

Science, Technology and Society, B.S.

The Major in Science, Technology and Society

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Overview

Science and technology are among the most powerful transformative forces in today's global society. They shape the way we think about ourselves, the world around us, and even what is possible in the future. They are also integral to nearly every major societal challenge we face today: the changing nature of work and employment, the challenges of a globalized economy, global pandemics, war crimes and human rights violations, the trustworthiness of information, race and racism, genetic modification, big data and surveillance, urban infrastructure, and the climate crisis, among others. The B.S. in Science, Technology, and Society (STS) examines these complex interactions of science and technology with social, cultural, and economic systems through a fundamentally humanistic lens.

The STS major introduces students to theories and methods from the humanities and social sciences (history, anthropology, sociology, and philosophy) that enable them to better understand how science and technology both shape—and are shaped by—the social contexts from which they emerge and are deployed.

The major is designed to build intellectual bridges across the university. For students in scientific and technical disciplines, STS provides the intellectual framework and the social and cultural perspectives needed to meaningfully reflect on what they are learning in their classrooms and laboratories, and to understand the implications of that knowledge. For students who are primarily grounded in the humanities and arts, STS provides the knowledge needed to meaningfully engage in debates about the impact of science and technology on humanity and the world we inhabit, and to advocate for better outcomes in research, development, and deployment of new knowledge and technologies.

All majors take Introduction to Historical Research & Writing (79-200, 9 units) and the capstone Advanced Seminar in History (79-420, 12 units), where they conduct individualized projects using archival and other primary sources. Several students often publish the results of their research, and we are exploring new ways to facilitate future publication of students' research in both undergraduate and professional history forums.

STS majors may pursue independent work through our Summer Undergraduate Research Assistantship (SURA) program, and they are also encouraged to consult the global collections available through CMU's membership with the Consortium for the History of Science, Technology, and Medicine (CHSTM).

STS may be elected as a **primary** or an **additional** major; the requirements for each are the same.

Curriculum

All students in the STS major are required to complete two reading- and writing-intensive courses: Introduction to Historical Research & Writing (79-200, 9 units), and Advanced Seminar in History (79-420, 12 units), which is regularly offered in the Fall semester of the senior year. Students must earn a final grade of "C" or better in these two courses in order to fulfill the requirements for the STS major.

Students in the STS major are also required to take at least one of the following general education courses: Introduction to the History of Science (79-160, 9 units) or Introduction to Science, Technology, and Society (79-170, 9 units). In addition, students must take two historical *survey courses* from a wide range of attractive options that include most major regions of the world. Otherwise, students enjoy great flexibility: they are

free to take additional survey courses or to specialize in thematic topics or regions of the world that are of special interest to them.

Students may "double-count" a maximum of four courses for the STS major that are used to fulfill the requirements of other majors and programs—with the notable exception of the Ethics, History, and Public Policy major, for which a student can double-count a maximum of two courses.

The Major in Science, Technology and Society 93 units

I. Required General Education Course		9 units
		Units
79-160	Introduction to the History of Science	9
79-170	Introduction to Science, Technology, and Society	9
II. Required History Department Courses		21 units
79-200	Introduction to Historical Research & Writing	9
79-420	Advanced Seminar in History	12
III. Required Survey Courses (choose two)		18 units
79-110	Introduction to the Medieval Mediterranean World	9
79-112	Introduction to Asian American History	9
79-116	Introduction to the Modern Middle East	9
79-120	Introduction to African American History: Black Americans and the World	9
79-145	Genocide and Weapons of Mass Destruction	9
79-174	Introduction to Latin America	9
79-189	Democracy and History: Thinking Beyond the Self	9
79-203	The Other Europe: The Habsburgs, Communism, & Central/Eastern Europe, 1740-1990	9
79-205	20th Century Europe	9
79-206	Crime and Punishment in Early Modern Europe	9
79-211	Modern Southeast Asia: Colonialism, Capitalism, and Cultural Exchange	9
79-212	Jim Crow America	9
79-223	Mexico: From the Aztec Empire to the Drug War	9
79-225	West African History in Film	9
79-226	African History: Earliest Times to 1780	9
79-227	Modern Africa: The Slave Trade to the End of Apartheid	9
79-240	U.S. History and Culture	9
79-241	The Holocaust: What You Should Know and Why	9
79-242	African American History: Reconstruction to the Present	9
79-245	Capitalism and Individualism in American Culture	9
79-248	U.S. Constitution & the Presidency	9
79-249	20th Century U.S. History	9
79-250	Voting Rights: An Introduction	9
79-255	Modern Ireland: Politics and Culture from the Famine (1847) to Today	9
79-260	Nazi Germany: A Practical History	9
79-261	The Last Emperors: Chinese History and Society, 1600-1900	9
79-262	Modern China: From the Birth of Mao ... to Now	9
79-265	Russian History: Game of Thrones	9
79-266	Russian History and Revolutionary Socialism	9
79-269	Russian History: From Socialism to Capitalism	9
79-270	Anti-Semitism Then and Now: Perspectives from the Middle Ages to the Present	9
79-272	Coexistence and Conflict: Muslims, Christians and Jews in Spain and Portugal	9
79-288	Bananas, Baseball, and Borders: Latin America and the United States	9
79-320	Women, Politics, and Protest	9
79-329	Introduction to Queer Studies	9

IV. Electives in Science, Technology, and Medicine 27 units

The B.S. in Science, Technology and Society is appropriate for those students who wish to focus their studies on the history and anthropology of science, technology, and medicine. Therefore, STS majors must fulfill their program's elective requirement by completing at least 27 units from the approved list of science-, medicine- and/or technology-focused courses below. Any courses not listed below may be accepted through petitioning the Academic Program Manager, Dr. Alexandra Garnhart-Bushakra, and such courses will require the endorsement of Director of Undergraduate Studies, Professor Ricky Law.

