Date Submitted: 03/22/23 11:39 am

Viewing: BS-STSS-1 : Bachelor of Science in Science, Technology, and Society

Last approved: 10/23/20 7:31 pm

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Changes proposed by: ymansury

Catalog Pages Using this Program	Bachelor of Science in Science, Technology, and Society

Program Status	Hiatus ~~Active~~				
Requestor	Name	Yuri Mansury ~~Holli Pryor-Harris~~	E-mail	ymansury@iit.edu ~~pryor@iit.edu~~	
Origination Date	2023-3-22 ~~2020-10-23~~				
Is this an interdisciplinary program?	No				
Academic Unit	Social Sciences		College	Lewis College of Science and Letters	
Program Title	Bachelor of Science in Science, Technology, and Society				
Effective Academic Year	2023 ~~2020~~ - 2024 ~~2021~~	Effective Term	Fall 2023		
Academic Level	Undergraduate				
Program Type	Degree				
Degree Type	Bachelor of Science (BS)				
CIP Code	24.0101 - Liberal Arts and Sciences/Liberal Studies.				
Is there more than one Academic Unit proposer?	No				
Program Code	BS-STSS-1				
Program Attribute					
Total Program Credit Hours	128				
Please provide a summary and rationale for the requested program revision.	10/23/2020 Updated program iteration code and effective CAT year/term for College Reorg. HPH 03/19/2023: Social Sciences faculty voted unanimously on March 13, 2023, to place the Science, Technology, and Society (STS) program on hiatus status. Reasons: (i) Social Sciences wish to consolidate the existing programs (including STS) into the upcoming Public Policy program. (ii) The program currently has no student majors and historically has never had more than two students in the major.				

Program Narrative and Justification

In Workflow

1. SSCI Chair
2. Academic Affairs
3. Undergraduate Academic Affairs
4. LS Dean
5. Undergraduate Studies Committee Chair
6. Faculty Council Chair
7. Faculty Council Chair
8. Provost
9. President
10. Academic Affairs

Approval Path

1. 03/24/23 8:37 am Jeffrey Terry (terryj): Approved for SSCI Chair
2. 03/27/23 10:42 am Patty Johnson Winston (winston): Approved for Academic Affairs
3. 03/27/23 12:20 pm Joseph Gorzkowski (jgorzkow): Approved for Undergraduate Academic Affairs

History

1. Jun 11, 2019 by Jonathan Rosenberg (jrosenb5)
2. Jun 25, 2019 by Sarah Pariseau (sparisea)
3. Jul 11, 2019 by Sarah Pariseau (sparisea)
4. Oct 23, 2020 by Holli Pryor-Harris (pryor)

Narrative description of how the institution determined the need for the program. For example, describe what need this program will address and how the institution became aware of that need. If the program is replacing a current program(s), identify the current program(s) that is being replaced by the new program(s) and provide details describing the benefits of the new program(s). If the program will be offered in connection with, or in response to, an initative by a governmental entity, provide details of that initiative.

Science, Technology and Society (STS) is a social scientific and humanistic field of study in which the primary research objects are science and technology; the processes and paradigms through which science and technology evolve; and how the results relate to society, culture and politics. Research questions typical to the field include: What is the role of users in the development of new technology? How do relevant actors and audiences adopt new technologies and scientific paradigms? Can technology discriminate, and if so, how do we "govern" its consequences? How are expertise and authority established and contested? How do we balance technological progress versus technological risk?

The program was initiated by a group of faculty with decades of teaching and research experience in sociology, politics and public policy, geography, philosophy, and history related to science and technology. They perceived a growing need, as well as the considerable strengths of Illinois Tech for delivering a program that would both serve the intellectual and career aspirations of our students and attract a new cohort of social science-oriented students to Illinois Tech. At the time these discussions began, faculty and courses were already in place that could be the foundation for an undergraduate STS major. Subsequent hires in Social Sciences and Humanities have enhanced that capacity. Therefore, the program can be delivered without additional faculty resources, using mostly existing courses, without compromising on content or quality.

STS programs have existed, in various forms, in colleges and universities in the US and UK since the mid-1970s. They range from undergraduate minors, to second majors, to stand-alone majors, to master's and doctoral degree programs. Data on the actual number of undergraduate bachelor's degree programs varies considerably, depending on the source. Cal Poly Pomona identifies 35 colleges and universities in the United States with STS programs (1). Using a somewhat broader definition, the College Board lists 71. These programs are structured and delivered differently by the wide variety of small colleges, large universities, and STEM oriented institutions that offer them (2). Regardless, STS is increasingly recognized as an important platform for education, research and career development.

Nationally, the following schools offer a standalone undergraduate major in Science and Technology Studies: Cornell, Georgia Tech, Arizona State, Lehigh, Worcester Polytechnic, Brown, University of Washington-Bothell, Bard, RPI, Vassar, University of Texas-Austin, Pomona College, University of Puget Sound, University of Pennsylvania, NYU Polytechnic, North Carolina State, Stanford, New Jersey Institute of Technology, SUNY Morrisville, Harvard, Colby, Cal Poly-Pomona, and the University of California-Davis. Several more feature a major with a narrower scope, such as majors at Princeton and Worchester Polytechnic which each combine STS with policy studies; and several schools with majors focused on the history of science and technology (University of Oklahoma and Johns Hopkins), with one school (Yale) focusing jointly on the history of medicine and public health.

While this proposed program bears similarities to established standalone STS majors in other tech schools, it also leverages distinctive resources of Illinois Tech. It would be unique in Illinois, where there is currently no standalone undergraduate STS degree program. The closest local equivalent is Northwestern University's 10-course "adjunct major" or a minor with core requirements, which draws exclusively from the social sciences and humanities and lacks significant STEM requirements.

Many of the undergraduate programs are liberal arts type programs, while our program emphasizes methodology, professional training and transferable skills in a STEM-oriented undergraduate degree program. And while our program would be locally unique, it draws from best practices of prominent and well-established national examples including similar specializations. Therefore, with this program, Illinois Tech will be able to attract local students who would otherwise have to leave the area to for a comparable degree.

Table 1 summarizes and compares the requirements of established STS programs at twelve US colleges and universities of various sizes, including four technological institutes (see, STS major proposal --tables, "Table 1: Selected existing STS program").

