Science and Technology Studies (SCST) is an interdisciplinary program concerned with science and technology and their relationship to society. In addition to the historical development and a philosophical understanding of the ideas and institutions of science and technology; Science and Technology Studies also examines their ethical, economic, social, and political implications.

The role that science and technology have played in shaping modern industrial societies is generally acknowledged, but few members of those societies, including scientists and engineers, possess any understanding of how that process has occurred or much knowledge of the complex technical and social interactions that direct change in either science or society. The Science and Technology Studies Program is intended to help create a coherent course of study for students interested in these questions by providing a broad range of perspectives. At present, courses are offered which examine the history or philosophy of science and technology, the sociology and psychology of science, the economics of research and development and technological change, science and public policy, technology assessment, technology and the environment, scientometrics, and ethical-value issues.

To complete the requirements of the program, students must complete six courses. The introductory course and senior seminar are required and three elective courses are chosen from the list of designated electives. Students may choose to concentrate their electives in a single area such as technology, American studies, philosophy, history of science, economics, environment, sociology, current science, or current technology, but are encouraged to take at least one elective in history, history of science, or philosophy. The sixth course necessary to complete the program is one semester of laboratory or field science in addition to the College’s three-course science requirement. Other science courses of particular interest include Chemistry 110 and Biology 134.

The program is administered by a chair and an advisory committee of faculty who teach in the program. Students who wish to enroll normally register with the chair by the fall of their junior year.

Elective Courses
Students can check with the program chair to see if other courses not listed here might count as electives.

- ASTR 336/HSCI 336 Science, Pseudoscience, and the Two Cultures
- BIOL 134/ENVI 134 The Tropics: Biology and Social Issues
- CHEM 113 Chemistry and Crime: From Sherlock Holmes to Modern Forensic Science
- ENVI 101F Nature and Society: an Introduction to Environmental Studies
- ENVI 307/MAST 402 Senior Seminar: Perspectives on Environmental Studies
- HIST 374 American Medical History
- PHIL 209 Philosophy of Science
- PHIL 213T(F) Biomedical Ethics
- PHIL 244T(S) Environmental Ethics
- SOC 368 Technology and Modern Society

Courses of Related Interest
- AMST 216(S) Environmental Humanities: Theory and Practice
- ANSO 205 Ways of Knowing
- ANTH 271 (F) Medicine, Technology, and Power
ARSH 257 Architecture 17001900

ASTR 340 Great Astronomers and Their Publications

BIOL 218T DNA, Life, and Everything

CHEM 115 AIDS: The Disease and Search for a Cure

CSCI 102T(F) The Socio-Techno Web

ECON 230 The Economics of Health and Health Care

ENGL 286(S) Writing about Science and Nature

ENGL 378(F) Nature/Writing

ENVI 208 Science and Politics in Environmental Decision Making

ENVI 210 Governing Nature

ENVI 302 Environmental Planning Workshop

GEOS 103/ENVI 103 Global Warming and Natural Disasters

GEOS 215 Climate Change

GEOS 226 The Oceans and Climate

HIST 165/LEAD 165 Going Nuclear: American Culture in the Atomic Age

HIST 475/LEAD 475 Modern Warfare and Military Leadership

NSCI 317T Nature v. Nurture: Topics in Developmental Psychology

PHYS 107 Spacetime and Quanta

PHYS 108 Energy Science and Technology

REL 281 Religion and Science

SOC 303(F) Cultures of Climate Change

SOC 300 Measuring Truth

WGSS 238 Science, Gender, and Power

STUDY ABROAD

FAQ

Students MUST contact departments/programs BEFORE assuming study away credit will be granted toward the major or concentration.

Can your department or program typically pre-approve courses for major/concentration credit?

Yes, in some cases, if appropriate course information is available in advance (e.g. syllabi and/or course descriptions), though students should be sure to contact the department.

What criteria will typically be used/required to determine whether a student may receive major/concentration credit for a course taken while on study away?

Complete syllabus and course description, including readings/assignments.

Does your department/program place restrictions on the number of major/concentration credits that a student might earn through study away?

No.

Does your department/program place restrictions on the types of courses that can be awarded credit towards your major?

No.

Are there specific major requirements that cannot be fulfilled while on study away?

No.

Are there specific major requirements in your department/program that students should be particularly aware of when weighing study away options? (Some examples might include a required course that is always taught in one semester, laboratory requirements.)
Yes. Be sure to check record of enrollment in Div 3 (sciences with labs) to satisfy program.

Give examples in which students thought or assumed that courses taken away would count toward the major or concentration and then learned they wouldn’t:

None to date.

