Science, Technology, and Society

The program for Science and Technology Studies at Brown operates under the premise that students and scholars in the field of science and technology studies want to know how scientific knowledge is produced. STS believes that the idealized accounts of knowledge production entrenched in our scientific belief system are inadequate, given the complexity of the process they claim to describe.

STS scholars seek to understand how science operates by analyzing historical case studies, observing contemporary scientists at work, examining representations of scientific ideas in textbooks or journals, and studying the infrastructure of scientific institutions.

This interdisciplinary field brings together anthropologists, philosophers, historians, art historians, literary theorists, sociologists and practicing scientists and technologists. In addition to offering an undergraduate concentration program in Science and Society, Brown also offers interdisciplinary courses under the same rubric.

For more information on STS at Brown, please visit: https://www.brown.edu/academics/science-and-technology-studies/

Science, Technology, and Society Concentration Requirements

Science, Technology, and Society (STS, formerly Science and Society) is an interdisciplinary concentration that examines the processes of scientific discovery and the establishment of scientific policies and systems of belief from historical, philosophical, anthropological, and sociological perspectives. Concentrators analyze the practices, norms, and values that reflect and shape our deepest convictions about what is considered "science." Students select courses in the physical sciences, life sciences, or mathematics and choose a thematic track that may include the history and philosophy of science; gender and science; race, science and ethnicity; health and medicine; environment and society; or they may create their own independent focus. STS prepares students to follow, guide, and shape scientific knowledge as it travels from the laboratory into the public arena.

Requirements

Consisting of 12 courses, the program of study outlined below will be developed by each student in consultation with the concentration advisor. Where appropriate, independent reading, lab courses or GISP's may count for up to three of the twelve total courses. Students will take a minimum of 7 intermediate to advanced courses.

Required Courses (2)

The concentration has two required courses.

• STS 1000 : Introduction to Science and Society: Theories and Controversies, or equivalent introductory course: usually taken in the second or third year.

• STS 1900 : Senior Seminar in Science and Society, also open to non-majors with the proper background, usually taken senior year.

Thematic Track (3)

Students will organize their course of study around the choice of a thematic track. The theme may be thought of as the applied content portion of the concentration. Students will take a minimum of three courses, at least one of which must be at an advanced level, in one of the thematic areas listed below:

• History & Philosophy of Science
• Gender & Science
• Race, Science & Ethnicity
• Health & Medicine
• Representing Science in Literature & Culture
• Policy, Persuasion & the Rhetoric of Science

Science, Technology, and Society

Students will take a minimum of four courses in one of the following scientific areas: physical sciences, life sciences, mathematics/computer science. The chosen area should provide appropriate background and support for the chosen concentration theme. The science courses will be sequenced such that a concentrator will move enough beyond the introductory level to gain some understanding of the world view of scientists within a chosen field. The particular sequence of courses which best meets the science requirement will be chosen in consultation with the concentration advisor. When necessary, the concentration advisor will seek guidance from faculty within the chosen scientific field.

Science and Technology Studies Theory (3)

Students will take three Science and Technology Studies-related courses in the social sciences and humanities. These courses, which will provide critical theoretical background for the study of Science and Society, should address questions of historiography, epistemology and methodology in the field of science and technology studies. A full list of such courses and sample concentrations may be found at https://www.brown.edu/academics/science-and-technology-studies/

Honors

To qualify for Honors a student must:

• Be in good standing
• Have completed at least two thirds of the concentration requirements by the application deadline
• Have earned a majority of “A” grades in the concentration.

Classes taken S/NC will count as qualifying towards that majority if they are marked “S with distinction” or are accompanied by a Course Performance Report (https://ask.brown.edu/ performance_reports/) indicating that had the student taken the course for a grade, the grade would have been an "A."

Courses

STS 0050. Science Fictions: The Misuse of Science in Public Life. People on all sides of the political spectrum distort or spin science to advance their own economic, policy, religious or other goals. The phenomenon is obvious today but it is not new, and it is visible on both the right and the left. In this seminar we consider what science is and how it works, how people learn about it, why they are vulnerable to spin about it (and how to avoid being spun) and how spin plays out with subjects like climate change, medicine, diet, the teaching of evolution, sex education, pollution and other issues.

STS 0050H. Communicating Science: Animating Science (BIOL 0140C). Interested students must register for BIOL 0140C.

STS 0050J. African American Health Activism from Emancipation to AIDS (AFRI 0550). Interested students must register for AFRI 0550.

