

Community and Environmental Sociology 245
Sociology 245
Technology and Society
TR 9:30-10:45AM 10 Agricultural Hall
Spring 2016

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Office Hours: By appointment

Course Description

This course explores the relationship between science, technology, and society. It is premised on the idea that science and technology affect our social, cultural, economic, and political lives, and, equally, scientific research and technology development are shaped by their social, cultural, economic, and political contexts.

The course has four goals:

1. Challenge students to reflect on their own assumptions about the relationships among knowledge, science, technology, society, and politics.
2. Allow students to develop a set of analytical tools with which to consider the place of science and technology in society.
3. Engage students in analyses of major contemporary controversies, enabling each student to acquire in-depth knowledge of one issue of her/his choosing.
4. Improve students' skills in writing and public speaking.

Requirements and Evaluation

- 1. Class participation and attendance (5%).** Most of the in-class learning that goes on will be through group discussion. You must show up prepared for class, engage in discussion, ask questions, dare to be wrong, listen to your fellow students, and share your ideas respectfully. The time each week in discussion represents the only meaningful difference between taking the course and simply using the syllabus as a private reading list. Preparation for class (reading, thinking, and writing) is essential to each participant's intellectual development as well as to the experience of the group.

Since this is a discussion-oriented class, you are expected to contribute to the class discussions. Lack of class participation could hurt your final grade. If you are a passive learner and never or almost never raise your hand in class to ask or answer questions or contribute thoughtful comments, your participation grade in this course will not be higher than BC. To facilitate class participation for some assignments, I will require you to submit *an index card with a question or observation about the reading*. I will provide you with the index card during the class prior to the discussion of the given reading.

2. **Attendance** is imperative. You are entitled to four absences throughout the semester. Each absence beyond the limit of four will result in lowering your course grade by one half grade: i.e., 5 absences turns an A into an AB; 6 absences turns an A into a B. Since I do not distinguish between "excused" and "unexcused" absences, I suggest you keep your four absences on hold for illness or other unanticipated events that might interfere with your attendance.

3. Assignments

- a. Details on each assignment are available at Learn@UW.
- b. Unless otherwise indicated all written assignments should be uploaded to the Learn@UW Dropbox.
- c. **Written Assignment Formatting:** All written assignments should be formatted with 1-inch margins, 12pt font (Times New Roman, if possible), and double-spaced. Please number your pages, and staple in upper left-hand corner. Your paper should have a title, and your name should appear on the paper.
- d. **Grading Criteria for Written Work** (borrowed and adapted from the syllabi of Professor Aili Mari Tripp):
 - i. *Well defined statement of problem.* Does the paper start out with a clear question or a clear statement of the problem to be addressed?
 - ii. *Originality of Ideas.* As appropriate, do your own views and voice come through clearly.
 - iii. *Serious Engagement of Alternative Arguments.* As appropriate, do you seriously consider arguments other than those you make?
 - iv. *Use of Evidence.* Are you clear about what the evidence is in the case you consider? Are you clear about the breadth of applicability of the evidence you cite? In other words, do you understand the extent to which it is appropriate to generalize from the evidence you draw on? Some evidence is better than other evidence. Do you provide an assessment of evidence quality, as appropriate?
 - v. *Clarity of Presentation.* Are your ideas clearly expressed? Is your paper focused or does it wander? Can a reader easily identify your main points? Are the ideas presented elaborated sufficiently? Are there sign-posts to guide the reader? Are terms defined?
 - vi. *Grammar, Spelling, Citations.* Have you footnoted or cited ideas and facts that are not your own? Of course, all quoted material should appear in quotation marks. Citations for readings from the syllabus should simply indicate author, date, and page number if relevant [e.g., (Collins 1995: 102)]. Citations for other readings should follow the same format within the text and also appear in a reference section at the end of the paper. You should have few spelling and/ or grammatical errors.
 - vii. *Organization.* Is the paper organized effectively? Is the sequence of points made logical and clear? Does each paragraph have a central idea that a reader can easily identify?

