Science, Technology, and Society

As our students enter into a world of accelerating change, it has become ever more important that these future scientists, engineers, computer and data scientists, health care practitioners, social scientists, teachers, policymakers, and more be able to reason about the social and ethical implications of science and technology in their fields and in public life. The Undergraduate Minor in Science, Technology, and Society (STS) brings Berkeley undergraduates to the forefront of understanding the global impact of science, technology and medicine-related challenges.

The STS Minor provides students critical thinking skills to effectively contribute to a world shaped by computing and artificial intelligence, environmental change, new medical technologies, and genetic engineering. Students engage with current technoscientific issues in historical context, develop capacities to examine scientific and technical processes, and practice speaking about them effectively to multidisciplinary audiences.

Declaring the Minor

To declare the minor:

1. Complete the core course with a C (2.0) or better. In Spring 2022, the core course is HISTORY 182A. After Spring 2022, the core course is STS C100.
2. Complete the STS Minor Application (https://docs.google.com/forms/d/e/1FAIpQLSeRESHsqR25fmoZ0rOC4jldtVJVGfYFenFfgEcnuiu740ScFw/viewform/), listing your proposed (or any already-taken) elective courses, to declare the minor by the deadline listed above.

The STS Minor advisor will notify the student whether their proposal satisfies the requirements for the minor, and will advise the student on their proposed self-designed pathway, if applicable.

General Guidelines

1. All minors must be declared before the first day of classes in your Expected Graduation Term (EGT). For summer graduates, minors must be declared prior to the first day of Summer Session A.
2. All upper-division courses must be taken for a letter grade.
3. A minimum of three of the upper-division courses taken to fulfill the minor requirements must be completed at UC Berkeley.
4. A minimum grade point average (GPA) of 2.0 is required in the upper-division courses to fulfill the minor requirements.
5. Courses used to fulfill the minor requirements may be applied toward the Seven-Course Breadth requirement, for Letters & Science students.
6. No more than one upper division course may be used to simultaneously fulfill requirements for a student’s major and minor programs.
7. All minor requirements must be completed prior to the last day of finals during the semester in which the student plans to graduate. If students cannot finish all courses required for the minor by that time, they should see a College of Letters & Science adviser.
8. All minor requirements must be completed within the unit ceiling. (For further information regarding the unit ceiling, please see the College Requirements tab.)

To complete the STS minor:

1. Complete four upper-division electives toward the minor. See below for suggested paths through the minor and elective options.
2. Petition (FORTHCOMING) to have STS any elective courses not currently on the approved list (if any) included in your minor. These must be upper-division or graduate-level courses.
3. Complete the STS Minor Application (FORTHCOMING) with all upper-division elective terms and grades entered to complete the minor by the deadline listed above.
4. NOTE: If you will be completing courses toward the minor during your graduating semester, please email cstms@berkeley.edu to let us know by the deadline listed above. Then, complete the STS Minor Application form as soon as your grades are posted and email cstms@berkeley.edu again.

Program Requirements and Recommendations

Students must take one required upper-division core course and four upper-division elective courses that relate to Science, Technology, and Society and are taught by affiliated faculty.

Students have the option to choose one of four pathways through the Minor, selecting their four electives from among the approved courses in that pathway, or to design their own pathway in consultation with the Minor Advisor. Each elective may be no fewer than 3 units. See below for a list of approved upper-division elective courses.

A lower-division gateway course of HISTORY 30, DATA 4AC, ANTHRO 84, and/or ISF 60 for the minor is recommended but not required. These courses serve as channels to the Minor, familiarizing students with fundamental STS topics and setting them up to succeed in the Minor.

Pathways through the STS Minor

Students may follow one of four recommended pathways through the Minor, detailed below, or propose their own pathway in consultation with the STS Minor Advisor when declaring the Minor. These pathways draw on approved course offerings curated by the Center for Science, Technology, Medicine and Society and offer guidance on how the STS Minor complements popular majors on campus including computer science, data science, molecular and cell biology, sociology, history, environmental studies, and more. They have been developed in consultation with the STS faculty across UC Berkeley. They are:

1. History and Philosophy of Science
2. Medicine, the Body, and Society
3. Environmental Change and Society
4. The Human Contexts of Data and Computing
A list of courses for each pathway is provided below.

**Course Policies Regarding the STS Minor**

One of the four elective courses that counts toward the minor can be taken outside UC Berkeley (pending the approval of the undergraduate minor advisor); the rest must be taken at UC Berkeley and cannot be transferred from other institutions. The core course must be taken at UC Berkeley.

Students must take all five minor courses for a letter grade, and maintain an average of 2.0 in those courses, to fulfill the minor. There is no overall minimum GPA requirement to declaring or completing the minor.

