

NOTE: Beginning September 2020, admissions to majors in Science and Technology Studies and Math have been suspended. We are continuing to offer courses in these areas so that current students can complete their degree program.

Not all courses listed are offered each year. Please consult with the Director for more information about current and planned course offerings.

Science and technology are among the most powerful forces transforming our world today. They have changed social institutions like work and the family, produced new medicines and foods, influenced economies and international affairs, and have the capacity to alter and destroy human life as well as the natural environment itself. These forces come with a vast and complicated array of ethical and social dilemmas that affect both our daily lives and our world. An individual cannot be considered well educated nor can they participate in civil society as an informed citizen without substantial knowledge of what science and technology are and how they interact with society.

From the perspective of the humanities and social sciences, STS uses a critical, balanced, and interdisciplinary approach, and promotes neither unbridled enthusiasm for, nor an activist rejection of science and technology. While science and technology can be appreciated for their valuable contributions, it is also important to acknowledge the range of negative and unintended consequences that often follow in their wake.

Students with a background in STS will bring a unique social and ethical perspective to pivotal debates in the 21st century including the relations between science and gender, science and religion, technology and social values, the politics of technological innovation, the impacts of disease and natural disasters on society, or whether nano-technologies will change the very nature of what it means to be human.

Students may obtain a Minor, Major or Honours in Science and Technology Studies. The Minor, Major and Honours requirements are stated below.

In addition to the requirements for a Major in STS, an Honours degree in STS requires a total of 57 credit hours (21 credit hours beyond the requirements for a Major in STS). The details for an Honours in STS are as follows:

- (i) all of the requirements for a Major in STS
- (ii) the following seminars:
 - STS 3433 Writing Workshop
 - any 6 credit hour courses beyond the 2000-level that complement the student's focus of study (as approved by the Director of STS)
- (iii) 6 credit hours in either Methods or Theory
- (iv) STS 4006 Honours Thesis

36 credits hours are required for a Major in STS. These include required courses in the core theoretical concepts in the discipline of STS, and at least 6 credit hours in science. Students can then follow their own particular interests and complete the Major requirements drawing from a range of 2000- and 3000-level courses in STS and from courses in other disciplines, recognized as STS electives. The details are that the Major in STS must include:

- (i) the following core STS courses:
 - STS 1003. Science, Technology & Society I
 - STS 2103. Science, Technology & Society II
 - STS 3103. Science, Technology & Society III
- (ii) at least 6 credit hours in science (selected from: STS 1503/1513 Principles of Biology I/II)
- (iii) a total of 9 credit hours selected from any 2000-level STS course (and which may include no more than 6 credit hours electives from ENG 2313, ENG 2393, ENVS 2023, SOC 2323, GRBK 2206)
- (iv) a total of 15 credit hours selected from any 3000-level STS course (and which may include no more than 6 credit hours electives selected from ECON 3323, ENVS 3013, POLS 3213, RELS 3513, RELS 3523, SOC 3523, SOC 3693)

18 credits hours are required for a Minor in STS. These must include:

- (i) STS 1003. Science, Technology & Society I, and
- (ii) an additional 15 credit hours in STS courses at the 2000-3000 level (which may include no more than 6 credit hours from courses in other disciplines, recognized as STS electives. See list of non-STS courses under sections (iii) and (iv) of the requirements for Majors.)

STS-1003. Science, Technology and Society I

Science and technology are among the most powerful forces in our world today and come with a vast and complicated array of social, ethical, political, legal, and economic implications. This course introduces students to the core theories and various branches of the dynamic field of Science and Technology Studies (STS) in order to facilitate thoughtful analysis of the intertwined relations among science, technology, and society.

STS-2103. Science, Technology and Society II

This course provides an intermediate-level study of the core theories and various branches of the dynamic field of Science and Technology Studies (STS) in order to facilitate thoughtful analysis and discussion of relevant topics which may include: science and public policy, STS and the environment, science and the media, the public understanding of science, gender and science, and/or expertise and scientific knowledge production. Prerequisite: STS 1003.

STS-2123. Food, Science & Sustainability (ENVS)

This course explores the relationships in our society among science, technology, and food by examining the ways that technology and scientific knowledge have altered food production. In addition, we will look more broadly at how our technical relationship to food has laid the foundations of modern civilization. We will also look at advocates of alternative modes

of food production and consumption who claim to redress some of the dilemmas of our modern food ways.

STS-2243. Science and Technology in World History: From Pre-History to 1543

Examines the transformation of civilizations around the world by technologies such as stone tools, catapults, hydraulic engineering, metallurgy, and gunpowder. Also examines the growth of the abstract, theoretical sciences of astronomy, mathematics, and medicine in various regions including China, the Americas, Egypt and Greece. Aims to understand the social, political, economic, and religious consequences of science and technology from the Paleolithic Era to the mid-16th century.

