SCIENCE, TECHNOLOGY, AND SOCIETY


Mission of the Undergraduate Program in Science, Technology, and Society

The Program in Science, Technology, and Society (STS) aims to provide students with an interdisciplinary framework through which to understand the complex interactions of science, technology and the social world. To major in STS, students work through a common core of courses drawn from the social sciences, the humanities, the natural and physical sciences and engineering. Students pursue coursework in one of five specialized areas:

- Communication and Media
- Innovation and Organization
- Nature and Environment
- Life Sciences and Health
- Politics and Policy

Students may also undertake research in affiliated laboratories and through the honors program for course units. All students complete a capstone project, either by taking one of the senior capstone courses (STS 200) or by applying for and completing an STS honors thesis. Students are encouraged to pursue mastery in at least one field from within the humanities or social sciences and at least one field from within the sciences or engineering. Majors may declare either a B.A. or a B.S. degree (see the specific requirements for each degree).

The Program’s affiliated faculty represent over a dozen departments, including Anthropology, Communication, Computer Science, Education, Electrical Engineering, History, Law, Management Science and Engineering, Political Science and Sociology. By learning to bring such a rich collection of disciplinary approaches to bear on questions of science and technology, students graduate uniquely equipped to provide students with an interdisciplinary framework through which to understand the complex interactions of science, technology and the social world.

Learning Outcomes (Undergraduate)

The Program expects undergraduate majors to be able to demonstrate the following learning outcomes. These learning outcomes are used in evaluating students and the Program in Science, Technology, and Society. Students are expected to demonstrate:

1. A knowledge of core theories and methods in the interdisciplinary field of STS.
2. An ability to deploy these theories and methods to analyze interactions between science, technology and society in particular historical and cultural contexts.
3. An ability to critically evaluate empirical evidence and theoretical claims in STS-related debates.
4. An ability to communicate clearly and persuasively about STS issues to a general audience in multiple media including oral presentation and writing.

Advising and Course Selection

The Program in Science, Technology, and Society offers an advising process that includes faculty, staff and peer advisers. Prospective majors must first meet with a peer adviser and then with the Program’s Student Services Officer to determine which degree they will pursue (the B.A. or B.S.) and how they will fulfill the Program’s basic requirements. When they are ready to declare, they meet with the Program’s Student Services Officer to submit their degree plan and then the Associate Director reviews the coursework for intellectual coherence. Majors are then assigned to a faculty adviser who serves as an intellectual mentor and helps them identify the core questions driving their interest in the field. The Program also sponsors a wide variety of events designed to help students meet their colleagues and Program alumni, discover research and internship opportunities, and make their way toward the career of their choice.

STS Core

The program offers a Bachelor of Arts and Bachelor of Science in Science, Technology, and Society. Both degree programs require that the student complete the STS Core.

With a grade of ‘C’ or higher in each course, complete 8 courses satisfying the following requirements:

**A. Gateway Requirement**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STS 1</td>
<td>The Public Life of Science and Technology</td>
</tr>
</tbody>
</table>

**B. Disciplinary Requirement: six courses, one of these courses must be a STS WIM course and at least one of these courses must be a STS Global course.**

1. Social Sciences and Humanities Courses (complete 4 courses) 13-20

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTHRO 41</td>
<td>Genes and Identity</td>
</tr>
<tr>
<td>ANTHRO 82</td>
<td>Medical Anthropology</td>
</tr>
<tr>
<td>ANTHRO 90C</td>
<td>Theory of Ecological and Environmental Anthropology</td>
</tr>
<tr>
<td>ANTHRO 93B</td>
<td>Prefield Research Seminar: Non-Majors</td>
</tr>
<tr>
<td>ANTHRO 126</td>
<td>Urban Culture in Global Perspective</td>
</tr>
<tr>
<td>ANTHRO 138</td>
<td>Medical Ethics in a Global World: Examining Race, Difference and Power in the Research Enterprise</td>
</tr>
<tr>
<td>ANTHRO 167A</td>
<td>A Wilderness Empire: The Political Ecology of California</td>
</tr>
<tr>
<td>COMM 104W</td>
<td>Reporting, Writing, and Understanding the News</td>
</tr>
<tr>
<td>COMM 120W</td>
<td>Digital Media in Society</td>
</tr>
<tr>
<td>COMM 137W</td>
<td>The Dialogue of Democracy</td>
</tr>
<tr>
<td>COMM 142W</td>
<td>Media Economics</td>
</tr>
<tr>
<td>ECON 106</td>
<td>World Food Economy</td>
</tr>
<tr>
<td>EDUC 120</td>
<td>Sociology of Science</td>
</tr>
<tr>
<td>HISTORY 44Q</td>
<td>Gendered Innovations in Science, Medicine, Engineering, and Environment</td>
</tr>
<tr>
<td>HISTORY 79C</td>
<td>The Ethical Challenges of Climate Change</td>
</tr>
<tr>
<td>HISTORY 104D</td>
<td>International Security in a Changing World</td>
</tr>
<tr>
<td>HISTORY 140</td>
<td>World History of Science</td>
</tr>
<tr>
<td>HISTORY 140A</td>
<td>The Scientific Revolution</td>
</tr>
<tr>
<td>HISTORY 144</td>
<td>Women and Gender in Science, Medicine and Engineering</td>
</tr>
<tr>
<td>HISTORY 179C</td>
<td>The Ethical Challenges of Climate Change</td>
</tr>
<tr>
<td>PHIL 167A</td>
<td>Philosophy of Biology</td>
</tr>
</tbody>
</table>

