SCIENCE AND TECHNOLOGY (STS-UY)

STS-UY LV1XF STS Level 1 Transfer (0 Credits)
STS Level 1 Transfer
Grading: Transfer Grades
Repeatable for additional credit: Yes

STS-UY LV2XF STS Level 2 Transfer (0 Credits)
STS Level 2 Transfer
Grading: Transfer Grades
Repeatable for additional credit: Yes

STS-UY LV3XF STS Level 3 Transfer (0 Credits)
STS Level 3 Transfer
Grading: Transfer Grades
Repeatable for additional credit: Yes

STS-UY 340X INDEPENDENT STUDY IN STS (1-3 Credits)
Typically offered occasionally
Variable credit independent study in Science and Technology Studies. Topic to be decided by instructor. Credits: Variable. | Prerequisites: One Level 2 HuSS Elective from the STS Cluster and instructor's permission.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 1002 Introduction to Science and Technology Studies (2 Credits)
Typically offered Fall and Summer terms
This course introduces contemporary topics in Science and Technology Studies, emphasizing the relations among science, technology and society from philosophical, historical, and sociological points of view. This course is required for STS majors and satisfies an HuSS General Education Elective for all other majors.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 1004 Science, Technology and Society (4 Credits)
Typically offered Fall and Spring
This course introduces important issues, historical and contemporary, related to science and technology from a variety of social, political and philosophical viewpoints. The multidisciplinary approach helps students to understand the interaction between science, technology and society and to discover the conditions that foster technological innovation. The scientific and technological way of thinking becomes clear through historical examples, helping students to consider important issues of science and technology policy, such as how science and technology can be used to benefit society and how one can foster innovation in a society or an organization. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 1004W Science, Technology and Society (4 Credits)
Typically offered Fall and Spring
This course introduces important issues, historical and contemporary, related to science and technology from a variety of social, political and philosophical viewpoints. The multidisciplinary approach helps students to understand the interaction between science, technology and society and to discover the conditions that foster technological innovation. The scientific and technological way of thinking becomes clear through historical examples, helping students to consider important issues of science and technology policy, such as how science and technology can be used to benefit society and how one can foster innovation in a society or an organization. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2004 Science, Technology and Society (4 Credits)
Typically offered Fall and Spring
This course introduces important issues, historical and contemporary, related to science and technology from a variety of social, political and philosophical viewpoints. The multidisciplinary approach helps students to understand the interaction between science, technology and society and to discover the conditions that foster technological innovation. The scientific and technological way of thinking becomes clear through historical examples, helping students to consider important issues of science and technology policy, such as how science and technology can be used to benefit society and how one can foster innovation in a society or an organization. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2004W Science, Technology and Society (4 Credits)
Typically offered Fall and Spring
This course introduces important issues, historical and contemporary, related to science and technology from a variety of social, political and philosophical viewpoints. The multidisciplinary approach helps students to understand the interaction between science, technology and society and to discover the conditions that foster technological innovation. The scientific and technological way of thinking becomes clear through historical examples, helping students to consider important issues of science and technology policy, such as how science and technology can be used to benefit society and how one can foster innovation in a society or an organization. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2134 Philosophy of Science, Technology and Society in China and India (4 Credits)
This course addresses the fundamental questions of philosophy—What is real? What is good? How do we know?—by considering the answers by classical philosophers from India and China. Philosophy in Asia has not been viewed as an abstract academic subject with little or no relevance to daily life. Rather, it has been seen as one of life's most basic and important enterprises. Philosophy is seen as essential to overcoming suffering and improving the quality of human life. Since Asian philosophy is concerned with practical issues to a greater extent than in the West, the course considers how technology is understood and valued. Attention is given to the history of science in China and India. Since no rigid distinctions exist between philosophy and religion in Asian thought, the place of science and technology in relation to human values is also different. The class examines the Asian philosophical tradition to understand both its historical importance and its relevance to society today. | Prerequisites: Completion of first year writing requirements. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2134W Philosophy of Science, Technology and Society in China and India (4 Credits)
Typically offered occasionally
This course addresses the fundamental questions of philosophy—What is real? What is good? How do we know?—by considering the answers by classical philosophers from India and China. Philosophy in Asia has not been viewed as an abstract academic subject with little or no relevance to daily life. Rather, it has been seen as one of life's most basic and important enterprises. Philosophy is seen as essential to overcoming suffering and improving the quality of human life. Since Asian philosophy is concerned with practical issues to a greater extent than in the West, the course considers how technology is understood and valued. Attention is given to the history of science in China and India. Since no rigid distinctions exist between philosophy and religion in Asian thought, the place of science and technology in relation to human values is also different. The class examines the Asian philosophical tradition to understand both its historical importance and its relevance to society today. | Prerequisites: Completion of first year writing requirements. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2144 Ethics and Technology (4 Credits)
Typically offered Fall, Spring, and Summer terms
Ethical expertise is integral to the careers and responsibilities of engineering and technology management professionals, from long-standing issues around professional responsibilities to society and more recent controversies such as "techlash" concerns about bias, equity, and surveillance. This survey course introduces undergraduate students to some of the most relevant ethical issues in engineering and the technology industry today. Students will begin by exploring basic ethical approaches from a variety of philosophical traditions and how these principles have historically been integrated into engineering professions. Then, students will study a variety of topics of high importance to engineers today, including ethics in computing, data, and automated systems; medical ethics, past and present; disability ethics and activism; ethical issues related to the environment and climate change; and ethical issues related to race and gender. | Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2204 Philosophy of Technology (4 Credits)
Typically offered occasionally
This survey of prominent approaches to the philosophy of technology asks: What are the philosophical problems presented by technology? How does technology influence ethics, politics and society? What is the relation of philosophy of technology to the traditional branches of philosophy (aesthetics, epistemology, metaphysics)? | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2204W Philosophy of Technology (4 Credits)
Typically offered occasionally
This survey of prominent approaches to the philosophy of technology asks: What are the philosophical problems presented by technology? How does technology influence ethics, politics and society? What is the relation of philosophy of technology to the traditional branches of philosophy (aesthetics, epistemology, metaphysics)? | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2214 Medical Ethics (4 Credits)
Typically offered Fall and Spring
This course is concerned with the many ethical issues that arise in the field of medicine, issues such as: patient autonomy, informed consent, experimentation on live subjects, confidentiality, truth telling, conflict of interest and the treatment of relatives. We will also study moral issues pertaining to new medical techniques such as online medicine and prenatal genetic screening. These issues will be approached via an understanding of important historical, legal and philosophical foundations of medical ethics. We will study ideas from the Hippocratic Oath and Islamic, Jewish and Christian traditions up to the codes of today's ethics review boards. Important legal issues explored involve the right to healthcare, the obligation of parents to seek proper medical care for their children and euthanasia. Some of the important ethical-philosophical notions studied will be: the law of double effect, the obligation of beneficence and non-malevolence, utilitarianism, and Kantian ethics. While this course is open to all majors, it's specific aim is to prepare the future medical practitioner to understand and deal with the various moral challenges of the profession. | Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2214W Medical Ethics (4 Credits)
Typically offered occasionally
This course is concerned with the many ethical issues that arise in the field of medicine, issues such as: patient autonomy, informed consent, experimentation on live subjects, confidentiality, truth telling, conflict of interest and the treatment of relatives. We will also study moral issues pertaining to new medical techniques such as online medicine and prenatal genetic screening. These issues will be approached via an understanding of important historical, legal and philosophical foundations of medical ethics. We will study ideas from the Hippocratic Oath and Islamic, Jewish and Christian traditions up to the codes of today's ethics review boards. Important legal issues explored involve the right to healthcare, the obligation of parents to seek proper medical care for their children and euthanasia. Some of the important ethical-philosophical notions studied will be: the law of double effect, the obligation of beneficence and non-malevolence, utilitarianism, and Kantian ethics. While this course is open to all majors, it's specific aim is to prepare the future medical practitioner to understand and deal with the various moral challenges of the profession. | Prerequisite(s): Completion of first year writing requirements. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2224 Science and Sexuality (4 Credits)
This course explores and analyzes the constructions of sexuality in the biological, social and medical sciences, focusing on issues in evolutionary biology, endocrinology, neuroscience, psychiatry, comparative anatomy and genetics. Throughout the semester, students compare the various meanings given to sexuality across disciplinary frameworks, paying attention to the increasingly unstable relationships between the categories of fiction and science, reproduction and sexuality, nature and culture, male and female, animal and human and hetero- and homosexuality. The class also assesses how expert scientific discourses influence popular understandings of sexuality and vice versa. Specifically, students examine how these understandings contribute to the normalization and official regulation of certain kinds of behavior, how they satisfy a desire for stories about human origins, and how they fashion terms of attraction, repulsion, affection, antagonism, dominance and submission according to which sexuality is putatively expressed. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2224W Science and Sexuality (4 Credits)
Typically offered Fall, Spring, and Summer terms
This course explores and analyzes the constructions of sexuality in the biological, social and medical sciences, focusing on issues in evolutionary biology, endocrinology, neuroscience, psychiatry, comparative anatomy and genetics. Throughout the semester, students compare the various meanings given to sexuality across disciplinary frameworks, paying attention to the increasingly unstable relationships between the categories of fiction and science, reproduction and sexuality, nature and culture, male and female, animal and human and hetero- and homosexuality. The class also assesses how expert scientific discourses influence popular understandings of sexuality and vice versa. Specifically, students examine how these understandings contribute to the normalization and official regulation of certain kinds of behavior, how they satisfy a desire for stories about human origins, and how they fashion terms of attraction, repulsion, affection, antagonism, dominance and submission according to which sexuality is putatively expressed. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2234 Introduction to the History of Technology (4 Credits)
Typically offered Fall
This course surveys generally the history of technology (from the early modern period to the present) and investigates how technology shapes society, and how society molds technology. Topics include ancient technologies, the printing press, the Industrial Revolution, the replacing of laborers with machines, electricity, transportation, Ford and the invention of the automobile, Taylorism and the organization of labor, technology during World War II (including radar, V1and V2 rockers and the Enigma machine) and the rise of the NASA space program. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: (EN-UY 1013W OR EXPOS-UA 1 OR EXPOS-UA 4) AND (HUSS-UY 1023W OR EXPOS-UA 2 with a Minimum Grade of D OR EXPOS-UA 9).

