 20; preference to students who have taken STS.034.

J. Durant

STS.042J Einstein, Oppenheimer, Feynman: Physics in the 20th Century  
(Subject meets as 8.225J)  
Prereq: None  
Acad Year 2014–2015: U (Spring)  
Acad Year 2015–2016: Not offered  
3-0-9 HASS-H

Explores the changing roles of physicists and physicists during the 20th century. Topics range from relativity theory and quantum mechanics to high-energy physics and cosmology. Examines the development of modern physics within shifting institutional, cultural, and political contexts, such as physics in Imperial Britain, Nazi Germany, US efforts during World War II, and physicists' roles during the Cold War. Enrollment limited.

D. L. Kaiser

STS.043 Technology and Self: Science, Technology, and Memoir  
(Subject meets with STS.443)  
Prereq: None  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: U (Spring)  
2-0-7 HASS-S

Focuses on the memoir as a window onto the relationship of the scientist, engineer, and technologist to his or her work. Studies the subjective side of technology and the social and psychological dimensions of technological change. Students write about specific objects and their role in their lives—memoir fragments. Readings concern child development theory and the role of technology in development. Explores the connection between material culture, identity, cognitive and emotional development. Students taking graduate version complete additional assignments. Limited to 15; no listeners.

S. Turkle

STS.044 Technology and Self: Things and Thinking  
(Subject meets with STS.444)  
Prereq: None  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: U (Spring)  
2-0-7 HASS-S

Explores emotional and intellectual impact of objects. The growing literature on cognition and "things" cuts across anthropology, history, social theory, literature, sociology, and psychology and is of great relevance to science students. Examines the range of theories, from Mary Douglas in anthropology to D.W. Winnicott in
psychoanalytic thinking, that underlies “thing” or “object” analysis. Students taking graduate version complete additional assignments. Limited to 15; no listeners.

_S. Turkle_

<table>
<thead>
<tr>
<th>STS.046J The Science of Race, Sex, and Gender</th>
<th>(Same subject as 21A.103J, WGS.225J)</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<tr>
<td>Acad Year 2014–2015: Not offered</td>
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<td>Acad Year 2015–2016: U (Spring)</td>
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<tr>
<td>3-0-9 HASS-S</td>
<td></td>
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<tr>
<td>See description under subject WGS.225J.</td>
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</tbody>
</table>

_A. Sur, S. Helmreich_

<table>
<thead>
<tr>
<th>STS.048 African Americans in Science, Technology, and Medicine</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<tr>
<td>U (Fall)</td>
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<tr>
<td>3-0-9 HASS-H</td>
</tr>
<tr>
<td>A survey of the contributions of African Americans to science, technology, and medicine from colonial times to the present. Explores the impact of concepts, trends, and developments in science, technology, and medicine on the lives of African Americans. Examples include the eugenics movement, the Tuskegee Syphilis Experiment, the debate surrounding racial inheritance, and IQ testing.</td>
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_K. Manning_

<table>
<thead>
<tr>
<th>STS.050 The History of MIT</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<tr>
<td>U (Spring)</td>
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<tr>
<td>3-0-9 HASS-H</td>
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<tr>
<td>Examines the history of MIT, from its founding to the present, through the lens of the history of science and technology. Topics include William Barton Rogers; the modern research university and educational philosophy; campus, intellectual, and organizational development; changing laboratories and practices; MIT’s relationship with Boston, the federal government, and industry; and notable activities and achievements of students, alumni, faculty, and staff. Includes guest lecturers, on-campus field trips, and interactive exercises.</td>
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_D. Douglas_