Units
### Concentration Areas

In addition to the Core requirements common to all STS students, a minimum of 50 units, at least twelve courses, are required from among those designated on the appropriate Concentration Area course list (available in the Concentration Areas tab (p. 2) and on the STS web site). All courses must be taken for a letter grade if offered and may not be double-counted with core course work. Students may count no more than two course petitions outside the list of approved Concentration Area courses toward their STS degree plan. Thematic concentrations are organized around an STS-related area or topic:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLISCI 233F</td>
<td>Science, technology and society and the humanities in the face of the looming disaster</td>
</tr>
<tr>
<td>RELIGST 31</td>
<td>The Religious Life of Things</td>
</tr>
<tr>
<td>SOC 114</td>
<td>Economic Sociology</td>
</tr>
<tr>
<td>STS 151</td>
<td>The Future of Information</td>
</tr>
<tr>
<td>STS 166</td>
<td>Knowledge and Information Infrastructures</td>
</tr>
<tr>
<td>STS 181</td>
<td>Techno-metabolism: Technology, Society, and the Anthropocene</td>
</tr>
<tr>
<td>STS 191W</td>
<td>Doing STS: Introduction to Research</td>
</tr>
</tbody>
</table>

#### 2. Engineering and Science Courses (complete 2 courses) 6-10

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOE 131</td>
<td>Ethics in Bioengineering</td>
</tr>
<tr>
<td>CEE 64</td>
<td>Air Pollution and Global Warming: History, Science, and Solutions</td>
</tr>
<tr>
<td>CS 181W</td>
<td>Computers, Ethics, and Public Policy</td>
</tr>
<tr>
<td>EARTHSYS 112</td>
<td>Human Society and Environmental Change</td>
</tr>
<tr>
<td>EARTHSYS 149</td>
<td>Wild Writing</td>
</tr>
<tr>
<td>EARTHSYS 177</td>
<td>Specialized Writing and Reporting: Environmental and Food System Journalism</td>
</tr>
<tr>
<td>ENGR 60</td>
<td>Engineering Economics and Sustainability</td>
</tr>
<tr>
<td>ENGR 131</td>
<td>Ethical Issues in Engineering</td>
</tr>
<tr>
<td>HUMBIO 173</td>
<td>Science, Innovation and the Law</td>
</tr>
<tr>
<td>MS&amp;E 193</td>
<td>Technology and National Security</td>
</tr>
</tbody>
</table>

#### 3. Senior Requirement 4-10

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STS 200A</td>
<td>Food and Society: Politics, Culture and Technology or STS 200D Predictive Technologies of Text or STS 200H Ethics, Science, &amp; Technology or STS 200K Sciences of Learning</td>
</tr>
<tr>
<td>STS 299</td>
<td>Advanced Individual Work</td>
</tr>
</tbody>
</table>

Total Units: 27-44

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1. Communication and Media
2. Innovation and Organization
3. Nature and Environment
4. Life Sciences and Health
5. Politics and Policy

### Concentration Area Course Lists

#### Communication and Media

Thematic concentration in Communication and Media:

<table>
<thead>
<tr>
<th>Socio-Cultural Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMSTUD 96</td>
<td>Signal to Noise: The Sounds of American Culture</td>
</tr>
<tr>
<td>AMSTUD 133</td>
<td>Technology and American Visual Culture</td>
</tr>
<tr>
<td>AMSTUD 143X</td>
<td>Starstuff: Space and the American Imagination</td>
</tr>
<tr>
<td>ARTHIST 164A</td>
<td>Technology and the Visual Imagination</td>
</tr>
<tr>
<td>ARTHIST 245</td>
<td>Art, Business &amp; the Law</td>
</tr>
<tr>
<td>ARTSTUDI 173</td>
<td>Cell Phone Photography</td>
</tr>
<tr>
<td>ARTSTUDI 174</td>
<td>Creativity in the Age of Facebook: Making Art for and from Networks</td>
</tr>
<tr>
<td>ARTSTUDI 236</td>
<td>Future Media, Media Archaeologies</td>
</tr>
<tr>
<td>COMM 106</td>
<td>Communication Research Methods</td>
</tr>
<tr>
<td>COMM 108</td>
<td>Media Processes and Effects</td>
</tr>
<tr>
<td>COMM 120W</td>
<td>Digital Media in Society</td>
</tr>
<tr>
<td>COMM 142W</td>
<td>Media Economics</td>
</tr>
<tr>
<td>COMM 154</td>
<td>The Politics of Algorithms</td>
</tr>
<tr>
<td>COMM 166</td>
<td>Virtual People</td>
</tr>
<tr>
<td>COMM 172</td>
<td>Media Psychology</td>
</tr>
<tr>
<td>CS 181</td>
<td>Computers, Ethics, and Public Policy</td>
</tr>
<tr>
<td>EARTHSYS 177</td>
<td>Specialized Writing and Reporting: Environmental and Food System Journalism</td>
</tr>
<tr>
<td>EDUC 120</td>
<td>Sociology of Science</td>
</tr>
<tr>
<td>EDUC 226</td>
<td>Curating Experience: Representation in and beyond Museums</td>
</tr>
<tr>
<td>ENGR 131</td>
<td>Ethical Issues in Engineering</td>
</tr>
<tr>
<td>ENGR 145</td>
<td>Technology Entrepreneurship</td>
</tr>
<tr>
<td>FILMSTUD 6</td>
<td>Introduction to Media</td>
</tr>
</tbody>
</table>
HISTORY 204D Advanced Topics in Agnotology
INTLPOL 221 Politics of Data: Algorithmic Culture, Big Data, and Information Waste
ME 267 Ethics and Equity in Transportation Systems
MS&E 180 Organizations: Theory and Management
OSPFLOR 28 Between Art and Science: the Evolution of Techniques from Antiquity to Leonardo da Vinci
OSPFLOR 48 Sharing Beauty in Florence: Collectors, Collections and the Shaping of the Western Museum Tradition
OSPFLOR 49 On-Screen Battles: Filmic Portrayals of Fascism and World War II
OSPFLOR 67 The Celluloid Gaze: Gender, Identity and Sexuality in Cinema
OSPPARIS 30 The Avant Garde in France through Literature, Art, and Theater
PSYCH 30 Introduction to Perception
PSYCH 75 Introduction to Cultural Psychology
RELIGST 31 The Religious Life of Things
SOC 180A Foundations of Social Research
STS 123 Making a Nuclear World: History, Politics, and Culture
STS 151 The Future of Information
STS 166 Knowledge and Information Infrastructures
STS 181 Techno-metabolism: Technology, Society, and the Anthropocene
STS 191 Doing STS: Introduction to Research
SYMSYS 1 Minds and Machines
SYMSYS 245 Cognition in Interaction Design
TAPS 253T Virtual Realities: Art, Technology, Performance