Students may use a single course from a single major to satisfy a minor requirement. The overlapping course must not exceed four units.

**Upper-Division Elective Courses for the STS Minor**

Following is a list of courses in each of the predefined pathways of the STS Minor, as well as a full list of STS-related courses that can be used as electives for the Minor if a student chooses to build their own pathway.

Upper-division and graduate-level STS-related courses not currently on the list of approved electives can be approved by petition to the STS Minor advisor. Students must submit the syllabus of the course with their petition. Eligible courses must be at least three units and be taken for a letter grade.

**Courses for the STS Minor Pathways**

Students who choose one of the pathways through the STS Minor will choose from the following courses to complete the Minor:

1. **THE HISTORY AND PHILOSOPHY OF SCIENCE**
   - ANTHRO 155 Modernity
   - HISTORY 100S Special Topics in the History of Science
   - HISTORY 138 History of Science in the U.S.
   - HISTORY 180 The Life Sciences since 1750
   - HISTORY 182C Introduction to Science, Technology, and Society
   - HISTORY C191 Death, Dying, and Modern Medicine: Historical and Contemporary Perspectives
   - INFO 103 History of Information
   - LD ARCH C171 The American Designed Landscape Since 1850
   - PHILOS 121 Moral Questions of Data Science
   - POLECON W160/Political Economy in Historical Context: The Twentieth Century: Economies, Societies, Polities, Technologies
   - RHETOR 107 Rhetoric of Scientific Discourse
   - RHETOR 115 Technology and Culture
   - RHETOR 145 Science, Narrative, and Image

2. **MEDICINE, THE BODY, AND SOCIETY**
   - ANTHRO 115 Introduction to Medical Anthropology
   - ANTHRO 119 Special Topics in Medical Anthropology
   - CHICANO 176 Chicano and Health Care
   - BIO ENG 100 Ethics in Science and Engineering
   - DEMOG C126 Sex, Death, and Data
   - ENGLISH 172 Literature and Psychology
   - ESPM 162 Bioethics and Society
   - ESPM 162A Health, Medicine, Society and Environment
   - GWS 130AC Gender, Race, Nation, and Health
   - GWS 131 Gender and Science
   - HISTORY 183A Disease, Health and Medicine in American History
   - HISTORY C191 Death, Dying, and Modern Medicine: Historical and Contemporary Perspectives
   - INTEGBI 117 Medical Ethnobotany
   - LEGALST 151 Law, Self, and Society
   - LEGALST 156 Bioethics and the Law
   - LEGALST 168 Sex, Reproduction and the Law
   - L & S 180AC Archaeology of Sex and Gender
   - PB HLTH 116 Seminar on Social, Political, and Ethical Issues in Health and Medicine
   - PB HLTH C155 Sociology of Health and Medicine
   - SOCIOL C115 Sociology of Health and Medicine
   - SOCIOL 115G Health in a Global Society
   - UGIS 110 Introduction to Disability Studies
   - UGIS C133 Death, Dying, and Modern Medicine: Historical and Contemporary Perspectives

3. **ENVIRONMENTAL CHANGE AND SOCIETY**
   - ANTHRO 137 Energy, Culture and Social Organization
   - ENE,RES W100 Energy and Society
   - ENE,RES 101 Ecology and Society
   - ENE,RES 131 Data, Environment and Society
   - ENE,RES 171 California Water
   - ENGIN 157AC Engineering, The Environment, and Society
   - IAS 157AC Engineering, The Environment, and Society
   - ENGLISH 180Z Science Fiction
   - ESPM 151 Society, Environment, and Culture
   - ESPM 161 Environmental Philosophy and Ethics
   - ESPM 163AC Environmental Justice: Race, Class, Equity, and the Environment
   - ESPM C167 Environmental Health and Development
   - GEOG 108 The Rise and Fall of the Fossil Fuel Economy
   - GEOG 130 Food and the Environment
   - LD ARCH C171 The American Designed Landscape Since 1850
   - PB HLTH 101 A Sustainable World: Challenges and Opportunities
   - SOCIOL C137AC Environmental Justice: Race, Class, Equity, and the Environment

4. **THE HUMAN CONTEXTS OF DATA AND COMPUTING**
   - AFRICAM 134 Information Technology and Society
   - AFRICAM 134L Information Technology and Society
   - AFRICAM 136L Criminal Justice and Surveillance in America
   - BIO ENG 100 Ethics in Science and Engineering
Courses for Students Building Their Own Pathways

This is a broad list of courses that students should reference if they elect to build their own pathway through the Minor, in collaboration with the Minor advisor.

