



communication skills and a professional experience through academically-supervised internship and/or a rigorous, research-based academic capstone focusing on policy or program evaluation and analysis.

The objectives of the STS major are to develop in its graduates:

- An understanding of the multi-faceted interactions between society, science and technology;
- Skills needed to analyze these interactions and to formulate policy recommendations;
- The ability to communicate across disciplines and cultures;
- The knowledge and skills to compete in today's international job market.

**Program Purpose:** *Provide details on the intent of the program and its relation to other programs.*

Students pursuing a Bachelor of Science in Science, Technology and Society (STS) learn not only how economic, cultural, political, and social forces affect scientific endeavors and technological innovation but how, in turn, science and technology shape society, cultural values, power relations, and the distribution of resources. The Bachelor of Science in Science, Technology and Society prepares students for the workplace and/or advanced research in the history of science, humanities, political economy, and sociology, particularly careers in government agencies, community outreach, think tanks, science journalism, international institutions, and non-governmental organizations. Students who successfully complete the STS degree will be able to pursue graduate studies in related fields, business administration, law, and public policy. Our career advising is based on the issues that motivate students to effect change for the betterment of society.

In addition to introducing students to a broad assessment of the bi-directional influence of science and technology on society from both a contemporary and historical perspective, the STS education emphasizes important general skills:

- Critical thinking and analytical problem solving;
- Quantitative, qualitative, and other research skills;
- Communication and presentation skills;
- Cross cultural and cross-disciplinary understanding; and
- The ability to contribute to multicultural and multi-disciplinary teams.

**Program Benefits:** *State the impact of the program for students and for IIT.*

Multiple sources have identified lucrative careers related to science, technology and society across a variety of areas. The Science, Technology and Society program will prepare students to pursue their career and will provide expertise in the analysis of science and technology as it may be applied to fields such as medicine, engineering, environmental policy, communication and business.

The Science, Technology and Society degree highlights the existing strengths across the Lewis College of Human Sciences and allows IIT to add value to the current market for science, technology and society-minded undergraduates through its professional orientation. Specific professions in which STS graduates have entered include the following: bioinformatics scientist, business systems analyst, communication support, economist, editor, financial analyst, mechanical design engineer, marketing research manager, medical doctor, museum curator, non-profit founder, policy advisor, policy consultant, technology analyst, among others.<sup>1</sup>

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<sup>1</sup> Sources: [https://sts.stanford.edu/sites/default/files/100\\_jobs\\_in\\_sts\\_0.pdf](https://sts.stanford.edu/sites/default/files/100_jobs_in_sts_0.pdf),  
<http://www.ucl.ac.uk/sts/prospective/careers/alumni-discuss-jobs-with-a-degree-in-sts>,  
<http://drexel.edu/coas/academics/graduate-programs/science-technology-society/alumni/>,  
<http://www.sts.rpi.edu/pl/bs-sts>.

Courses in the STS degree program draw from the offerings in the Social Sciences and the Humanities. The STS degree is deliberately designed to be flexible, allowing STS majors to take 30 credit hours of free electives with which to enhance and focus their training in order to prepare for specific careers or graduate programs. With that in mind, STS academic advisors will strongly recommend that their students use at least 15 of those credits to complete a minor in a STEM or other related fields, to be chosen with the approval of the advisor. The program flexibility is likely to be attractive to external transfer students as well as existing IIT students who may be looking for a dual degree or a change of major.

The degree will be advised and the courses will be taught by faculty members in the Lewis College of Human Sciences, who currently teach undergraduate classes in the proposed STS curriculum (see “Course Requirements” below).

It is expected that the STS undergraduate degree will also provide suitable preparation for several master’s programs in existence or under development at IIT—with an eye toward creating new co-terminal degree programs—including: Master of Public Administration, Master of Laws (L.L.M.), Master of Business Administration, Master of Science in Environmental Sustainability, Master of Science in Technology and Humanities, and Master of Science in Technical Communication and Information Architecture.