<table>
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<tr>
<th>STS.056 Science on Screen</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<tr>
<td>Acad Year 2014–2015: Not offered</td>
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<td>Acad Year 2015–2016: U (Spring)</td>
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<td>2-1-9 HASS-A</td>
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<tr>
<td>Examines the linked histories of science, engineering, and documentary film from 1895 to present. In addition to historical study and visual analysis, students produce their own short videos based on archival footage. Provides opportunities to interact with both antiquated and modern technologies of media production and projection. Readings cover topics in film studies, the history of technology, STS, and material culture studies. Includes mandatory weekly screenings and media production assignments, as well as several short writing assignments. Limited to 15.</td>
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</tbody>
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_G. Jones_

<table>
<thead>
<tr>
<th>STS.060J The Anthropology of Biology</th>
<th>(Same subject as 21A.303J)</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<td>Acad Year 2014–2015: Not offered</td>
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<td>Acad Year 2015–2016: U (Fall)</td>
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<tr>
<td>3-0-9 HASS-S</td>
<td></td>
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<tr>
<td>See description under subject 21A.303J</td>
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_S. Helmreich_

<table>
<thead>
<tr>
<th>STS.064J DV Lab: Documenting Science through Video and New Media</th>
<th>(Same subject as 21A.550J)</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<tr>
<td>Acad Year 2014–2015: Not offered</td>
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<td>Acad Year 2015–2016: U (Fall)</td>
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<tr>
<td>3-3-12 HASS-S</td>
<td></td>
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<tr>
<td>See description under subject 21A.550J.</td>
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_C. Walley, C. Boebel_

<table>
<thead>
<tr>
<th>STS.065J The Anthropology of Sound</th>
<th>(Same subject as 21A.505J)</th>
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<tr>
<td>Prereq: None</td>
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<td>U (Spring)</td>
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<tr>
<td>Not offered regularly; consult department</td>
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<tr>
<td>3-0-9 HASS-S</td>
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<tr>
<td>Credit cannot also be received for CMS.407</td>
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<tr>
<td>See description under subject 21A.505J.</td>
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_S. Helmreich_

<table>
<thead>
<tr>
<th>STS.068J Advanced DV Lab: Documenting Science through Video and New Media</th>
<th>(Same subject as 21A.551J)</th>
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<tbody>
<tr>
<td>Prereq: 21A.550 or permission of instructor</td>
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<tr>
<td>Acad Year 2014–2015: Not offered</td>
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<td>Acad Year 2015–2016: U (Spring)</td>
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<tr>
<td>3-3-6 HASS-S</td>
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<tr>
<td>See description under subject 21A.551J.</td>
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_C. Walley, C. Boebel_

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<thead>
<tr>
<th>STS.070J Language and Technology</th>
<th>(Same subject as 24.913J, 21A.503J)</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<td>Acad Year 2014–2015: Not offered</td>
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<td>Acad Year 2015–2016: U (Fall)</td>
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<td>3-0-9 HASS-S</td>
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<tr>
<td>See description under subject 21A.503J.</td>
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_G. Jones_

<table>
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<tr>
<th>STS.071J Cross-Cultural Investigations: Technology and Development</th>
<th>(Same subject as EC.702J, 21A.801J)</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<td>Acad Year 2014–2015: Not offered</td>
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<tr>
<td>Acad Year 2015–2016: U (Fall)</td>
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<td>3-0-9 HASS-S</td>
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<td>See description under subject 21A.801J.</td>
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_C. Walley_

<table>
<thead>
<tr>
<th>STS.072J Nuclear Forces and Missile Defenses</th>
<th>(Same subject as 17.475J)</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<td>Acad Year 2014–2015: Not offered</td>
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<td>Acad Year 2015–2016: U (Fall)</td>
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<td>3-0-9 HASS-S</td>
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<tr>
<td>Introduces the assessment of strategic nuclear forces. Emphasizes the development of force requirements. Methods for analyzing alternative force postures in terms of missions, effectiveness, and cost. The history of the US-Soviet strategic competition provides the backdrop against which the evolution of nuclear strategy and forces is considered. Students taking the graduate version are expected to complete additional assignments.</td>
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_T. Postol_

