

SOC 357 Sociology of Technology

Wednesdays, 1:30 to 4:20pm

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You are probably reading this course description on a computer, or in a book compiled and printed by a printing press. In a single day you might talk to your parents on your cell phone, buy books on the internet with a credit card, enter your student number to register for class, or drive to the store. Technology is everywhere, and even if we take it for granted it is easy to see that it influences our lives. But how do our lifestyles, our values and social norms influence technology in the first place? Where do new technologies come from, how are they picked up and used, and why are they crafted the way they are? Addressing these questions with examples from the bicycle to computers, from birth control to DRM, this course provides an introduction to the growing and important field of the Sociology of Technology.

Expectations

This one semester, seminar survey course provides an overview of the field of the Sociology of Technology, 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*.

The **readings** for this course are structured around ten themes that explore the relationship between technology and social values, behaviors and norms. The readings in normal type with a black bullet point are required readings for 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.

Short responses to the week's readings are due by email to the instructor **before 8am** Wednesday mornings. 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).

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

The "final" is a **12-15 page research paper** on a topic of the student's choice. It is wise to use the readings and the Recommendation Service 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.

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.

Attendance and Participation Policy

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 either by email at [jvertesi@princeton.edu], or by phone *if an emergency* at [258-9053]. 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 Policy

This is a course about the social effects and relationships with technology in our everyday lives. In order to achieve enough analytical distance from our machines, 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.

Grading Breakdown

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

A Note on Sources

Academia is all about using sources: reading them, talking about them, critiquing them or exploring them. But there is also the unacceptable use of sources, **plagiarism**: put simply, this is passing off someone else's work or ideas as your own, without crediting them properly. Therefore, **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. **Inappropriate use of sources will not be tolerated.** 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.

Also note that **the internet is not, wholesale, an academic source**. Certainly, many academic sources can be found online, but not all are 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. To encourage you to cite responsibly, please note that no more than **1 out of every 5** of your sources may be information solely accessible on the internet. This includes personal, commercial and organizational websites, i.e. personal or academic pages, NASA's public image database, etc. It does not include electronic versions of magazines, newspapers, books, journal publications, or conference proceedings.

Course Schedule

1. Introductory Class. No readings.

2. The Social Construction of Technology

How might we talk about technology sociologically? While we may take technological artifacts such as bicycles, bridges, or cars for granted, we don't often think about how they influence our lives – or how our lives influenced them to begin with.

- Langdon Winner, "Do Artifacts have Politics?," Ch.2 in The Whale and the Reactor: A Search for Limits in an Age of High Technology (University of Chicago Press, 1986), p. 19-39.
- Trevor Pinch and Wiebe Bijker, "The Social Construction of Facts and Artifacts: Or, How the Sociology of Science and the Sociology of Technology Might Benefit Each Other," in Bijker, Hughes & Pinch (eds.), The Social Construction of Technological Systems, (MIT Press, 1987), p. 17-50.
- Trevor Pinch and Ronald Kline, "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States," Technology and Culture 37 (1998): 763-95.

3. Technology as Social Force

As much as social worlds shape technologies, surely technology shapes our social world as well? These sociologists of technology suggest ways of approaching symmetry between humans and machines as equal and sometimes conflicting actors in social space.

- Bruno Latour, "Where are the Missing Masses? The Sociology of a Few Mundane Artifacts," in: Bijker and Law, Eds., Shaping Technology/Building Society: Studies in Sociotechnical Change (MIT Press, 1992), p. 225-258.
- Akrich, Madeline, "The De-Description of Technological Objects," in: Bijker and Law, Eds., Shaping Technology/Building Society (MIT Press, 1992), p. 205-24.
- Steve Woolgar, "Configuring the User: The Case of Usability Trials" in John Law, Ed., A Sociology of Monsters: Essays on Power, Technology, and Domination, Sociological Review Monograph 38 (Routledge, 1991), pp.57-99.

4. Infrastructure and Experience

Technology isn't always something shiny that fits in your pocket: it can be pervasive, networked, institutionalized, and ubiquitous. How do these large technological infrastructures mediate our experience with the world around us, when are they made visible to us, and what tools can we bring to bear to analyze them?

- Thomas P. Hughes, "The Evolution of Large Technological Systems", in Bijker, Hughes & Pinch (eds.), The Social Construction of Technological Systems (MIT Press, 1987) pp. 51-82.
- Susan Leigh Star, "The Ethnography of Infrastructure," American Behavioral Scientist 43.3 (1999), 377-391.
- Paul Dourish and Genevieve Bell, "The Infrastructure of Experience and the Experience of Infrastructure: Meaning and Structure in Everyday Encounters with Space," Environment and Planning B 34 (2007): 414-430.

5. Technologies of Control

Whether state bureaucratic regimes or DRM on your iPod, technologies can impose existing forms of power, segregation, or legal action upon individuals. This week we look at two examples - apartheid classification infrastructures, and the development of recording protections - as well as an important argument about user resistance.

- Geoff Bowker and Susan Leigh Star, "The Case of Race Classification and Reclassification under Apartheid," Ch. 6 in Sorting Things Out: Classification and its Consequences (MIT Press, 1999), p.195-225.
- Tarleton Gillespie, "Designed to Effectively Frustrate: Copyright, Technology and the Agency of Users," New Media and Society 8 (2006): 651-669.
- Sally Wyatt, "Non-Users Also Matter: The Construction of Users and Non-Users of the Internet," in: Pinch and Oudshoorn, Eds., How Users Matter (MIT Press, 2003): 67-80.