STS-UY 2244 Magic, Medicine and Science (4 Credits)
Typically offered occasionally
This course looks at the metaphysical and epistemological origins of three systems of thought—the organic, the magical and the mechanical—and considers the extent to which modern science can be seen as arising from their synthesis. Topics include Presocratics, Plato, Aristotle, Plotinus, the Hermetic Corpus, Ficino's naturalistic magic, Pico's supernatural magic, Paracelsus and the ontic theory of disease, Copernicus, Galileo, Kepler, Descartes, the Cambridge Platonists and Newton. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS Elective
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 2244W Magic, Medicine and Science (4 Credits)
Typically offered Fall and Spring
This course looks at the metaphysical and epistemological origins of three systems of thought—the organic, the magical and the mechanical —and considers the extent to which modern science can be seen as arising from their synthesis. Topics include Presocratics, Plato, Aristotle, Plotinus, the Hermetic Corpus, Ficino's naturalistic magic, Pico's supernatural magic, Paracelsus and the ontic theory of disease, Copernicus, Galileo, Kepler, Descartes, the Cambridge Platonists and Newton. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2253 BIOLOGY AND SOCIETY (3 Credits)
Typically offered occasionally
This course explores the relationship between the biological sciences and society from Enlightenment France to the Human Genome Project and biotechnology in the United States. Ever since the Enlightenment, the study of nature has played an ever-increasing role in shaping social issues. For example, the course examines the roles played by gender, social class and natural theology in 18th-century classifications of plants and animals. The course investigates how biologists and anthropologists drew upon rather ambiguous notions of nature to classify humans into races. The course traces Darwin's theory of evolution and how it shaped, and was shaped by, socioeconomic, political and religious views. The course discusses the depressing history of eugenics in Britain and the U.S. The course concludes by provocatively asking if there is a link between eugenics and the Human Genome Project. Students will learn how economics, politics and religion have shaped biotechnology and human-embryonic-stem-cell research. The student is invited to think about the way in which debates concerning "nature versus nurture" have been framed historically, in order to understand current controversies over that distinction. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: (EN-UY 1013W OR EXPOS-UA 1 OR EXPOS-UA 4) AND (HUSS-UY 1023W OR EXPOS-UA 2 with a Minimum Grade of D OR EXPOS-UA 9).