The relevance to STEM is recognized by the National Science Foundation (NSF), which has described STS training and education as central to solutions-oriented research in sustainability, and resilience and adaptation in the face of rapid global environmental change and the introduction of innovative technologies. A workshop organized by the NSF in 2008, "Science, Technology and Sustainability: Building a Research Agenda," emphasized the critically important role STS studies will play in advancing knowledge, research and practice in sustainability. Areas of particular importance that were identified are: 1) Socio-technical

systems, including “work in the fields of STS research [focusing] on the coupled systems that link human and social values, behavior, relationships, and institutions to science and technology (p. 3).” 2) Knowledge, ideas and values, involving “inquiries into the human and social practices and arrangements and conceptual and ethical frameworks that provide foundations for particular ways of knowing and valuing aspects of society and the environment that are critical to sustainability problems and solutions (p. 3).” 3) Science, technology and governance, with a “focus on strategies and institutions for governing science and technology in society (p. 3).” And while the report focused on support for research and graduate studies, it also noted the importance of earlier training at the high school and undergraduate levels for building capacity and diversity in STS research and practice (pp. 18-19) (3).

The NSF Science, Technology and Society program (under the Division of Social and Economic Sciences) reflects the orientation of several of the undergraduate STS programs examined in establishing the need for this program.

"The Science, Technology, and Society (STS) program supports research that uses historical, philosophical, and social scientific methods to investigate the intellectual, material, and social facets of the scientific, technological, engineering and mathematical (STEM) disciplines. It encompasses a broad spectrum of STS topics including interdisciplinary studies of ethics, equity, governance, and policy issues that are closely related to STEM disciplines, including medical science (4)."

This is backed up by STS programs at other universities. For example, the Stanford University STS program webpage lists no fewer than 11 scholarly journals that are either solely devoted to STS or contain substantial STS content(5).

Therefore, it is in the interest of Illinois Tech students to 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. In the degree proposed here, a suite of core major requirements exposes students to a wide range of thinking on those vital issues; then students specialize in an area from which such knowledge is derived and to which it may be applied; and their specialization is coupled with a STEM minor or equivalent STEM content to familiarize them with an applicable technical or scientific field. In that way, students will enter the workforce and/or post-baccalaureate study with the tools to analyze the social, economic and political impacts of science and technology and the skills needed to communicate and collaborate with scientists and engineers in a wide range of professional settings, including government agencies, community-based organizations, think tanks, news and media organizations, international institutions, non-governmental organizations, and innovative businesses. Students who achieve high levels of academic success in completing the STS bachelor’s degree will be able to pursue graduate studies in related fields, such as business administration, law, and public policy, STS and related masters and doctoral programs.

Data from STS programs at other colleges and universities indicate that graduates—with the appropriate additional training and experience—have also gone on to careers in medicine, engineering, product development, management, media production, engineering, and entrepreneurship. Students majoring in STS will receive career advising informed by the issues that motivate them to effect change for the betterment of society through work and/or research in their chosen fields.

The range of potential career options is broad due to the inherently inter-disciplinary nature of the STS program. In addition to introducing students to a broad assessment of the bi-directional influence of science and technology on society from both contemporary and historical perspectives, an STS education emphasizes important general skills:

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

Courses in the STS degree core draw from the offerings in the Social Sciences and Humanities departments and highlight existing strengths across the Lewis College of Human Sciences. Overall, the degree strikes a balance between focus and flexibility. It is built around a core that emphasizes social science research methods and theory, as well as humanistic study of science and technology. Within the major students will chose one of two areas of concentration, a specialization in Science, Technology and Environmental Policy; or Information, Communication and Society. Free electives allow students to enhance and focus their training and broaden their perspective. In addition, in order to provide a solid foundation in a scientific, technical or related field, the program requires a minimum of 15 STEM related credits beyond

Narrative description of how the program was designed to meet local market needs, or for the College of Science, regional or national market needs. For example, indicate if Bureau of Labor Statistics data or State labor data systems information was used, and/or if State, regional, or local workforce agencies were consulted. Include how the course content, program length, academic level, admission requirements, and prerequisites were decided, including information received from potential employers about course content; and [illegible]

[illegible] College of Engineering, Industrial Technology & Management, Information Security, or Architecture. Advisors will work with students to assure that all the elements of the major (core courses, specialization, and STEM coursework) complement each other and are relevant to the career goals, interests and aptitudes of each student. The STEM content is also specific [illegible] the proposed STS degree. This involves promoting professional development by pairing the "soft skills" of social sciences and humanities education such as understanding complex institutional environments and analysis of social and political systems with "hard skills" in both the social sciences and STEM fields, providing a distinct advantage over BA degree STS programs that lack STEM content. In academia and industry there is a growing recognition that the so-called "soft skills" associated with a broad social science and humanities education are essential to the efficiency and effectiveness of STEM training and businesses(1,2,3). [illegible] fields and research methods that this degree will offer. Recent studies indicate that [illegible] developed and applied in business and industry [illegible] well-developed capacity to work with others [illegible] complexity and change. A [illegible] Michigan State University report indicated excellent prospects for new college graduates in the region across a wide range of fields and industries but also contains the following caveats.

Notes:

1. Cal Poly Pomona. n.d. "About STS." Available at https://www.cpp.edu/~class/science-technology-society/about/index.shtml. Last accessed 20 June 2018.
2. See, https://bigfuture.collegeboard.org/college-search?major=970_Science,%20Technology,%20and%20Society
3. Miller, C., D. Sarewitz, A. Light. 2008 Science, Technology, and Sustainability: Building a Research Agenda. National Science Foundation Supported Workshop, 8-9 September 2008. Available at https://www.nsf.gov/sbe/ses/sts/Science_Technology_and_Sustainability_Workshop_Rpt.pdf Last accessed 5 June 2018.
4. Science, Technology and Society (STS), National Science Foundation. Available at https://nsf.gov/funding/pgm_summ.jsp?pims_id=5324. Last accessed 8 June 2018.
5. See, Stanford, The Program in Science, Technology and Society. What is STS? Available at https://sts.stanford.edu/about/what-sts. Last accessed 21 September 2018.

• Employers lament the lack of "soft skills" among college graduates, especially the ability to work with diverse personalities and across different functional areas.
• Internships are important since employers prefer to hire those with professional experience(4).

This substantiates observations by several scholars and practitioners that, as much or more than technical competence, future employers look for communication and problem-solving skills, and the ability to think creatively. In other words, the current emphasis is on cognitive and social rather than technical qualifications. There is wide agreement about this across industrial fields. Moreover, students are expected to enter the job market with these capabilities already developed(5).