<table>
<thead>
<tr>
<th>STS.074J Art, Craft, Science</th>
<th>(Same subject as 21A.501J)</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<td>Acad Year 2014–2015: Not offered</td>
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<td>Acad Year 2015–2016: U (Spring)</td>
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<td>3-0-9 HASS-S</td>
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<tr>
<td>Credit cannot also be received for 21A.509, STS.474</td>
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<td>See description under subject 21A.501J.</td>
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_H. Paxson_

<table>
<thead>
<tr>
<th>STS.075J Technology and Culture</th>
<th>(Same subject as 21A.500J)</th>
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<tbody>
<tr>
<td>Prereq: None</td>
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<td>Acad Year 2014–2015: Not offered</td>
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<td>Acad Year 2015–2016: U (Spring)</td>
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<td>2-0-7 HASS-S</td>
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<td>See description under subject 21A.500J.</td>
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_S. Helmreich, H. Paxson_
STS.076 Technology and Policy of Weapons Systems  
(Same subject as 17.477J)  
Prereq: None  
3-0-9 HASS-S  
Examines in detail the technology of nuclear weapons systems. Topics include nuclear weapons design, effects, targeting, and delivery; ballistic and air breathing missile propulsion and guidance; communications and early warning techniques and systems; and anti-missile, air, and submarine systems. Combines the discussion of technical materials with the national security policy issues raised by the capabilities of these technologies. Considers security issues from the distinct and often conflicting perspectives of technologists, military planners, and political leaders. Subject fulfills the undergraduate public policy requirement in the Political Science major and minor.  
T. Postol

STS.082 Science, Technology, and Public Policy  
(Same subject as 17.309J, ESD.082J)  
(Subject meets with 17.310J, ESD.103J, STS.482J)  
Prereq: None  
U (Fall)  
4-0-8 HASS-S; CI-H  
See description under subject 17.309J.  
K. Oye

STS.083 Social Problems of Nuclear Energy  
(New)  
(Same subject as 22.04J)  
Prereq: None  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: U (Fall)  
3-0-9 HASS-S  
See description under subject 22.04J.  
R. S. Kemp

STS.084 Foundations of Information Policy  
(Same subject as 6.805J)  
(Subject meets with STS.487)  
Prereq: Permission of instructor  
U (Fall)  
3-0-9 HASS-S  
See description under subject 6.805J.  
H. Abelson, M. Fischer, D. Weitzner

STS.086 Cultures of Computing  
(Same subject as 21A.504J, WGS.276J)  
Prereq: None  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: U (Spring)  
3-0-9 HASS-S  
See description under subject 21A.504J.  
S. Helmreich

STS.087 Biography in Science  
Prereq: None  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: U (Spring)  
3-0-9 HASS-H  
An examination of biography as a literary genre to be employed in the history of science. The use of biography in different historical periods to illuminate aspects of the development of science. A critical analysis of autobiography, archival sources, and the oral tradition as materials in the construction of biographies of scientists. Published biographies of scientists constitute the major reading, but attention is given to unpublished biographical sources as well. Comparison is drawn between biography as a literary form in the history of science and in other disciplines.  
K. Manning

STS.089 Technology and Innovation in Africa  
Prereq: None  
U (Fall)  
3-0-9 HASS-H  
Examines development, environment, public health, and politics in Africa, past and present. Studies indigenous innovations, such as plant/animal domestication, fire making, ecology, mining/metallurgy, architecture, textiles, music, medicine, and finance. Explores impact of incoming factors (e.g., slave trade, colonialism, development aid) on indigenous innovation. Discusses the uses Africans assign to incoming technologies (such as guns, cameras, and information and communication technology) and ideas like democracy and human rights.  
C. Mavhunga