STS-UY 2253W BIOLOGY AND SOCIETY (3 Credits)
This course explores the relationship between the biological sciences and society from Enlightenment France to the Human Genome Project and biotechnology in the United States. Ever since the Enlightenment, the study of nature has played an ever-increasing role in shaping social issues. For example, the course examines the roles played by gender, social class and natural theology in 18th-century classifications of plants and animals. The course investigates how biologists and anthropologists drew upon rather ambiguous notions of nature to classify humans into races. The course traces Darwin's theory of evolution and how it shaped, and was shaped by, socioeconomic, political and religious views. The course discusses the depressing history of eugenics in Britain and the U.S. The course concludes by provocatively asking if there is a link between eugenics and the Human Genome Project. Students will learn how economics, politics and religion have shaped biotechnology and human-embryonic-stem-cell research. The student is invited to think about the way in which debates concerning "nature versus nurture" have been framed historically, in order to understand current controversies over that distinction. | Prerequisite(s): Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: (EN-UY 1013W OR EXPOS-UA 1 OR EXPOS-UA 4) AND (HUSS-UY 1023W OR EXPOS-UA 2 with a Minimum Grade of D OR EXPOS-UA 9).

STS-UY 2254 Evolution (4 Credits)
Typically offered occasionally
This course discusses the development of the theory of evolution based on the amassed evidence from the geological and biological sciences over the past 200 years. Darwin’s idea that natural selection was the driving force behind evolution is considered in detail. Early rival theories to Darwin’s ideas are discussed as part of the process leading to the modern theory. The integration into the theory of genetics and molecular biology has led to a much deeper understanding of how organisms are related. The role of chance factors is also considered. Application of evolution theory to problems in economic biology and modern medicine and epidemiology I also be discussed. Finally, current controversies regarding Intelligent Design is addressed and put into a historical context. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2264 Addressing Public Policy Issues In Sci, Eng, & Med (4 Credits)
Typically offered Spring
This course explores public-policy issues on critical and often controversial questions in science (cap-and-trade, global warming, LEDs as lighting sources, biofuels, spectrum allocation), medicine (embryonic stem-cell research, national health care, genetic therapy, workplace risks of nanotechnology), and technology (off-shore drilling, biotechnology, clean coal, nuclear energy, “smart” power). Students select areas for specialization and are required to submit a white paper on one of these major issues. The report is based on library research and face-to-face interviews with experts in the field. As students draft sections of their white papers, they submit them for class discussion and meet periodically with the instructor to review their progress. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 2264W Addressing Public Policy Issues in Sci, Eng, & Med (4 Credits)
Typically offered Spring
This course explores public-policy issues on critical and often controversial questions in science (cap-and-trade, global warming, LEDs as lighting sources, biofuels, spectrum allocation), medicine (embryonic stem-cell research, national health care, genetic therapy, workplace risks of nanotechnology), and technology (off-shore drilling, biotechnology, clean coal, nuclear energy, "smart" power). Students select areas for specialization and are required to submit a white paper on one of these major issues. The report is based on library research and face-to-face interviews with experts in the field. As students draft sections of their white papers, they submit them for class discussion and meet periodically with the instructor to review their progress. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 2274 Space and Spacetime (4 Credits)
Typically offered occasionally
What is the nature of space? Is it an independently existing substance, or does it merely consist of the relations between physical objects? Can motion be described simply in terms of the relational properties of objects, or must people always define motion with respect to an absolute motionless substratum? Does the existence of left-handed gloves entail the existence of absolute space? This course considers these and other questions about the nature of space and time as they appear in the writings of philosophers and scientists, including Plato, Aristotle, Descartes, Newton, Leibniz, Berkeley, Kant, Poincaré and Einstein. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2274W SPACE AND SPACETIME (4 Credits)
Typically offered occasionally
What is the nature of space? Is it an independently existing substance, or does it merely consist of the relations between physical objects? Can motion be described simply in terms of the relational properties of objects, or must people always define motion with respect to an absolute motionless substratum? Does the existence of left-handed gloves entail the existence of absolute space? This course considers these and other questions about the nature of space and time as they appear in the writings of philosophers and scientists, including Plato, Aristotle, Descartes, Newton, Leibniz, Berkeley, Kant, Poincaré and Einstein. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2284 Introduction to FSTEM (4 Credits)
Typically offered Fall and Spring
This course will introduce feminist theory as a foundational methodology for critically investigating of the fields of STEM. Feminist theory is not a political ideology nor an analytic framework limited to "women's issues," but an important way of asking questions about how hierarchies of power including gender, race, class, and disability, relate to the funding, research directions, and accessibility of science, technology, and engineering. While thinking through how STEM conforms to and creates social systems of difference, students in this course will learn how to apply feminist theory to contemporary case studies, examining issues of practice, ethics, social justice, and inequality in STEM. | Prerequisite: EXPOS-UA 1
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1.

STS-UY 2294 Quantum Mechanics and Information (4 Credits)
Typically offered Fall and Spring
Quantum mechanics is today the best-confirmed theory of particle dynamics. The theory is not only the basis for all digital technologies, but also the theoretical foundation for the best-confirmed theories of matter (quantum field theories). However, since its inception, quantum mechanics has been beset with conceptual problems. No consensus exists on how to interpret it: What would the world be like if it were true? This course develops the mathematical formalism of the theory and explores several proposals about how to interpret it. Other topics include conceptual issues of quantum teleportation, quantum computing and quantum cryptography. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4 Notes: Satisfies a HuSS elective.

STS-UY 2294W Quantum Mechanics and Infomation (4 Credits)
Quantum mechanics is today the best-confirmed theory of particle dynamics. The theory is not only the basis for all digital technologies, but also the theoretical foundation for the best-confirmed theories of matter (quantum field theories). However, since its inception, quantum mechanics has been beset with conceptual problems. No consensus exists on how to interpret it: What would the world be like if it were true? This course develops the mathematical formalism of the theory and explores several proposals about how to interpret it. Other topics include conceptual issues of quantum teleportation, quantum computing and quantum cryptography. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: (EN-UY 1013W OR EXPOS-UA 1 OR EXPOS-UA 4) AND (HUSS-UY 1023W OR EXPOS-UA 2 with a Minimum Grade of D OR EXPOS-UA 9).