## PROGRAM VIABILITY

**Competitive Programs:** *Indicate other similar programs locally and nationally detail their success.*

In Chicago or any university in Illinois, there is no standalone undergraduate STS degree program currently in existence. However, the following U.S. schools offer undergraduate STS majors: Cornell, MIT, Georgia Tech, Virginia Tech, Arizona State, Johns Hopkins, Lehigh, Worcester Polytechnic, and UC Davis. Several of these institutions also have masters and Ph.D. programs in STS, which make them less comparable to STS at IIT as they provide an immediate possibility for an advanced degree. Moreover, many of the listed undergraduate programs are liberal arts type programs, while our program emphasizes methodology, professional training and transferable skills in a terminal undergraduate degree program.

**Market Analysis for Recruiting Students:** *Detail the results of any market analysis performed; if none, provide justification for the program including (potential) employment opportunities for graduates.*

The Science, Technology and Society degree emphasizes the knowledge and skills required for a number of bachelor’s-level jobs listed on O\*NET as having high growth and high income opportunities, such as biostatisticians, management analysts, personal financial advisor, social science instructors, statisticians, and web developers. Students with STS degrees from other institutions have also qualified for additional, post-baccalaureate training leading to employment as Biomedical Engineer; Clinical Data Manager; Information Security Analyst; Commercial and Industrial Designers; Video Game Designers; Search Marketing Strategists; Human Factors Engineers and Ergonomists; and Management Analysts.<sup>2</sup>

In addition, a number of STS-related fellowships and internship programs exist for students and graduates. One of the most well-known fellowship programs in science and technology policy is run by the American Association for the Advancement of Science and among the most well-known science and

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<sup>2</sup> Source: <https://www.onetonline.org/find/bright?b=1&g=Go>

technology policy internships is the Tisdale Fellowship and others.<sup>3</sup>

**Marketing and Advertising:** *List the strategies to be employed for the program.*

A high priority for the university is to build programs and majors in the Lewis College of Human Sciences. Strategies for the program will be developed in consultation with the Admissions office, which has offered to take the necessary steps to promote the program. The Social Sciences Department, where the degree will be officially housed, has already established a relationship with Admissions to develop new materials and recruitment strategies for its existing degrees.

## ACADEMIC INFORMATION

**Enrollment Estimates:** *Provide estimates for initial enrollments (first three years) and for steady state including justification.*

We are targeting 10 students in the first year. We can afford to run the Science, Technology and Society program with fewer students as all of the included classes are already included in other degree programs in the Lewis College.

**Retention Estimates:** *Provide estimates for retention including justification.*

We expect retention rates to be on par with other departments in the college (roughly 90% retention for years 1-2).

**Course Requirements:** *Detail the courses needed for the program including courses currently offered, new courses to be developed, and dependence on courses from other academic units with their commitments to provide these courses on a long-range basis. Include descriptions of laboratories that will need to be developed along with equipment and facilities requirements.*

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<sup>3</sup> For additional details, see <https://www.aaas.org/page/stpf/fellowship-resources>.

**DISTRIBUTION OF CREDIT HOURS**

Science, Technology and Society Major Courses	51
Introduction to the Profession	2
IIT Core-Science	10
IIT Core-CS	2
IIT Core-Math Including PSYC 203 OR BUS 221	6-7
IIT Core-IPRO	6
IIT Core-LCHS	21
Free Electives*	30
<b>MIN TOTAL</b>	<b>128</b>

\* Students are encouraged to complete a minor or dual degree with their free electives and should meet with their advisor to discuss programs that are complementary.