The record of established STS undergraduate programs regarding placement of their students in jobs, professions and graduate programs reflect a wide range of opportunities. Those programs identify careers related to science, technology and society across a variety of areas, substantiated by stories of the careers of successful alumni. These include writing and research-heavy careers in science and technology; consulting on policy and management related to emerging technologies; marketing and policy analysis for tech companies and foundations; sales and communications positions at tech and energy companies; policy specialists with federal, state and local government agencies and non-profits; administrative and academic positions at colleges and universities; and entrepreneurship involving a wide range of products and services. In addition, specific professions reported by other institutions for their STS graduates who went on for advanced graduate or professional degrees include: business systems analyst, communication support, economist, editor, financial analyst, marketing research manager, medical doctor, museum curator, non-profit founder, policy advisor, policy consultant, regulatory and compliance officer, and technology analyst(6). A particularly strong area of job growth according to the U.S. Bureau of Labor Statistics is Health Care and Social Assistance, projected to add nearly 4 million jobs by 2026, or about one-third of all new jobs(7). 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(8).

It should be understood that the data provided by established STS programs at other colleges and universities is limited and mainly anecdotal. Career paths—from completion of bachelor's degree to current position—are not specified. But they may be taken as indications of the possibilities that exist for STS majors—many of which require additional training and experience—but are difficult to anticipate.

The combination of "soft skills" and technical knowledge, from the appropriate specialization (such as Science, Technology and Environmental Policy) and STEM coursework will prepare students for fields that require social scientific knowledge and the ability to understand,

analyze and communicate relevant scientific and technical information. Opportunities for an STS graduate with, for example, an Information Security minor include positions concerned with drafting or maintenance of information security policy, as well as technical writing positions in information security(9). STS degree requirements also align well with the knowledge and skills sought by several employers hiring graduates with bachelor's degrees for work related to the challenges of environmental sustainability; such as Climate Change Analyst. O*NET lists 16 skills associated with the profession. Although 79 percent of people employed in the field have a master's degree, the work emphasizes the skills and areas of knowledge that the STS major can provide, allowing graduates to either compete for entry-level positions or pursue more advanced training.

Several courses in the specialization and STS core provide direct preparation for graduates seeking such positions. These include: PS 329, Environmental Politics and Policy; PS 338, Energy Policy; SSCI 380, International Development; and PS 388, International Law and Organizations. In addition, advisors can authorize substitutions with special topics courses, such as recent offerings in Urbanized Ecosystems, Climate Change Law and Policy, and Environmental Politics and Economic Globalization. A valuable skill set will be provided by the capstone course recommended for this specialization: SSCI 408, Methods of Policy Analysis. Careers such as those described above value research skills and policy impact analysis focused on particular types of industrial, activities, patterns of human settlement, and geography. Courses that provide useful preparation include SSCI 389, Urban Policy Analysis; SSCI 225 and 325, Geographic Information Systems; or selected social science electives, such as SSCI 388, Economic Impact Analysis; and SSCI 389, Urban Planning Analysis.

It is expected that the STS undergraduate degree will also provide suitable preparation for several master's programs in existence or under development at Illinois Tech—with an eye toward creating new co-terminal degree programs—including: Master of Public Administration, Master of Law (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.

Finally, a number of STS-related fellowships and internship programs exist for students and graduates. One of the best-known fellowship programs in science and technology policy is run by the American Association for the Advancement of Science, including the Tisdale Fellowship in science and technology policy(10). In addition, many of the organizations listing employment opportunities consistent with STS training also offer internships (especially in the government and not-for-profit sectors).

Notes:
1. The Future of Jobs Report, World Economic Forum Annual Meeting 2016, Davos-Klosters, Switzerland 20-23 January 2016.
2. What Graduates Need to Succeed – Colleges and Employers Weigh In. Chronicle of Higher Education, May 2017.
3. See, for example, Sue Marquette Poremba, 2017, Soft skills every tech worker needs, IT Business Edge. Available from https://www.itbusinessedge.com/articles/soft-skills-every-tech-worker-needs.html,; Dawn Kwamoto, 2016, Why technical skills get you in the door, but soft skills advance your career, available from https://insight.ieeeusa.org/articles/why-technical-skills-get-you-in-the-door-but-soft-skills-advance-your-career-2/; Ruy Araujo Costa, 2015, Soft skills for science and technology students: a pedagogical experience, Proceeding of the 2015 Conference on Interactive Collaborative Learning, DOI 410.1109/ICL.2015.7318206, available from https://ieeexplore.ieee.org/document/7318206/; David J. Deming, 2018, The value of soft skills in the labor market, NBER Reporter, available at http://www.nber.org/reporter/2017number4/deming.html. All of the above were last accessed September 21, 2018.
4. Cited in Kim Kozlowski, MSU study: Job outlook bright for college graduates, The Detroit News, October 25, 2018, available from: https://www.detroitnews.com/story/news/local/michigan/2018/10/25/michigan-state-study-job-outlook-bright-college-graduates/1762231002/?elqTrackId=47c2c3eeaaf04cb59259fcd321b23d93&elq=cb4b8aec3f0343b2ad2a3b3873efc1c3&elqaid=21146&elqat=1&elqCampaignId=10052. Last accessed 26, October 2018. Significantly, this report surveyed 3,300 employers from US states and territories with Illinois and Michigan listed among the states with the highest numbers of usable responses.
5. See, for example, The Future of Jobs Report, World Economic Forum Annual Meeting 2016, Davos-Klosters, Switzerland 20-23 January 2016; and What Graduates Need to Succeed – Colleges and Employers Weigh In. Chronicle of Higher Education, May 2017.
6. Sources: 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.
7. Source: https://www.bls.gov

Narrative description of any wage analysis, including any consideration of Bureau of Labor Statistics wage data related to the new program.

8. Source: https://www.onetonline.org/find/bright?b=1&g=Go
9. NICE work role Cyber Policy and Strategy Planner, OV-SPP-002 as per NIST Special Publication 800-181. Available from https://csrc.nist.gov/publications/detail/sp/800-181/final. Last accessed 12 June 2018.
10. For additional details, see

"[e]mployment of life, physical, and social science occupations is projected to grow 10 percent from 2016 to 2026, faster than the average for all occupations, which will result in about 124,800 new jobs. Increasing demand for expertise in the sciences, particularly in occupations involved in biomedical research, psychology, energy management, and environmental protection, is projected to result in employment growth."
The median annual wage for life, physical, and social science occupations was $64,510 in May 2017, which was higher than the median wage for all occupations of $37,690(1)."

