SCIENCE, TECHNOLOGY, AND SOCIETY

Director, Professor James Fleming

Advisory Committee: Professors Daniel Cohen (Philosophy), James Fleming (Science, Technology, and Society), Fernando Gouvêa (Mathematics and Statistics), Russell Johnson, (Biology), Paul Josephson (History), Dale Skrien (Computer Science), Judy Stone (Biology), and Dasan Thamattoor (Chemistry); Associate Professors Chandra Bhimull (Anthropology and African-American Studies), Melissa Glenn (Psychology), Jonathan Hallstrom (Music), Laura Saltz (American Studies), Tanya Sheehan (Art), and Andrea Tilden (Biology); Assistant Professors Matthew Archibald (Sociology), Keith Peterson (Philosophy), and Gianluca Rizzo (French and Italian); Faculty Members without Rank Lauren Lessing (Museum of Art) and Elizabeth Finch (Museum of Art)

Science, Technology, and Society (STS) is an exciting interdisciplinary field of study grounded in the history, philosophy, anthropology, and sociology of science and technology. It examines deep cultural roots of our technoscientific society and addresses pressing public policy issues. It constitutes a fundamental aspect of a liberal arts education and is excellent preparation for graduate study or future employment opportunities.

Science and technology have become increasingly important components of our world, changing the ways we live, work, and think. The well-being of individuals, nations, and ultimately our Earth depends in part on technoscientific developments that are part of the process shaping both the social fabric and the natural environment, both in America and globally.

Following an introductory core course, students in the STS Program choose from a variety of electives and complete a year-long senior research project. By doing so they gain an understanding of the historical and social dimensions of science and technology, become better-informed citizens of our high-tech society, and they hone critical and valuable interdisciplinary skills involving writing, speaking, and creative thinking. Students pursuing a major or minor in STS require no special technical expertise.

Requirements for the Major in Science, Technology, and Society

The STS major has a core curriculum based on the research and teaching interests of the faculty. All courses are either U.S. or internationally focused and either science or technology focused. Majors must take three required courses and choose a minimum of eight electives from the list of STS-approved courses below. Courses taken abroad or otherwise not on this list require the approval of the STS Program director.

- ST 112: Introduction to STS (required)
- ST 485: Technology Matters (required)
- ST 486: Senior Project: The Craft of Research or ST 484 Honors (required)
- One 200-level or higher course in natural science or computer science beyond the all-College requirement
- One STS internationally focused course (designated I)
- One STS U.S.-focused course (designated U)
- One STS science-focused course (designated S)
- One STS technology-focused course (designated T)
- Three approved STS electives

Electives are chosen from the list of STS approved courses to fulfill the I, U, S, and T foci, but a course that satisfies two or more foci may not be counted twice. In choosing the eight electives, students must take a minimum of three courses designated or cross-listed as ST. A student may not count more than two 100-level electives toward the major.

Senior Projects

All senior STS majors will take ST 485, which will prepare them for research through seminar readings, literature reviews, and proposal writing. This is the first part of a yearlong capstone experience in which students design and complete a final integrative project in science, technology, and society. This is followed by ST 486, an intensive research and writing experience with final public presentations. Any member of the faculty may serve as an advisor for STS senior projects.

Honors in Science, Technology, and Society

Students with a 3.5 GPA in the major (and at least 3.25 GPA overall) may request permission to undertake an honors thesis. They will enroll in STS 485 and meet with other STS seniors to prepare a literature review and proposal, which must be approved by a panel of faculty members. Students continuing in the honors program will enroll in STS 484 under the supervision of an advisor and second reader. Upon successful completion of the thesis and fulfillment of all requirements for the major, and, if a 3.5 GPA in the major is maintained, the student will be invited to deposit a copy of his or her thesis in Miller Library and will graduate with "Honors in Science, Technology, and Society."