STS-UY 2314 It's About Time (4 Credits)
Typically offered Fall and Spring
From looking at a watch and noting the change from day to night and counting the days, months and years, people seem time as so mundane that they take it for granted and usually think little more about it. But what is time and why is it measured so obsessively and with such precision? This course concerns itself with all aspects of time, from the evolution of calendars (including our own) to precision timepieces and our own internal clocks. And finally, the nature of time itself and its relationship to space and other aspects of our universe are discussed. This course draws on knowledge from history, anthropology, psychology, technology, astronomy and physics to gain an understanding of this very basic "dimension." | Prerequisites: Completion of first year writing requirements. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2324 FROM HEAT ENGINES TO BLACK HOLES (4 Credits)
Typically offered occasionally
What is the nature of heat? How does it relate to atoms, black holes, information and a demon in a box full of gas molecules? This course answers these questions by developing the history of thermodynamics. That history begins with early 18th-century caloric theories of heat, 19th-century analyses of steam engines, the kinetic theory of gases, the statistical approach to mechanics, atomic theories of matter, the concept of entropy, early 20th-century concepts of formation and, finally, current applications to black holes (as well as Maxwell and his famous demon). The course considers theoretical descriptions of the phenomena and the technologies derived from them. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: (EN-UY 1013W OR EXPOS-UA 1 OR EXPOS-UA 4) AND (HUSS-UY 1023W OR EXPOS-UA 2 with a Minimum Grade of D OR EXPOS-UA 9).

STS-UY 2324W FROM HEAT ENGINES TO BLACK HOLES (4 Credits)
What is the nature of heat? How does it relate to atoms, black holes, information and a demon in a box full of gas molecules? This course answers these questions by developing the history of thermodynamics. That history begins with early 18th-century caloric theories of heat, 19th-century analyses of steam engines, the kinetic theory of gases, the statistical approach to mechanics, atomic theories of matter, the concept of entropy, early 20th-century concepts of formation and, finally, current applications to black holes (as well as Maxwell and his famous demon). The course considers theoretical descriptions of the phenomena and the technologies derived from them. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: (EN-UY 1013W OR EXPOS-UA 1 OR EXPOS-UA 4) AND (HUSS-UY 1023W OR EXPOS-UA 2 with a Minimum Grade of D OR EXPOS-UA 9).

STS-UY 2334 The Invention of Race (4 Credits)
Typically offered Fall and Spring
This course traces the history of science as it shapes race into a divisive standard for regulating and altering the shape of the population. Topics include the Enlightenment and the emergence of race as a science, eugenics and its lasting effects (actuarial science, mortgage policies, sentencing and paroling), and the fractured relationship between race and medicine. | Prerequisite: EXPOS-UA 1
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1.

STS-UY 2364 History of Aviation & Aviation Technology (4 Credits)
Typically offered Spring
In little more than 100 years, aviation has passed from a ground-hugging flight of less than a minute to high-altitude, supersonic flights that cross continents and oceans. This course surveys the history of aviation and the technological innovations that led to this crucial modern technology. This course also discusses the physics of flight, how increased understanding of aerodynamic principles led to successive aircraft improvements, and the development of new materials and control systems. Although military research drove many technological innovations, this course focuses on the economics and development of commercial aviation, which has changed the world. The course also looks at ultramodern trends in aircraft design and control, including unmanned cruise missiles and aircraft, and new commercial-aircraft designs and production techniques. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2374 The Ship (4 Credits)
Typically offered Fall
Ships, the largest human-made moving objects, have played a pivotal role in trade and warfare throughout history. This course covers the history, development and technology of ships from ancient times to the present. The course discusses aspects of the atmosphere and seas as they relate to ship design and use. Technological advances in hull design, materials, sails and power also will be discussed. The use of ships in trade, human transportation, warfare, fishing, piracy and global exploration are covered, along with the satellite industries of shipbuilding and port support. The course also looks at the manning of ships, the social and military organization, ¬the life of mariners, the development of navigation and its technologies in an historical context, and submarine evolution and technologies. | Prerequisites: EXPOOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 2444 History and Philosophy of Internet Technology (4 Credits)
Typically offered Spring
This course investigates implementations of Internet technologies. The focus is on the founding premises of the Internet, uncovering the assumptions about culture, policy objectives and ideals of practitioners, before and after the World Wide Web. The course investigates typical claims about the Internet, such as its capability to inculcate democracy, and the development of the attendant hardware and software infrastructure. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2444W History and Philosophy of Internet Technology (4 Credits)
Typically offered occasionally
This course investigates implementations of Internet technologies. The focus is on the founding premises of the Internet, uncovering the assumptions about culture, policy objectives and ideals of practitioners, before and after the World Wide Web. The course investigates typical claims about the Internet, such as its capability to inculcate democracy, and the development of the attendant hardware and software infrastructure. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2454 Digital Humanities (4 Credits)
Typically offered occasionally
What happens to works of the humanities when they are distributed electronically and created on computers? What values from the analog humanities should be preserved in the digital world? This course examines traditional works of literature available in electronic formats as well as digital-only creations. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 2454W Digital Humanities (4 Credits)
What happens to works of the humanities when they are distributed electronically and created on computers? What values from the analog humanities should be preserved in the digital world? This course examines traditional works of literature available in electronic formats as well as digital-only creations. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 2464W PUBLIC POLICY ISSUES IN TELECOMMUNICATIONS (4 Credits)
Typically offered Fall and Spring
This course addresses the myriad public policy issues arising from the phenomenal growth of the telecommunications industry, especially in light of convergence and the fierce competition that it has spawned over the past decade. Among the most pressing issues of the day are networking neutrality, Internet censorship, privacy, standardization, the enforcement powers of the FCC, workplace monitoring, and spectrum allocation. In addition, the course will introduce the student to the basic concepts of the technology, provide a historical perspective of the industry (with an emphasis on the cataclysmic chain of events set off by the Modified Final Judgment in 1983 that led to the break-up of AT&T), and explore trends. As a major requirement, students will be asked to give oral and written presentations on a major international or domestic public policy issue currently besetting this industry. | Prerequisites: Completion of first year writing requirements.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: (EN-UY 1013W OR EXPOS-UA 1 OR EXPOS-UA 4) AND (HUSS-UY 1023W OR EXPOS-UA 2 with a Minimum Grade of D OR EXPOS-UA 9).