SCST 101 (S) Science, Technology, and Human Values
Crosslistings: HSCI101 / SCST101 / SOC201

Primary Crosslisting
This course offers an introduction to science and technology studies, or STS. A radically interdisciplinary field of inquiry, the roots of STS stretch through the philosophy, history, and sociology/anthropology of science and technology. Students will become acquainted with major STS schools, methodological strategies and research trajectories through intensive reading and analysis of classical and contemporary works in the field. Considerable attention will be devoted to exploring the nature of science and technology, their relationships to and interactions with one another, society and the natural world, and the influences these interactions exert in shaping what humans value. A fundamental goal of the course is to cultivate awareness and understanding of the social organization of technology and scientific knowledge production, and the technoscientific structuring of modern social life broadly. The course as such is aimed at attracting from all divisions those students who are intellectually adventurous and inclined to think critically about the place and prominence of science and technology in the modern world.

Class Format: seminar
Requirements/Evaluation: two or three short exercises, two papers (3-5 pages and 5-7 pages), and two hour exams
Prerequisites: none
Enrollment Limit: 20-25
Enrollment Preferences: first-years and sophomores
Expected Class Size: 20
Distributions: (D2)

Spring 2019
SEM Section: 01 MWF 8:30 am - 9:45 am Grant Shoffstall

SCST 153 (S) Androids, Cyborgs, Selves (WI)
Crosslistings: ENGL153 / SCST153

Secondary Crosslisting
In this expository writing course, we will analyze and argue about how near-human or partly human bodies and intelligences are imagined in fiction and film. When do these bodies, these intelligences, improve the worlds in which they appear, and when do they threaten them? How are they gendered, how are they raced, and why? And what do they want? As we will see, authors in different cultural and technological contexts have imagined not-quite-human selves for different ends and in radically different ways. This course focuses on articulating these differences and developing significant claims about them in clear, argumentative prose. We will spend half or more of our class time discussing and practicing writing skills. Texts may include *R.U.R.*, *“The Bicentennial Man,“ Blade Runner, Metropolis (Suite 1: The Chase)*, and *Her*.

Class Format: seminar
Requirements/Evaluation: writing (four 5-page essays in multiple drafts) and discussion/participation
Extra Info: not available for the fifth course option
Prerequisites: none
Enrollment Limit: 19
Expected Class Size: 19
Distributions: (D2) (WI)
Distribution Notes: meets Division 1 requirement if registration is under ENGL; meets Division 2 requirement if registration is under SCST WI; This
A writing-intensive course is geared towards improving students' analytical and argumentative prose in the context of studying literary and filmic fictions.

**Spring 2019**

**SEM Section:** 01  TR 8:30 am - 9:45 am  Ezra D. Feldman

**SCST 236 (F)  Automatic Culture: From the Mechanical Turk to A.I.**

*Crosslistings: HSCI236 / SCST236*

**Primary Crosslisting**

Using literary writing and visual representation as our primary points of entry, we will study the history of automation, exploring its effects as idea and as material implementation upon public and private spheres, craftsmen and courts, wage-laborers, artists, and inventors. Readings from such authors as E.T.A. Hoffman, Kurt Vonnegut, Roald Dahl, and Sydney Padua will be supplemented with studies in the history and historiography of technology. The objects we examine will be as different from one another as the dulcimer-playing android presented as a gift to Marie Antoinette, IBM's Deep Blue, and contemporary devices like Amazon's Echo.

**Class Format:** seminar

**Requirements/Evaluation:** students will be evaluated based on mid-term and final essays, discussion participation, and brief in-class writing exercises.

**Prerequisites:** none

**Enrollment Limit:** 25

**Enrollment Preferences:** SCST concentrators

**Expected Class Size:** none

**Distributions:** (D2)

**Fall 2018**

**SEM Section:** 01  TR 8:30 am - 9:45 am  Ezra D. Feldman

**SCST 250 (S)  Environmental Justice  (DPE)**

*Crosslistings: SCST250 / ENVI250*

**Secondary Crosslisting**

How are local and global environmental problems distributed unevenly according to race, gender, and class? What are the historical, social and economic structures that create unequal exposures to environmental risks and benefits? And how does inequity shape the construction and distribution of environmental knowledge? These are some of the questions we will take up in this course, which will be reading and discussion intensive. Through readings, discussions, and case studies, we will explore EJ in both senses. Potential topics include: toxics exposure, food justice, urban planning, e-waste, unnatural hazards, nuclearism in the U.S. West, natural resources and war, and climate refugees. Occasionally, community leaders, organizers, academics, and government officials will join the class to discuss current issues.