STS 0050K. Pride and Prejudice in the Development of Scientific Theories (BIOL 0190P). Interested students must register for BIOL 0190P.

STS 0050L. Botanical Roots of Modern Medicine (BIOL 0190E). Interested students must register for BIOL 0190E.

STS 00500. Data, Ethics and Society (DATA 0080). Interested students must register for DATA 0080.

STS 0120. Culture and Health (ANTH 0300). Interested students must register for ANTH 0300.

STS 0140A. Water, Culture and Power (ARCH 0680). Interested students must register for ARCH 0680.


STS 0295. Equity and the Environment (ENVS 0705). Interested students must register for ENVS 0705.

STS 0360. Art and Technology from Futurism to Hacktivism (HIAA 0820). Interested students must register for HIAA 0820.

STS 0381A. History of Capitalism (HIST 0150A). Interested students must register for HIST 0150A.

STS 0382. Foods and Drugs in History (HIST 0150H). Interested students must register for HIST 0150H.

STS 0383. From Fire Wielders to Empire Builders: Human Impact on the Global Environment before 1492 (HIST 0270A). Interested students must register for HIST 0270A.

STS 0384. History of Medicine I: Medical Traditions in the Old World Before 1700 (HIST 0286A). Interested students must register for HIST 0286A.

STS 0385A. History of the Laboratory (HIST 0676A). Interested students must register for HIST 0676A.

STS 0386. History of Medicine II: The Development of Scientific Medicine in Europe and the World (HIST 0286B). Interested students must register for HIST 0286B.

STS 0400. The Phoenix and the Hummingbird: Natural History from Antiquity to Evolution. Scientists love to solve mysteries. From philosophers of antiquity to contemporary citizen naturalists, study of nature has focused on the creatures that have most puzzled humankind. These have inspired natural histories: encompassing studies covering everything that could be known about an animal—from what it symbolized and how it behaved to its place in the natural order. By looking at issues of truth and its relationship to myth, direct experience, and nature’s systematization, this seminar provides an introduction to the history of science through what naturalists have written about the more mystifying creatures in the natural world.

STS 0410. Simulating Reality: The (Curious) History and Science of Immersive Experiences (ITAL 0701). Interested students must register for ITAL 0701.

STS 0470. Digital Media (MCM 0230). Interested students must register for MCM 0230.

STS 0470A. Literally Occult: Hidden Imaginaries in Media and Theory (MCM 0902Q). Interested students must register for MCM 0902Q.

STS 0610. Inequalities and Health (SOC 0310K). Interested students must register for SOC 0310K.

STS 0610A. Environmental Sociology (SOC 0250). Interested students must register for SOC 0250.

STS 0700B. Science and Social Controversy. In this course we examine the institution of science and its relations to the social context in which it is embedded. Scientific objectivity, scientific consensus, scientific authority, and the social and moral accountability of scientists will be considered in the context of discussing such controversies as: the AIDS epidemic, climate change, science and religion, the Manhattan Project, the Tuskegee Syphilis Experiment, genetic and pharmacological enhancement, the role of drug companies in science and medicine, psychiatric diagnosis and medication, robotics, and the implications of neuroscience for free will and moral responsibility. Enrollment limited to 20 first year students and sophomores.

STS 0701. Dirty Computer: Race, Queerness, and Science Fiction. What do representations of robots and cyborgs in popular film, sci-fi literature, and music tell us about gender, sexuality, race, and what it means to be “human?” Using queer of color critique, feminist theory, disability studies, and science and technology studies (STS), we will investigate the ways that science fiction’s disruption of race, gender, and sexuality as stable categories offers radical models for our present and possible futures. Our case examples explore the politics of the body through narratives of artificial intelligence, sex work, urbanism and segregation, biotech research, prosthetics and athleticism, new reproductive technologies, and more. We will engage with poetry, film, visual art, and speculative fiction to explore how bodies are dreamed, crafted, and represented as these works re-imagine bodily and social estrangement in the present through the creation of counter-futures.

STS 0740. Health, Illness and Medicine in Spanish American Literature and Film (HISP 0750Q). Interested students must register for HISP 0750Q.

STS 0760. Poetry and Science (ENGL 0710R). Interested students must register for ENGL 0710R.