Technical Courses
ARTSTUDI 130 Interactive Art: Making it with Arduino
ARTSTUDI 160 Intro to Digital / Physical Design
ARTSTUDI 168 Data as Material
ARTSTUDI 176 Time Shifts
ARTSTUDI 177 Video Art I
ARTSTUDI 179 Digital Art I
ARTSTUDI 275 PHOTOGRAPHY II: Digital
CME 108 Introduction to Scientific Computing
COMM 113 Computational Methods in the Civic Sphere
COMM 176 Advanced Digital Media Production
CS 102 Big Data - Tools and Techniques
CS 103 Mathematical Foundations of Computing
CS 105 Introduction to Computers
CS 106A Programming Methodology
CS 106B Programming Abstractions
CS 106X Programming Abstractions (Accelerated)
CS 107 Computer Organization and Systems
CS 108 Object-Oriented Systems Design
CS 109 Introduction to Probability for Computer Scientists
CS 110 Principles of Computer Systems
CS 124 From Languages to Information
CS 144 Introduction to Computer Networking
CS 145 Data Management and Data Systems
CS 147 Introduction to Human-Computer Interaction Design
CS 148 Introduction to Computer Graphics and Imaging
CS 154 Introduction to Automata and Complexity Theory
CS 161 Design and Analysis of Algorithms
CS 194H User Interface Design Project
CS 221 Artificial Intelligence: Principles and Techniques
CS 224W Analysis of Networks
CS 247 Human-Computer Interaction Design Studio
CS 248 Interactive Computer Graphics
CS 255 Introduction to Cryptography
CS 376 Human-Computer Interaction Research
ECON 102A Introduction to Statistical Methods (Postcalculus) for Social Scientists
EE 101A Circuits I
EE 101B Circuits II
EE 102A Signal Processing and Linear Systems I
EE 102B Signal Processing and Linear Systems II
EE 108 Digital System Design
EE 168 Introduction to Digital Image Processing
EE 169 Introduction to Bioimaging
EE 180 Digital Systems Architecture
ENGR 150 Data Challenge Lab
HUMBIO 145L The Biology and Evolution of Language
ME 125 Visual Frontiers
MS&E 111 Introduction to Optimization
MS&E 120 Probabilistic Analysis
MS&E 130 Information Networks and Services
MS&E 135 Networks
MUSIC 220A Fundamentals of Computer-Generated Sound
MUSIC 220B Compositional Algorithms, Psychoacoustics, and Computational Music
MUSIC 254 Music Query, Analysis, and Style Simulation
MUSIC 257 Neuroplasticity and Musical Gaming
OSPCPTWN 67 ICT4D: An Introduction to the Use of ICTs for Development
SOC 180B Introduction to Data Analysis
STATS 60 Introduction to Statistical Methods: Precalculus
STATS 191 Introduction to Applied Statistics

Innovation and Organization
Thematic concentration in Innovation and Organization:

Socio-Cultural Courses
AMSTUD 96 Signal to Noise: The Sounds of American Culture
AMSTUD 133 Technology and American Visual Culture
ANTHRO 41 Genes and Identity
ANTHRO 136 The Anthropology of Global Supply Chains
ANTHRO 154 Anthropology of Drugs: Experience, Capitalism, Modernity
ARTHIST 147 Modernism and Modernity
ARTSTUDI 1741Creativity in the Age of Facebook: Making Art for and from Networks
ARTSTUDI 236 Future Media, Media Archaeologies
BIO 182 Modeling Cultural Evolution
CEE 32B Design Theory
CLASSICS 156 Design of Cities
COMM 154 The Politics of Algorithms
CS 181 Computers, Ethics, and Public Policy
ECON 118 Development Economics
Science, Technology, and Society