- e. **What is technology? What is science?—1** (5%) Due: January 21st in class. Provide a hard copy version of the paper, and upload it to the Learn@UW Dropbox. Write two paragraphs in which you answer one of these questions. Following these paragraphs, provide a list of factors (a minimum of three) that you believe shape the development of technology or developments in science. For each factor on your list, you should write a sentence or two describing the factor's role in the development of technology or science. This assignment will be graded as: Excellent, Acceptable, or Unacceptable. Papers that formally meet the terms of the assignment will be graded "acceptable." Well written and crafted essays that provide logically and analytically compelling descriptions of the role of the factors listed and which provide brief and appropriate examples will be graded as "excellent."
- f. **Two reading reactions** (5% each). One of these papers should be about a reading required between January 28 and March 1. Your second paper should be about a reading required between March 15, 17, or April 5. These brief papers should illustrate your understanding and active engagement with the reading under consideration. Reading reactions must be uploaded to Learn@UW Dropbox by 5 p.m. the day before class meets to discuss the reading to which the reaction refers. You may not submit a reaction essay for a reading that there is a separate writing assignment for (e.g. *Intuition*).
Your reaction papers should be approximately 400-500 words and include four sections (clearly labeled):
- Argument*: briefly describe the central argument made in the reading.
 - Evidence*: describe and evaluate the kind of evidence used by the author(s) to support the argument.
 - Connection*: connect this reading to other readings or ideas from class.
 - Evaluation*: a paragraph or more that expresses your opinion about the reading. This evaluation must be substantive. That is, you cannot, for example, simply indicate you like the writing style, the topic or the position taken by the author. You must speak to what you find compelling or inadequate in the reading.
- These essays will be graded using standard UW letter grades. No late submissions of assignments will be accepted.
- g. **Rhetoric and Science** (10%) February 9 by 9:30 a.m.
- h. **Critical Review of the *Immortal Life of Henrietta Lacks*** (10%) Due: By 9:30 a.m. on March 8 or 10.
- i. **Gender and Technology** (5%) Due by 9:30 a.m. on March 17.
- j. **Critical Review of *Intuition*** (10%) Due: March 29 or 31 by 9:30 a.m..
- k. **Science and Technology Policy and the Presidential Election Essay** (10%) Due: April 5 at 5p.m.
- l. **Group presentation and facilitation** (20%).
- m. **Individual Write-Up of Group Presentation** (10%) Due: May 11.
- n. **What is technology? What is science?—2** (5%) Due: May 13. Follow the instructions for the first 'What is technology? What is science?' assignment, except upload to Dropbox without handing in a hard copy.

4. **Improving Your Writing.** Writing is one of the most important skills with which you will leave the University. You should take your writing seriously and work hard to improve it. The University has a Writing Center where trained graduate students and professionals will work with you on your papers and help you to make them better. I urge you to take advantage of this resource. The Writing Center is at 6171 Helen C. White (263-9305). You are advised to make an appointment in advance of your desire to meet with a member of the Writing Center. This is especially important at the end of the semester.
5. **Academic Honesty.** You are responsible for understanding the University's standards for academic honesty. These are described on the University's website at <https://www.students.wisc.edu/doso/students/>.
6. **Grading.** Sometimes the end of the semester comes and students indicate to me that they are not clear about how each course requirement figures into their final grade and/ or how I grade individual assignments. I believe that the description above is exceedingly clear. Indeed, drawing on what I say above, you should be able to determine your grade at any point during the semester. If there is something you are unsure about, it is your responsibility to talk to me. I am always available.
7. **Accommodations.** If you have a disability that could affect your participation and/or performance in this course, please contact me as soon as possible in order to discuss appropriate and helpful accommodations.

Required Reading

The books from which we will read substantial parts are available for purchase at A Room of One's Own (315 W Gorham St, Madison, WI 53703, 257-7888):

- Allegra Goodman. 2007. *Intuition*. New York: Dial Press.
- Rebecca Skloot. 2010. *The Immortal Life of Henrietta Lacks*. New York: Crown Publishers.

In addition, I will try to have these books on reserve at Helen C. White. Shorter readings will be available at Learn@UW.

Schedule

Beginnings

Jan 19: Introduction to the Course

- Introductions by instructor and students.
- Review of syllabus and assignments.

Jan 21: What is Science? What is Technology?

- **Assignment:** “What is technology?” or “What is science?” due in class.

Where Science and Technology Meet Society

Jan 26: A Politics to Technology?

- Winner, Langdon (1986). “Do Artifacts Have Politics?” in *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (Chicago, University of Chicago Press): 19-39.

January 28: A Politics to Science?

- Kinchy, Abby J. and Daniel Lee Kleinman (2005). “Democratizing Science, Debating Values: New Approaches to ‘Politicized’ Science under the Bush Administration.” *Dissent* Summer: 54-62.

Feb 2: Facts, Values and Ethics

- Pfatteicher, Sarah K. A. 2010. Introduction and Chapter 1 in *Lessons amid the Rubble*. Baltimore: Johns Hopkins University Press.

Feb 4: Rhetoric in Science and Technology

- Peter B. Medawar (1964) “Is the Scientific Paper Fraudulent?” *The Saturday Review* (August 1): 42–43. <http://www.unz.org/Pub/SaturdayRev-1964aug01-00042>
- Eleonore Pauwels (2013) “Mind the Metaphor”, *Nature* 500 (29 August): 523-524.

Feb 9: Rhetoric in Science and Technology Assignment Discussion

Ethics, Risk, Accidents, and Disaster

Feb 11: Engineering and Risk

- Pfatteicher, Sarah K. A. 2010. Chapter 2 in *Lessons amid the Rubble*. Baltimore, Johns Hopkins University Press.

Feb 16: Normal Accidents

- Charles Perrow. 1981. “Normal Accident at Three Mile Island,” *Society* July/ August: 17-26.