STS.090 Critical Issues in STS  
Prereq: One STS Tier I subject or permission of instructor  
U (Fall)  
2-0-10 HASS-E  
Can be repeated for credit  
Analyzes current events and issues from the perspective of Science, Technology and Society. Students explore a chosen topic and develop their own unique analysis, applying the ideas and concepts of STS. Draws on the recent work of STS faculty, along with the concepts and methods that inspired them. Includes current and classic readings in STS; frequent short writing assignments, oral presentations, and collective discussion; and an independently defined research project. Occasional guest visits by STS faculty and advanced graduate students.  
R. H. Williams

Special Subjects

STS.095, STS.096 Independent Study in Science, Technology, and Society  
Prereq: None  
U (Fall, IAP, Spring, Summer)  
Units arranged [P/D/F]  
Can be repeated for credit  
For students who wish to pursue special studies or projects with a member of the Program in Science, Technology, and Society. STS.095 is letter-graded; STS.096 is P/D/F.  
Staff

Research

STS.095, STS.096 Independent Study in Science, Technology, and Society  
Prereq: None  
U (Fall, IAP, Spring, Summer)  
Units arranged [P/D/F]  
Can be repeated for credit  
For students who wish to pursue special studies or projects with a member of the Program in Science, Technology, and Society. STS.095 is letter-graded; STS.096 is P/D/F.  
Staff

Undergraduate research opportunities in the STS Program.

Staff
Advanced Seminars

STS.310 History of Science
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-9 H-LEVEL Grad Credit

Intensive reading and analysis of key works in the history and historiography of science. Introduces students to basic interpretive issues, bibliographic sources, and professional standards. Topics change from year to year.

STS.320J Environmental Conflict and Social Change
(Same subject as 21A.429J)
Prereq: Permission of instructor
Acad Year 2014–2015: G (Spring)
Acad Year 2015–2016: Not offered
3-0-9 H-LEVEL Grad Credit

See description under subject 21A.429J.

C. Wooley

STS.330J History and Anthropology of Medicine and Biology
(Same subject as 21A.319J)
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-9 H-LEVEL Grad Credit

Explores recent historical and anthropological approaches to the study of medicine and biology. Topics might include interaction of disease and society; science, colonialism, and international health; impact of new technologies on medicine and the life sciences; neuroscience and psychiatry; race, biology and medicine. Specific emphasis varies from year to year.

S. Helmreich

STS.340 Introduction to the History of Technology
Prereq: Permission of instructor
Acad Year 2014–2015: G (Fall)
Acad Year 2015–2016: Not offered
3-0-9 H-LEVEL Grad Credit

Introduction to the consideration of technology as the outcome of particular technical, historical, cultural, and political efforts, especially in the United States during the 19th and 20th centuries. Topics include industrialization of production and consumption, development of engineering professions, the emergence of management and its role in shaping technological forms, the technological construction of gender roles, and the relationship between humans and machines.

D. Mindell, J. S. Light

STS.360J Ethnography
(Same subject as 21A.829J)
Prereq: Permission of instructor; Coreq: 21A.859
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-9 H-LEVEL Grad Credit

Practicum-style course in anthropological methods of ethnographic fieldwork and writing. Depending on student experience in ethnographic reading and practice, subject combines reading ethnographies in anthropological and science studies with formulating and pursuing ethnographic work in local labs, companies, or other sites. Preference to HASTS, CMS, HTC and Sloan graduate students.

M. Fischer

STS.413 Energy: Humanistic Perspectives
Prereq: None
Acad Year 2014–2015: G (Spring)
Acad Year 2015–2016: Not offered
3-0-9

Explores energy from a humanities perspective, including its place in history and society, architectures, security, conflicts, politics, climate change, and pollution. Covers all continents and time periods, from the invention of fire to present. Emphasizes the different energy cultures and practices as reflected in anthropology, history, literature, philosophy, religious studies, art history, and the arts.