STS-UY 2524 Computer Ethics (4 Credits)
Using a case study approach, this course explores the issues of professional and technological ethics especially as it pertains to networked computers in a global setting. The course will begin with the appropriate ethical codes of the professional societies, including the code of ethics for the Association for Computing Machinery (ACM) but also codes in other areas such as finance and medicine. The mandates and expectations of the codes will be interpreted from varying perspectives and will be applied concretely to the specifics of the cases under consideration. Ethical issues will be approached in a manner similar to that of engineering problems and students will be expected to show a step-by-step process for the resolution of actual and potential ethical conflict. The technique of "line drawing" will be used to exhibit the alternatives and to help justify the ultimate decision made. In addition to video lectures Power Point charts, and notes the course teaching techniques will employ social media ("Google +") to create a class community, "NYU Classes" to present texts and case studies, built-in assessment tools to permit student dialogue and debate on assigned topics. These online tools do not demand excessive bandwidth and can be used in both synchronous and asynchronous settings.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2534 Computers and Social Change (4 Credits)
This course examines the social, legal, economic, and policy contexts surrounding worldwide computing. Issues to be addressed include the economic impacts of computer and software development in the global context; the impacts of computers on family and social structure, work, education, and leisure; the digital divide in the US and internationally; questions of privacy and safety; the changing landscape of international and national laws surrounding computing; and others. Course readings, online discussions and a research project are required. | Pre-requisites: EXPOS-UA 1 or EXPOS-UA 4
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 2554 Science and Pseudoscience (4 Credits)
Typically offered Fall and Spring
This survey of popular pseudoscientific claims emphasizes issues in the philosophy of science, including demarcation, evidential warrant, scientific progress, science and public policy, and fallacies of reasoning. Topics include UFO sightings and alien abductions, the Nemesis theory of dinosaur extinctions, astrology, creationism, psychic phenomena, theories of intelligence, alternative medicines, global warming and cold fusion. The course emphasizes student input to determine the topics covered. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2554W Science and Pseudoscience (4 Credits)
Typically offered occasionally
This survey of popular pseudoscientific claims emphasis on such issues in the philosophy of science, including demarcation, evidential warrant, scientific progress, science and public policy, and fallacies of reasoning. Topics include UFO sightings and alien abductions, the Nemesis theory of dinosaur extinctions, astrology, creationism, psychic phenomena, theories of intelligence, alternative medicines, global warming and cold fusion. Student input in determining topics covered is heavily emphasized. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2604 Ethics and Engineering (4 Credits)
Typically offered Fall and Spring
This course examines issues relating to engineering practice and applied technology. We will study foundations for moral decision making such as professional codes and ethical theories such as Kantianism and utilitarianism. These ethical tools will be applied to a range of case studies. We will also seek a deeper understanding of important issues and challenges stemming from technology with an eye to how globalization and its attendant cultural and moral pluralism affect them. Topics include: business in a globalized world, information technology, military technology, food production, the environment, bioethics, energy, and emerging technologies. Satisfies a HuSS elective. | Prerequisites: Completion of first year writing requirements.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2614 Science Fiction for Innovation (4 Credits)
Typically offered occasionally
A distinct genre of literature emerges during the 20th century that imagines new possibilities and challenges for human society in light of scientific and technological change. This course reviews important authors of this field, considering whether science fiction can be an agent of social change and how well it can critique or imagine the interaction between science, technology and society. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2614W Science Fiction for Innovation (4 Credits)
Typically offered Summer term
A distinct genre of literature emerges during the 20th century that imagines new possibilities and challenges for human society in light of scientific and technological change. This course reviews important authors of this field, considering whether science fiction can be an agent of social change and how well it can critique or imagine the interaction between science, technology and society. Satisfies a HuSS Elective | Prerequisites: Completion of first year writing requirements
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: (EN-UY 1013W OR EXPOS-UA 1 OR EXPOS-UA 4 OR EXPOS-UA 4) AND (HUSS-UY 1023W OR EXPOS-UA 2 with a Minimum Grade of D OR EXPOS-UA 9 OR EXPOS-UA 9).

STS-UY 2624 The Rhetoric of Science (4 Credits)
This course is an introduction to the history, theory, practice and implications of rhetoric— the art and craft of persuasion. Specifically, this class focuses on the ways that scientists use various methods of persuasion as they construct scientific knowledge. By first examining the nature of science and rhetoric, the course then looks at texts written by scientists and use rhetorical theory to analyze those texts. Students look at the professional scientific research articles and other genres of scientific writing. Finally, students investigate the way that rhetoric plays a role in the everyday life of scientists. Throughout the class, students wrestle with questions, such as: How is science rhetorical? What can rhetorical analysis reveal about the ways that scientists use persuasion? How might rhetorical analysis limit the understanding of science? | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2624W The Rhetoric of Science (4 Credits)
Typically offered Fall and Spring
This course is an introduction to the history, theory, practice and implications of rhetoric— the art and craft of persuasion. Specifically, this class focuses on the ways that scientists use various methods of persuasion as they construct scientific knowledge. By first examining the nature of science and rhetoric, the course then looks at texts written by scientists and use rhetorical theory to analyze those texts. Students look at the professional scientific research articles and other genres of scientific writing. Finally, students investigate the way that rhetoric plays a role in the everyday life of scientists. Throughout the class, students wrestle with questions, such as: How is science rhetorical? What can rhetorical analysis reveal about the ways that scientists use persuasion? How might rhetorical analysis limit the understanding of science? | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2634 Psychology of the Internet (4 Credits)
Typically offered Fall and Summer terms
This class investigates aspects of human behavior in terms of the Internet. The Internet is a technological phenomenon that allows people separated by huge distances to interact with each other in relatively seamless fashion. Does the Internet allow people to connect in ways never possible before? Or are these new connections variations of previous human interactions, only on a computer screen. For all of its positive attributes, the Internet has a negative side: People become increasingly dependent on interacting only through the Internet. Is this dysfunctional? What characterizes addictive behavior? Can addictive behavior be attributed to a physical action as opposed to a biological substance? | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2644 Creativity and Innovation (4 Credits)
Typically offered Fall
This course explores the nature of the creative act. What does it take to be creative? What are some of the cognitive and personality variables that aid and hinder creativity? What are the characteristics of great innovators? Is innovation purely individual? Or are innovators a product of their time? The course also surveys literature on teaching creativity and innovation. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2664 Intelligence: Real & Artificial (4 Credits)
Typically offered Spring
This course explores the nature of intelligence, both human and computer, and covers historical debates centered on intelligence testing. Can computers be programmed to think? If they can, what would a "thinking" computer look like? The course covers issues such as the Turing test and human-computer interaction. | Prerequisites: Completion of first year writing requirements. Corequisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2724 Dinosaurs: Resurrecting An Extinct Species (4 Credits)
Typically offered Spring
Large fossil bones have fascinated people since ancient times, and after 1842 some of these fossils were described as belonging to the taxum Dinosauria. Since then, new discoveries and scientific techniques have led to a series of changes in both the views of scientists and the public as to what dinosaurs were, what groups they were related to, and how they behaved and interacted with their environments. This course looks at the views of fossils in ancient Greece and Rome, and also in some modern tribal societies. Most emphasis is on the changing views of paleontology, geology, biology and evolution from the Enlightenment period to the present. All major dinosaur groups are discussed, as well as their physiology, relationships to other animals, behavior and ecology, as scientific ideas evolve and new discoveries are made. Finally, how scientists reconstruct dinosaurs through images, sculpture and mountings for the public and popular culture's fascination with dinosaurs is to be discussed. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 2901 SPECIAL TOPICS IN STS (1 Credit)
Typically offered occasionally
Variable credit special topic in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 2902 SPECIAL TOPICS IN STS (2 Credits)
Typically offered occasionally
Variable credit special topic in Science and Technology Studies. Topic to be decided by instructor. | Prerequisite(s): Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 2903 SPECIAL TOPICS IN STS (3 Credits)
Typically offered Spring
Variable credit special topic in Science and Technology Studies. Topic to be decided by instructor. Credits: Variable. Prerequisite(s): Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 2904 Special Topics in STS (4 Credits)
Typically offered Fall and Spring
Special topics in Science and Technology Studies. Topic to be decided by instructor. Prerequisite(s): Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 2904W Special Topics in STS (4 Credits)
Typically offered Spring
Special topics in Science and Technology Studies. Topic to be decided by instructor. Prerequisite(s): Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 2914 Special Topics in Ethics (4 Credits)
Typically offered all terms
Special Topics in Ethics is a variable topics course that will allow TCS faculty to offer courses that deal with specific areas of ethical reasoning and/or specific contexts of ethics relevant to engineering students. This course will fulfill the TCS ethics requirement for undergraduate students. Topics could include Medicine, Ethics, and COVID-19; Ethics and the Nuremberg Trials; Ethics and Digital Media; or Ethics and City Infrastructure. This course will fulfill the TCS ethics requirement for undergraduate students. | Prerequisites: EXPOS-UA 1
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3004 Sem In Science & Tech Studies (4 Credits)
Typically offered occasionally
This course considers the current state of the field of Science and Technology Studies. Students are exposed to the range and methods of STS as well as their own place within the field. The course is designed specifically to bring students with different academic backgrounds into contact with each other in a classroom setting. | Prerequisites: One Level 2 STS Cluster HuSS Elective. Corequisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3004W Seminar In Science & Technology Studies (4 Credits)
Typically offered Spring and Summer
This course considers the current state of the field of Science and Technology Studies. Students are exposed to the range and methods of STS as well as their own place within the field. The course is designed specifically to bring students with different academic backgrounds into contact with each other in a classroom setting. Satisfies an HuSS elective. | Prerequisite: One Level 2 STS Cluster HuSS Elective
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3013 Directed Study in STS (3 Credits)
Typically offered occasionally
Directed study under supervision of faculty advisor in Humanities & Social Sciences. Students are exposed to foundational research techniques under the guidance of a faculty advisor. Library research, written and oral reports required. Does not satisfy an HuSS Elective. | Prerequisite: STS-UY 3003, and permission of STS faculty advisor.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: STS-UY 3004 with a Minimum Grade of D.