Feb 18: Organizational Culture and Accidents

- Diane Vaughan. 2008. “On Slippery Slopes, Repeating Negative Patterns, and Learning from Mistake: NASA’s Space Shuttle Disasters.” Pages 262-277 in Daniel Lee Kleinman, et al. (eds.), *Controversies in Science and Technology: From Climate to Chromosomes*, volume 2. New Rochelle, NY: Mary Ann Liebert, Inc. Publishers.

Feb 23: Epistemic Accidents

- John Downer. 2011. “‘737-Cabriolet’: The Limits of Knowledge and the Sociology of Inevitable Failure,” *American Journal of Sociology* 117:3: 725-762.

Feb 25: Knowledge Gaps in the Aftermath of Disaster

- Scott Frickel and M. Bess Vincent. 2011. “Katrina’s Contamination: Regulatory Knowledge Gaps in the Making and Unmaking of Environmental Contention.” Pages 11-28 in Rachel A. Dowty and Barbara L. Allen (eds.), *Dynamics of Disaster: Lessons on Risk, Response and Recovery*. London: Earthscan.

Knowledge, Ignorance and the Production of Knowledge: The Case of Honey Bees

Mar 1: Knowledge and Ignorance

- “Are Pesticides to Blame for the Massive Bee Die Off? PBS Newshour, November 24, 2015 <http://www.pbs.org/newshour/bb/are-pesticides-to-blame-for-the-massive-bee-die-off/>
- Kleinman, Daniel Lee and Sainath Suryanarayanan. 2013. “Dying Bees and the Social Production of Ignorance.” *Science, Technology, and Human Values*. 38:4: 492-517

Mar 3: A New Way to Make Knowledge

- Guest Speaker: Sainath Suryanarayanan

Race, Ethics and the Politics of Medicine

Mar 8

- Skloot. *The Immortal Life of Henrietta Lacks*. Pages 1-176.
- **Assignment:** Critical Assessment of the Skloot book.

Mar 10

- Skloot. Pages 179-328
- **Assignment:** Critical Assessment of the Skloot book.

Gender, Science, and Technology

Mar 15: Gender, Science, and Technology

- Ruth Schwartz Cowan. 1985. “The Industrial Revolution in the Home.” Pages 281-301 in Donald MacKenzie and Judy Wajcman (eds.), *The Social Shaping of Technology*. 2nd edition. London: Open University Press.

Mar 17: Gender and Technology around Us

- Joanne McNeil. 2015. “Why do I have to call this app ‘Julie’?” *New York Times* December 20, 2015. http://www.nytimes.com/2015/12/20/opinion/sunday/why-do-i-have-to-call-this-app-julie.html?_r=0
- Writing assignment

Spring Break: No Class March 22, 24**Science and Fiction****Mar 29: Laboratory Life and Intuition--1**

- Allegra Goodman. *Intuition*. Pages 3-228

Mar 31: Laboratory Life and Intuition--2

- Allegra Goodman. *Intuition*. Pages 228-385.
- **Assignment:** Critical Assessment of *Intuition*

Apr 5: Living Digital

- Sherry Turkle. 2015. “Talk to Each Other, Not Your Phone,” *New York Times* October 1. http://www.nytimes.com/2015/10/01/opinion/talk-to-each-other-not-your-phone.html?_r=0

Apr 7: The Elections and Science and Technology Policy

- Discuss presidential candidate positions

The Politics of Energy**Apr 12: Fracking**

- Kinchy, Abby J., Simona Perry, Danielle Reinhardt, Kathryn Brasier, Richard Stedman, and Jeffrey Jacquet (2014) “The Impact of New Natural Gas Development on Rural Communities in North America,” *Rural America in a Globalizing World: Problems and Prospects for the 2010s*. Morgantown: West Virginia University Press, forthcoming.

Apr 14: Nuclear Power

- On Point Podcast: “Is Nuclear Power Necessary?” <http://onpoint.wbur.org/2015/12/03/nuclear-energy-nuclear-power-climate-change> (You must listen to this podcast prior to class.)
- Steven Cohen. 2011. “The Political Demise of Nuclear Power in the United States. *The Huffington Post*. http://www.huffingtonpost.com/steven-cohen/the-political-demise-of-n_b_838291.html
- Ryan Cooper. 2014. “The Political Instability of Nuclear Power.” *The Week*. <http://theweek.com/articles/450174/political-instability-nuclear-power>

Group Presentations

April 19	Group #1 Presentation
April 21	Group #2 Presentation
April 26	Group #3 Presentation
April 28	Group #4 Presentation
May 3	Group #5 Presentation
May 5	Group #6 Presentation

Group Presentations - Possible Topics

Each student will provide ranked preferences for which three among these topics s/he would like to work on. Sign up for one of the following topics, as explained in the description of assignments. I will then assign students to presentation groups. Topics:

- Climate Change
 - Meat production and climate change
- Alternative Fuels
- Fracking
- Food and Technology
 - Genetically modified crops
 - Antibiotics and meat production
- Nuclear Power
- The Future of Television
- Growing up Digital
- Personalized medical care
- Conflicts of Interest in Science
- Youth and Digital Technology