<table>
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<tr>
<th>African American Studies</th>
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| AFRICAM 112A            |  | Political and Economic Development in the Third World
| or AFRICAM 114          |  | Political and Economic Development in the Third World
| AFRICAM 134             |  | Information Technology and Society
| or AFRICAM C136         |  | Information Technology and Society
| AFRICAM 136L            |  | Criminal Justice and Surveillance in America
| AFRICAM 181AC Prison    |  |

<table>
<thead>
<tr>
<th>American Studies</th>
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| AMERSTD 101             |  | Examining U.S. Cultures in Time
| AMERSTD C134            |  | Information Technology and Society
| AMERSTD C172            |  | History of American Business
|                       |  |

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<tr>
<th>Anthropology</th>
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| ANTHRO 115              |  | Introduction to Medical Anthropology
| ANTHRO 119              |  | Special Topics in Medical Anthropology
| ANTHRO 137              |  | Energy, Culture and Social Organization
| ANTHRO 150              |  | Utopia: Art and Power in Modern Times
| ANTHRO 155              |  | Modernity
|                       |  |

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<tr>
<th>Bioengineering</th>
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| BIO ENG 100             |  | Ethics in Science and Engineering
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<tr>
<th>Chicano Studies</th>
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| CHICANO 176             |  | Chicanos and Health Care
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<tr>
<th>Data Science</th>
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| DATA C104               |  | Human Contexts and Ethics of Data - DATA/History/STS
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<th>Demography</th>
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| DEMOG C126              |  | Sex, Death, and Data
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<tr>
<th>Digital Humanities</th>
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| DIGHUM 100              |  | Theory and Method in the Digital Humanities
|                       |  |

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<th>Energy and Resources Group</th>
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| ENE,RES W100             |  | Energy and Society
| ENE,RES 101              |  | Ecology and Society
| ENE,RES 131              |  | Data, Environment and Society
| ENE,RES 171              |  | California Water
|                       |  |

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<thead>
<tr>
<th>Engineering</th>
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| ENGIN 125               |  | Ethics, Engineering, and Society
| ENGIN 157AC             |  | Engineering, The Environment, and Society
|                       |  |

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<tr>
<th>English</th>
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| ENGLISH 145             |  | Writing Technology
| ENGLISH 172             |  | Literature and Psychology
| ENGLISH 180Z            |  | Science Fiction
|                       |  |

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<tr>
<th>Environmental Science, Policy and Management</th>
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</table>
| ESPM 151                                     |  | Society, Environment, and Culture
| ESPM 161                                     |  | Environmental Philosophy and Ethics
| ESPM 162                                     |  | Bioethics and Society
| ESPM 162A                                   |  | Health, Medicine, Society and Environment
| ESPM 163AC                                  |  | Environmental Justice: Race, Class, Equity, and the Environment
| ESPM C167                                   |  | Environmental Health and Development
| or PB HLTH C1                              |  | Environmental Health and Development
|                       |  |

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<th>Film &amp; Media Studies</th>
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| FILM 155                  |  | Media Technologies
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<th>Gender and Women's Studies</th>
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| GWS 102                   |  | Transnational Feminism
| GWS 130AC                 |  | Gender, Race, Nation, and Health
| GWS 131                   |  | Gender and Science
|                       |  |

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<tr>
<th>Geography</th>
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</table>
| GEOG 108                 |  | Geographies of Energy: The Rise and Fall of the Fossil Fuel Economy
| GEOG 130                 |  | Food and the Environment
|                       |  |

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<thead>
<tr>
<th>History</th>
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| HISTORY 100S             |  | Special Topics in the History of Science
| HISTORY 138              |  | History of Science in the U.S.
| or HISTORY 13             |  | History of Science in the U.S CalTeach
| HISTORY 180              |  | The Life Sciences since 1750
| or HISTORY 180           |  | History of the Life Sciences Since 1750 (Cal Teach)
| HISTORY 182A             |  | Science, Technology, and Society
| or HISTORY 18            |  | Science, Technology, and Society (Cal Teach)
| HISTORY C184D            |  | Human Contexts and Ethics of Data - DATA/History/STS
| HISTORY C191             |  | Death, Dying, and Modern Medicine: Historical and Contemporary Perspectives
|                       |  |

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<th>International and Area Studies</th>
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| IAS 157AC                     |  | Engineering, The Environment, and Society
|                       |  |

| Information                |  |
INFO 103  History of Information  4
INFO 188  Behind the Data: Humans and Values  3

**Integrative Biology**

INTEGBI 117  Medical Ethnobotany  2

**Interdisciplinary Studies Field Major**

ISF 100D  Introduction to Technology, Society, and Culture  4
ISF 100G  Introduction to Science, Society, and Ethics  4
ISF 100J  The Social Life of Computing  4