STS 0770. Stories of Nature. What is nature? Are humans part of it or outside it? How has this boundary diverged over time and space, and how has it been expressed? This seminar tackles these questions by exploring stories of nature from various epistemetic traditions. Through ten case studies, we will investigate how the human-nonhuman boundary has been expressed through storytelling in creation myths, natural histories, fiction and journalistic writing, documentaries, and artistic creations. Methodologically, we will survey how scholars have reflected on this boundary from the history of science, animal studies and indigenous studies, while learning to write stories of nature of our own. WRIT DIAP

STS 1000. Introduction to Science, Technology and Society: Theories and Controversies. What is “science”? How do scientific ideas become knowledge? What is the nature of scientific objectivity, how can it be compromised? What is a scientific community, scientific consensus, and scientific authority? What roles does science play in our culture, and how is science related to other social institutions and practices? The interdisciplinary field of science studies is introduced through exploration of topics that include: gender and race, psychiatric classification, the drug industry, science and religion, and the use of nuclear weapons during World War II. Enrollment limited to 30 sophomores, juniors, seniors; others may enroll with permission of instructor.

Spr STS1000 S01 26085 TTh 10:30-11:50(09) (D. Weinstein)

STS 1122A. Bioethics and Culture (ANTH 1242). Interested students must register for ANTH 1242.

STS 1122A. Race, Racialization, and Health (ANTH 1315). Interested students must register for ANTH 1315.

STS 1125. Anthropology of Mental Health (ANTH 1515). Interested students must register for ANTH 1515.

STS 1130A. Race and Gender in the Scientific Community (APMA 1910). Interested students must register for APMA 1910.

STS 1161. Astronomy Before the Telescope (ASYR 1600). Interested students must register for ASYR 1600.

STS 1161A. Scientific Thought in Ancient Iraq (ASYR 1725). Interested students must register for ASYR 1725.

STS 1210A. Literature and Medicine (COLT 1810P). Interested students must register for COLT 1810P.


STS 1220B. Cybersecurity Ethics (CSCI 1870). Interested students must register for CSCI 1870.

STS 1220C. Cybersecurity and International Relations (CSCI 1800). Interested students must register for CSCI 1800.
**Science, Technology, and Society**

**STS 1280A.** Neuroaesthetics and Reading (ENGL 1900Z). Interested students must register for ENGL 1900Z.

**STS 1280B.** Nature Writing (ENGL 1190U). Interested students must register for ENGL 1190U.

**STS 1281.** Nature Writing (ENGL 1190U). Interested students must register for ENGL 1190U.

**STS 1300A.** Science and Power: The Corruption of Environmental Health (ENVS 1552). Interested students must register for ENVS 1552.

**STS 1300B.** Birthing Communities (ENVS 1557). Interested students must register for ENVS 1557.

**STS 1300C.** Podcasting for the Common Good (ENVS 1421). Interested students must register for ENVS 1421.

**STS 1350A.** Reproductive In/Justice (GNSS 1510A). Interested students must register for GNSS 1510A.

**STS 1390I.** Science at the Crossroads (HIST 1825M). Interested students must register for HIST 1825M.

**STS 1390J.** From Medieval Bedlam to Prozac Nation: Intimate Histories of Psychiatry and Self (HIST 1830M). Interested students must register for HIST 1830M.

**STS 1390K.** Nature, Knowledge, Power in Renaissance Europe (HIST 1825F). Interested students must register for HIST 1825F.

**STS 1390L.** Science, Medicine and Technology in the 17th Century (HIST 1825H). Interested students must register for HIST 1825H.

**STS 1390P.** Environmental History of East Asia (HIST 1820B). Interested students must register for HIST 1820B.

**STS 1390R.** Unearthing the Body: History, Archaeology, and Biology at the End of Antiquity (HIST 1835A). Interested students must register for HIST 1835A.

**STS 1390T.** Gender, Race, and Medicine in the Americas (HIST 1977I). Interested students must register for HIST 1977I.

**STS 1570.** Technologies of and the Body - Mediated Visions (MCM 1506O). Interested students must register for MCM 1506O.

**STS 1590.** Histories of Watching and Surveying (MES 1270). Interested students must register for MES 1270.

**STS 1622.** Philosophy of Science (PHIL 1590). Interested students must register for PHIL 1590.

**STS 1625.** Philosophy of Biology (PHIL 1900). Interested students must register for PHIL 1900.

**STS 1694A.** Artists and Scientists as Partners (TAPS 1281W). Interested students must register for TAPS 1281W.

**STS 1694B.** Artists and Scientists as Partners: Theory to Practice (TAPS 1281Z). Interested students must register for TAPS 1281Z.