**Class Format:** seminar

**Requirements/Evaluation:** several short essays, final essay

**Extra Info:** may not be taken on a pass/fail basis; not available for the fifth course option

**Prerequisites:** ENVI101 or permission of the instructor

**Enrollment Limit:** 12

**Enrollment Preferences:** Environmental Studies concentrators

**Expected Class Size:** 10

**Distributions:** (D2) (DPE)

**Distribution Notes:** DPE: This course will explore how unequal power leads to environmental injustice. Specifically, we will analyze how local and global environmental problems are distributed unevenly according to race, gender, and class. This is a service-based learning course, and students will hone skills to address environmental injustices.

**Attributes:** ENVI Humanities, Arts + Social Science Electives; EVST Culture/Humanities
SCST 301 (F) Social Construction  (DPE)
Crosslistings: REL301 / SCST301 / WGSS302 / COMP315 / SOC301

Secondary Crosslisting

"Social construction" can often seem like the great collegial insight. By now, you've all heard that categories such as race, gender, and sexuality are in some sense not part of nature, but instead are created and maintained socially or culturally. The idea of social construction has been vital to critical race theory and queer theory, and, in this course, we will push ourselves into philosophy of science to see whether or not these same insights apply to everything. If we know that "Whiteness," "heterosexuality," and "masculinity," for instance, are all socially constructed, we will ask if the same is true of "electrons," "money," "the solar system," and "climate change." Can it be that all of our reality is socially constructed? Or does social construction have limits? If so, what are they? We will also ask more fundamental questions, such as: What does it mean to say something is socially constructed? How does social construction relate to claims that an aspect of the world is "real" or "not real?" Is social construction a theory about language, power, culture, societies, human perceptions, or the limits of science? What kind of political, ethical, ontological, or epistemological work do theories of social construction do? We will begin with different accounts of the social construction of race, gender, and sexuality. In the second part of the course, we will dig deeper into philosophical debates about social construction as such. Then we will explore constructionism about natural science. In the last part of the course, we will change gears and explore look at cutting-edge work in the theory of social science aimed at explaining the construction and ontology of the social world. The class will culminate in a project in which students will put their social construction theories into practice.

Class Format: seminar

Requirements/Evaluation: regular attendance and participation, short weekly reflection papers, a 10-page research paper, and final project

Extra Info: may not be taken on a pass/fail basis

Prerequisites: none

Enrollment Limit: 15

Enrollment Preferences: Religion majors, then majors from cross-listed departments

Expected Class Size: 15

Distributions: (D2) (DPE)

Distribution Notes: meets Division 2 requirement if registration is under REL, SOC, WGSS or SCST; meets Division 1 requirement if registration is under COMP. DPE: Central to REL 301 will be an analysis of the social construction of race, gender, and sexuality. It will show how power and difference are tied up in their construction and maintenance of these categories. Students will be taught how to critically analyze race, gender, and sexuality as well as social construction as such. Students will also learn sophisticated tools for studying systems of social power and difference.

Fall 2018

SEM Section: 01    W 1:10 pm - 3:50 pm    Jason Josephson Storm

SCST 330 (S) Technology, Culture and Society
Crosslistings: SCST330 / SOC330

Secondary Crosslisting

An introduction to major trajectories of theory and empirical research in the sociology and history of technology: the Social Construction of Technology (SCOT), Large Scale Technological Systems (LTS), Actor-Network Theory (ANT), and cultural studies of technoscience broadly. Students will also become acquainted with a number of philosophical positions on technology: instrumentalist, Marxist, cultural/substantivist, humanist and posthumanist. Topics to be explored include technology, (post)industrial capitalism, and the nature of modern power; the role of technology in giving shape and weight to social institutions and forms of agency; technology, individualism, and everyday life in the modern world; technological determinism; resistance and accommodation to technological change; technology as a point of view and total way of life (culture); language, quantification, computerization, and (tele)visual media; and technology and environment. The course is furthermore designed to allow students to explore and research topics not appearing on the syllabus in the main.

Class Format: seminar

Requirements/Evaluation: weekly discussion precis, class presentations, a midterm essay and final paper

Extra Info: may not be taken on a pass/fail basis
SCST 338 (F) Transhumanism: Religion, Technoscience, Obsolescence

This interdisciplinary seminar invites students to pursue sociohistorical analysis and sustained critical discussion of the so-called “transhumanist movement” and its overriding aim: the transformation and eventual transcendence of human biological constitution; the realization, through highly speculative technoscientific means, of an enhanced or even “postbiological” existence, the so-called “posthuman condition,” “Humanity 2.0.” Through close readings of historical documents, transhumanist texts, scholarship on transhumanism, and relevant works of science-fiction film and literature, we will position the movement as an empirical conduit through which to explore the sociohistorical conditions under which transhumanist ideas have emerged, circulated, and taken up residence. To this end, we will consider transhumanism’s ties to some of the most objectionable aspects of modern technology and late capitalism; eugenics, the commodification of health, and massive investments pharmaceuticals, anti-aging medicine, and so-called "GNR" technologies (i.e. genetics, nanotechnology, and artificial intelligence and robotics); the movement’s affinities with neoliberalism and Euro-American (cyber) libertarian politics; and what some have pointed to as transhumanism’s racialized subtext of whiteness. We will furthermore devote considerable attention to the technological singularity, artificial intelligence, the figure of the cyborg, mind-uploading, space colonization, and cryonic suspension, all of which, like transhumanism broadly, suggest that science and technology have in some sense come to operate as powerful channeling agents for the very sorts of magical beliefs, practices, and forms of expectation and association that theorists of secularization expected modernity to displace. Lastly, throughout the course of the seminar we will take transhumanism as a provocation to think broadly and seriously about embodiment, culture, and ways of being human.

