

STS 4500: STS and Engineering Practice

Professor Lisa Messeri

Fall 2016

Office: Thornton Hall, A216

Office Hours: Tuesday 2:30-4:30 or by appointment

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Overview

“I don’t spend my time pontificating about high-concept things; I spend my time solving engineering and manufacturing problems.” -Elon Musk

In this quote, Musk (who is famous for such visionary projects, including SpaceX and Tesla Motors) divides two ways of thinking about problems: the high-concept world of ideas and the nitty-gritty, day-to-day work of engineering. To focus on one, he implies, requires ignoring the other. In this class, we will question this assumption, asking instead how even the most basic feats of engineering are always wrapped up in dynamics of the social, political, and conceptual world. Our goal will be to breakdown the artificial barriers between “technology” and “society,” favoring instead an image of an interconnected web of things, people, and ideas.

Throughout this year, in both 4500 and 4600, you will be working towards producing your STS thesis – a research paper that uses social science methods to explore the social significance of technology. The first half of 4500 is designed to offer a broad overview of concepts in STS, focusing specifically on social studies of technology. Each week introduces different approaches and areas of focus that might frame your STS thesis. In Week 11 you will hand in a formal proposal of both your STS thesis topic and your technical thesis topic. The remainder of 4500 will be spent preparing you for the research and writing that lies ahead in 4600.

By the end of the semester, you will be comfortable thinking like a social scientist. We will collectively develop a new vocabulary, a new way to conceptualize the world, and a new way to ask questions. Individual writing assignments and group discussions will help you develop your “STS voice.” This voice will travel with you into the spring semester, as you expertly carry out the research project you design this semester. Beyond this year, I hope you will carry this STS way of thinking into your professional and personal life as an alternative and informative way of looking at the world.

Assignments

The assignments for this class help you achieve two broad, overlapping goals: preparing you to write your STS thesis and understanding how an STS perspective enhances engineering problem solving.

Reflective Writing	3x week	10%
Revisited Reflection	Sept 21, Oct 24	10%
Preliminary Research Question	September 30	5%
Sources, first draft	October 14	P/F
Prospectus, STS section draft	October 31	5%
Prospectus	November 2	30%
Presentations	November 5-19	10%
Sources, second draft	December 5	5%
Framework essay	December 5	10%
Participation	Ongoing	15%

All assignments, are to be turned in on Collab. Reflective writing posts are due at 10 am (see guidelines for more details). Other assignments are due at 5 pm (i.e., before you come to class) unless otherwise noted.

Class Policies

Participation is vital to the success and fun of this class. Offering your thoughts and attentive listening to and responding to your classmates are key to productive conversations. I expect you to attend every session. If you know you will be absent please let me know ahead of time. Likewise, if you are sick please just send me a short email, no need to go into detail.

Participation can take many forms: attendance, participating in discussion, attending office hours, going to optional talks I might recommend are all ways to be an active member of this class.

I prefer the classroom to be a laptop-free zone. However, sometimes laptops or tablets are the best way to access readings and notes. Unless otherwise specified, if you choose to bring a laptop to class you must turn off wireless. I would also invite you to take notes by hand. This has been proven to be a more effective way of retaining information. The many studies of laptop use in classrooms, all showing negative effects, was summarized in this New Yorker article written by a CS professor at Dartmouth (<http://www.newyorker.com/tech/elements/the-case-for-banning-laptops-in-the-classroom>).

I want you to be present in class. Think about what you need to do to achieve that goal.

Readings and Schedules

All readings will be available on the course Collab site.

Week 1: Introduction to the Course

Wednesday, August 24

Welcome! No readings today.

Week 2: S&T Only Exist in Social Contexts

Monday, August 29

Kentaro Toyama, 2015, “No Laptop Left Behind” in *Geek Heresy* pg. 3-16

Ethan Zuckerman, 2016, “The Perils of Using Technology to Solve Other People’s Problems,” *The Atlantic*,
http://www.theatlantic.com/technology/archive/2016/06/tech-and-other-peoples-problems/488297/?utm_source=atltw

Wednesday, August 31

Bruno Latour, 1987, “Introduction” in *Science in Action*, pg 1-17.

Week 3: Understanding Who Produces S&T

Monday, September 5

Hugh Gusterson, 1998, “Becoming a Weapons Engineer,” in *Nuclear Rites*. Read pg 38-59 closely and skim to end of chapter.

Wednesday, September 7

Jennifer Light, 1999, “When Computers Were Women,” *Technology and Culture* 40(3): 455-483

Week 4: Understanding Who Consumes S&T

Monday, September 12

Tom Boellstorff, 2008, “Personhood,” in *Coming of Age in Second Life*, pg 118-134, 138-147.

Ilana Gershon, 2014, “Selling Your Self in the United States,” *PoLAR* 37(2): 281-295

Wednesday, September 14

Sara Grimes. 2015. “Configuring the Child Player.” *Science, Technology, and Human Values* 40(1): 126-148.