**STS 1700C.** Science and Technology Policy in the Global South. Junior-senior seminar exploring the relationships among science, technology, society, and public policymaking in the Global South. Exemplar countries are South Africa, Brazil, India, and China. Biotech, nanotech, public health, environment, and science training policies are among those closely examined. Three writing assignments, plus electronic conversations with counterparts in the Global South.

**STS 1700N.** Race, Science, and Society: Genomics and Beyond. Why are drugs being marketed as racial saviors? What does biotechnology have to do with race? This course introduces students to interdisciplinary approaches to the study of race in science and society as an integrated natural and social scientific endeavor. Using a team-based pedagogy, interdisciplinary groups of natural and social science concentrators will explore real-world problems like validating knowledge about racial difference, the relationship between politics and science, and the newest findings in such scientific fields as anthropology, epidemiology, and cognitive science. Enrollment limited to 20. S/N/C

**STS 1700P.** Neuroethics. In this course, we will examine ethical, social, and philosophical issues raised by developments in the neurosciences. Topics will include: neurodevelopment and the emergence of persons; the impact of child abuse on brain development; aging, brain disease, and mental decline; life extension research; strategies and technologies for enhancement of human traits; “mind-reading” technologies; agency, autonomy, and excuse from responsibility; error and bias in memory; mind control; neuroscientific and evolutionary models of religious belief and moral judgement. Enrollment limited to 20. Instructor permission required.

**STS 1700R.** Bodies at Work: Disability and Capitalism. If disability has been defined as the inability to work, then an exploration of disability necessitates an exploration of capitalism. Workplaces literally injure and disable bodies, while changing arrangements of labor define and redefine what makes something a disability, requiring new tasks of bodies at work. This course traces the dynamic relationship between bodies and economies over the course of American history from the birth of industrial management science in the nineteenth century, to the “essential worker” of the COVID-19 pandemic. Nimbling moving back and forth between disability studies and labor history, we will develop the conceptual tools to understand capitalism through the lens of disability, while also generating new ways to think about disability via critical histories of capitalism. We will also look at how disabled people have pushed back, envisioning new ways of valuing bodies beyond productivity. DIAP WRIT Fall STS1700R S01 17942 M 3:00-5:30(03) (E. Rogers)

**STS 1700S.** Crippling Technoscience: Disability, Knowledge, (Re)Invention. Just as disabled people have re-appropriated the term “crip” for their own political empowerment, so too has technoscience been both a means of oppression and transformation in disabled people’s lives. In this course, we will examine this tension. The social model of disability has long pointed out that inaccessible infrastructures and technologies literally “disable” bodies. Yet, disabled people are not just passive recipients; they also use technology for their own ends. In addition to our focus on technology, we will also look at knowledge and chronic illness: how science becomes both a tool for control and for activism. With the United States as our (general) focus, our exploration will intersect with themes such as race, sexuality, gender, and the nation-state.

**STS 1700V.** The Changing Arctic Environment: Science, Society and Politics. The Arctic has become a lens through which to understand the world. An unstable Arctic poses threats not only to the future of the Arctic but the world itself. This seminar will explore the Arctic as a region and the challenges it faces due to climate change, the rising conflicts over its vast mineral reserves, and the competing interests within the nations. The course is intended for students who are interested in Science, Technology and Society, Environmental Studies, Environmental Policy, and International Relations. There are no prerequisites for this class.

**STS 1701A.** Health Inequality in Historical Perspective (AFRI 1920). Interested student must register for AFRI 1920.

**STS 1701B.** Race, Difference and Biomedical Research: Historical Considerations (AFRI 1930). Interested students must register for AFRI 1930.
Who were the “first scientists” in the Americas?, what exactly do we mean by “science” in this context?, and what has amounted to “America” in the past? Focusing on present-day Latin America, this seminar analyses the links between the exploration of the New World and scientific discovery in the early modern period. We will explore issues of primacy (why have both empires and scientists cared about “arriving first”); the nature of science (what kind of knowledge has been considered “scientific” in different periods); and locality in knowledge production (was there something special about the New World in fostering scientific thinking).