## SCIENCE, TECHNOLOGY AND SOCIETY MAJOR COURSES

<p><b>Core (30 credits)</b></p> <p>LCHS 2XX: Introduction to Science, Technology and Society          PS 332: Politics of Science and Technology          SOC 301: The Social Dimension of Science OR              SOC 303: Science in Society OR              PHIL 351: Science and Values          SOC 322: Sociology of Objects and Technology          SOC 302: Science and Belief          HUM 380: History of Science          PHIL 360: Ethics          SSCI 209: Social Science Research Methods          SSCI 385: Computational Social Science  <i>1 out of 2 Methods courses:</i>              SSCI 389: Urban Policy Analysis              SOC 386: Qualitative Sociological Res. Meth.</p>
<p><b>Electives – Choose at least one from the (i) Policy, (ii) History, (iii) Philosophy, and (iv) Methods rubrics, plus two more for a total of six courses (18 credits). You may take any alternative STS core courses not already taken for the core. For example, if SOC 301 is taken to meet the STS core requirement, then SOC 303 may be taken as an elective.</b></p>
<p><b>(i) Policy</b></p> <p>PS 306: Politics and Public Policy          PS 329: Environmental Politics and Policy          PS 338: Energy Policy          SSCI 354: Urban Policy          SOC 320: Sociology of Accidents, Disasters and Security</p> <p><b>(ii) History</b></p> <p>HIST 340: Rise of the Global Economy          HIST 350: US Urban History          HIST 351: The City in World History          HIST 375: History of Computing          HIST 383: Technology in History 1850 to present          HIST 384: Science in the 20<sup>th</sup> Century</p> <p><b>(iii) Philosophy</b></p> <p>PHIL 302: Origins of Modern Philosophy          PHIL 332: Political Philosophy          PHIL 341: Philosophy of Science          PHIL 342: Philosophy of Mind          PHIL 350: Science and Method          PHIL 370: Engineering Ethics          PHIL 371: Architectural Ethics          PHIL 380: Philosophical and Ethical Issues in Neurosciences</p>

**(iv) Methods**

SSCI 225: Introduction to GIS

SSCI 325: Intermediate GIS

COM 383: Social Networks

**Special Topics**

SSCI 220: Global Chicago

SSCI 319: Comparative Health Systems

HIST 355: Digital Labor

HIST 385: Women in Computing History

HUM 352: Gender and Technological Change

HUM 374: Disasters

COM 350: Digital Media and Citizenship

COM 372: Mass Media and Society

COM 384: Humanizing Technology

PHIL 333: Social Philosophy

PS 360: Global Political Economy

PS 378: The Triple Helix of Development

SOC 211: Introduction to the Sociology of Space

**Capstone (3 credits)**

Choose at least one of the following: SSCI 493: Public Service Internship; SSCI, PS 408: Methods of Policy Analysis, or SSCI 486: Planning, Fundraising and Program Evaluation

**SAMPLE CURRICULUM /PROGRAM REQUIREMENTS**

*Provide below a sample curriculum and the program requirements, as they would appear in the IIT Undergraduate Programs bulletin or Graduate Programs bulletin as appropriate.*

**Course Plan: Science, Technology and Society**

<b>Semester 1</b>	
LCHS 100	2
HUM 20X	3
Social Science 20X or 30X	3
MATH 119	3
CS 105 or 110	2
Natural Science or Engineering Elective	3
	16 cr
<b>Semester 2</b>	
LCHS 2XX: Introduction to Science, Technology and Society	3
SSCI 209: Research Methods	3
Natural Science or Engineering Elective	4
Psych 203 or Bus 221: Statistics	3-4
Free elective	3
	16-17 cr
<b>Semester 3</b>	
PS 332: Politics of Science & Tech	3
SSCI 385: Computational Social Science	3
SOC 301 or 303 or PHIL 351	3
Natural Science or Engineering Elective	3
Free elective	6
	18 cr
<b>Semester 4</b>	
PS 306: Politics and Public Policy	3
Methods course	3
SOC 322: Sociology of Objects and Technology	3
HUM 380: History of Science	3
Free elective	3
	15 cr
<b>Semester 5</b>	
SOC 302: Science and Belief	3
PHIL 360: Ethics	3
STS elective	3
Humanities 30X	3
Free elective	3
	15 cr
<b>Semester 6</b>	
STS elective	3
STS elective	3
Humanities 30X	3
I PRO	3
Free elective	3
Free elective	3
	18 cr
<b>Semester 7</b>	
STS Capstone	3
STS elective	3
I PRO	3
Social Science 30X	3
Free elective	3