- **ECON 145** Labor Economics
- **EDUC 120** Sociology of Science
- **ENGR 145** Technology Entrepreneurship
- **HISTORY 1C** Global History: The Modern Age
- **HISTORY 44Q** Gendered Innovations in Science, Medicine, Engineering, and Environment
- **HISTORY 140** World History of Science
- **HISTORY 140A** The Scientific Revolution
- **HISTORY 144** Women and Gender in Science, Medicine and Engineering
- **HISTORY 203C** History of Ignorance
- **HUMBIO 173** Science, Innovation and the Law
- **INTL POL 221** Politics of Data: Algorithmic Culture, Big Data, and Information Waste
- **ME 120** History and Philosophy of Design
- **ME 177** Global Engineers' Education
- **ME 267** Ethics and Equity in Transportation Systems
- **ME 297** Forecasting for Innovators: Technology, Tools & Social Change
- **MS&E 175** Innovation, Creativity, and Change
- **MS&E 177** Creativity Rules
- **MS&E 180** Organizations: Theory and Management
- **MS&E 185** Global Work
- **MS&E 256** Technology Assessment and Regulation of Medical Devices
- **OSPBER 126X** A People's Union? Money, Markets, and Identity in the EU
- **OSPCPTWN 36** The Archaeology of Southern African Hunter Gatherers
- **OSPFLOR 28** Between Art and Science: the Evolution of Techniques from Antiquity to Leonardo da Vinci
- **OSPFLOR 41** The Florentine Sketchbook: A Visual Arts Practicum
- **OSPFLOR 48** Sharing Beauty in Florence: Collectors, Collections and the Shaping of the Western Museum Tradition
- **OSPFLOR 58** Space as History: Social Vision and Urban Change
- **OSPFLOR 115Y** Building the Cathedral and the Town Hall: Constructing and Deconstructing Symbols of a Civilization
- **OSPOXFRD 45** British Economic Policy since World War II
- **OSPPARIS 30** The Avant Garde in France through Literature, Art, and Theater
- **OSPPARIS 44** EAP Analytical Drawing and Graphic Art
- **OSPPARIS 72** The Ceilings of Paris
- **OSPPARIS 92** Building Paris: Its History, Architecture, and Urban Design
- **OSPSANTG 29** Sustainable Cities: Comparative Transportation Systems in Latin America
- **OSPSANTG 71** Santiago: Urban Planning, Public Policy, and the Built Environment
- **OSPSANTG 115** The Chilean Economy: History, International Relations, and Development Strategies
- **PUBLPOL 134** Ethics on the Edge: Business, Non-Profit Organizations, Government, and Individuals
- **PUBLPOL 353A** Science and Technology Policy
- **RELIGST 31** The Religious Life of Things
- **SOC 114** Economic Sociology
- **SOC 160** Formal Organizations
- **SOC 162** The Social Regulation of Markets
- **SOC 168** Global Organizations: The Matrix of Change
- **SOC 180A** Foundations of Social Research
- **STS 123** Making of a Nuclear World: History, Politics, and Culture
- **STS 151** The Future of Information
- **STS 166** Knowledge and Information Infrastructures
- **STS 181** Techno-metabolism: Technology, Society, and the Anthropocene
- **STS 190** Issues in Technology and the Environment
- **STS 191** Doing STS: Introduction to Research
- **SYMSYS 1** Minds and Machines
- **SYMSYS 245** Cognition in Interaction Design
- **TAPS 253T** Virtual Realities: Art, Technology, Performance

**Technical Courses**

- **ARTSTUDI 130** Interactive Art: Making it with Arduino
- **ARTSTUDI 160** Intro to Digital / Physical Design
- **ARTSTUDI 168** Data as Material
- **COMM 113** Computational Methods in the Civic Sphere
- **CS 102** Big Data - Tools and Techniques
- **CS 105** Introduction to Computers
- **CS 106A** Programming Methodology
- **CS 106B** Programming Abstractions
- **CS 106X** Programming Abstractions (Accelerated)
- **CS 107** Computer Organization and Systems
- **CS 108** Object-Oriented Systems Design
- **CS 109** Introduction to Probability for Computer Scientists
- **CS 110** Principles of Computer Systems
- **CS 124** From Languages to Information
- **CS 147** Introduction to Human-Computer Interaction Design
- **CS 194H** User Interface Design Project
- **CS 221** Artificial Intelligence: Principles and Techniques
- **CS 223A** Introduction to Robotics
- **CS 225A** Experimental Robotics
- **CS 247** Human-Computer Interaction Design Studio
- **CS 376** Human-Computer Interaction Research
- **CS 402** Beyond Bits and Atoms: Designing Technological Tools
- **CS 402L** Beyond Bits and Atoms - Lab
- **ECON 102A** Introduction to Statistical Methods (Postcalculus) for Social Scientists
- **EE 101A** Circuits I
- **EE 101B** Circuits II
- **EE 102A** Signal Processing and Linear Systems I
- **EE 102B** Signal Processing and Linear Systems II
- **EE 108** Digital System Design
- **EE 169** Introduction to Bioimaging
- **EE 180** Digital Systems Architecture
- **ENGR 14** Intro to Solid Mechanics
- **ENGR 40M** An Intro to Making: What is EE
- **ENGR 60** Engineering Economics and Sustainability
- **ENGR 110** Perspectives in Assistive Technology (ENGR 110)
- **ENGR 150** Data Challenge Lab
- **ME 21** Renaissance Machine Design
- **ME 80** Mechanics of Materials
- **ME 101** Visual Thinking
- **ME 102** Foundations of Product Realization
- **ME 115A** Introduction to Human Values in Design
ME 115B  Product Design Methods  MS&E 92Q  International Environmental Policy
ME 203  Design and Manufacturing  OSPCPTWN 36  The Archaeology of Southern African Hunter Gatherers
ME 216A  Advanced Product Design: Needfinding  OSPFLOR 28  Between Art and Science: the Evolution of Techniques from Antiquity to Leonardo da Vinci
MS&E 52  Introduction to Decision Making  OSPPARIS 91  The Future of Globalization: Economics, Politics and the Environment
MS&E 111  Introduction to Optimization  OSPPARIS 97  Le Grand Paris: Paris of the 21st Century
MS&E 120  Probabilistic Analysis  OSPSANTRG 29  Sustainable Cities: Comparative Transportation Systems in Latin America
MS&E 121  Introduction to Stochastic Modeling  OSPSANTRG 52  Energy and Climate Cooperation in the Americas: The Role of Chile
MS&E 130  Information Networks and Services  OSPSANTRG 71  Santiago: Urban Planning, Public Policy, and the Built Environment
MS&E 135  Networks  PHIL 167A  Philosophy of Biology
MS&E 152  Introduction to Decision Analysis  POLISCI 110G  Governing the Global Economy
MS&E 184  Future of Work: Issues in Organizational Learning and Design  POLISCI 114S  International Security in a Changing World
MUSIC 220A  Fundamentals of Computer-Generated Sound  POLISCI 233F  Science, Technology and Society and the Humanities in the Face of the Looming Disaster
MUSIC 220B  Compositional Algorithms, Psychoacoustics, and Computational Music  SOC 180A  Foundations of Social Research
MUSIC 257  Neuroplasticity and Musical Gaming  STS 123  Making of a Nuclear World: History, Politics, and Culture
OSPCPTWN 67  ICT4D: An Introduction to the Use of ICTs for Development  STS 166  Knowledge and Information Infrastructures
SOC 180B  Introduction to Data Analysis  STS 181  Techno-metabolism: Technology, Society, and the Anthropocene
STATS 60  Introduction to Statistical Methods: Precalculus  STS 190  Issues in Technology and the Environment
STATS 110  Statistical Methods in Engineering and the Physical Sciences  STS 191  Doing STS: Introduction to Research
STATS 116  Theory of Probability  URBANST 164  Sustainable Cities
STATS 191  Introduction to Applied Statistics  URBANST 164  Sustainable Cities