STS-UY 3204 Science and Difference (4 Credits)
Typically offered Fall and Spring
This course critically examines the various frameworks through which science operates to construct difference in living populations. It analyzes the logistics of classification as they pertain to modern empirical science and situates classificatory practices in their historical and cultural contexts. Particular attention is paid to the interplay between scientific research and historical episodes of cultural anxiety concerning the nature and significance of human differences based on race, gender, ethnicity and sexuality. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.
Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3204W Science and Difference (4 Credits)
Typically offered occasionally
This course critically examines the various frameworks through which science operates to construct difference in living populations. It analyzes the logistics of classification as they pertain to modern empirical science and situates classificatory practices in their historical and cultural contexts. Particular attention is paid to the interplay between scientific research and historical episodes of cultural anxiety concerning the nature and significance of human differences based on race, gender, ethnicity and sexuality. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.
Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3214 Science and Feminism (4 Credits)
Typically offered Fall and Spring
This course will introduce students to feminist perspectives from the field of Science & Technology Studies (STS). Scholars from anthropology, sociology, history, and philosophy of science are studied to gain insight on how gender and race affect the practice of science and how we come to think about facts, progress, modernity, and our technological and scientific worlds. Students are expected to become familiar with the basic theories, concepts, and questions of STS and will learn to apply critical feminist theory to analyze the day-to-day practice of science. | Prerequisite(s): One Level 2 STS Cluster TCS Elective
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3214W Science and Feminism (4 Credits)
Typically offered Fall, Spring, and Summer terms
This course will introduce students to feminist perspectives from the field of Science & Technology Studies (STS). Scholars from anthropology, sociology, history, and philosophy of science are studied to gain insight on how gender and race affect the practice of science and how we come to think about facts, progress, modernity, and our technological and scientific worlds. Students are expected to become familiar with the basic theories, concepts, and questions of STS and will learn to apply critical feminist theory to analyze the day-to-day practice of science. | Prerequisite(s): One Level 2 STS Cluster TCS Elective
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3224 Queering Science and Technology (4 Credits)
Typically offered Fall and Spring
This course introduces students to the intersection of feminist STS and queer studies, to examine how cultural norms around bodies, identity, selfhood, gender, and sexuality shape the production of knowledge and expertise. We will engage with foundational theories and concepts, including heteronormativity, the social construction of technology, the production of space and place, and the relationship between power, knowledge, and subjectivity. We will explore these themes through case studies and topics such as cyborgs, monsters, and other nonhumans, queer time and space, digital media, public health, trans studies, embodiment, queer futurity, and more. The course is based around reading, writing, and discussion. | Prerequisite: EXPOS-1, and one 1000-level or 2000-level course in the Science, Technology and Society cluster.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-1.