	15 cr
<b>Semester 8</b>	
STS elective	3
Social Science 30X	3
Humanities 30X or SOC 30X	3
Free elective	3
Free elective	3
	15 cr
<b>Min Total 128 credit hours</b>	

## **ECONOMIC ANALYSIS**

This degree program can be established in the short term with very few resources. All of the courses are currently taught or can be taught by an existing faculty member.

## **ASSESSMENT PLAN**

### **Learning Objectives:**

**LO1-Knowledge:** Students will demonstrate knowledge of issues at the intersections of science, technology, and society.

Goals:

- 1: Students will be able to describe and explain major concepts and theoretical principles.
- 2: Students will be able to describe and explain research directions and scholarly trends.
- 3: Students will be able to describe and explain key components of the societal impact of science and technology.

**LO2-Application:** Students will demonstrate abilities to analyze the societal impact of science and technology, and critically evaluate potential solutions.

Goals:

- 1: Students will demonstrate their ability to define the challenges brought about by science and technology, and determine their impact.
- 2: Students will demonstrate that they can critically review theoretical explanations of societal problems and solutions.
- 3: Students will demonstrate their ability to justify evidence based assumptions or recommendations.

**LO3-Communication:** Students will demonstrate effective communication skills.

Goals:

- 1: Students will be able to articulate and defend arguments that are clear, logical and substantive
- 2: Students will be able to disseminate and explain research results in different formats.

**Course Plan: Science, Technology and Society – Biology minor**

<b>Semester 1</b>	
LCHS 100	2
HUM 20X	3
Social Science 20X or 30X	3
MATH 122: Introduction to Calculus	3
CS 105 or 110	2
BIOL 107: General Biology Lectures	3
	16 cr
<b>Semester 2</b>	
LCHS 2XX: Introduction to Science, Technology and Society	3
SSCI 209: Research Methods	3
BIOL 115: Human Biology	3
Psych 203 or Bus 221: Statistics	3-4
CHEM 122: Principles of Chemistry I Without Laboratory	3
	15-16 cr
<b>Semester 3</b>	
PS 332: Politics of Science & Tech	3
SSCI 385: Computational Social Science	3
SOC 301 or 303 or PHIL 351	3
BIOL 214: Genetics	3
CHEM 126: Principles of Chemistry II Without Laboratory	3
Free elective	3
	18 cr
<b>Semester 4</b>	
STS elective	3
Methods course	3
SOC 322: Sociology of Objects and Technology	3
HUM 380: History of Science	3
CHEM 237: Organic Chemistry I	4
	16 cr
<b>Semester 5</b>	
SOC 302: Science and Belief	3
PHIL 360: Ethics	3
STS elective	3
Humanities 30X	3
BIOL 445: Cell Biology	3
	15 cr
<b>Semester 6</b>	
STS elective	3
STS elective	3
Humanities 30X	3
I PRO	3
BIOL 401: Introduction to Biochemistry	3
Free elective	3
	18 cr
<b>Semester 7</b>	
STS Capstone	3
STS elective	3
I PRO	3
Social Science 30X	3
Free elective	3
	15 cr

<b>Semester 8</b>	
STS elective	3
Social Science 30X	3
Humanities 30X or SOC 30X	3
Free elective	3
Free elective	3
	15 cr
<b>Min Total 128 credit hours</b>	

