

# B.S. in STS (2009-2010)

## *Science, Technology, and Society: Requirements for the B.A. Major*

*The following directions pertain to the attached B.A. Curriculum Form.*

- This form must be filled out in draft before STS will approve your declaration of STS as your major.
- The completed, signed, final version of the form must be placed in your major folder at STS by the end of the quarter immediately prior to your expected graduation quarter.

For each course, fill in the quarter and year of planned or completed enrollment (e.g., A/08-09), course number and title, units, and grade earned (if available). The STS B.A. major curriculum has three components: Core, Technical Literacy, and Thematic Concentration. You must obtain a signature of approval from a *Stanford Academic Council faculty member* for each component. The STS Program Director is the default signatory for the Core component and will offer suggestions for faculty advisors to sign off on your Technical Literacy and Thematic Concentration components and general feedback on your curricular plans. Additional questions may be directed to the Student Services Specialist in the STS Office. **Note:** the number or range of units for a class and the quarter in which it will be offered in 2009-10 are indicated in parentheses after each course title below (A = Autumn, W = Winter, S = Spring, NO = “not offered in 2009-10”).

### Component # 1: STS Core

**Requirements:** (i) with one exception (not counting STS 190), all Core courses must be taken from professors who are members of the Stanford Academic Council; (ii) successful completion, for a letter grade wherever available, of eight (1 + 5 + 2) courses in the following three categories:

#### **1. Interdisciplinary Foundational Course (1):**

STS 101: Science, Technology, and Contemporary Society (4-5, A) **or**  
STS 101Q: Technology in Contemporary Society (4, A)

#### **2. Disciplinary Analysis (5 courses in 3 areas, with at least one course in each)**

##### **a. Philosophical perspectives** (*indicate as P on Curriculum Form*)

STS 110/MS&E 197/PUBPOL 103B: Ethics and Public Policy (5, W)  
STS 112/CLASSART 113: Ten Things: An Archaeology of Design (4-5, W)  
STS 114/ENGLISH 153G: Technology, Ecology & the Imagination of the Future (5, NO)  
ENGLISH 176: Science Fiction: Techno Dreams and Nightmares (5, W)

##### **b. Historical perspectives** (*indicate as H on Curriculum Form*)

STS 128: Science & Technology in WWII and What Happened Afterward (3, NO)  
CLASSGEN 123: Urban Sustainability: Long-Term Archaeological Perspectives (3-5, W)  
CLASSGEN 133: Invention of Science (3-5, S)  
ECON 116: American Economic History (5, S)  
HISTORY 41A/141A: The Emergence of Medicine: The Middle Age and the Renaissance (3-5, W)  
HISTORY 140A: The Scientific Revolution (5, NO)  
HISTORY 208A: Science and Law in History (4-5, W)  
POLISCI 116: History of Nuclear Weapons (5, S)

##### **c. Social Scientific perspectives** (*indicate as S on Curriculum Form*)

ANTHRO 82: Medical Anthropology (5, S)  
ANTHRO 180: Science, Technology, and Gender (3-5, NO)  
COMM 120: Digital Media in Society (4-5, S)  
COMM 169: Computers and Interfaces (4-5, W)

ECON 113: Economics of Innovation (5, S)  
MS&E 181: Issues in Technology and Work for a Post-Industrial Economy (3, S)  
MS&E 185: Global Work (4, S)  
MS&E 193/193W: Technology and National Security (3, A)  
POLISCI 114S: International Security in a Changing World (5, W)  
POLISCI 116: History of Nuclear Weapons (5, S)  
SOC 114: Economic Sociology (5, A)

### 3. Advanced Courses (2):

#### a. One Disciplinary Analysis Level II Course *(indicate as A on Curriculum Form)*

**\*\*\*The course taken to satisfy this requirement must BUILD on a course previously taken for STS Core Requirement #2 above\*\*\***

STS 210: Ethics, Science, and Technology (4, S)  
STS 211/FRENGEN 258E: Foundations of Nanotechnology Ethics (3-5, NO)  
CS 181: Computers, Ethics, and Public Policy (3-4, W)  
COMM 268: Experimental Research in Advanced User Interfaces<sup>§</sup> (1-5, W & S)  
ECON 224: Science and Technology in Economic Growth<sup>§^</sup> (2-5, NO)  
ECON 225: Economics of Technology and Innovation<sup>§^</sup> (2-5, S)  
ECON 226: U.S. Economic History<sup>§^</sup> (2-5, A)  
EDUC 358X: Developments in Access to Knowledge & Scholarly Communication<sup>§</sup> (1-4, NO)  
FRENGEN 265: The Problem of Evil in Literature, Film, and Philosophy (3-5, W)  
HISTORY 243G: Tobacco and Health in World History (4-5, A)  
ME 314: Good Products, Bad Products\* (3-4, W)  
SOC 115: Topics in Economic Sociology (5, NO)