**Journalism**

JORN 124  Introduction to Data Journalism  3

**Landscape Architecture**

LD ARCH C171  The American Designed Landscape Since 1850  3

**Legal Studies**

LEGALST 102  Policing and Society  4
LEGALST 123  Data, Prediction & Law  4
LEGALST 149  Law, Technology and Entrepreneurship  4
LEGALST 151  Law, Self, and Society  3
LEGALST 152AC  Human Rights & Technology  4
LEGALST 156  Bioethics and the Law  4
LEGALST 162AC  Restorative Justice  4
LEGALST 168  Sex, Reproduction and the Law  4
LEGALST 182  Law, Politics and Society  4
LEGALST C185  Prison  4

or LEGALST 114  Prison

**Letters and Science**

L & S 121  Origins in Science and Religion  4
L & S 128  Crowds and Clouds  4
L & S 180AC  Archaeology of Sex and Gender  4

**Philosophy**

PHILOS 121  Moral Questions of Data Science  4
PHILOS 128  Philosophy of Science  4

**Political Economy**

POLECON 156  Silicon Valley and the Global Economy  4
POLECON W160/Political Economy in Historical Context: The Twentieth Century: Economies, Societies, Politics, Technologies

**Public Health**

PB HLTH 101  A Sustainable World: Challenges and Opportunities  3
PB HLTH 116  Seminar on Social, Political, and Ethical Issues in Health and Medicine  3
PB HLTH C155  Sociology of Health and Medicine  4

**Rhetoric**

RHETOR 107  Rhetoric of Scientific Discourse  4
RHETOR 115  Technology and Culture  4
RHETOR 145  Science, Narrative, and Image  4

**Sociology**

SOCIOL C115  Sociology of Health and Medicine  4
SOCIOL 115G  Health in a Global Society  4
SOCIOL C126  Sex, Death, and Data  4
SOCIOL 137AC  Environmental Justice: Race, Class, Equity, and the Environment  4
SOCIOL 166  Society and Technology  4

STTS C100  Introduction to Science, Technology, and Society 4 Units

Terms offered: Fall 2024, Fall 2023, Fall 2022, Spring 2016, Spring 2015

This course provides an overview of the field of Science and Technology Studies (STS) as a way to study how our knowledge and technology shape and are shaped by social, political, historical, economic, and other factors. We will learn key concepts of the field (e.g., how technologies are understood and used differently in different communities) and apply them to a wide range of topics, including geography, history, environmental and information science, and others. Questions this course will address include: how are scientific facts constructed? How are values embedded in technical systems?

Introduction to Science, Technology, and Society: Read More [+]

**Hours & Format**

Fall and/or spring: 15 weeks - 3 hours of lecture and 1.5 hours of discussion per week

Summer:
6 weeks - 7.5 hours of lecture and 3.5 hours of discussion per week
8 weeks - 6 hours of lecture and 3 hours of discussion per week

**Additional Details**

**Subject/Course Level:** Science and Technology Studies/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructors:** Mazzotti, Winickoff

**Also listed as:** HISTORY C182C/ISF C100G

Introduction to Science, Technology, and Society: Read Less [-]
**STS C104D Human Contexts and Ethics of Data - DATA/History/STS 4 Units**

Terms offered: Fall 2024, Spring 2024, Fall 2023, Spring 2022, Fall 2020, Spring 2020

This course teaches you to use the tools of applied historical thinking and Science, Technology, and Society (STS) to recognize, analyze, and shape the human contexts and ethics of data. It addresses key topics such as doing ethical data science amid shifting definitions of human subjects, consent, and privacy; the changing relationship between data, democracy, and law; the role of data analytics in how corporations and governments provide public goods such as health and security to citizens; sensors, machine learning and artificial intelligence and changing landscapes of labor, industry, and city life. It prepares you to engage as a knowledgeable and responsible citizen and professional in the varied arenas of our datafied world.

Rules & Requirements

Credit Restrictions: Students will receive no credit for DATA C104/HISTORY C184D/STS C104D after completing DATA 104. A deficient grade in DATA C104/HISTORY C184D/STS C104D may be removed by taking DATA 104.

Hours & Format

Fall and/or spring: 15 weeks - 3-3 hours of lecture and 0-1.5 hours of discussion per week

Summer:
6 weeks - 7.5-7.5 hours of lecture and 0-3.5 hours of discussion per week
8 weeks - 6-6 hours of lecture and 0-3 hours of discussion per week

Additional Details

Subject/Course Level: Science and Technology Studies/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Formerly known as: History C184D/Science and Technology Studies
C104D

Also listed as: DATA C104/HISTORY C184D

Human Contexts and Ethics of Data - DATA/History/STS: Read More [+]