Nature and Environment
Thematic concentration in Nature and Environment:

<table>
<thead>
<tr>
<th>Units</th>
<th>Socio-Cultural Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AMSTUD 143X  Starstuff: Space and the American Imagination</td>
</tr>
<tr>
<td></td>
<td>ANTHRO 90C  Theory of Ecological and Environmental Anthropology</td>
</tr>
<tr>
<td></td>
<td>ANTHRO 126  Urban Culture in Global Perspective</td>
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<tr>
<td></td>
<td>ANTHRO 166  Political Ecology of Tropical Land Use: Conservation, Natural Resource Extraction, and Agribusiness</td>
</tr>
<tr>
<td></td>
<td>BIOE 122  Biosecurity and Bioterrorism Response</td>
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<tr>
<td></td>
<td>CEE 175A  California Coast: Science, Policy, and Law</td>
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<tr>
<td></td>
<td>CLASSICS 156  Design of Cities</td>
</tr>
<tr>
<td></td>
<td>EARTHSYS 61Q  Food and security</td>
</tr>
<tr>
<td></td>
<td>EARTHSYS 105F  Food and Community: Food Security, Resilience and Equity</td>
</tr>
<tr>
<td></td>
<td>EARTHSYS 112H  Human Society and Environmental Change</td>
</tr>
<tr>
<td></td>
<td>EARTHSYS 177  Specialized Writing and Reporting: Environmental and Food System Journalism</td>
</tr>
<tr>
<td></td>
<td>EARTHSYS 185F  Feeding Nine Billion</td>
</tr>
<tr>
<td></td>
<td>ECON 106  World Food Economy</td>
</tr>
<tr>
<td></td>
<td>ECON 155  Environmental Economics and Policy</td>
</tr>
<tr>
<td></td>
<td>EDUC 120  Sociology of Science</td>
</tr>
<tr>
<td></td>
<td>ESS 112  Human Society and Environmental Change</td>
</tr>
<tr>
<td></td>
<td>HISTORY 1C  Global History: The Modern Age</td>
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<td></td>
<td>HISTORY 140  World History of Science</td>
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<tr>
<td></td>
<td>HISTORY 140A  The Scientific Revolution</td>
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<tr>
<td></td>
<td>HISTORY 203C  History of Ignorance</td>
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<tr>
<td></td>
<td>HUMBIO 2B  Culture, Evolution, and Society</td>
</tr>
<tr>
<td></td>
<td>HUMBIO 4B  Environmental and Health Policy Analysis</td>
</tr>
<tr>
<td></td>
<td>ME 297  Forecasting for Innovators: Technology, Tools &amp; Social Change</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Units</th>
<th>Technical Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BIO 138  Ecosystem Services: Frontiers in the Science of Valuing Nature</td>
</tr>
<tr>
<td></td>
<td>BIO 144  Conservation Biology: A Latin American Perspective</td>
</tr>
<tr>
<td></td>
<td>BIOHOPK 172H  Marine Ecology: From Organisms to Ecosystems</td>
</tr>
<tr>
<td></td>
<td>BIOHOPK 187H  Sensory Ecology</td>
</tr>
<tr>
<td></td>
<td>CEE 64  Air Pollution and Global Warming: History, Science, and Solutions</td>
</tr>
<tr>
<td></td>
<td>CEE 70  Environmental Science and Technology</td>
</tr>
<tr>
<td></td>
<td>CEE 73  Water: An Introduction</td>
</tr>
<tr>
<td></td>
<td>CEE 100  Managing Sustainable Building Projects</td>
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<td>CEE 120A  Building Information Modeling Workshop</td>
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<td>CEE 124  Sustainable Development Studio</td>
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<td>CEE 171  Environmental Planning Methods</td>
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<td>CEE 176A  Energy Efficient Buildings</td>
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<td>CEE 176B  100% Clean, Renewable Energy and Storage for Everything</td>
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<td>CEE 272R  Modern Power Systems Engineering</td>
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<td>CHEMENG 60Q  Environmental Regulation and Policy</td>
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<td>CS 102  Big Data - Tools and Techniques</td>
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<td>EARTHSYS 101  Energy and the Environment</td>
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<td>EARTHSYS 155  Science of Soils</td>
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<td>EARTHSYS 180P  Principles and Practices of Sustainable Agriculture</td>
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<td>ENERGY 104  Sustainable Energy for 9 Billion</td>
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<td>ENERGY 120  Fundamentals of Petroleum Engineering</td>
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</table>
Thematic concentration in Life Sciences and Health:

Social-Cultural Courses
- AMSTUD 156W Women and Medicine in US History: Women as Patients, Healers and Doctors
- ANTHRO 41 Genes and Identity
- ANTHRO 82 Medical Anthropology
- ANTHRO 138 Medical Ethics in a Global World: Examining Race, Difference and Power in the Research Enterprise
- ANTHRO 139C Anthropology of Global Health
- ANTHRO 154 Anthropology of Drugs: Experience, Capitalism, Modernity
- ARTSTUDI 284 Art and Biology
- BIOE 131 Ethics in Bioengineering
- EARTHSYS 112 Human Society and Environmental Change
- EDUC 120 Sociology of Science
- EDUC 340 Psychology and American Indian Mental Health
- FRENCH 219 The Renaissance Body in French Literature and Medicine
- GENE 104Q Law and the Biosciences
- HISTORY 44Q Gendered Innovations in Science, Medicine, Engineering, and Environment
- HISTORY 140 World History of Science
- HISTORY 144 Women and Gender in Science, Medicine and Engineering
- HISTORY 203C History of Ignorance
- HISTORY 243C People, Plants, and Medicine: Colonial Science and Medicine
- HISTORY 243G Tobacco and Health in World History
- HUMBIO 2B Culture, Evolution, and Society
- HUMBIO 3B Behavior, Health, and Development
- HUMBIO 4B Environmental and Health Policy Analysis
- HUMBIO 122S Social Class, Race, Ethnicity, and Health
- HUMBIO 174 Foundations of Bioethics
- MED 157 Foundations for Community Health Engagement
- MS&E 256 Technology Assessment and Regulation of Medical Devices
- OSPFLOR 70 The Value of Life: Philosophical Foundations

Life Sciences and Health

Technical Courses
- ANTHRO 113 Culture and Epigenetics: Towards A Non-Darwinian Synthesis
- BIO 45 Introduction to Laboratory Research in Cell and Molecular Biology
- BIO 46 Introduction to Research in Ecology and Evolutionary Biology
- BIO 47 Introduction to Research in Ecology and Evolutionary Biology
- BIO 109A The Human Genome and Disease
- BIO 109B The Human Genome and Disease: Genetic Diversity and Personalized Medicine
- BIO 144 Conservation Biology: A Latin American Perspective
- BIO 150 Human Behavioral Biology
- BIOE 44 Fundamentals for Engineering Biology Lab
- BIOE 80 Introduction to Bioengineering (Engineering Living Matter)
- BIOE 101 Systems Biology
- BIOE 103 Systems Physiology and Design
- CHEM 31A Chemical Principles I
- CHEM 31B Chemical Principles II
- CHEM 31X Chemical Principles Accelerated
- CHEM 33 Structure and Reactivity of Organic Molecules
- CHEM 35 Organic Chemistry of Bioactive Molecules
- CHEM 130 Organic Chemistry Laboratory
- CHEM 131 Organic Polyfunctional Compounds
- CHEM 171 Physical Chemistry I
- COMPMED 87Q Laboratory Mouse in Biomedical Research
- CS 102 Big Data - Tools and Techniques
- EE 102A Signal Processing and Linear Systems I
- EE 102B Signal Processing and Linear Systems II
- EE 169 Introduction to Bioimaging
- EE 372 Data Science for High Throughput Sequencing
- HUMBIO 2A Genetics, Evolution, and Ecology
- HUMBIO 3A Cell and Developmental Biology
- HUMBIO 4A The Human Organism
- HUMBIO 89 Introduction to Health Sciences Statistics
- HUMBIO 145L The Biology and Evolution of Language
- HUMBIO 167 The Art of Vision
- OSPAUSTR 25 Freshwater Systems
OSPAUSTL 30 Coastal Forest Ecosystems
SOC 180B Introduction to Data Analysis
STATS 60 Introduction to Statistical Methods: Precalculus
STATS 141 Biostatistics
STATS 191 Introduction to Applied Statistics

Politics and Policy
Thematic concentration in Politics and Policy.