Requirements for the Minor in Science, Technology, and Society

Science, Technology, and Society 112, 485, 486, two other STS courses, and at least two courses from the list of STS approved courses.
# List of STS Approved Courses

* Key: International = I; U.S. = U; Science = S; Technology = T

## Anthropology
- 112 Cultural Anthropology I
- 256 Land, Food, Culture, and Power I
- 341 Culture, Mobility, Identity I

## Art
- 252 Medicine and Visual Culture U, S
- 285 History of Photography I, T
- 454 American Art and Science U, S

## Biochemistry
- 362 Medical Biochemistry S

## Biology
- 133 Microorganisms and Society U, S
- 164 Evolution and Diversity S
- 259 Plants of the Tropics I S
- 274 Neurobiology S
- 275 Human Physiology S

## Chemistry
- 112 Chemistry for Citizens U, S
- 217 Environmental Chemistry S

## Computer Science
- 151 Computational Thinking T
- 232 Computer Organization T

## Economics
- 231 Environmental and Natural Resource Economics U
- 341 Natural Resource Economics U, S

## Environmental Studies
- 118 Environment and Society U
- 234 International Environmental Policy I
- 265 Global Public Health I
- 271 Introduction to Ecology S
- 319 Conservation Biology S
- 366 Environment and Human Health I, T
- 494 Problems in Environmental Science S

## History
- 245 Science, Race, and Gender S
- 246 Luddite Rantings U, I, T
- 364 Environmental and Health History in Africa I, S
- 394 Ecological History I, S
- 443 Research Seminar: 20th-Century Environmental History I, U, S, T
- 445 Research Seminar: Nuclear Madness I, U, T

## Mathematics
- 376 History of Mathematics S

## Philosophy
- 126 Philosophy and the Environment U, S
- 213 Philosophical Inquiries into Race I, S
- 217 Feminism and Science S
- 317 Philosophy of Science S
- 318 Philosophy of Nature S
• 328 Radical Ecologies S

*Psychology*

• 233 Biological Basis of Behavior S

*Russian*

• 232 Science Fiction in the Great Utopia I

*Science, Technology, and Society*

• 112 Science, Technology, and Society (required)
• 215 Weather, Climate, and Society I, U, S, T
• 271 History of Science in America U, S
• 297 Human/Nature in the 21st Century I, U, S, T
• 484 Honors in STS
• 485 Technology Matters (required)
• 486 Senior Project: The Craft of Research (required)
• 491/492 Independent Study

*Sociology*

• 131 Introduction to Sociology U
• 256 Global Health I
• 258 Health and Medicine U
• 261 Sociology of Organizations U
• 361 Substance Use and Abuse U

**Course Offerings**

**ST112s  Science, Technology, and Society** Critical perspectives on the social aspects of science and technology in our lives, in the world around us, and throughout history. Issues include gender, communications, war, and the environment.  *Four credit hours.*  S.

**ST197f  Human/Nature Arts and Humanities Lab** How are the terms “human” and “nature” interrelated and how is their relationship changing? We like to think of the interaction as a peaceful one, as one of balance and mutually beneficial coexistence, but the word “slash” can help us remember that more often than not violence is the mode of interaction. This Arts and Humanities laboratory and public lecture series features visiting scholars and Colby faculty from a variety of fields, including history, art, and philosophy, addressing fundamental aspects of human experience, such as food, architecture, war, and planetary futures. Who is ultimately in charge? Students will discuss weekly topics on a course weblog.  Nongraded.  Human/Nature humanities lab.  *One credit hour.*  FLEMING, RIZZO

**ST120f  Cognitive Science of Religion** Religion is deeply puzzling from the perspective of evolutionary biology. The practice of religion takes time and energy, and yet it does not have any clear adaptive benefits: evolutionarily, gathering food is more rewarding than kneeling in prayer. So, how did religion become a universal if it is so costly? We explore both the psychology of religion and recent attempts to understand its evolutionary history.  *Four credit hours.*  S, W1.