O*NET provides data for median wages with appropriate undergraduate degrees and skill sets for several of the occupational categories mentioned above. Table 2 provides a sample of those requiring skills and knowledge acquirable through the STS major, and for which a bachelor's degree is the most common "educational level required(2)." Note that some of these occupational categories require substantial on-the-job experience and/or post-baccalaureate degrees for advancement; therefore, median wages may also reflect a substantial minority of employees with qualifications beyond a bachelor's degree. (See STS proposal--tables, Table 2: Careers obtainable with STS major.)

More specifically, and perhaps a clearer indication of entry-level salaries for graduates with BS degrees, the New Jersey Institute of Technology reports an average starting salary for its class of 2016 STS majors of $50,775(3).

Specializations and careers
Each STS major will choose a 15 credit-hour specialization within the major and either a catalog-listed STEM minor or 15 credits of appropriate STEM coursework. The option of appropriate STEM coursework can be satisfied by an appropriately structured set of 15 credits of STEM courses outside the Core Curriculum, after consultation with the STS adviser and approval by the faculty/adviser(s) in the relevant STEM fields. Students will be advised on the selection of specialization and minor—along with course selection within the major core and elective requirements—based on their career goals and interests. With the appropriate specialization, STS majors will be prepared for fields that require social scientific knowledge and the ability to understand, analyze and communicate relevant scientific and technical information.

The following sections discuss sets of careers associated with specific combinations of specializations within the STS major, required STEM content and, where appropriate, post-baccalaureate training. These are representation samples with specified career paths, based current or recent job announcements are presented for each of the proposed specializations.

i. Specialization in Science, Technology and Environmental Policy
The specialization emphasizes political dynamics and policy challenges at multiple levels of governance—local, national, regional, and global—and the societal impacts of change in such areas as technological innovation, as well as various aspects of human security, and sustainability of the natural environment. This specialization emphasizes policy analytical tools, and the curriculum is designed to provide students with repeated opportunities to conduct policy analysis.

The specialization examines the aforementioned issue-areas as connected sets of economic and social challenges with the goal of helping students understand and contribute to societal responses. With the communication and research skills gained through the STS core requirements and IIT Core Curriculum, graduates are prepared for entry level positions in a variety of government agencies, environmental NGOs, businesses and professional organizations, and prepared for post-baccalaureate studies in STS, Environmental Studies, Public Policy, and related fields.

Many of the minors relevant for students specializing in Science, Technology, and Environmental Policy will complement a student's training in policy analysis, particularly areas targeting innovation processes at local and national levels, and environmental policy as implemented by local and national governments, and international organizations. For example:

• Students minoring in Artificial Intelligence will be able to conduct analyses on policies related to surveillance, smart policing, and the Internet of Things.
• Students seeking positions related to urban sustainability and/or environmental impacts of the built environment could minor in Architecture or Construction Management.
• Students minoring in Information Security will be able to conduct analyses on cyberattacks, malware, and the international political economy of a revamped Cold War that centers on the embedding of security risks within countries' high technology exports.

• Students interested in biodiversity conservation or the effects of environmental stressors on health and wellness may choose to minor in Biology or Food Science and Nutrition(4).
• Students minoring in Applied Math or Statistics could work in data analytics in research institutes, NGOs, financial services and management consulting; this path also strengthens applications for graduate study in Public Policy Analysis.

Narrative description of how the program was reviewed or approved by, or developed in conjunction with, one or more of the following: a) business advisory committees; b) program integrity boards; c) public or private oversight or regulatory agencies (not including the state licensing/authorization agency and accrediting agency); and d) businesses that would likely employ graduates of the program. For example, describe the steps taken to develop the program, identify when and with whom discussions were held, provide relevant details of any proposals or correspondence generated, and/or describe any process used to evaluate the program.

The proposal process has benefited from the advice of experts with extensive experience in STS and related fields. It was developed by a committee of social science and humanities faculty with decades of experience researching and teaching in STS-related areas of sociology, political science and public policy, philosophy, history, and regional science. In addition, one member of the committee has an undergraduate degree in metallurgical engineering, another has a master's degree in chemistry and molecular biology (with minors in mathematics and physics), and a third member has a bachelor's degree in computer science and a master's degree in urban planning.

Faculty involved at various stages of the process carefully researched programs at other institutions. Three members regularly participate in professional association meetings and conferences that provide opportunities to network and consult with faculty from other institutions with STS programs including the Society for Social Studies of Science (the international professional organization of STS scholars), the European Association for Science and Technology Studies, the Society for the History of Technology, the Atlanta Conference of Science and Innovation Policy, the Science, Knowledge and Technology Section of the American Sociological Association, and the Triple Helix International Conference.

An earlier version of this proposal was presented to the Undergraduate Studies Committee (UGSC) and received useful recommendations for including adequate science and technology content and greater clarity of purpose. Further review of established STS programs at comparable institutions also reinforced the usefulness of specializations (or areas of concentration) for focusing students' interests. Consultations by committee members with other Illinois Tech departments, colleges, and programs reinforced the UGSC recommendations for adding required STEM content in the form of a minor or course cluster.

Those meetings included discussions of appropriate minors, the possible creation of new minors tailored to the needs of STS students, and career preparation. Members also discussed the proposal with the original Academic Director of the Kaplan Institute and faculty from the Institute of Design, indicating that: the program would be good preparation (after appropriate field experience) for graduate study at ID; STS students could make important contributions to the work of the Kaplan Institute as participants in projects and observers and analysts of the nature of news in our discourse, and new ideas and products in the marketplace.

What are the enrollment estimates?

Year 1 5 new students Year 2 5 new students Year 3 5 new students

Attach Additional Program Justification Document(s)

STS major proposal- tables.docx
APPENDIX- STEM content advising.docx

Academic Information

Advising

Since quality advising is a key component of good retention, graduation, and career placement, how will students be mentored? What student professional organizations will be formed? How will the department work with the Career Services office to develop industry connections?

Students majoring in STS will be advised by a program director chosen from among the qualified faculty of the Social Sciences Department. Advising on the minor or STEM content will be provided by the adviser in the minor/STEM field. Other faculty participating in the program will assist with student mentoring, such as internship supervision and career advice in their areas of expertise once students have chosen their specializations. Students may also get the benefit of input from faculty in the departments of their minors.