79-150	Medieval Science, Magic, and Wonders of Nature	9
79-175	Moneyball Nation: Data in American Life	9
79-176	Telegraphs, Tapes & TikTok: Technology and Revolutions in the Modern Middle East	6
79-202	Flesh and Spirit: Early Modern Europe, 1400-1750	9
79-204	American Environmental History	9
79-208	Witchcraft and Witch-Hunting	9
79-213	The American Railroad: Decline and Renaissance in the Age of Deregulation	6
79-215	Environmental Justice from Conservation to Climate Change	9
79-221	From Compton to Kabul: Sound, Power, and Global History	9
79-234	Technology and Society	9
79-278	How (Not) to Change the World	9
79-280	Coffee and Capitalism	9
79-283	Anthropology of Energy	9
79-289	Animal Planet: An Environmental History of People and Animals	9
79-297	Technology and Work	9
79-302	Killer Robots? The Ethics, Law, and Politics of Drones and A.I. in War	9
79-303	Pittsburgh and the Transformation of Modern Urban America	9
79-304	History of Eugenics and Scientific Racism	9
79-315	The Politics of Water in Global Perspective	9
79-330	Medicine and Society: Health, Healers, and Hospitals	9
79-331	Body Politics: Women and Health in America	9
79-332	Medical Anthropology	9
79-357	Science and the Body	6
79-365	Race, Medicine, and Civil Rights	9
79-368	Un-natural Disasters: Societies and Environmental Hazards in Global Perspective	6
79-370	Technology in the United States	9
79-375	Science & Religion	6
79-380	Hostile Environments: The Politics of Pollution in Global Perspective	9
79-381	The Multispecies City: Anthropology of Urban Environments	9

V. Courses in Other Departments that Fulfill STS Elective Requirements (at least 18 units)

In addition, students who elect to earn a B.S. in Science, Technology and Society degree should complete at least two courses in a scientific or technical discipline, which may be drawn from CMU-approved coursework in mathematics, statistics, biology, ecology, geology, physics, astronomy, and chemistry. These courses may be chosen from the list below, or by petitioning the Academic Program Manager, Dr. Alexandra Garnhart-Bushakra, to accept equivalent courses as substitutions. (Note that some of the courses may have prerequisites established by the departments offering them. Students should consult with the academic advisor about how such prerequisites may affect their course of study.)

36-202	Methods for Statistics & Data Science	9
or 70-208	Regression Analysis	
36-303	Sampling, Survey and Society	9
36-309	Experimental Design for Behavioral & Social Sciences	9
70-257	Optimization for Business	9
80-305	Game Theory	9
80-306	Decision Theory	9
88-221	Markets, Democracy, and Public Policy	9

88-223	Decision Analysis	12
88-251	Empirical Research Methods	9
88-300	Programming and Data Analysis for Social Scientists	9

Sample Curriculum

First-Year		Second-Year	
Fall	Spring	Fall	Spring
79-160 Introduction to the History of Science	STS Survey Course	STS Survey Course	STS Elective Course
First-Year Writing Requirement	36-200 Reasoning with Data	General Education Course	General Education Course
Grand Challenge Seminar	General Education Course	General Education Course	Third Course (open)
General Education Course	Fourth Course (open)	Fourth Course (open)	Fourth Course (open)
General Education Course	Fifth Course (open)	Fifth Course (open)	Fifth Course (open)
99-101 Core@CMU			

Third-Year		Fourth-Year	
Fall	Spring	Fall	Spring
79-200 Introduction to Historical Research & Writing	STS Elective Course	79-420 Advanced Seminar in History	STS Elective Course
STS Elective Course	STS Elective Course	Second Course (open)	Second Course (open)
General Education Course	General Education Course	Third Course (open)	Third Course (open)
General Education Course	Fourth Course (open)	Fourth Course (open)	Fourth Course (open)
Fifth Course (open)	Fifth Course (open)	Fifth Course (open)	Fifth Course (open)

The table above represents a four-year plan for completing all requirements for the STS Major. Students may declare the major and begin course requirements as early as the second semester of their first year. Students should meet with the department's Academic Advisor, Beth Jameson, Department of History, Baker Hall 240A, for both short- and long-term course planning.

*Some STS majors choose to apply for the senior honors thesis program. The department strongly encourages students to take advantage of this option.

VI. History Internship 3-9 units

79-505	Social & Political History Internship	3-9
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The History program strongly encourages students to locate internship opportunities in Pittsburgh or elsewhere that complement their historical interests (as, for example, in a museum or historical society) or in areas of policy research that complement their historical interests (as, for example, in a government agency or non-profit organization that promotes science education and outreach). The Academic Program Manager, Dr. Alexandra Garnhart-Bushakra, will assist students with matching their interests to local organizations. STS students can earn up to 9 units in each internship. Up to 9 history internship credits may count toward fulfillment of elective course requirements for the STS major.

VII. Additional Major in Science, Technology and Society

The STS Major may be scheduled as an additional major in consultation with the Academic Advisor, Beth Jameson, History Department, Baker Hall 240A. To reiterate, the requirements for STS as either a primary or an additional major are the same.