6. Digital Studies

The past 15 years have seen the development, implementation and widespread adoption of platforms for virtual engagement. How might sociologists explore and understand these virtual spaces? Where and how do the virtual and real worlds intersect? And how do our existing social categories translate to virtual systems?

- Sherry Turkle, "Aspects of the Self," Ch. 7 in Life on the Screen: Identity in the Age of the Internet (Simon and Schuster, 1998), p.177-209.
- Tom Boellstorff, "Place and Time," Ch. 4 in Coming of Age in Second Life: An Anthropologist Explores the Virtually Human (Princeton, 2008), p.89-117.
- danah boyd, "White Flight in Networked Publics? How Race and Class Shaped American Teen Engagement with MySpace and Facebook," in: Digital Race Anthology, ed. Lisa Nakamura and Peter Chow-White (Routledge, forthcoming). Online at <http://www.danah.org/papers/2009/WhiteFlightDraft3.pdf>

7. [Fall Recess]

8. Gender and Technology (**Paper Proposals Due)

This week we look at how concepts of gender and sexual identity are embedded in technological artifacts. Who decides how these technologies are built, what social and cultural arrangements inform their design, and how do technologies perform different understandings of gendered practices and experiences?

- Ellen van Oost "Materialized Gender: How Shavers Configure the Users' Femininity and Masculinity," in: Pinch and Oudshoorn, Eds., How Users Matter (MIT Press, 2003): 193-208.
- Nelly Oudshoorn, "How Man Came to be Included in the Contraceptive Research Agenda," Ch. 2 in The Male Pill: A Biography of a Technology in the Making (Duke University Press, 2003), p. 19-51.
- Wihua Wu, Steve Fore, Xiyang Wang and Petula Sik Ying Ho, "Beyond Virtual Carnival and Masquerade: In-Game Marriage on the Chinese Internet," Games and Culture 2 (2007): 59-89.

9. Technology and Social Relations (** In-class Midterm Exam)

Basic social theory reminds us that societies are structured: race, class, gender and the organization of labor produce social categories and transgressions. How are these social categories and relations reproduced, enforced or challenged through technological means?

- Fred Turner, "Where the Counterculture Met the New Economy: the WELL and the Origins of Virtual Community," Technology and Culture, 46 (2005): 485-512.
- Jane Barker and Hazel Downing, "Word Processing and the Transformation of Patriarchal Relations of Control in the Office," in: MacKenzie and Wajzman, Eds., The Social Shaping of Technology (Open University Press, 1985): 147-164.
- Barley, Stephen. 1986. "Technology as an Occasion for Structuring: Evidence from Observations of CT Scanners and the Social Order of Radiology Departments." Administrative Science Quarterly 31: 78-108.

10. Technology and Personhood

Along with breakthroughs in medical technology and artificial intelligence come complex ethical dilemmas about personhood, experience, and even life. How do such technologies naturalize, efface, enlist, or control our understandings of the human body?

- Margaret Lock, "Technology in Extremis" and "Narrow Escapes," Ch. 2 in Twice Dead: Organ Transplants and the Reinvention of Death (University of California Press, 1999), p.57-77.
- Rayna Rapp, "An Error in Cell Division, or the Power of Positive Diagnosis," Ch. 9 in Testing Women, Testing the Fetus: the Social Impact of Amniocentesis in America (Routledge, 2000), p.220-262.
- Lucy Suchman, "Figuring the Human in AI and Robotics" and "Demystifications and Reenchantments of the Humanlike Machine," Ch.13-14 in Human-Machine Reconfigurations (Cambridge University Press, 2007), pp.226-258.

11. Expanding "the User" in Information and Communication Technologies

In an age of globalization, there is an increased distance between technology designers and users. What can we learn about technology from observing how it is used, understood and deployed in transnational contexts?

- Lilly Irani et al. "Postcolonial Computing: A Lens on Design and Development," Proceedings of CHI 2010, Atlanta, CA (ACM Press, 2010), p. 1311-1320.
- Julian Dibbell, "The Life of the Chinese Gold Farmer," New York Times, June 17, 2007, Section 6, Column 1, Magazine, p.36.
- Jenna Burrell, "User Agency in the Middle Range: Rumors and the Reinvention of the Internet in Accra, Ghana," Science, Technology and Human Values 36.2 (2011): 139-159.
- James Ross, Lilly Irani, et al., "Who are the crowdworkers? Shifting demographics in Amazon's Mechanical Turk," Extended Abstracts of CHI 2010, Atlanta, GA (ACM Press, 2010), p.2863-2872.

12. Failures

Not everything works the way it is supposed to. What do we do when technologies fail, why do they fail, how do we determine risk and blame for their failure, and do these problems require technical, social, or hybrid fixes?

- Diane Vaughan, “Conformity and Tragedy,” Ch. 9 in The Challenger Launch Decision: Risky Technology, Culture and Deviance at NASA (University of Chicago Press, 1996), p.334-386.
- Sonja Schmid, “Transformation Discourse: Nuclear Risk as a Strategic Tool in Late Soviet Politics of Expertise,” Science, Technology and Human Values 29 (2004): 353-376.
- British Petroleum Incident Investigation Team, “Overview of Deepwater Horizon Accident Analysis,” Section 4 in Deepwater Horizon Accident Analysis Report (September 8, 2010), p.31-48. Access online via Blackboard.

13. Presentations of individual research projects