A curriculum committee will be formed consisting of three or four faculty from Social Sciences and Humanities. The committee will recommend and review curriculum changes and conduct annual program assessments. The department has not as yet consulted extensively with Career Services due to transition in that office; however, it has solicited information on industry connections from other staff at Illinois Tech and used that to inform planning. It is our intention to build a strong relationship with Career Services.

Program Resources

Which program resources are

Personnel
Communications

necessary to offer this program?

Describe the personnel requirements necessary to offer the program. Describe how and when resources will be made available to hire any additional personnel that are required.

The faculty resources currently available in the Social Sciences and Humanities Departments, and Lewis College are expected be sufficient because all but one course proposed for the degree is listed in the bulletin and most of those are in current faculty rotations. Only one new course will need to be developed and assigned—LCHS 2XX, Introduction to Science, Technology, and Society.

Notes:

1. Bureau of Labor Statistics. Occupational Outlook Handbook: Life, Physical and Social Science Occupations. U.S. Department of Labor. Available from: https://www.bls.gov/ooh/life-physical-and-social-science/home.htm. Last accessed 1 June 2018.
2. Data compiled from O*NET Online, "Find Occupations; career clusters." Available from: https://www.onetonline.org/find/. Last accessed 19 June 2018.
3. Science, Technology, and Society, New Jersey Institute of Technology, available from: https://www.njit.edu/academics/major/science-technology-and-society. Last accessed 24 October 2108.
4. Several other minors would be appropriate choices but the prerequisites for required courses may make them inaccessible for many STS majors.
5. Available from: https://nmhc.referrals.selectminds.com/jobs/innovation-analyst-innovation-full-time-days-21674. Last accessed November 3, 2018.
6. Available from: https://www.peak6.com/open-positions/?gh_jid=1279751. Last accessed November 3, 2018.
7. Available from https://www.nature.org/en-us/connect/careers/. Last accessed September 7, 2018.
8. See, https://www.unenvironment.org/work-with-us. Last accessed September 19, 2018.
9. All internships refer to actual listings in the Chicago area from indeed.com, current to October 23, 2018.
10. All jobs refer to actual listings in the Chicago area from Idealist.com, current to October 14, 2018.

Proposed Bulletin Entry

Admission Requirements

The Bachelor of Science in Science, Technology and Society (STS) is an interdisciplinary degree that combines coursework in the Social Sciences, Humanities and selected fields in science and technology. STS students examine the influence of political, economic, cultural, and social forces on science and technology, as well as the impact of science and technology on society, from both contemporary and historical perspectives. The major is notable for the flexibility students have to focus on the aspects and approaches of STS that most interest and motivate them. The major also strikes a balance between breadth and focus, including a mix of core requirements and interdisciplinary electives. Coursework covers areas such as sustainability, the ethical aspects of science and technology, medicine and health, the history and sociology of science, human interaction with technologies and technological systems, the economics of innovation, and science and technology policy. In this way, graduates with a Bachelor of Science in STS will have a unified understanding of the interdependencies among science, technology, and society.

Through providing broad training in methodological and professional skills, the STS major prepares students for both careers and graduate studies. The training includes qualitative and quantitative research methods, Geographic Information Systems, computational analysis as well as intercultural communication skills and a professional experience through academically-supervised internship and 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.

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 BS in STS prepares students for careers in government agencies, community outreach, think tanks, science journalism, international institutions, and non-governmental organizations, as well as advanced research in the history of science, humanities, political economy, and sociology. 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.

Requirements will be the same as for all other BS degree programs offered by the Social Sciences Department.

Course Requirements

Science, Technology, and Society Requirements		(32)
LCHS 100	Introduction to the Professions	2
LCHS 2XX Introduction to Science, Technology, and Society		3
HUM 380	Topics in Humanities (History of Science)	3
or HIST 375	History of Computing	
PHIL 360	Ethics	3
PS 332	Politics of Science and Technology	3
SSCI 209	Social Science Research Methods	3
SOC 302	Science and Belief	3
SOC 322	Sociology of Objects and Technology	3

Select one of the following theory courses:		3
SOC 301	The Social Dimension of Science	3
SOC 303	Science in Society	3
PHIL 351	Science and Values	3
Select two of the following research methods courses:		6
COM 383	Social Networks	3
COM 435	Intercultural Communication	3
SOC 305	Social Communication	3
SSCI 225	Introduction to Geographic Information Systems	3
SSCI 325	Intermediate Geographic Information Systems	3
SSCI 385	Special Topics	3
SSCI 386	Qualitative Social Science Research Methods	3
SSCI 387	Fieldwork Methods	3
SSCI 389	Urban Planning Analysis	3
SSCI 480	Introduction to Survey Methodology	3
Capstone Requirement		(3)
PS 408	Methods of Policy Analysis	3
or SSCI 486	Planning, Fundraising, and Program Evaluation	
Internship Requirement		(3)
SSCI 493	Public Service Internship [1]	3
Science, Technology, and Society Specialization		(15)
Select Science, Technology, and Environmental Policy or Information, Communication, and Society. See Specializations tab for requirements.		15
Minor Requirement		(15)
Select 15 credit hours [2]		15
Mathematics Requirements		(6-7)
Select two courses at the level of MATH 119 or above including PSYC 203 or BUS 221		6-7
Natural Sciences Requirement		(10)
See Illinois Tech Core Curriculum, section D		10
Computer Science Requirement		(2)
CS 105	Introduction to Computer Programming	2
or CS 110	Computing Principles	
Humanities and Social Science Requirements		(21)
See Illinois Tech Core Curriculum, sections B and C		21
Interprofessional Projects		(6)
See Illinois Tech Core Curriculum, section E		6
Free Electives		(15)
Select 15 credit hours		15
Total Credit Hours		128-129

1 SSCI 493 may be substituted with a 300+-level STS elective.

2 Minors will be selected in consultation with the program director/adviser based on the student's interests, goals, and academic qualifications for successfully completing the required coursework. Transfer students may be approved for a substitution of a minimum of 15 credit hours of appropriate STEM coursework above and beyond Core Curriculum requirements. Students who enter Illinois Tech as Science, Technology, and Society majors may consult with the undergraduate program director about similar substitutions as well. All such substitutions must be approved by the program director.