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*ST215  Weather, Climate, and Society*  A scientific introduction to the Earth’s atmosphere and historical and social issues related to weather and climate. Topics include the atmosphere’s composition, structure, and dynamics; air pollution; ozone depletion; natural disasters; and climate change. Includes lectures, an exam, quizzes, short essays, and a group project to be presented in a final poster session.  *Four credit hours.*  N.

**ST216s  Philosophy of Nature** Listed as Philosophy 216.  *Four credit hours.*  PETERSON

**ST217  Feminism and Science** Listed as Philosophy 217.  *Four credit hours.*  S, U.

**ST233f  Biological Basis of Behavior** Listed as Psychology 233.  *Four credit hours.*  GLENN
ST245f  Science, Race, and Gender  Listed as History 245.  Four credit hours.  N, U.  JOSEPHSON

ST246s  Luddite Rantings: A Historical Critique of Big Technology  Listed as History 246.  Four credit hours.  H, U.  JOSEPHSON

[ST252]  Medicine and Visual Culture  Listed as Art 252.  Four credit hours.  A.

[ST256]  Global Health  Listed as Sociology 256.  Four credit hours.

[ST258]  Health and Medicine  Listed as Sociology 258.  Four credit hours.

[ST261]  Sociology of Organizations  Listed as Sociology 261.  Four credit hours.  S.

[ST271]  History of Science in America  A seminar on the social, intellectual, and institutional development of science in America from native contact to the present. Topics include scientists’ roles in government, education, and industry; science in war; women in science; and the emergence of America as a leading scientific nation.  Four credit hours.  H.

ST285s  History of Photography  Listed as Art 285.  Four credit hours.  A.  SALTZ

ST297f  Human/Nature in the 21st Century  A seminar and humanities laboratory with a coordinated evening lecture series open to students and the general public, offered with the support of the Arts and Humanities Center and the Colby Museum of Art. What does it mean to be human in an era of nearly incomprehensible technological complexity and change? Are there universal laws of nature and human nature, or is everything up for grabs? Is technoculture making things different in degree or in kind? Examines contemporary human-nature interactions and historical pathways leading to the current situation. Provides critical links and synergies between and among disciplines. Human/Nature humanities lab.  Prerequisite: Concurrent registration in Science, Technology, and Society 197.  Three credit hours.  FLEMING

[ST317]  Philosophy of Science  Listed as Philosophy 317.  Four credit hours.

ST341f  Culture, Mobility, Identity: Encounters in the African Diaspora  Listed as Anthropology 341.  Four credit hours.  S, I.  BHIMULL

ST361j  Special Topics in Health and Medicine: Substance Use and Abuse  Listed as Sociology 361.  Three credit hours.  ARCHIBALD

[ST364]  Environmental and Health History in Africa  Listed as History 364.  Four credit hours.  H.

[ST394]  Ecological History  Listed as History 394.  Four credit hours.  H.


[ST445]  Research Seminar: Nuclear Madness  Listed as History 445.  Four credit hours.  H.

ST454s  American Art and Science  Listed as Art 454.  Four credit hours.  SHEEHAN

ST485f  Technology Matters  Seminar emphasizing classical, enduring issues involving the social study of science and technology. A senior capstone in preparation for a career. Students design, propose, and initiate a year-long project through broad reading, seminar discussions, written think pieces, a book review, thorough literature search, and preparation of a proposal and exploratory essay. Completion, typically in the spring but including a possible January internship, requires intensive research, writing, and presentation at a public seminar. Research funding may be available. Goal is to complete a project the student finds exciting and challenging and that will solidify her/his ability to conduct interdisciplinary research.  Prerequisite: Senior standing and a W1 course.  Four credit hours.  W3.  FLEMING

ST486s  Senior Project: The Craft of Research  Written and oral communication of research. Students complete a final integrative
project and present a public seminar. **Prerequisite:** Science, Technology, and Society 485.  **Four credit hours.**  FLEMING

**ST491f, 492s  Independent Study**  Independent study in areas in which the student has demonstrated the interest and competence necessary for independent work. **Prerequisite:** Permission of the instructor and the program director.  **One to four credit hours.**

FACULTY