Socio-Cultural Courses
AMSTUD 133 Technology and American Visual Culture
AMSTUD 143X Starstuff: Space and the American Imagination
ANTHRO 138 Medical Ethics in a Global World: Examining Race, Difference and Power in the Research Enterprise
ANTHRO 139C Anthropology of Global Health
ANTHRO 166 Political Ecology of Tropical Land Use: Conservation, Natural Resource Extraction, and Agribusiness
BIOE 122 Biosecurity and Bioterrorism Response
COMM 137W The Dialogue of Democracy
COMM 154 The Politics of Algorithms
CS 181 Computers, Ethics, and Public Policy
EARTHSYS 61Q Food and security
ECON 106 World Food Economy
EDUC 120 Sociology of Science
ESS 112 Human Society and Environmental Change
GERMAN 132 History and Politics of the Future in Germany, 1900-Present
HISTORY 1C Global History: The Modern Age
HISTORY 102 History of the International System
HISTORY 103F The Changing Face of War: Introduction to Military History
HISTORY 104D International Security in a Changing World
HISTORY 140 World History of Science
HISTORY 203C History of Ignorance
HISTORY 204D Advanced Topics in Agnotology
HISTORY 261G Presidents and Foreign Policy in Modern History
HUMBIO 173 Science, Innovation and the Law
INTLREL 221 Politics of Data: Algorithmic Culture, Big Data, and Information Waste
INTNLREL 140/International Law and International Relations
INTNLREL 140C The U.S., U.N. Peacekeeping, and Humanitarian War
INTNLREL 180/Transitional Justice, Human Rights, and International Criminal Tribunals
ME 267 Ethics and Equity in Transportation Systems
MS&E 193 Technology and National Security
OSPCPTWN 43 Public and Community Health in Sub-Saharan Africa
OSPFLOR 49 On-Screen Battles: Filmic Portrayals of Fascism and World War II
OSPMADRD 57 Health Care: A Contrastive Analysis between Spain and the U.S.
OSPPARIS 91 The Future of Globalization: Economics, Politics and the Environment
OSPPARIS 97 Le Grand Paris: Paris of the 21st Century
OSPSANTG 52 Energy and Climate Cooperation in the Americas: The Role of Chile
OSPSANTG 71 Santiago: Urban Planning, Public Policy, and the Built Environment
OSPSANTG 111 The Chilean Economy: History, International Relations, and Development Strategies
POLISCI 102 Politics and Public Policy
POLISCI 110G Governing the Global Economy
POLISCI 110Y War and Peace in American Foreign Policy
POLISCI 114D Democracy, Development, and the Rule of Law
POLISCI 114S International Security in a Changing World
POLISCI 122 Introduction to American Law
POLISCI 124L The Psychology of Communication About Politics in America
POLISCI 150A Data Science for Politics
POLISCI 214R Challenges and Dilemmas in American Foreign Policy
POLISCI 233F Science, technology and society and the humanities in the face of the looming disaster
PUBLPOL 122 Biosecurity and Bioterrorism Response
PUBLPOL 353A Science and Technology Policy
SOC 180A Foundations of Social Research
STS 123 Making of a Nuclear World: History, Politics, and Culture
STS 151 The Future of Information
STS 166 Knowledge and Information Infrastructures
STS 181 Techno-metabolism: Technology, Society, and the Anthropocene
STS 190 Issues in Technology and the Environment
STS 191 Doing STS: Introduction to Research

Technical Courses
CEE 70 Environmental Science and Technology
CEE 107A Understanding Energy
CEE 171 Environmental Planning Methods
CHEM 31A Chemical Principles I
CHEM 31B Chemical Principles II
CHEM 31X Chemical Principles Accelerated
CHEM 33 Structure and Reactivity of Organic Molecules
CHEM 35 Organic Chemistry of Bioactive Molecules
CS 102 Big Data - Tools and Techniques
CS 105 Introduction to Computers
CS 106A Programming Methodology
CS 106B Programming Abstractions
CS 106X Programming Abstractions (Accelerated)
CS 107 Computer Organization and Systems
CS 108 Object-Oriented Systems Design
CS 109 Introduction to Probability for Computer Scientists
CS 110 Principles of Computer Systems
CS 255 Introduction to Cryptography
MS&E 93Q Nuclear Weapons, Energy, Proliferation, and Terrorism
PHYSICS 41 Mechanics
PHYSICS 43 Electricity and Magnetism
PHYSICS 240 Introduction to the Physics of Energy
PHYSICS 241 Introduction to Nuclear Energy
POLISCI 150A Data Science for Politics
POLISCI 150B Machine Learning for Social Scientists
POLISCI 150C Causal Inference for Social Science
SOC 180B Introduction to Data Analysis
Interdisciplinary Honors in Science, Technology, and Society

The Program in Science, Technology, and Society (STS) offers an opportunity for undergraduates to graduate with Interdisciplinary Honors in STS. The STS honors program is open to STS majors as well as students from other majors.

Students accepted into the program carry out an original honors project, working with a faculty adviser. For STS majors, this project also fulfills the requirements for a capstone course and a sociocultural concentration course. An STS honors thesis tackles a significant problem or question related to the intersection of science, technology, and society. Students draw research methods from one or more of the disciplines that shape STS, such as history, sociology, communication, anthropology, environmental science, computer programming/modeling, engineering, economics, political science, and art history, while also capitalizing on unique analytical perspectives of STS as an intellectual field. STS interdisciplinary honors signals expertise in a given area, organizational skills, and intellectual rigor, and students have used it as a springboard for graduate studies and for careers in fields such as information technology, entrepreneurship, finance, public policy, media, education, law, medicine, and the nonprofit sector. Past honors projects are on file in the STS office library, as well as the digital repository.

Admission

Students are encouraged to apply to the STS honors program during the Spring Quarter of their junior year. Late application is considered up to the add/drop deadline of the Autumn Quarter of their senior year.

For Majors in Science, Technology, and Society

In preparation for applying to the honors program in STS, students should:

1. Select an area of research interest in STS, prepare related research questions, and identify potential faculty advisers for an honors thesis based on those questions.
2. Attend one or more of the quarterly STS workshops offered for prospective honors students, and/or take STS 191 Introduction to Research in STS (offered Winter Quarter) or an alternative course on research methods approved by the STS honors program director, and/or speak with the STS honors program director.
3. Submit a research statement and an honors program application, following the parameters set out at STS Honors Program (https://sts.stanford.edu major sts honors program) web site.