C. Mavhunga

STS.419 Global Science, Technology and Society
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-9 H-LEVEL Grad Credit

Going beyond issues of brain drain and brain circulation, explores how contemporary science and technology innovations look from, and are being created in, parts of the world other than the US and Europe. Examines new forms of science and technology institutions, harmonization and intellectual property constraints, and distributed knowledge. Discusses MIT’s role in global STS issues and challenges students to think about how they can effectively apply their expertise in their home countries. Open to upperclassmen with permission of instructor.

M. Fischer
STS.425 History of Manufacturing in America (New)
(Subject meets with STS.026)
Prereq: None
Acad Year 2014–2015: G (Fall)
Acad Year 2015–2016: Not offered
3-0-9
Introductory survey of fundamental innovations and transitions in American manufacturing from the colonial period to the mid-twentieth century. Primary emphasis on textiles and metalworking, with particular attention to the role of the machine tool industry in the American manufacturing economy. Students taking graduate version are expected to explore the material in greater depth.
M. R. Smith

STS.427 The Civil War and the Emergence of Modern America: 1861–1890
(Subject meets with 21H.205J, STS.027)
Prereq: None
Acad Year 2014–2015: G (Spring)
Acad Year 2015–2016: Not offered
3-0-9
See description under subject STS.027).
M. R. Smith

STS.429J Food and Power
(Subject same as 21A.439J)
Prereq: Permission of instructor
G (Spring)
Not offered regularly; consult department
3-0-9 H-LEVEL Grad Credit
Anthropological and historical analysis of food production, processing, and consumption in the US and globally. Emphasizes the social and technical practices of raising crops and livestock; efforts to preserve as well as create new foods; the industrialization and de-industrialization of food; the relation between food supply and safety and the state; the role of ethnicity and gender in consumption patterns; and the historical and cultural act of eating. STS.250 recommended.
H. Paxson

STS.433 Technology, War, and the American Experience: 1650-1950
Prereq: Permission of instructor
G (Spring)
Not offered regularly; consult department
3-0-9 H-LEVEL Grad Credit
Analyses the development, deployment, and impacts of technology in warfare, focusing primarily on American military affairs from the industrial revolution to the post-World War II period. Also explores how and why the military played a role in American industrialization and influenced the larger economy and society, taking into consideration current discussions among political economists and historians. Open to upperclassmen with permission of instructor.
M. R. Smith

STS.434 Mobility and Global Society
Prereq: None
G (Spring)
Not offered regularly; consult department
3-0-9
Examines the interaction of transport, communication, and bodies (people, animals, insects, and microbes). Explores the origins of transport systems (from walking, wagons and automobiles, to canoes, ships, and aircraft), then studies the communication media triggered by, or existing in parallel with, each system. Transport examples include runners, the use of sound and visual signals, telegraph, telephone, cell phone, and the Internet. Communication mediums include ‘useful’ and ‘deadly’/‘scary’ technology, information and substances.
C. Mavhunga

STS.435J Nuclear Forces and Missile Defenses
(Same subject as 17.476J)
(Subject meets with 17.475J, STS.072)
Prereq: Permission of instructor
G (Fall)
3-0-9 H-LEVEL Grad Credit
Introduces the assessment of strategic nuclear forces. Emphasizes the development of force requirements and methods for analyzing alternative force postures in terms of missions, effectiveness, and cost. The history of the US-Soviet strategic competition provides the backdrop against which the evolution of nuclear strategy and forces is considered. Students taking graduate version are expected to complete additional assignments.
T. Postol

STS.440 Self as Data
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-9
Examines cases in which individuals treat their own habits, bodies, moods, and thoughts as objects of scrutiny, analysis, and intervention. Explores what shifting modes of self-tracking, self-care, and self-governance reveal about changing understandings of the self, and how they remake subjectivity. Topics range from 19th century diary writing and Benjamin Franklin’s self-monitoring practices to contemporary diet techniques and the Quantified Self movement’s digital data collection apps.
N. Schüll