Sample Curriculum/Program Requirements

Year 1			
Semester 1	Credit Hours	Semester 2	Credit Hours
CS 105 or 110	2	SSCI 209	3
LCHS 100	2	Humanities or Social Sciences Elective	3
LCHS 2XX Intro to Science, Technology, and Society	3	Mathematics Elective[1]	3
Humanities 200-level Course	3	Natural Science or Engineering Elective	4
Mathematics Elective[1]	4	Specialization Elective[2]	3
Natural Science or Engineering Elective	3		
	17		16

Year 2			
Semester 1	Credit Hours	Semester 2	Credit Hours
PS 332	3	HUM 380 or HIST 375	3
SOC 301, 303, or PHIL 351	3	SOC 322	3
Research Methods Course[3]	3	Research Methods Course[3]	3
Minor Elective	3	Specialization Elective[2]	3
Natural Science or Engineering Elective	3	Minor Elective	3
	15		15

Year 3			
Semester 1	Credit Hours	Semester 2	Credit Hours
SOC 302	3	SSCI 493[4]	3
PHIL 360	3	Minor Elective	3

Specialization Elective[2]	3	Humanities Elective (300+)	3
Minor Elective	3	IPRO Elective I	3
Humanities Elective (300+)	3	Free Elective	3
	15		15

Year 4

Semester 1	Credit Hours	Semester 2	Credit Hours
PS 408 or SSCI 486	3	Specialization Elective[2]	3
Specialization Elective[2]	3	Minor Elective	3
IPRO Elective II	3	Social Sciences Elective	3
Social Sciences Elective (300+)	3	Social Sciences Elective (300+)	3
Free Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
	18		18

Total Credit Hours: 129

1 Two courses at the level of MATH 119 or above including PSYC 203 or BUS 221.

2 Select from Science, Technology, and Environmental Policy or Information, Communication, and Society; see Specializations tab for requirements.

3 Select from COM 383, COM 435, SOC 305, SSCI 225, SSCI 325, SSCI 385, SSCI 386, SSCI 387, SSCI 389, or SSCI 480.

4 SSCI 493 may be substituted with a 300+-level STS elective.

Specialization Requirements

Science, Technology, and Environmental Policy

Required Courses		(6)
PS 306	Politics and Public Policy	3
or PS 313	Comparative Public Policy	
SSCI 378	Innovation Policy	3
Elective Courses		(9)
Select three of the following courses:		9
PS 306	Politics and Public Policy	3
or PS 313	Comparative Public Policy	
PS 329	Environmental Politics and Policy	3
PS 338	Energy Policy	3
PS 360	Global Political Economy	3
or PS 388	International Law and Organizations	
SSCI 204	States, Markets, and Society	3
SSCI 318	Global Health	3
SSCI 320	Sociology of Accidents, Disasters, and Security	3
SSCI 354	Urban Policy	3
SSCI 359	Course SSCI 359 Not Found	3
SSCI 380	International Development	3
Total Credit Hours		15

Information, Communication, and Society

Required Courses		(6)
PHIL 370	Engineering Ethics	3
or PHIL 380	Topics in Philosophy	
Select one of the following courses:		3
HIST 355	Digital Labor	3
HIST 385	Women in Computing History	3
HUM 352	Gender and Technological Change	3
SSCI 321	Social Inequality	3
Elective Courses		(9)
Select three of the following courses:		9
COM 323	Communicating Science	3
COM 372	Mass Media and Society	3
COM 380	Topics in Communication (Social Media and Society)	3
COM 383	Social Networks	3
COM 384	Humanizing Technology	3
HIST 355	Digital Labor	3
HIST 385	Women in Computing History	3
HUM 352	Gender and Technological Change	3
HUM 380	Topics in Humanities (Philosophy of Decision Making)	3
PHIL 370	Engineering Ethics	3
PHIL 380	Topics in Philosophy (Ethics of Communications Technology)	3
Total Credit Hours		15

Program Outcomes and Assessment Process

What are the learning goals for this program?

Learning goal	Courses/student work used to assess achievement of this goal
Demonstrates understanding of major concepts and theoretical principles in the field	Selected assignment from LCHS 2XX
Demonstrates understanding of scholarly work	Selected assignment from LCHS 2XX
Students will be able to describe and explain key components of the societal and cultural impacts of institutions, practices, and developments related to science and technology	Selected assignment from LCHS 2XX
Students will demonstrate their ability to define the challenges brought about by science and technology, and determine their impact	Selected assignment from LCHS 2XX
Students will demonstrate that they can critically review theoretical explanations of societal problems and solutions	Literature review assignment from upper level course in major core
Students will demonstrate their ability to justify evidence-based assumptions or recommendations	Research-based assignment from any upper level course taken for major
Students will be able to articulate and defend arguments that are clear, logical and substantive	Written assignment from selected upper level course required for major
Students will be able to disseminate and explain research results in different formats	Final paper for PS 408 OR SSCI 486 AND presentation on SSCI 493 internship

In what semesters will the data be collected to assess this learning goal, and by whom?	STS undergrad program director will collect data at the end of each spring semester.
Provide the name of the rubric that will be used to assess the extent to which students are achieving this learning goal.	An appropriately revised version of the rubrics currently used for the Social and Economic Development Policy major will be used.
How often and by whom will the data be analyzed? What benchmarks or targets will be used to interpret your results?	Annually.
Briefly describe the process that will be used to share the results with faculty and use these to motivate program improvement.	Assessment will be done by a subcommittee of the STS Curriculum Committee plus an outside member; all will be core faculty in the department. Data and findings will be uploaded to a Google Drive folder accessible by all Social Sciences Department faculty and participating faculty from Humanities. Results and recommendations will be examined by the STS Curriculum Committee. Changes proposed on the basis of the findings will be submitted to the Social Science faculty for approval.
Attach Additional Assessment Document(s)	

Undergraduate Program Requirements

Undergraduate Degree Requirements

Minimum credit hours	128

Specialization required?	Yes
Notes about specialization requirement	Students will chose one of two 15-credit-hour specializations: Science, Technology and Environmental Policy; or Information, Communication, and Society.
Minor required?	Yes
How many credit hours are required for the minor?	15
Details about the minor requirement	A minor or the equivalent is required to provide a focused STEM component to the STS major. Minors will be selected in consultation with the program director/advisor based on the student's interests and goals and academic qualifications for successfully completing the required coursework. Typically, students will take a minor linked to their chosen specialization within the major and their career goals and intellectual interests. Students transferring into the STS major from other Illinois Tech majors or other institutions may be approved for substitution of a minimum of 15 credit hours of appropriate STEM coursework (above and beyond Core Curriculum requirements). Students who enter Illinois Tech as STS majors may consult with the STS undergraduate program director about similar substitutions as well. All such substitutions must be approved by the program director.