STS-2253. Science and Technology in World History: From 1543 to the Present

Examines the transformation of civilizations around the world by technologies such as steam engines, electricity, airplanes, and nuclear bombs. Also examines the development and impact of new scientific theories of universal gravitation, evolution, genetics, and bio-engineering. Aims to understand the social, political, economic, and religious consequences of science and technology from the mid-16th century to the present.

STS-2313. Energy and Society (ENVS)

This course examines energy systems (oil, gas, coal, hydroelectric, nuclear, and renewable) both historically and in the contemporary world, in terms of environmental and economic impacts, theories of technological change in their creation, deployment, and decommissioning, as well as public policy issues.

STS-2403. Science, Technology, and War (HMRT 2283)

This course explores the development of modern techniques, technologies, and social systems for the purposes of making war. It also explores how wars change societies, technologically, socially, and structurally. Note: Students who have taken STS-1403 will not receive credit for STS-2403.

STS-2413. Science, Technology, and Innovation

This course examines the field of science and technology studies (STS) with a focus on science and technological-based innovation, historically and in the contemporary world. The course will offer students an opportunity to critically evaluate theories of technological change, and science and technology in globalization, and the post-modern economy. Students will also be expected to critically discuss implications for public policies in the areas of research and development, science and technology, and innovation. No pre-requisites required.

STS-2503. Plagues and Peoples

This course studies the impact of disease epidemics on human populations and on economic, social, intellectual, religious, and political aspects of life from ancient times to the present.

STS-2603. Animals: Rights, Consciousness, and Experimentation

This course is an introduction to the scientific, legal, philosophical, and political debates over animal rights, animal consciousness, and animal experimentation.

STS-2623. Human Anatomy (BIOL)

This course will provide students with an examination of human anatomy with emphasis on the structure and function of the skeletal, muscular and nervous systems. This course is clinically oriented, in that it uses case studies to emphasize the importance of fundamental knowledge of anatomy for clinical work. The emphasis in this class is

on learning and understanding rather than on memorizing; the class is structured to foster the retention of workable knowledge. Prerequisites: None.

STS-2703. History of Life Sciences

This course examines the historical background and development of the life sciences from the ancient Greek world to the present. Particular attention will be focused on the fields of biology, ecology, medicine and genetics.

STS-2903. The Politics of Science

This course introduces students to the many ways in which science interacts with political interests. This includes the ways in which political considerations from outside of science and elected officials influence the development of science. It also includes the ways in which political interests from within science itself control the development of science and how scientific concerns often guide the development of public policies made by politicians.

STS-2913. Communicating Science In Democracy

In modern democratic societies, the sciences are dominant forces that affect everyone. This course examines how critical scientific issues are communicated to (or with), members of the public, government, and within the scientific community itself. The basic question we will be exploring is: What science communication strategies work, what don't work, and most importantly, why? This course explores the relationship between the communication of complex scientific issues and democracy.

STS 3003 - Scientific Reasoning

This course provides students with the tools needed to pursue research in Science and Technology Studies. The course will typically cover the basic elements of a traditional conceptual framework used by scientists to describe their work, including the concepts of prediction, testing, theoretical models, and scientific change over time, as well as the basic elements of alternative theoretical frameworks. Some mathematical content. Prerequisite: at least 9 credit hours in STS or permission of the instructor.

STS-3013. Controversies in Science and Technology

This course explores controversial issues involving science and technology in order to investigate the underlying dynamics of science and technology themselves since it is during controversies that the normally hidden social dimensions of techno-science become more explicit. Various controversies, such as climate change, transgenic foods, biofuels, and chemical additives in food are studied to reveal the rhetorical tools, underlying assumptions, and social, political, economic, and philosophical struggles embedded within science and technology. Prerequisite: STS 1003.

STS-3043. Heaven and Earth: Astronomy and Matter Theories from the Ancient World to the Scientific Revolution

This course explores theories explaining the structure and material makeup of the universe from ancient times to the Scientific Revolution. Technical details of astronomy and matter theories are examined in philosophical, theological, and medical contexts. Topics include: the shift from an earth-centered to a sun-centered astronomy, medical astrology, the shift from ancient atomism to mechanistic theories of matter, and the implications of postulating empty space in the macro and micro universe.



The University of New Brunswick offers a number of courses in the Sciences and courses that fall under the description of Science and Technology Studies but are offered by departments such as history and sociology. St. Thomas students who wish to register for any of the courses described immediately above may do so only with the approval of the Director of Science and Technology Studies and the approval of the Registrar's Office.