STS.441 Technology and Self: Technology and Conversation
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
2-0-10
Explores the relationship between technology and conversation, with an emphasis on conversation in our digital age when so many say they would rather text than talk. Topics center on the psychology of online life, such as the way in which we both share and withhold information about the self. Discussion about the ways new kinds of online conversation are playing out in education, the workplace, and in families and what the changes in conversation mean for collaboration, innovation, and leadership. Readings include works in history, literature, anthropology, psychology, and linguistics. Open to undergraduates by permission of instructor. Limited to 15; no listeners.
S. Turkle

STS.443 Technology and Self: Science, Technology, and Memoir
(Subject meets with STS.043)
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
2-0-7 H-LEVEL Grad Credit
Focuses on the memoir as a window onto the relationship of the scientist, engineer, and technologist to his or her work. Studies the subjective side of technology and the social and psychological dimensions of technological change. Students write about specific objects and their role in their lives—memoir fragments. Readings concern child development theory and the role of technology in development. Explores the connection between material culture, identity, cognitive and emotional development. Students taking graduate version complete additional assignments. Limited to 15; no listeners.
S. Turkle

STS.444 Technology and Self: Things and Thinking
(Subject meets with STS.044)
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
2-0-7 H-LEVEL Grad Credit
Explores emotional and intellectual impact of objects. The growing literature on cognition and “things” cuts across anthropology, history, so-
cial theory, literature, sociology, and psychology and is of great relevance to science students. Examines the range of theories, from Mary Douglas in anthropology to D.W. Winnicott in psychoanalytic thinking, that underlies “thing” “object” analysis. Students taking graduate version complete additional assignments. Limited to 15; no listeners.

STS.449| Introduction to Global Medicine: Bioscience, Technologies, Disparities, Strategies
(Same subject as HST.934j)
Prereq: None
G (Spring)
2-0-1 [P/D/F]

See description under subject HST.934j.
M. J. Good, B. J. Good

STS.452| Living in a Technological World
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-9

Explores the consequences when human beings dwell in a predominantly self-constructed environment, from the standpoint of humanistic inquiry. Topics include the concept of life-world; the end of the world frontier; advancing edges and empty places; the visible landscape as a register of technological change; world alienation; loss of human habitat; redefining exploration; and imagining a rehumanized world. Readings, both fiction and non-fiction, include works by authors such as H. Arendt, M. Berman, T.J. Clark, L. Marx, W. Morris, J. Verne, and R. L. Stevenson.
R. H. Williams

STS.454| Science and Technology in the Museum Environment
Prereq: None
Acad Year 2014–2015: G (Spring)
Acad Year 2015–2016: Not offered
3-0-9

Examines the ways museums preserve the material culture of science and technology and present it distinctively to a mass audience. Focuses on challenges and opportunities of preserving and presenting science and technology in the museum environment. Students review recent work in museum studies as it relates specifically to science, medicine, and technology; review a major gallery or exhibition locally; and have an opportunity to participate in a collections- or communications-related research project in the MIT Museum.
J. Durant

STS.460| Histories of Information, Communication, and Computing Technologies (New)
Prereq: None
G (Spring)
3-0-9

Introduction to the historical study of information, communication, and computing technologies with a focus on the United States. Paired analysis of a multidisciplinary reading list with in-depth discussions of research methods and writing for academic publications. Later weeks of the course adapt to student interests and are determined by students in consultation with the instructor. Limited to 15.
J. S. Light

STS.462| Social and Political Implications of Technology
Prereq: None
Acad Year 2014–2015: G (Fall)
Acad Year 2015–2016: Not offered
3-0-9

Historical and contemporary studies are used to explore the interaction of technology with social and political values. Emphasis on how technological devices, structures, and systems influence the organization of society and the behavior of its members. Examples drawn from the technologies of war, transportation, communication, production, and reproduction.
M. R. Smith