\*Limited enrollment of small number of upper division STS majors at discretion of instructor

<sup>†</sup> Must be taken at advanced level by arrangement with instructor

<sup>§</sup> Must be taken for a minimum of 3 units

<sup>^</sup> Students are encouraged to make sure they have sufficient economics coursework as background for this advanced course

#### b. Required Interdisciplinary Seminar

STS 200: Senior Colloquium (4, W) **or**  
STS 290 A, B, & C (1-5, A/W/S): Senior Honors Seminar

**4. Writing in the Major Requirement:** One of the classes taken in the STS Core must satisfy the Writing in the Major (WIM) requirement. Most STS majors satisfy this requirement by taking STS 110. However, a major may alternatively satisfy the WIM requirement by taking a cross-listed STS course that satisfies both the STS Core and the WIM requirement in the cross-listed department or program, e.g., Comm 120 or MS&E 193W.

**5. STS Senior Paper:** each STS senior major not writing a Senior Honors Thesis in STS or some other undergraduate honors program must write an STS Senior Paper as part of taking STS 200. (A designated STS faculty member must be consulted periodically during the paper writing process.) The paper is intended to be part of the intellectual capstone experience for senior STS majors. The paper must be 20-25 pages long, explore an original, approved 'STSy' topic, incorporate knowledge and perspectives acquired in earlier STS studies, reach and defend a conclusion about the topic or question explored, contain thoughtful analysis of the subject being explored, and make use of some methodology in reaching its conclusion. STS Senior Papers will be evaluated by the STS Senior Paper Evaluation Panel, which will assign each Paper a letter grade. The Senior Paper grade will be one factor in the student's overall grade for STS 200.

**NOTE:** for a short supplementary list of courses applicable to the Philosophical Perspectives, Historical Perspectives, Social Scientific Perspectives, and Advanced Course requirements, inquire at the STS Office at the beginning of each quarter. Listed courses are applicable only during the term (quarter and year) indicated. The STS Core Supplementary List will be sent to declared STS majors just before the beginning of each quarter.

## Component # 2: Technical Depth

**Requirement:** A minimum-50-unit package of courses in the natural, biological, cognitive, or formal sciences (including mathematics), or in engineering, satisfying the guidelines of either the Focused Depth or the Clustered Depth option described below. A maximum of 2 Technical Depth courses may be taken on a pass/no credit basis. All courses taken as part of the student's Technical Depth package should be "technical," i.e., courses in the natural (physical, biological, or earth) sciences, formal sciences; engineering; or mathematics, and will normally be in one or more of the following fields:

<u>Science</u>	<u>Engineering</u>	<u>Mathematical Sciences</u>
Applied Physics	Aeronautics and Astronautics	Mathematics
Biology	Bioengineering	Statistics
Chemistry	Chemical	
Geological and Environmental	Civil and Environmental	
Geophysics	Computer Science*	
Physics	Electrical	
	Mgmt Science & Engineering**	
	Mat. Science & Engineering	
	Mechanical	
	Petroleum	

**Note:** Introductory courses, e.g., Math 19 or Physics 19, are normally not acceptable. Computer Science 106A, while not required, is **strongly recommended** (a course with CS 106A as a prerequisite would suffice).

\*CS 105 cannot be used towards the Technical Depth component in the BS degree.

\*\*If one chooses MS&E as a Technical Depth field, at least half of the advanced courses (i.e, 2 of the advanced classes for the Focused Depth option; 1 for the Clustered Depth option) must be drawn from this list of *technical and advanced* MS&E courses; 121, 142, 206, 211, 220, 221, 223, 241, 242, 243, 246, 248, 250A, 252, 265, 292, 294. Be aware that many of these courses have multiple prerequisites, which the student should satisfy before enrolling in the course.

### **Option 1: Focused Depth**

**Requirement:** a minimum of 7 courses amounting to at least 25 units in a single field of engineering, science, or mathematics. For this option, with the exception of at most two "stand-alone" courses, the remaining units of the Technical Depth Component **MUST** be comprised of **sequences** of at least three courses each in technical fields complementing the field of focus. For example, a Focused Technical Depth package might contain eight mechanical engineering, three physics, three mathematics, and three computer science courses, plus one each in electrical engineering and earth sciences.

**Important:** Four or more minimum-three-unit courses in the field of focus must be "advanced," i.e., not normally taken in freshman year or in the first year of study in the field. Indicate advanced courses with an "A" on the Curriculum Form.

### **Option 2: Clustered Depth**

**Requirement:** a minimum of two clusters of at least 5 technical courses and 15 units each in different fields of engineering, science, or mathematics. For this option, with the exception of at most two "stand-alone" courses, the remaining units of the Technical Depth Component must be comprised of sequences of at least three courses each in fields complementing the cluster fields.

