Science is a critical part of our modern world. But how is it actually done? And how does it affect our daily lives? Placing science in social context is essential to understanding it as a process, as an institution, and as a powerful and influential force in society. With examples such as controversies over cold fusion and HIV-AIDS research, the practices of genetic testing and brain scan analysis, the questions of nuclear weapons and climate change, forms of expertise and public policy, this course will introduce you to the exciting and growing field of the sociology of science.

What is the Sociology of Science?

We are often used to thinking of science as something outside of the sphere of human influence: after all, facts are just facts. But we can also examine science as a social phenomenon. After all, it is done by people and is subject to our social norms, institutions, beliefs and practices.

For over forty years, scholars in the field of Science and Technology Studies (also called “Science Studies”) have used the tools of sociology, history, anthropology, and philosophy to understand the human dimension of scientific work. How are scientific facts made and verified? How does our social commitments on issues like gender or race affect our scientific vision? Where does science policy come from and how does it involve different kinds of expertise? In this course, you will learn how to ask important questions about how our human world affects science -- and how science affects our human world.

Where (some of) the action is...

IN THE LAB

As the place where scientific knowledge gets made, laboratories are an important focus for Science Studies. Laboratory Ethnography, the qualitative and immersive field study of laboratory work, is one of the primary methods that sociologists of science used to understand scientific practice, knowledge and discovery.
Readings & Writings

This one semester, seminar survey course provides an overview of the field of the Sociology of Science, a focus area within Science and Technology Studies. Readings are organized around weekly themes to give students theoretical grounding in the field and provide interesting examples with scope for good discussion. From these readings and discussions, students will develop independent research projects on a relevant topic of their choice.

This is a seminar course: completion of readings prior to class, seminar attendance and participation are mandatory and graded.

Readings

The readings for this course are structured around ten themes that explore the relationship between science and society, norms, and policies. The readings are required prior to each seminar discussion, listed under the week in which they are due. These readings will be available in the course packet from the campus store.

Reading Responses

Short responses to the week’s readings are due by email to the instructor before 8am on the morning of class. These should be a short, 1-2 page summary of the readings, including your thoughts or questions about them, or correlations you see between them or between a topic in a reading and technology in your daily life. I require 8 responses over the semester (you decide which weeks to skip).

Midterm

An in-class midterm exam will require short answer questions.

Final Paper

The “final” for this course is a 12-15 page research paper on a topic of your choice. I encourage you to think about writing a research paper as a process that involves several stages, opportunities for consultation and feedback, and writing.

It is wise to use the readings as a jumping-off point for exploring your topic of special interest. At individual conferences during week 4-5 we’ll discuss your ideas for the paper and give you guidelines and resources to proceed.

A paper proposal is due in Week 8 of the class. This should be a 2-3 page summary indicating your topic of interest and sources, and outlining your research and argument. Plan to include at least two in-class sources, and at least 4 other sources not listed on this syllabus.

The best papers will involve both empirical and analytical components. Analytical materials will be drawn from class, but empirical materials may involve original/archival research, interviews, or ethnographic observations. If you are planning to use human subjects in your research, contact the instructor early on so that you may apply for an IRB.

In the final class, you will have five minutes to give a brief, informative, workshop-style presentation on the topic of your paper to your classmates. We will talk about these presentations, my expectations for them and their grading, in class.

The final paper is due DEAN’S DATE, by 5pm, by email or mailbox delivery. This paper must present a clear argument, employ at least 10 academic sources, and demonstrate engagement with the topics of concern to the course.

Deadlines are summarized on p.6.

GRADING BREAKDOWN

10% Seminar Attendance and Participation
15% Weekly Reading Responses
20% Midterm Exam
15% Paper Proposal: 2-3 pages, concise, detailing your argument and sources.
10% Paper Presentation: 5 minutes, peer-evaluated
30% Final Paper: 12-15 pages double-spaced.

Scientific images and practices make great research topics! Lynch & Jordan show the role of ritual in genetic plasma preps (above), Dumit describes patients’ responses to brain scans (top), and Latour argues that visual “inscriptions” are central to scientific practice.
Course Policies

Attendance and Participation

This is a seminar course: completion of readings prior to class, seminar attendance and participation are mandatory and graded. You are expected to come to class, having completed the reading and/or writing assignments due that day.

If you have to miss a class, you must contact me beforehand with a valid excuse, preferably supplemented with medical letters or notes from your Dean to excuse your absence. After two unexcused absences, every further class you miss will subtract a third of a letter (i.e. A-, B+, B…) from your final grade.

In-Class Computing

This is a course about the social effects and relationships with science in our everyday lives. In order to achieve enough analytical distance from our inventions, we will host an electronics-free classroom. No phones, laptops, media players, or digital readers. Cell phones will be permitted in cases of emergency only, by prior permission of the instructor.