STS.467| The History of Aviation
(Same subject as 16.707j)
Prereq: Permission of Instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-9 H-LEVEL Grad Credit

Reading course in the history of aviation, focusing on science and technology and cultural and political context. Themes include: the science of aeronautics, pilots and piloting, control systems and electronics, engineering epistemology, infrastructure, industry, government and politics, evolution of aeronautics research, culture and experience, automation and autonomy, role of MIT, literature and film. Case studies of specific systems and engineering projects. Emphasis is on book-length texts, close reading, historical methods of analyzing technological change. Study of social and political dimensions of engineering projects, examination of aviation institutions. Students prepare weekly response papers to readings, make extended presentations to class twice per term, and submit a final research paper.
D. Mindell

STS.470| Research Seminar: Human, Remote and Autonomous Systems in Air, Sea, and Space
(Same subject as 16.440j)
Prereq: 16.400, 16.453, or permission of instructor
G (Fall)
3-0-9 H-LEVEL Grad Credit
See description under subject 16.440j.
D. A. Mindell

STS.471| Engineering Apollo: The Moon Project as a Complex System
(Same subject as 16.895j, ESD.30l)
Prereq: Permission of instructor
Acad Year 2014–2015: G (Spring)
Acad Year 2015–2016: Not offered
4-0-8 H-LEVEL Grad Credit

Detailed technical and historical exploration of the Apollo project to fly humans to the moon and return them safely to Earth as an example of a complex engineering system. Emphasizes how the systems worked, the technical and social processes that produced them, mission operations, and historical significance. Guest lectures by MIT-affiliated engineers who contributed to and participated in the Apollo missions. Students work in teams on a final project analyzing an aspect of the historical project to articulate and synthesize ideas in engineering systems.
D. Mindell

STS.474| Art, Craft, Science
(Same subject as 21A.509j)
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-9
Credit cannot also be received for 21A.501, STS.074
See description under subject 21A.509j.
H. Paxson

STS.477| Writing: Science, Technology, and Society
(Same subject as 21W.820l)
Prereq: 21H.991j
Acad Year 2014–2015: G (Spring)
Acad Year 2015–2016: Not offered
3-0-9 H-LEVEL Grad Credit

Examination of different “voices” used to consider issues of scientific, technological, and social concern. Students write frequently and choose among a variety of non-fiction forms: historical writing, social analysis, political criticism, and policy reports. Instruction in expressing ideas clearly and in organizing a thesis-length work. Reading and writing on three case studies drawn
from the history of science; the cultural study of technology and science; and policy issues.

K. Manning

STS.481J Cross-Cultural Investigations: Technology and Development
(Same subject as EC.702J, 21A.839J)
(Subject meets with EC.702J, 21A.801J, STS.071J)
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-9
See description under subject 21A.839J.
C. Walley

STS.482J Science, Technology, and Public Policy
(Same subject as 17.310J, ESD.103J)
(Subject meets with 17.309J, ESD.082J, STS.082J)
Prereq: Permission of instructor
G (Fall)
4-0-8 H-LEVEL Grad Credit
See description under subject 17.310J.
K. Oye

STS.487 Foundations of Information Policy
(Subject meets with 6.805J, STS.085J)
Prereq: Permission of instructor
G (Fall)
3-0-9 H-LEVEL Grad Credit
Studies the growth of computer and communications technology and the new legal and ethical challenges that reflect tensions between individual rights and societal needs. Topics include computer crime; intellectual property restrictions on software; encryption, privacy, and national security; academic freedom and free speech. Students meet and question technologists, activists, law enforcement agents, journalists, and legal experts. Instruction and practice in oral and written communication provided. Students taking graduate version complete additional assignments. Enrollment limited.
H. Abelson, M. Fischer, D. Weitzner