Class Format: seminar

Requirements/Evaluation: attendance and participation, informal weekly writing, 15- to 20-page seminar paper

Extra Info: not available for the fifth course option

Prerequisites: none

Enrollment Limit: 20

Enrollment Preferences: Anthropology and Sociology majors

Expected Class Size: 20

Distributions: (D2)

Not offered current academic year

SCST 371 (S) Medicine, Technology, and Modern Power

Medicalization: those processes by which previously non-medical problems, once defined as ethical-religious, legal or social (e.g. drug and alcohol addition, shyness, obesity), are brought within the purview of medical science and redefined as medical problems, usually in terms of “illness” or “disorder.” Part I: The history of the medicalization thesis; medicalization as a technical process; modern medicine as a form of social control; critiques of the medicalization thesis. Part II: From medicalization to biomedicalization; from the management of human life to the transformation of “life itself” by way of post-World War II technoscientific interventions aimed at “optimizing” human vitality. Empirical cases for consideration will be drawn from those technoscientific developments having made possible the work of optimization that defines biomedicalization: molecular biology, pharmacogenomics, biotechnologies, imaging techniques, robotics, and transplant medicine, among others. Finally, a consideration of how processes of biomedical optimization have produced new ways of seeing, knowing, and imagining human bodies, such that biology is increasingly less representative of “destiny” than it is of possibility. The course will to this end conclude with a survey of emerging issues in speculative technoscience and the ethics and politics of human enhancement.

Class Format: lecture
SCST 401 (F) Senior Seminar: Critical Perspectives on Science and Technology

A research-oriented course designed to give students direct experience in evaluating and assessing scientific and technological issues. Students initially study particular techniques and methodologies by employing a case study approach. They then apply these methods to a major research project. Students may choose topics from fields such as biotechnology, computers, biomedical engineering, energy, and other resource development. Students will apply their background of historical, philosophical, and technological perspectives in carrying out their study.

Class Format: studio
Requirements/Evaluation: research paper or project
Enrollment Limit: 5
Distributions: (D2)

Not offered current academic year

SCST 401 (F) Cold War Technocultures

Secondary Crosslisting

In this seminar students will pursue sociohistorical analyses of Cold War American culture(s) by attending to key points of intersection between politics, aesthetics, and major technoscientific developments during this period. Part I will focus principally on the emergence of the computer and its role in shaping American infrastructure and styles of thought aimed at Soviet "containment." We will trace the historical threads connecting MIT's "Whirlwind" computer project and the SAGE continental air defense system; nuclear wargaming at the RAND Corporation and the aesthetics of "thinking the unthinkable"; the science of cybernetics and the prospect of automation; and ultimately the role of computation, intermedia, and systems logic in perpetrating the atrocities of the Vietnam War. Part II will take up the Cold War space race--from Luna 2, Sputnik I, and Yuri Gagarin to Projects Mercury, Gemini, and the Apollo moon landing. Within this context we will also consider the Club of Rome’s Limits to Growth report; plans backed by NASA for the industrialization and colonization of outer space; and the place of science-fiction as a Cold War aesthetic (print, televisual, cinematic). Part III, finally, will explore key moments of conflict, resistance, appropriation, and unintended consequences of Cold War technoscientific developments, among them antipsychiatry and environmentalism; Project Cybersyn, an infrastructural casualty of the U.S./CIA-backed Chilean coup of 1973; the New Left, the American counterculture, new social movements, and the countercultural roots of new media and neoliberalism.

Class Format: seminar
Requirements/Evaluation: two 5-page book review essays, weekly 1-page papers, midterm essay exam, final essay exam
Extra Info: may not be taken on a pass/fail basis; not available for the fifth course option
Prerequisites: SCST 101 or instructor consent; prior coursework in Anthropology and Sociology and/or History
Enrollment Limit: 15
Enrollment Preferences: Anthropology and Sociology majors, Science and Technology Studies concentrators
Expected Class Size: 15
Department Notes: SCST Senior Seminar
Distributions: (D2)

Fall 2018