**Course Plan: Science, Technology and Society – Chemistry minor**

<b>Semester 1</b>	
LCHS 100	2
HUM 20X	3
Social Science 20X or 30X	3
MATH 122: Introduction to Calculus	3
CS 105 or 110	2
CHEM 124: Principles of Chemistry I with Laboratory	4
	17 cr
<b>Semester 2</b>	
LCHS 2XX: Introduction to Science, Technology and Society	3
SSCI 209: Research Methods	3
CHEM 125: Principles of Chemistry II with Laboratory	4
Psych 203 or Bus 221: Statistics	3-4
Engineering or natural science elective (excluding CHEM)	3
	16-17 cr
<b>Semester 3</b>	
PS 332: Politics of Science & Tech	3
SSCI 385: Computational Social Science	3
SOC 301 or 303 or PHIL 351	3
CHEM 237: Organic Chemistry I	4
CHEM 247: Analytical Chemistry	3
	16 cr
<b>Semester 4</b>	
STS elective	3
Methods course	3
SOC 322: Sociology of Objects and Technology	3
HUM 380: History of Science	3
CHEM 239: Organic Chemistry II	3
Free elective	3
	18 cr
<b>Semester 5</b>	
SOC 302: Science and Belief	3
PHIL 360: Ethics	3
STS elective	3
Humanities 30X	3
CHEM 410: Science of Climate Change	3
	18 cr
<b>Semester 6</b>	
STS elective	3
STS elective	3
Humanities 30X	3
I PRO	3
CHEM 472: Environmental Chemistry	3
Free elective	3
	18 cr
<b>Semester 7</b>	
STS Capstone	3
STS elective	3
I PRO	3
Social Science 30X	3
Free elective	3
Free elective	3

	18 cr
<b>Semester 8</b>	
STS elective	3
Social Science 30X	3
Humanities 30X or SOC 30X	3
Free elective	3
Free elective	3
	15 cr
<b>Min Total 130 credit hours</b>	

**Course Plan: Science, Technology and Society – Artificial Intelligence minor**

<b>Semester 1</b>	
LCHS 100	2
HUM 20X	3
Social Science 20X or 30X	3
MATH 122: Introduction to Calculus	3
CS 104: Introduction to Computer Programming for Engineers	2
Natural Science or Engineering Elective	3
	16 cr
<b>Semester 2</b>	
LCHS 2XX: Introduction to Science, Technology and Society	3
SSCI 209: Research Methods	3
Natural Science or Engineering Elective	4
Psych 203 or Bus 221: Statistics	3-4
CS 201: Accelerated Introduction to Computer Science	4
	17-18 cr
<b>Semester 3</b>	
PS 332: Politics of Science & Tech	3
SSCI 385: Computational Social Science	3
SOC 301 or 303 or PHIL 351	3
Natural Science or Engineering Elective	3
CS 330: Discrete Structures	3
CS 401: Introduction to Advanced Studies I	3
	18 cr
<b>Semester 4</b>	
STS elective	3
Methods course	3
SOC 322: Sociology of Objects and Technology	3
HUM 380: History of Science	3
CS 331: Data Structures and Algorithms	3
	15 cr
<b>Semester 5</b>	
SOC 302: Science and Belief	3
PHIL 360: Ethics	3
STS elective	3
Humanities 30X	3
CS 430: Introduction to Algorithms	3
	15 cr
<b>Semester 6</b>	
STS elective	3
STS elective	3
Humanities 30X	3
I PRO	3
CS 402: Introduction to Advanced Studies II	3
CS 480: Artificial Intelligence Planning and Control	3
	18 cr
<b>Semester 7</b>	
STS Capstone	3
STS elective	3
I PRO	3
Social Science 30X	3
Free elective	3
	15 cr

<b>Semester 8</b>	
STS elective	3
Social Science 30X	3
Humanities 30X or SOC 30X	3
Free elective	3
Free elective	3
	15 cr
<b>Min Total 129 credit hours</b>	



