

B.A. 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[§] (1-5, W & S)
ECON 224: Science and Technology in Economic Growth^{§^} (2-5, NO)
ECON 225: Economics of Technology and Innovation^{§^} (2-5, S)
ECON 226: U.S. Economic History^{§^} (2-5, A)
EDUC 358X: Developments in Access to Knowledge & Scholarly Communication[§] (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

[†] Must be taken at advanced level by arrangement with instructor

[§] Must be taken for a minimum of 3 units

[^] 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 Literacy

A. Computer Literacy

Requirement: successful completion *for a letter grade* of CS105, CS 106A, or the equivalent.

B. Other Technical Literacy

Requirement: successful completion *for a letter grade* wherever available of all courses for ONE of the following options:

Option 1. A minimum-4-course, minimum-12-unit sequence - *taken in logical order* - in a field of engineering, science, or mathematics or other formal science. Approved sequences from curricula of past STS majors may be inspected upon request at the STS Office. Sequences will normally be in one 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	

*For a minimum-4-course MS&E package to be acceptable, at least 2 of its courses must be drawn from this list of technical MS&E courses: 107, 111, 112, 120, 121, 130, 131, 140, 142, 152/152W, 160, 164, 169, and 193/193W.

**A list of acceptable and unacceptable math sequences are available in the STS Office.

Option 2. four of the following "Engineering Fundamentals" courses:

ENGR 10: Introduction to Engineering Analysis
ENGR 14: Applied Mechanics: Statics
ENGR 15: Dynamics
ENGR 20: Introduction to Chemical Engineering
ENGR 25: Biotechnology
ENGR 30: Engineering Thermodynamics
ENGR 31: Chemical Principles with Application to Nanoscale Science and Technology
ENGR 40: Introductory Electronics
ENGR 50: Introduction to Materials Science, Nanotechnology Emphasis
ENGR 50M: Introduction to Materials Science, Biomaterials Emphasis
E 60: Engineering Economy
E 62: Introduction to Optimization
E 70A/CS 106A: Programming Methodology (**Note:** cannot be part of a four-course package if used to satisfy the Computer Literacy requirement)

Component # 3: Thematic Concentration

Requirements:

A. Focus: a specific area or topic of concentration

Option 1: one of the seven areas pre-certified by STS:

Intersections of science and technology with...

1. Aesthetics
2. Development
3. History and Philosophy
4. Information and Society
5. Public Policy
6. Social Change
7. Work and Organizations

For Foundational and Advanced courses applicable to each area, see *Thematic Concentration Guidelines and Course Lists*, available in the STS Office.

Option 2: a student-designed area (subject to approval by STS):

In 50-100 words, characterize the intellectual focus of the proposed concentration and indicate why it is appropriate for a B.A. major in STS, relating it to some aspect of science and/or technology in society.

B. Course Package: All thematic concentration courses must be taken for a letter grade where offered, totaling at least 20 units.

C. Foundational/Advanced: at least one course in the Thematic Concentration course package must be chosen from among those designated on the appropriate Thematic Concentration Area Course List as "Foundational" and at least one from among those designated as "Advanced." Indicate as **F** or **A** on Curriculum Form.

D. Center of Gravity: to foster progressive competence in the concentration area, the Course Package must have a "center of gravity" in at least one discipline (e.g., 3 out of 5 or 4 out of 6 courses in sociology, or economics, or...). The center-of-gravity courses need not all be in the same department as long as they are in the same discipline.

Note 1: if the student elects to design her or his own concentration, requirements B and D and the equivalent of requirement C still apply. By her or his signature, the faculty advisor signing off on the self-designed Thematic Concentration area and related Course Package certifies that these requirements have been satisfied.

Note 2: the individual signing off on the student's Thematic Concentration must be a member of the Academic Council, not a lecturer or visiting professor.

Note 3: Thematic Concentrations with more than 5 courses or more than 20 units are welcome, indeed encouraged.

B.A. 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 Literacy
 (ALL Technical Literacy courses must be taken for a grade where offered)

Part A: Computer Literacy: Computer Science 105 or 106A

Qtr./Yr.	Dept.	Course Number and Title	Units	Grade
	CS			

Part B: Science, Engineering, Math, or Engineering Fundamentals Literacy
 (minimum-4-course-sequence amounting to at least 12 units)

Field: _____

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

Total units: _____

Technical Literacy Approval:

In my view, the above sequence constitutes an appropriate one for the purposes of the Technical Literacy Component of the STS B.A. Curriculum.

Signature: _____ Dept. _____

Name: _____ Date: _____

Note well: signature above should be that of a Stanford faculty member who is knowledgeable in the chosen field and *a member of the Academic Council* (not a visiting faculty member or a lecturer).

Component # 3: Thematic Concentration

(ALL Thematic Concentration courses must be taken for a grade where offered)

Each Thematic Concentration must contain at least 5 courses amounting to at least 20 units, with at least one of these courses being a foundational (F) course and at least one an advanced (A) course. For details, see Thematic Concentration Guidelines in “STS Thematic Concentrations: Guidelines and Concentration Area Courses.”

Option # 1: STS Pre-certified Concentration Area

Area/Topic Selected: _____

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

Total units: _____

The intellectual center of gravity of the above Thematic Concentration Package lies in the following discipline(s):

_____ and, if appropriate, _____.

Thematic Concentration Signature of Approval for Option # 1:

The signature below must be that of a Stanford faculty member who is knowledgeable in the Thematic Concentration area and *a member of the Academic Council* (not a visiting professor or a lecturer). *Note to would-be signer:* your signature will be taken to mean that in your view (a) the listed courses comprise a suitable package of offerings for the purpose of the STS B.A. degree Thematic Concentration, and (b) successful completion of the total course package, with its indicated foundational and advanced elements, is likely to foster a measure of progressive competence by the student in the chosen concentration area.

Signature: _____ Dept. _____

Name: _____ Date: _____

Option # 2: Student-Designed Concentration Area

Area/Topic Proposed: _____

Please justify your choice of a student-designed Concentration Area in 50-100 words:

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

The intellectual center of gravity of the above Thematic Concentration Package lies in the following discipline(s): _____ and, if appropriate, _____.

Thematic Concentration Signature of Approval for Option # 2:

The signature below should be that of a Stanford faculty member knowledgeable in the Concentration area and *a member of the Academic Council* (not a visiting professor or lecturer). Note to would-be signer: your signature will be taken to mean that in your view (a) the proposed Concentration area is an appropriate one for an STS major; (b) the listed courses comprise a suitable package of offerings in that area for the purpose of the STS B.A.; and (c) completion of the total course package, with its indicated foundational and advanced elements, is likely to foster a measure of progressive competence by the student in the chosen concentration area.

Signature: _____ Dept. _____

Name: _____ Date: _____