Sally Wyatt, 2005, “Non-Users Also Matter,” in *How Users Matter*, pg 67-80.

Week 5: Frameworks I – SCOT, or how social groups influence the development of a technology

Monday, September 19

Trevor Pinch and Wiebe Bijker, 1999, “The Social Construction of Facts and Artifacts,” in *The Social Construction of Technological Systems*, edited by Bijker, Hughes, and Pinch, pg 11-44.

Ahmed, Qureshi, Khan, 2015, “Reviving a ghost in the history of technology: The social construction of the recumbent bicycle” *Social Studies of Science* 45(1): 130-136

Wednesday, September 21

No Class

Small group conferences Thurs and Fri.

Week 6: Frameworks II – ANT, CoPro, or how to treat technology and society symmetrically

Monday, September 26

John Law, 1992, “Notes on the Theory of the Actor-Network: Ordering, Strategy, and Heterogeneity,” *Systems Practice*, 5, 379-93

Wednesday, September 28

Sheila Jasanoff. 2004. “The idiom of Co-Production.” In *States of Knowledge: The co-production of science and social order*. 1-12.

Wiebe Bijker. 2010. “How is Technology Made? That is the Question!” *Cambridge Journal of Economics* 34: 63-76.

Week 7: Gearing up for Research

Monday, October 3

READING DAY - No class.

Wednesday, October 5

Library Day

Week 8: Frameworks III – Social Worlds, or how S&T work in practice

Monday, October 10

Clarke and Star, 2007, “The Social Worlds Framework: A Theory/Methods Package” in *The Handbook of Science and Technology Studies*, 113-137

Wednesday, October 12

No Class. Prof. Messeri will be observing Yom Kippur. Use this time to work on your assignment!

Week 9: Election Year Special! The Politics of Technology and the Technologies of Politics

Monday, October 17

Langdon Winner, 1980, “Do Artifacts Have Politics?” *Daedalus* 109(1): 121-136.

Tarleton Gillespie, 2012, “Can an Algorithm be Wrong?” *Limn* 2. <http://limn.it/can-an-algorithm-be-wrong/>

Wednesday, October 19

The following are short pieces from *Social Studies of Science* 31(3) discussing the fallout from the 2000 election. Before reading these comments, refresh your memories on what you may or may not have learned in High School history class: https://en.wikipedia.org/wiki/Florida_election_recount

Michael Lynch, 2001, “Pandora’s Ballot Box: Comments on the 2000 US Presidential Election” 417-419

John Carson, 2001, “Opening the Democracy Box,” 425-428

Clark Miller, 2001, “Making Democracy Count,” 454-458

Week 10: Prospectus Prep*

Monday, October 24

Methods Workshops

Wednesday, October 26

Methods Workshops

Week 11: Prospectus Prep, Presentations*

Monday, October 31

In class peer-review

Wednesday, November 2

Presentations

Week 12: Presentations*

Monday, November 7

Presentations

Wednesday, November 9

Presentations

Week 13: Presentations*

Monday, November 14

Presentations

Wednesday, November 16

Presentations

Week 14: Why do we innovate?*

Monday, November 21

Leo Marx, 1987, "Does Improved Technology Mean Progress?" *Technology Review*.

OPTIONAL: Jill Lepore, 2014, "The Disruption Machine," *New Yorker*.

Wednesday, November 23

No Class, Thanksgiving Holiday

Week 15: Looking Towards Next Semester*

Monday, November 28

Gathering Evidence

Wednesday, November 30

TBD

Week 16: Wrap Up*

Monday, December 5

Movie Discussion

*These weeks are subject to change to meet the needs of the class.

Other Resources

Consult the **STS subject guide** early and often: <http://guides.lib.virginia.edu/sts>. Our subject librarian, Maggie Nunley, is a great resource and is constantly pulling new ideas and materials into this reference area. Here you will find the Undergraduate Thesis Manual and other information about appropriate scholarly sources.

Please also take the time to look at the tutorials in **Grounds for Argument**: <http://www.groundsforargument.org/drupal/welcome>. We will cover some of this material in class, but this is also an incredibly useful tool to learn or re-learn how to construct a convincing argument. The concepts covered here are the backbone for a successful thesis.

Grading

Each assignment will be graded out of 100 points:

97-100	A+
93-96	A
90-92	A-
87-89	B+
83-86	B
80-82	B-

etc...

A weighted average will be taken to determine your final grade.

Honor Code and Plagiarism

Unless otherwise specified, the work you submit for this class will be undertaken as an individual. Though we will have plenty of group discussions and I encourage you to talk amongst your classmates about the readings and your prospectus ideas outside of class, all written assignments will be a product of your own thinking. I expect you to adhere to the honor code and pledge your work when appropriate. Additionally, please consult the Honor Guidelines for STS Papers:

<http://guides.lib.virginia.edu/content.php?pid=607723&sid=5088610#tips>.