**Course Plan: Science, Technology and Society – Building Systems Engineering minor**

<b>Semester 1</b>	
LCHS 100	2
Social Science 20X or 30X	3
MATH 151: Calculus I	5
CS 104: Introduction to Computer Programming for Engineers	2
CHEM 124: Principles of Chemistry I with Laboratory	4
	16 cr
<b>Semester 2</b>	
LCHS 2XX: Introduction to Science, Technology and Society	3
HUM 20X	3
SSCI 209: Research Methods	3
PHYS 123: General Physics I: Mechanics	4
MATH 152: Calculus II	5
	18 cr
<b>Semester 3</b>	
PS 332: Politics of Science & Tech	3
SSCI 385: Computational Social Science	3
SOC 301 or 303 or PHIL 351	3
CAE 208: Thermal-Fluids Engineering I	3
MATH 251: Multivariate and Vector Calculus	4
	16 cr
<b>Semester 4</b>	
STS elective	3
SOC 322: Sociology of Objects and Technology	3
HUM 380: History of Science	3
MATH 252: Introduction to Differential Equations	4
CAE 209: Thermal-Fluids Engineering II	3
	16 cr
<b>Semester 5</b>	
SOC 302: Science and Belief	3
PHIL 360: Ethics	3
STS elective	3
STS elective	3
Humanities 30X	3
Methods course	3
	18 cr
<b>Semester 6</b>	
STS elective	3
Humanities 30X	3
I PRO	3
Social Science 30X	3
CAE 331: Building Science	3
CAE 4xx: Building Systems Elective	3
	18 cr
<b>Semester 7</b>	
STS Capstone	3
STS elective	3
I PRO	3
CAE 4xx: Building Systems Elective	3
CAE 4xx: Building Systems Elective	3
	15 cr
<b>Semester 8</b>	

STS elective	3
Social Science 30X	3
Humanities 30X or SOC 30X	3
CAE 4xx: Building Systems Elective	3
Free elective	3
	15 cr
<b>Min Total 132 credit hours</b>	

**Course Plan: Science, Technology and Society – Structural Engineering minor (non-CAEE/ARCH)**

<b>Semester 1</b>	
LCHS 100	2
Social Science 20X or 30X	3
MATH 151: Calculus I	5
CS 104: Introduction to Computer Programming for Engineers	2
PHYS 123: General Physics I: Mechanics	4
	16 cr
<b>Semester 2</b>	
LCHS 2XX: Introduction to Science, Technology and Society	3
HUM 20X	3
SSCI 209: Research Methods	3
CAE 286: Theory and Concept of Structural Mechanics	3
MATH 152: Calculus II	5
	17 cr
<b>Semester 3</b>	
PS 332: Politics of Science & Tech	3
SSCI 385: Computational Social Science	3
SOC 301 or 303 or PHIL 351	3
CAE 287: Mechanics of Structural Materials	3
MATH 252: Introduction to Differential Equations	3
	15 cr
<b>Semester 4</b>	
STS elective	3
Methods course	3
SOC 322: Sociology of Objects and Technology	3
HUM 380: History of Science	3
CAE 303: Structural Design I	3
CAE 315: Materials of Construction	3
	18 cr
<b>Semester 5</b>	
SOC 302: Science and Belief	3
PHIL 360: Ethics	3
STS elective	3
Humanities 30X	3
CAE 304: Structural Analysis I	3
	18 cr
<b>Semester 6</b>	
STS elective	3
Humanities 30X	3
I PRO	3
Social Science 30X	3
CAE 307: Structural Design II	3
CAE 431: Steel Design	3
	18 cr
<b>Semester 7</b>	
STS Capstone	3
STS elective	3
STS elective	3
I PRO	3
Free elective	3
	15 cr
<b>Semester 8</b>	

STS elective	3
Social Science 30X	3
Humanities 30X or SOC 30X	3
Free elective	3
Free elective	3
	15 cr
<b>Min Total 129 credit hours</b>	