STS-UY 3234 The Phenomenon of Life (4 Credits)
Typically offered Fall and Spring
This course offers an existential interpretation of biological facts. The problem of inwardness as examined in modern philosophy is addressed from the standpoint of scientific biology. The course approach is not be limited by the anthropocentric tradition of idealist and existentialist philosophy, nor the materialist standards of natural science. The course explores the great contradictions of human experience—freedom and necessity, autonomy and dependence, self and world, creativity and mortality—through the ascending order of organic powers and functions: metabolism, motility, desiring, sensing and perceiving and on to imagination, art and mind. | prerequisites:EXPOS-UA 1 or EXPOS-UA 4.
Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3244 THE HISTORY OF LIGHT (4 Credits)
Typically offered Fall
What is the nature of light? How does it relate to magnets, electric circuits, TVs, radioactivity and the fundamental forces of nature? More importantly, what really happens to your burrito when you microwave it? This course answers these and similar questions by following the historical development of three apparently distinct and unrelated phenomena—electricity, magnetism and light. Topics range from descriptions of these phenomena by the Greeks to Maxwell's 19th-century unification of them into a single phenomenon to Einstein's theory of special relativity to their incorporation into the Standard Model of contemporary physics. The course considers theoretical descriptions of the phenomena and technologies derived from them. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 3244W THE HISTORY OF LIGHT (4 Credits)
What is the nature of light? How does it relate to magnets, electric circuits, TVs, radioactivity, and the fundamental forces of nature? More importantly, what really happens to your burrito when you microwave it? This course answers these and similar questions by following the historical development of three apparently distinct and unrelated phenomena - electricity, magnetism, and light - from their descriptions by the Greeks, to their unification under a single phenomena by Maxwell in the 19th century, and beyond to Einstein's theory of special relativity, and their incorporation into the Standard Model of contemporary physics. The path taken considers both the theoretical descriptions of the phenomena and the technologies derived from them. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Note: Satisfies an HUSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 3254 Philosophy of Science (4 Credits)
Typically offered occasionally
The philosophy of science is divided into two subfields: The first studies the nature and methodology of science. The second examines the conceptual and philosophical foundations of particular scientific fields. This course considers topics in the first subfield, including philosophical attempts to describe scientific explanations, laws of nature and the process by which evidence confirms theories in science. The course also considers the nature of scientific theories: what they are, how they change and how they can and should be interpreted. | Prerequisites: Completion of first year writing requirements. | Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3254W PHILOSOPHY OF SCIENCE (4 Credits)
Typically offered Spring and Summer
The philosophy of science is divided into two subfields: The first studies the nature and methodology of science. The second examines the conceptual and philosophical foundations of particular scientific fields. This course considers topics in the first subfield, including philosophical attempts to describe scientific explanations, laws of nature and the process by which evidence confirms theories in science. The course also considers the nature of scientific theories: what they are, how they change and how they can and should be interpreted. | Prerequisites: Completion of first year writing requirements. | Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3264 Physics, Information and Computation (4 Credits)
Typically offered Fall and Spring
This course investigates the conceptual foundations of contemporary notions of information and computation from the point of view of physics. The course is divided into four parts: Part I considers the relation between entropy and global concepts of information; Part 2 considers the relation between spacetime structure and physical concepts of computation; Part 3 considers the relation between quantum and classical information; and Part 4 considers attempts to reconceive physics entirely in information-theoretic terms. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 3264W PHYSICS, INFORMATION, AND COMPUTATION (4 Credits)
This course investigates the conceptual foundations of contemporary notions of information and computation from the point of view of physics. The course is divided into four parts: Part I considers the relation between entropy and global concepts of information; Part 2 considers the relation between spacetime structure and physical concepts of computation; Part 3 considers the relation between quantum and classical information; and Part 4 considers attempts to reconceive physics entirely in information-theoretic terms. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 3284 Relativity and Spacetime (4 Credits)
Typically offered Spring term of odd numbered years
This course is an introduction to the physics and philosophy of special and general relativity. In the first part of the course, we will develop the physics underlying special relativity and consider conceptual questions including the following: Does Special Relativity prohibit faster-than-light travel? Does it allow a traveling astronaut to age less and return home in the distant future? What is the significance of Einstein's famous equation "E = mc2"? In the second part, we will develop the physics underlying general relativity and consider conceptual issues surrounding such current applications as time machines, wormholes and "warp-drive" spacetimes. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3284W Relativity and Spacetime (4 Credits)
The first part of this course develops the physics underlying special relativity and considers such conceptual questions as: Does Special Relativity prohibit faster-than-light travel? Does it allow a traveling astronaut to age less and return home in the distant future? What is the significance of Einstein's famous equation "E = mc2"? The second part of the course develops the physics underlying general relativity and considers conceptual issues surrounding such current applications as time machines, wormholes and "warp-drive" spacetimes. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3354 Brain, Behavior, and the Mind: The History and Development of Neuroscience (4 Credits)
Typically offered Spring
This course traces the development of neuroscience and its techniques to the present day. Ranging from mesmerism and phrenology to physiology, genetics, and modern neuroscience, it considers various theories of the brain and its relationship to the body. Because neuroscience and its sub-disciplines will be one of the leading sciences of the 21st century, this course considers how an increased understanding of brain/mind relationships holds the promise for innovation in treating mental disorders, altering human habits, countering the effects of stress, and elsewhere. Other topics that may be discussed include learning and memory at both the cell and brain levels, and the ways insights from neuroscience are applied in medicine, law, economics, government policy, and religion. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3402 INDEPENDENT STUDY IN STS (2 Credits)
Typically offered occasionally
INDEPENDENT STUDY IN STS
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3403 INDEPENDENT STUDY IN STS (3 Credits)
Typically offered occasionally
Variable credit independent study in Science and Technology Studies. Topic to be decided by instructor. Credits: Variable. | Prerequisites: One Level 2 HuSS Elective from the STS Cluster and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3434 HYPERMEDIA IN CONTEXT (4 Credits)
Typically offered Fall and Spring
This course investigates precursors to new media, revealing the possibilities and limitations of today's incarnations. Students search analog media for examples of supposedly new technologies like associative thinking, multimedia and participatory design, and examine the social and economic structures that allow for such tools to arise and to determine what exactly is new in new media. Further, the course considers how to use the concept of antecedent to critique present manifestations of media and how to incorporate ideas from the past into the present while avoiding homologies. | Prerequisites: Completion of first year writing requirements. Co-requisites: None. Notes: Satisfies a HuSS Elective
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3434W Hypermedia in Context (4 Credits)
Typically offered Fall and Spring
This course investigates precursors to new media, revealing the possibilities and limitations of today's incarnations. Students search analog media for examples of supposedly new technologies like associative thinking, multimedia and participatory design, and examine the social and economic structures that allow for such tools to arise and to determine what exactly is new in new media. Further, the course considers how to use the concept of antecedent to critique present manifestations of media and how to incorporate ideas from the past into the present while avoiding homologies. | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS Elective
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 3604 Psychology of Internet Security (4 Credits)
Typically offered Fall
This course looks at the relationship between psychology and online security. How do computer hackers access secure computers strictly by asking people for their password? What are the key features of current security messages and how can they be made more explicit so the average computer user can understand them? What social-psychology principles are required for a secure network? And what perceptual issues help secure a computer network? | Prerequisites: EXPOS-UA 1 or EXPOS-UA 4. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No
Prerequisites: EXPOS-UA 1 or EXPOS-UA 4.