Working with Sources

Academia is all about using sources: reading them, talking about them, critiquing them or exploring them. But plagiarism, or passing off someone else’s work or ideas as your own without crediting them properly, is unacceptable. All sources – electronic and paper – must be referenced with the appropriate formatting. Whether you choose MLA, Chicago style, APA or typical formats in the sciences, please make sure you are consistent! Please note that I will consider your choice of sources in your paper towards your grade, so use your judgment wisely. Plagiarized assignments will result in a grade of zero, and will be subject to University policies on academic integrity. If you have any questions about what constitutes plagiarism, please do not hesitate to contact me.

Online Sources

The internet is not, wholesale, an academic source. Certainly, many academic sources can be found online, such as electronic versions of books, newspapers, academic journals, and conference proceedings. But personal, commercial, or organizational websites are not appropriate to use as sources in your college career. If you have any doubts as to whether or not a website constitutes a reliable source, send me an email with the URL and I will check it out for you as soon as I possibly can.

See the back page of the syllabus for more online resources.
Introduction

No readings for introductory session.

Laboratories

Where does science take place and what happens there?


Controversy

How do discoveries happen, and who gets the credit?


Experiments

What role do instruments and experience play in scientific experiments?


Images

How do scientists represent what they know? And with what consequences?


Communities

How do scientists police and transgress their borders?

Gender

How does our cultural understanding of gender affect our scientific knowledge?


Animals

What role do experiments and observations of animals play in our knowledge of the world?


Experts

Who knows what; why; and with what consequences?


Politics

How do scientists reconcile their work with global networks of power and politics?


Policy

How do we - or should we - put scientific knowledge into practice as public policy?


Presentations

Presentations of individual research projects.
Resources

Professional Associations

- http://www.4sonline.org - The Society for Social Studies of Science, the primary professional association for sociologists of science. Lots of great information online.
- http://www2.asanet.org/sectionskat/ - The Science, Knowledge and Technology Section of the American Sociological Association.

Journals

Sociologists of science publish in a variety of journals. Look for the top articles in these publications:

- Social Studies of Science (sagepub.com/sss)
- Science, Technology, and Human Values (sagepub.com/sth)
- Science Studies
- Science as Culture (cultural studies of science)
- Science Communication (public understanding of science)
- Science and Public Policy (policy issues)
- Minerva (gender and science)
- Configurations (science, art, and literature)

Handbooks (in course reserve)

- The Science Studies Reader, edited by Mario Biagioli. All the seminal texts in one place! (Routledge, 1999).
- The Handbook of Science and Technology Studies, short, encyclopedia-style entries on key topics in STS (MIT Press, 2008)
- An Introduction to Science and Technology Studies, by Sergio Sismondo (Blackwell, 2010). A text-book style approach to introducing and explaining the field.
- The STS Wiki (www.stswiki.org) is a consolidated, community-based resource for STS-ers, including lists of readings and previews of Science Studies programs worldwide.

Sociology of Science Programs

- Cornell University Science & Technology Studies: http://sts.cornell.edu/
- MIT Program in Science, Technology and Society: http://web.mit.edu/sts/
- Rensselaer Polytechnic Science and Technology Studies: http://www.sts.rpi.edu/
- UC San Diego’s Science Studies: http://sciencestudies.ucsd.edu/
- University College London Science and Technology Studies: http://www.ucu.ac.uk/sts/
- University of Edinburgh Science Studies Unit: http://wwwstis.ed.ac.uk/
- University of Oxford, Said Business School: http://www.sbs.ox.ac.uk/research/sts

RESEARCH IDEAS

Getting started with your final paper...

Add @sciencemagazine, @NYTimesScience and/or @NatureMagazine to your Twitter feed and tune into current science news to find an area, controversy, or case that interests you.

Browse online resources for STS bibliographies on topics that you get excited about. The Syllabus Collection on the 4S website (4sonline.org) or the STS Wiki (stswiki.org) both have terrific lists of readings and writing topics that can inspire.

Consult the STS Handbooks for more grounding in your choice of theoretical perspective or empirical site.

PAPER TIMELINE

Week 4: Professor Conference. Bring one or more ideas for research topics.

Week 8: Proposal Due. 2-3 pages, with sources and topics well explained.

Week 12: Presentations. Your opportunity to present and get feedback on your topic with your classmates.

Deans’ Date: Paper due.

Note: All research papers do better with feedback. Circulate drafts to your peers in the class. I will read and provide comments on drafts up to 2 days before the deadline.

STAND BACK

I'M GOING TO TRY SCIENCE