Proposed General Curriculum

Degree credit hours required	128
Specialization credit hour requirement	15
List Major Course Requirements	

DISTRIBUTION OF CREDIT HOURS

Major Core (30 credits):

LCHS 2XX: Introduction to Science, Technology and Society (3 credits)
PS 332: Politics of Science and Technology (3 credits)
SOC 301: The Social Dimensions of Science
SOC 322: Sociology of Objects and Technology (3 credits)
HUM 380: History of Science OR HIST 375: History of Computing (3 credits)
PHIL 360: Ethics (3 credits)
SSCI 209: Social Science Research Methods (3 credits)
ONE additional theory course from the following (3 credits)*
SOC 302: Science and Belief OR
SOC 303: Science in Society OR
PHIL 351: Science and Method
TWO additional research methods courses chosen from the following (6 credits)*:*
SSCI 225: Introduction to Geographic Information Systems (GIS)
SSCI 325: Intermediate GIS
SOC 305: Social Communication
COM 383: Social Networks
SSCI 385: Computational Social Science
SSCI 386: Qualitative Social Science Research Methods
SSCI 387: Fieldwork Methods
SSCI 389: Urban Planning Analysis*
COM 435: Intercultural Communication
SSCI 480: Introduction to Survey Methodology

Specialization (15 credits) – *Choose one area of specialization, and take at least 5 courses, following the requirements for your chosen specialization. Course substitutions or an alternative specialization may be taken with advisor's approval.*

(i) Science, Technology, and Environmental Policy

SSCI 378: Innovation Policy
PS 306: Politics and Public Policy OR PS 313: Comparative Public Policy*
And THREE of the following:
PS 306: Politics and Public Policy OR PS 313: Comparative Public Policy*
PS 329: Environmental Politics and Policy
PS 338: Energy Policy
SSCI 204: States, Markets, and Society
SSCI 354: Urban Policy
PS 360: Global Political Economy OR PS 388: International Law and Organizations
SSCI 320: Sociology of Accidents, Disasters and Security

SSCI 318: Global Health
SSCI 359: Humans, Ecology, and Environment
SSCI 380: International Development

(ii) Information, Communication, and Society

PHIL 370 Engineering Ethics OR PHIL 380* Ethics of Communications Technology

And ONE of the following:

HIST 355: Digital Labor
HIST 385: Women in Computing History
HUM 352: Gender and Technological Change
SSCI 321 Social Inequality

And THREE of the following:

COM 323: Communicating Science
COM 383: Social Networks
COM 372: Mass Media and Society
COM 384: Humanizing Technology
HIST 355: Digital Labor
HIST 385: Women in Computing History
HUM 352: Gender and Technological Change
PHIL 370: Engineering Ethics
SSCI 321: Social Inequality
COM 380*: Social Media and Society
PHIL 380*: Ethics of Communications Technology
HUM 380*: Philosophy of Decision Making

Capstone: PS 408: Methods of Policy Analysis or SSCI 486, Planning Fundraising, and Program Evaluation (3 credits)

Internship (SSCI 493, Public Service Internship [unpaid]**) or upper-level STS elective (3 credits)**

*Courses not chosen as a major requirement may be used as a major elective where appropriate.

List Mathematics Requirements	
IIT Coure Curriculum Mathematics requirement; including PSYC 203, BUS 221, OR MATH 225 6-7 credit hours	
List Science Requirements	
IIT Core Curriculum Natural Science requirement 10 credit hours	
List Computer Science Requirements	
IIT Core Curriculum Computer Science requirement--CS 105 or 110 2 credit hours	
List Humanities and Social Sciences Requirements	
IIT Core Curriculum LCHS requirement 21 credits	
List Interprofessional Project (IPRO) Requirements	
IIT IPRO requirement 6 credit hours	
List Technical Elective Course Options	
An appropriate STEM minor or 15 credits of STEM coursework is required. A minor or the equivalent is required to provide a focused STEM component to the STS major. Minors will be selected in consultation with the program director/advisor based on the student's interests and goals and academic qualifications for successfully completing the required coursework. Typically, students will take a minor linked to their chosen specialization within the major and their career goals and intellectual interests. Students transferring into the STS major from other Illinois Tech majors or other institutions may be approved for substitution of a minimum of 15 credit hours of appropriate STEM coursework (above and beyond Core Curriculum requirements). The required STEM content can be satisfied either by taking an existing minor, or by an appropriately structured set of 15 credits of STEM courses outside the core curriculum, after consultation with the STS adviser and approval by the adviser/faculty in the relevant STEM field(s). Students who enter Illinois Tech as STS majors may consult with the STS undergraduate program director about similar substitutions as well. All such substitutions must be approved by the program director.	
List Free Elective Credit Hours (if applicable)	15

Semester-by-semester plan of study for the degree program

	Credit Hours	Semester 1	Credit Hours	Semester 2	Credit Hours	Semester 3
With Applied Math minor		LCHS 100	2	SOCIAL SCIENCE ELECTIVE 2XX or SOCIAL SCIENCE 3XX	3	PS 332
		LCHS 2XX: INTRO TO SCIENCE, TECHNOLOGY AND SOCIETY	3	SSCI 209	3	RESEARCH METHODS COURSE
		HUM 2XX	3	NATURAL SCIENCE OR ENGINEERING ELECTIVE	4	SOC 301, 303, or PHIL 351
		MATH 151 (placement or MATH 148 as prereq)	5	MATH 152	5	NATURAL SCIENCE OR ENGINEERING
		CS 105 or 110	2	MAJOR SPECIALIZATION ELECTIVE	3	MATH 251
		NATURAL SCIENCE OR ENGINEERING ELECTIVE	3			
	0		18		18	

Total Credit Hours: 131

	Credit Hours	Semester 1	Credit Hours	Semester 2	Cred Hou
With Information Security minor		LCHS 100	2	SOCIAL SCIENCE ELECTIVE 2XX or 3XX	3
NATURAL SCIENCE OR ENGINEERING ELECTIVE	3	LCHS 2XX: INTRO TO SCIENCE, TECHNOLOGY AND SOCIETY	3	SSCI 209	3
		HUM 2XX	3	NATURAL SCIENCE OR ENGINEERING ELECTIVE	4
		MATH 180	3	PSYC 203, BUS 221, or MATH 225	4
		CS 105 or 110	2	MAJOR SPECIALIZATION REQUIREMENT	3
		NATURAL SCIENCE OR ENGINEERING ELECTIVE	3		
	3		16		17