For Majors in Other Departments and Programs

In addition to the requirements for STS majors, applicants from other departments should:

1. Meet with the honors program director as early as possible to ensure that they have sufficient background in relevant analytical and methodological approaches.
2. Satisfy one of the following:
   - Complete STS 1 The Public Life of Science and Technology, and either two courses approved as sociocultural foundational courses in STS, or two alternative courses approved by the STS honors program director as relevant to the proposed honors research in STS; or
   - Complete three courses approved by the STS honors program director as relevant to the proposed honors research in STS.

Interdisciplinary Honors Requirements

To graduate with Interdisciplinary Honors in STS, seniors in the honors program need to meet the following criteria:

1. Enroll in STS 299 with an honors faculty adviser to oversee the thesis for a minimum of 10 units total, with up to 5 units per quarter, over Autumn, Winter and Spring quarters. Students who choose to obtain Permit for Services Only (PSO) status during their final quarter may do so with the consent of the STS honors program director but they must still have enrolled in a minimum of 10 units of STS 299 during previous quarters.
2. Attend required monthly workshops for current STS honors students.
3. Complete a thesis judged worthy of an honors program by the faculty adviser and STS adviser.
4. Have an overall Stanford GPA of 3.4 at the end of Winter Quarter, senior year, or demonstrated academic competence.

STS Affiliated Faculty

Director and Professor of Education: John Willinsky

Associate Director: Kyoko Sato

Executive Board: Paula Findlen (History), Duana Fullwiley (Anthropology), Mark Granovetter (Sociology), Hank Greely (Law), Sarah Lochlann Jain (Anthropology), Michael Lepech (Civil and Environmental Engineering), Robert McGinn (Management Science and Engineering), Brad Osgood (Electrical Engineering), Eric Roberts (Computer Science), Scott Sagan (Political Science), Fred Turner (Communication), John Willinsky (Education)

Affiliated Faculty and Staff: Jeremy Bailenson (Communication), Adam Banks (Graduate School of Education), Thomas Byers (Management Science and Engineering), Angele Christin (Communication), Jean-Pierre Dupuy (French), Paul N. Edwards (OISAC and STS), Paula Findlen (History), Duana Fullwiley (Anthropology), Mark Granovetter, (Sociology), Hank Greely (Law), Ann Grimes (Communication), James T. Hamilton (Communication), Gabrielle Hecht (History) Pamela Hinds (Management Science and Engineering), Hector Hoyos (Iberian and Latin American Cultures), Miyako Inoue (Anthropology), Sarah Lochlann Jain (Anthropology), Robert Laughlin (Physics), Pamela Lee (Art and Art History), Michael Lepech (Civil and Environmental Engineering), Sandra Soo-Jin Lee (Biomedical Ethics), Helen Longino (Philosophy), Henry Lowood (Stanford University Libraries), Robert McGinn (Management Science and Engineering), Thomas Mullaney (History), Brad Osgood (Electrical Engineering), Walter Powell (Education), Robert Proctor (History), Jessica Riskin (History), Scott Sagan (Political Science), Kyoko Sato (STS), Londa Schiebinger (History), Michael Shank (Classics, Anthropology), Mitchell Stevens (Education), Fred Turner (Communication), John Willinsky (Education)

Emeriti: James Adams (Management Science and Engineering, Mechanical Engineering), Barton Bernstein (History), Martin Hellman (Electrical Engineering), Eric Roberts (Computer Science), Walter Vincenti (Aeronautics and Astronautics), Gavin Wright (American Economic History)

Overseas Studies Courses in Science, Technology, and Society

The Bing Overseas Studies Program (http://bosp.stanford.edu) manages Stanford study abroad programs for Stanford undergraduates. Students should consult their department or program's student services office for applicability of Overseas Studies courses to a major or minor program.

Stanford Bulletin 2018-19
The Bing Overseas Studies course search site (https://undergrad.stanford.edu/programs/bosp/explore/search-courses) displays courses, locations, and quarters relevant to specific majors.

For course descriptions and additional offerings, see the listings in the Stanford Bulletin's ExploreCourses (http://explorecourses.stanford.edu) or Bing Overseas Studies (http://bosp.stanford.edu).

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<td>OSPAUSTL 25</td>
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<td>A People's Union? Money, Markets, and Identity in the EU</td>
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<td>The Archaeology of Southern African Hunter Gatherers</td>
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<td>OSCPPTWN 43</td>
<td>Public and Community Health in Sub-Saharan Africa</td>
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<td>OSCPPTWN 67</td>
<td>ICT4D: An Introduction to the Use of ICTs for Development</td>
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<td>OSPFLOR 28</td>
<td>Between Art and Science: the Evolution of Techniques from Antiquity to Leonardo da Vinci</td>
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<td>The Florentine Sketchbook: A Visual Arts Practicum</td>
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<td>Sharing Beauty in Florence: Collectors, Collections and the Shaping of the Western Museum Tradition</td>
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<td>On-Screen Battles: Filmic Portrayals of Fascism and World War II</td>
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<td>OSPFLOR 58</td>
<td>Space as History: Social Vision and Urban Change</td>
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<td>The Celluloid Gaze: Gender, Identity and Sexuality in Cinema</td>
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<td>OSPPARIS 98</td>
<td>Global Health Systems: the Future</td>
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<td>OSPSANTG 29</td>
<td>Sustainable Cities: Comparative Transportation Systems in Latin America</td>
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<td>Santiago: Urban Planning, Public Policy, and the Built Environment</td>
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<td>The Chilean Economy: History, International Relations, and Development Strategies</td>
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