STS-UY 3624 Science and Technology in the Literary Sphere (4 Credits)
Typically offered occasionally
How does literature seek to accommodate new ideas from science? When do new technologies find their way into the public sphere? What happens when scientists and engineers translate their findings into novels or other narratives? This course reads literature as evidence of the diffusion of technological and scientific ideas. When literary forms are used to promote, challenge or even misrepresent scientific or technical developments, students gain insight into the interaction between scientists, engineers and society at large. This course may be organized around different themes, but it always explores how scientific and technological ideas fare in the republic of letters. | Prerequisites: One Level 2 STS Cluster HuSS Elective. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3814 Social Psychology of Virtual Worlds (4 Credits)
Typically offered Spring
This course explores human relations in the virtual world. Do real-world interactions maintain themselves in an online community, or do the rules of social interaction change significantly in a virtual environment? When people perceive themselves as being anonymous, do they feel the same responsibility for their own behavior, or do they interact with others differently as they would in the real world? This course examines the psychology of online, virtual relationships with a view to compare and contrast them with real-world relationships. | Prerequisites: One Level 2 PS Elective. Co-requisites: None. Notes: Satisfies a HuSS elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 3901 Special Topics in STS (1 Credit)
Typically offered occasionally
Variable credit special topic in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: Completion of first year writing requirements and One Level 2 STS Cluster HuSS Elective and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3902 Special Topics in STS (2 Credits)
Variable credit special topic in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: Completion of first year writing requirements and One Level 2 STS Cluster HuSS Elective and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3903 Special Topics in STS (3 Credits)
Typically offered Fall and Spring
Variable credit special topic in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: Completion of first year writing requirements and One Level 2 STS Cluster HuSS Elective and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3904 Special Topics in STS (4 Credits)
Typically offered Fall and Spring
Variable credit special topic in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: Completion of first year writing requirements and One Level 2 STS Cluster HuSS Elective and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3904W Special Topics in STS (4 Credits)
Variable credit special topic in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: Completion of first year writing requirements and One Level 2 STS Cluster HuSS Elective and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3911 Independent Study in STS (1 Credit)
Variable credit independent study in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: One Level 2 HuSS Elective from the STS Cluster and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3912 Independent Study in STS (2 Credits)
Variable credit independent study in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: One Level 2 HuSS Elective from the STS Cluster and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3913 Independent Study in STS (3 Credits)
Typically offered Fall and Spring
Variable credit independent study in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: One Level 2 HuSS Elective from the STS Cluster and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 3914 Independent Study in STS (4 Credits)
Typically offered Spring
Variable credit independent study in Science and Technology Studies. Topic to be decided by instructor. | Prerequisites: One Level 2 HuSS Elective from the STS Cluster and instructor's permission. Co-requisites: None. Notes: Satisfies a HuSS Elective.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes

STS-UY 4002 Capstone Project I in Science and Technology Studies (2 Credits)
Typically offered Spring
The capstone project I is an opportunity for STS majors to complete an independent, integrative, piece of scholarship on an important issue involving science, technology, and society. The capstone experience is intended to bring together students' past learning in previous courses, and to extend and deepen it by focusing on a specific, cumulative project. The capstone includes a substantial research paper and an oral presentation.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 4003 STUDY ABROAD (3 Credits)
Typically offered occasionally
This course is for STS majors only and takes the form of a semester studying abroad. Semester-long course of study at a foreign institution. Students must maintain a course-load equivalent of 12 credits (including the 3 for STS-UY 4003) during this semester. | Prerequisite: Junior/Senior STS major and permission of STS faculty advisor.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 4021 STS Global Experience (1 Credit)
Typically offered Summer and January terms
Students in this course participate in a global study away experience to learn about Science and Technology Studies in a global context. The course involves travel to a Global study site, field trips, and guest lectures. It also involves a real world research/service project tied to the global location.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 4022 STS Global Experience (2 Credits)
Typically offered Summer and January terms
Students in this course participate in a global study away experience to learn about Science and Technology Studies in a global context. The course involves travel to a Global study site, field trips, and guest lectures. It also involves a real world research/service project tied to the global location.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 4023 STS Global Experience (3 Credits)
Typically offered Summer and January terms
Students in this course participate in a global study away experience to learn about Science and Technology Studies in a global context. The course involves travel to a Global study site, field trips, and guest lectures. It also involves a real world research/service project tied to the global location.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 4024 STS Global Experience (4 Credits)
Typically offered Summer and January terms
Students in this course participate in a global study away experience to learn about Science and Technology Studies in a global context. The course involves travel to a Global study site, field trips, and guest lectures. It also involves a real world research/service project tied to the global location.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 4034 Internship (4 Credits)
Typically offered occasionally
Students may undertake an internship for academic credit with an appropriate private, public, or non-profit agency or firm. The internship is an opportunity to extend learning outside of the classroom into a real world setting, and to explore career options tied to the major. Students complete 140 hours at the internship site and attend occasional class meetings. The course involves completing a learning contract, regular reflections, assignments, and a final presentation. | Prerequisite: IDM/SUE/STS majors only. Permission of instructor required.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 4202 Capstone Project II in Science and Technology Studies (2 Credits)
Typically offered Spring
The second half of a 2 course sequence, in which STS majors complete an independent, integrative piece of scholarship on a current issue involving science, technology, and society. This course centers on analysis and writing; students will draw upon modes of STS analysis and use critical thinking skills to transform their project proposal from Capstone I into a formal research paper. Students will bring the depth and breadth of their STS knowledge to this culminating senior project, which will also include a research prospectus, literature review, and visual presentation/oral defense. | Prerequisites: A grade of B- or better in STS-UY 4002 and senior standing.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 4404 Ind Study in Science and Technology Studies (4 Credits)
Typically offered occasionally
Independent study in Science and Technology Studies. Topic to be decided by instructor.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: No

STS-UY 4504 Advanced Seminar in Science and Technology (4 Credits)
Typically offered Fall, Spring, and Summer terms
The Advanced Seminar is a writing- and research-intensive course that will explore in-depth a topic in Technology, Culture, and Society, requiring practice of both writing and research skills. Topics vary by section; see Albert for detailed topic descriptions. | Prerequisite: (EXPOS-UA 1, EXPOS-UA 4, EXPOS-UA 5, EXPOS-UA 9, ASPP-UT 2, WREX-UF 101 or WRCI-UF 102) and one TCS elective course and Junior/Senior standing.
Grading: Ugrd Tandon Graded
Repeatable for additional credit: Yes
Prerequisites: EXPOS-UA 1, EXPOS-UA 4, EXPOS-UA 5, EXPOS-UA 9, ASPP-UT 2, WREX-UF 101 or WRCI-UF 102 and Junior/Senior standing.