Total Credit Hours: 126

	Credit Hours	Semester 1	Credit Hours	Semester 2	Credit Hours	Semester 3
With general STEM requirement (Graphics and CAD for non-engineers focus as an example)		LCHS 100	2	SOCIAL SCIENCE ELECTIVE 2XX or 3XX	3	PS 332
FREE ELECTIVE	3	LCHS 2XX: INTRO TO SCIENCE, TECHNOLOGY AND SOCIETY	3	SSCI 209	3	SSCI 385 COMPUTATIONAL SC
		HUM 2XX	3	NATURAL SCIENCE OR ENGINEERING ELECTIVE	4	SOC 301, 303, or PHIL 351
		MATH 122	3	PSYC 203, BUS 221, or MATH 225	4	NATURAL SCIENCE OR ENGIN
		CS 105 or 110	2	MAJOR SPECIALIZATION REQUIREMENT	3	EG 225
		NATURAL SCIENCE OR ENGINEERING ELECTIVE	3			MAJOR SPECIALIZATION ELEC
	3		16		17	

Total Credit Hours: 132

	Credit Hours	Semester 1	Credit Hours	Semester 2	Credit Hours	Semester 3
With Architecture Minor		LCHS 100	2	SOCIAL SCIENCE ELECTIVE 2XX or 3XX	3	SOC 322
		LCHS 2XX: INTRO TO SCIENCE, TECHNOLOGY AND SOCIETY	3	SSCI 209	3	SSCI 385 COMPUTATIONAL SOCI
		HUM 2XX	3	NATURAL SCIENCE OR ENGINEERING ELECTIVE	4	SOC 301, 303, or PHIL 351
		MATH 130 or 148	3	PSYC 203 or BUS 221	4	NATURAL SCIENCE OR ENGINEE
		CS 105 or 110	2	MAJOR SPECIALIZATION REQUIREMENT	3	ARCH 100
		NATURAL SCIENCE OR ENGINEERING ELECTIVE	3			ARCH 107
	0		16		17	

Total Credit Hours: 132

Semester 1	Credit Hours	Semester 2	Credit Hours	Semester 3	Credit Hours	Semeste Hours
With Biology Minor		SOCIAL SCIENCE ELECTIVE 2XX or 3XX	3	MAJOR SPECIALIZATION REQUIREMENT	3	RESE
LCHS 100	2	SSCI 209	3	SSCI 385 COMPUTATIONAL SOCIAL SCIENCES	3	SOC 1
LCHS 2XX: INTRO TO SCIENCE, TECHNOLOGY AND SOCIETY	3	CHEM 125	4	SOC 301, 303, or PHIL 351	3	HUM
HUM 2XX	3	PSYC 203	3	BIOL 107	3	BIOL
MATH 130 or 148	3	MAJOR SPECIALIZATION REQUIREMENT	3	MAJOR SPECIALIZATION REQUIREMENT	3	MAJO
CS 105 or 110	2			NATURAL SCIENCE OR ENGINEERING ELECTIVE	3	
CHEM 124	4					
	17		16		18	

Total Credit Hours: 127

	Semester 1	Credit Hours	Semester 2	Credit Hours	Semester 3	Credit Hours
Generic: unspecified specialization and STEM minor or course requirements	LCHS 100	2	NATURAL SCIENCE OR ENGINEERING ELECTIVE	3	SSCI 385 COMPUTATIONAL SOC	
	LCHS 2XX: INTRO TO SCIENCE, TECHNOLOGY AND SOCIETY	3	SSCI 209	3	SOC 303 or SOC 301 OR PHIL 3	
	HUM 2XX	3	PSYC 203, BUS 221, or MATH 225	3	PS 332	
	NATURAL SCIENCE OR ENGINEERING ELECTIVE	4	SOCIAL SCIENCE ELECTIVE 2XX or 3XX	3	MINOR REQUIREMENT	
	CS 105 or CS110	2	MAJOR SPECIALIZATION ELECTIVE	3	NATURAL SCIENCE OR ENGINEE	
	MATH 130, 119, 122, 148, 151, or 180	3			MAJOR SPECIALIZATION REQUI	
		0		17		15

Total Credit Hours: 128

Specialization

To which degree does this specialization / concentration apply?

Title of Specialization / Concentration

Science, Technology, and Environmental Policy

How many credit hours are required for this specialization / concentration?

15

Can credit hours be shared between specialization / concentration and major requirements?

No

List specialization/concentration courses, including any required choices from formal course groups. Please include the credit hour minimums for all course categories.

SSCI 378: Innovation Policy
PS 306: Politics and Public Policy OR PS 313: Comparative Public Policy*

And THREE of the following:
PS 306: Politics and Public Policy OR PS 313: Comparative Public Policy*
PS 329: Environmental Politics and Policy
PS 338: Energy Policy
SSCI 204: States, Markets, and Society
SSCI 354: Urban Policy
PS 360: Global Political Economy OR PS 388: International Law and Organizations
SSCI 320: Sociology of Accidents, Disasters and Security
SSCI 318: Global Health
SSCI 359: Humans, Ecology, and Environment
SSCI 380: International Development

To which degree does this specialization / concentration apply?

Title of Specialization / Concentration

Information, Communication, and Society

How many credit hours are required for this specialization / concentration?

15

Can credit hours be shared between specialization / concentration and major requirements?

No

List specialization/concentration courses, including any required choices from formal course groups. Please include the credit hour minimums for all course categories.

PHIL 370 Engineering Ethics OR PHIL 380* Ethics of Communications Technology

And ONE of the following:
HIST 355: Digital Labor
HIST 385: Women in Computing History
HUM 352: Gender and Technological Change
SSCI 321 Social Inequality

And THREE of the following:
COM 323: Communicating Science
COM 383: Social Networks
COM 372: Mass Media and Society
COM 384: Humanizing Technology
HIST 355: Digital Labor
HIST 385: Women in Computing History
HUM 352: Gender and Technological Change
PHIL 370: Engineering Ethics
SSCI 321: Social Inequality
COM 380*: Social Media and Society
PHIL 380*: Ethics of Communications Technology
HUM 380*: Philosophy of Decision Making

Reviewer
Comments

Key: 450