STS 1701Q. The Fate of the Coast.
This seminar focuses on what happens when science, politics and money intersect in a highly contested venue, in this case, the coast; the nation’s most beloved and highly valued landscape. These issues form the heart of this seminar. Though the course will focus on the saltwater coasts of the contiguous 48 United States, it will also discuss the fate of low-lying island nations and other countries vulnerable to sea level rise; engineering efforts around the world to cope with the problem; and legal issues relating to climate refugees here and abroad, driven from their homes by rising seas.

STS 1702A. Social Impact of Emerging Technologies: The Role of Engineers (ENGN 1931J).
Interested students must register for ENGN 1931J.

STS 1705. The Medium(s) of Animation: Plasticity, Labor, Technology.
It is by no means a coincidence that early animators such as Emile Cohl, Winsor McCay and the Fleischer brothers brought to life scientific theories of evolution and neuropathology in their pioneering experiments. Beginning with the birth of animation as an industrial art form, this course will focus your attention on the technical mediums in which biological plasticity became an object of scientific knowledge, aesthetic experience, and political governance. While learning about a range of animation forms and techniques in their historical contexts, we will think deeply about the thrills and terrors of our own plasticity made suddenly perceptible through transformative encounters with new media technologies.

STS 1720. Anthropology of Addictions and Recovery (ANTH 1300).
Interested students must register for ANTH 1300.

STS 1721. Anthropology of Addictions and Recovery (ANTH 1300).
Interested students must register for ANTH 1300.

STS 1726. Reimagining Climate Change (ANTH 1601).
Interested students must register for ANTH 1601.

STS 1771A. The Anthropocene: The Past and Present of Environmental Change (ENVS 1910).
Interested students must register for ENVS 1910.

STS 1771B. Wasted: Rethinking Chemical Environments (ENVS 1926).
Interested students must register for ENVS 1926.

Interested students must register for ENVS 1925.

STS 1790F. Special Topics in Ancient Sciences (ASYR 2700).
Interested students must register for ASYR 2700.

STS 1790G. Medical Anthropology (ANTH 2230).
Interested students must register for ANTH 2230.

STS 1790L. Data and Society (DATA 2080).
Interested students must register for DATA 2080.

STS 1790J. Privacy and Personal Data Protection (CSCI 2002).
Interested students must register for CSCI 2002.

Interested students must register for HMAN 1974R.

STS 1802A. Planning the Family (HMAN 1975G).
Interested students must register for HMAN 1975G.

STS 1840. Philosophy of Quantum Mechanics (PHIL 1775).
Interested students must register for PHIL 1775.

Interested students must register for MCM 1701J.

STS 1900. Senior Seminar in Science, Technology and Society.
This is an advanced seminar that uses a Problem Based Learning style pedagogy to explore real-world problems in STS. To solve assigned problems students will want to explore critical scholarship in areas such as laboratory studies, feminist science and technology studies, the rhetoric and discourse of science and technology, expertise and the public understanding of science. Course is intended for Science and Society senior concentrators, but is open to others with appropriate background. Enrollment limited to 20.
Fall STS1900 S01 172726 T 4:00-6:30(07) ‘To Be Arranged’

Independent reading and research work in Science and Society is available to students who have completed introductory and intermediate level work in Science and Society. A decision to enroll must be made via consultation with the concentration advisor and the faculty advisor for the course. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Prerequisite: STS 1400. Open to junior and senior concentrators in Science and Society; instructor permission required.

Independent reading and research work in Science and Society is available to students who have completed introductory and intermediate level work in Science and Society. A decision to enroll must be made via consultation with the concentration advisor and the faculty advisor for the course. Section numbers vary by instructor. Please check Banner for the correct section number and CRN to use when registering for this course. Prerequisite: STS 1400. Open to junior and senior concentrators in Science and Society; instructor permission required.

STS 2385. Environmental Sociology (SOC 2385).
Interested students must register for SOC 2385.

STS 2400I. Environmental Humanities (HMAN 2400I).
Interested students must register for HMAN 2400I.

STS 2700A. The Politics of Knowledge (HIST 2981F).
Interested students must register for HIST 2981F.

STS 2700D. Race and Species (HIST 2981T).
Interested students must register for HIST 2981T.

STS 2700F. Special Topics in Ancient Sciences (ASYR 2700).
Interested students must register for ASYR 2700.

STS 2700G. Medical Anthropology (ANTH 2230).
Interested students must register for ANTH 2230.

STS 2700L. Data and Society (DATA 2080).
Interested students must register for DATA 2080.

Interested students must register for CSCI 2002.