For example, a Clustered Technical Depth package might contain five courses each in biology, electrical engineering, and computer science, one course each in industrial engineering and physics, and three courses in civil engineering. Note: if the minimum-five-course clusters and stand-alone course add up to at least 50 units, there is no need to also take one or more minimum-three-course sequences. Taking one or two might be necessary if one cluster and stand-alone courses comprise less than 50 units.

**Important:** two or more minimum-3-unit courses *in each cluster* must be "advanced," i.e., not normally taken in freshman year or in the first year of study in the field. Indicate advanced courses with an "A" on the Curriculum Form.

# B.S. in STS

## Curriculum Form: 2009-10

Name: \_\_\_\_\_ Student ID Number: \_\_\_\_\_

E-Mail: \_\_\_\_\_ Expected Graduation Qtr/Yr: \_\_\_\_\_

### Component # 1: STS Core

(ALL Core courses must be taken for letter grades where offered)

For A; P, H, or S	Qtr/Yr.	Dept.	Course Number and Title	Units	Grade
1. F	Aut/	STS	101: Science, Technology, and Contemporary Society, OR 101Q: Technology in Contemporary Society		
2.					
3.					
4.					
5.					
6.					
7. A					
8. A		STS	200: Senior Colloquium OR 290A, B, & C: Senior Honors Seminar		

**WIM Course:** \_\_\_\_\_ (STS 110; Comm 120; CS 181; History 140A; MS&E 193W)

**Required STS Senior Paper** (check one): Honors Thesis \_\_\_\_\_ or Senior Colloquium Paper \_\_\_\_\_

**Title:** \_\_\_\_\_

**STS Core Approval:** the above set of courses fulfills the STS Core Requirements:

Signature: \_\_\_\_\_, STS Program Director

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Component # 2: Technical Depth**

(At most **two** Technical Depth courses may be taken on a pass/no credit basis)

**Option # 1: Focused Depth**

Field of Focused Depth: \_\_\_\_\_ (minima: 7 courses, 25 units)

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					
3.					
4.					
5.					
6.					
7.					

**Total Units in Focus Field:** \_\_\_\_\_

Field of Complementary Sequence # 1: \_\_\_\_\_ (minima: 3 courses, 9 units)

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					
3.					

Field of Complementary Sequence # 2<sup>1</sup>: \_\_\_\_\_ (minima: 3 courses, 9 units)

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					
3.					

Field of Complementary Sequence # 3<sup>2</sup>: \_\_\_\_\_ (minima: 3 courses, 9 units)

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					
3.					

“Stand-Alone” Courses (maximum of 2):

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					

**Total number of units in Technical Depth Component: \_\_\_\_\_ (50 units min.)**

**Technical Depth Component Approval (Focused Depth Option):**

Signature of approval below must be that of a Stanford faculty member who is knowledgeable in the focused depth field and *a member of the Academic Council* (not a visiting professor or lecturer). *Note to would-be signer:* a signature indicates that in the signer’s view, the listed set of courses comprises a suitable package for the purposes of the Technical Depth Component of the STS B.S. Curriculum.

Signature: \_\_\_\_\_ Dept. \_\_\_\_\_

Name: \_\_\_\_\_ Date: \_\_\_\_\_

<sup>1</sup> If needed to reach 50 or more units of technical classes.

<sup>2</sup> If needed to reach 50 or more units of technical classes.

**Option # 2:** Clustered Depth (minimum of 2 Clusters; remaining courses in sequences of at least three, except for at most 2 “stand-alone” courses)

Cluster Field #1: \_\_\_\_\_ (minima: 5 courses, 15 units)

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					
3.					
4.					
5.					

Cluster Field # 2: \_\_\_\_\_ (minima: 5 courses, 15 units)

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					
3.					
4.					
5.					

Cluster Field # 3<sup>3</sup>: \_\_\_\_\_ (minima: 5 courses, 15 units)

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					
3.					
4.					
5.					

Field of Complementary Sequence # 1<sup>4</sup>: \_\_\_\_\_ (minima: 3 courses, 9 units)

<sup>3</sup> If needed to reach 50 or more units of technical classes.

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					
3.					

“Stand-Alone” Courses (optional but a maximum of 2):

A	Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
1.					
2.					

**Total number of units in Technical Depth Component: \_\_\_\_\_ (50 units min. required)**

**Technical Depth Component Approval (Clustered Depth Option):**

Signature of approval below must be that of a Stanford faculty member who is knowledgeable in one of the clustered depth fields and *a member of the Academic Council* (not a visiting professor or lecturer). *Note to would-be signer:* a signature indicates that in the signer’s view, the listed set of courses comprises a suitable package for the purposes of the Technical Depth Component of the STS B.S. Curriculum.

Signature: \_\_\_\_\_ Dept. \_\_\_\_\_

Name: \_\_\_\_\_ Date: \_\_\_\_\_

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<sup>4</sup> If cluster courses and stand-alone courses do not aggregate to 50 or more units.