Special Subjects

STS.591, STS.592 Special Subject: Science, Technology and Society
Prereq: None
G (Fall, IAP, Spring)
Not offered regularly; consult department
Units arranged
Can be repeated for credit
Addresses a special topic in Science, Technology and Society which is not offered in the regular curriculum.
Staff

Research and Teaching

STS.800 Teaching Science, Technology and Society
Prereq: None
G (Fall, Spring)
Units arranged [P/D/F]
Can be repeated for credit
For qualified graduate students serving as either a teaching assistant or instructor for subjects in Science, Technology and Society (STS). Enrollment limited by availability of suitable teaching assignments.
Staff

STS.901–STS.904 Independent Study in Science, Technology, and Society
Prereq: Permission of instructor
G (Fall, Spring)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit
For students who wish to pursue special studies or projects at an advanced level with a faculty member of the Program in Science, Technology, and Society.
Staff

STS.THG Graduate Thesis
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit
Program of graduate research leading to the writing of a PhD thesis, to be arranged by the student with an appropriate MIT faculty member, who is the thesis supervisor.
Staff
**Bachelor of Science in Science, Technology, and Society/Double Major/ Course STS**(1)

<table>
<thead>
<tr>
<th>General Institute Requirements (GIRs)</th>
<th>Subjects</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Requirement</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Humanities, Arts, and Social Sciences Requirement [all but two subjects can be from the Departmental Program]</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Restricted Electives in Science and Technology (REST) Requirement</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Laboratory Requirement</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total GIR Subjects Required for SB Degree</td>
<td></td>
<td>17</td>
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</tbody>
</table>

**Communication Requirement**
The program includes a Communication Requirement of 4 subjects: 2 subjects designated as Communication Intensive in Humanities, Arts, and Social Sciences (CI-H); and 2 subjects designated as Communication Intensive in the Major (CI-M).

**PLUS Departmental Program**
Subject names below are followed by credit units, and by prerequisites, if any (corequisites in italics).

<table>
<thead>
<tr>
<th>Required Subjects</th>
<th>Units</th>
<th>Units</th>
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<tbody>
<tr>
<td>One STS Tier I subject</td>
<td></td>
<td>51–54</td>
</tr>
<tr>
<td>One STS Tier II subject</td>
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<tr>
<td><strong>STS.091 Critical Issues in STS, 12, HASS-E, CI-M</strong></td>
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<tr>
<td><strong>STS.ThT Undergraduate Thesis Tutorial, 6</strong></td>
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<tr>
<td><strong>STS.ThU Undergraduate Thesis, 12, CI-M</strong></td>
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<tr>
<th>Restricted Electives</th>
<th>Units</th>
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<tbody>
<tr>
<td>A coherent group of five elective subjects in STS, plus four subjects related to the historical and social study of science and technology, in consultation with the STS undergraduate officer.</td>
<td>102–108</td>
</tr>
</tbody>
</table>

**Departmental Program Units That Also Satisfy the GIRs**

<table>
<thead>
<tr>
<th>Unrestricted Electives</th>
<th>Units</th>
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<tbody>
<tr>
<td>(72)</td>
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</tbody>
</table>

**Total Units Beyond the GIRs Required for SB Degree**

<table>
<thead>
<tr>
<th>Total Units Beyond the GIRs Required for SB Degree</th>
<th>Units</th>
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<tbody>
<tr>
<td>180</td>
<td></td>
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</table>

No subject can be counted both as part of the 17-subject GIRs and as part of the 180 units required beyond the GIRs. Every subject in the student’s departmental program will count toward one or the other, but not both.

**Notes**

*Prerequisites and corequisites are listed in the subject description.

1The full major in Science, Technology, and Society (STS) may be pursued only as a second major program in conjunction with another degree program in a field of engineering or science, or in other fields on a case-by-case basis.

For an explanation of credit units, or hours, please refer to the online help of the MIT Subject Listing & Schedule, [http://student.mit.edu/catalog/index.cgi](http://student.mit.edu/catalog/index.cgi).