

RC SSci 275/History 285
Science, Technology, Medicine, and Society
Winter 2012 — Tuesdays & Thursdays, 10-11:30
126 East Quad

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Course web site: CTools – <https://ctools.umich.edu/portal>

From iPhones to intelligence testing to immunizations, technology, science and medicine permeate our modern lives. In this course students will learn to think critically about and technology, science and medicine, what they do to us, and how they make the world around us. We will explore questions such as: How have culture and politics affected the goals and designs of technologies such as cars, computers, and atomic bombs? How has the development of biomedicine shaped contemporary debates about the AIDS epidemic? How do science, technology, and politics interact in contemporary debates about global energy sources and climate change?

There will be two lectures and one discussion section per week. Requirements include attendance at lectures *and* section, weekly reading, short weekly reports, two midterm, and a final paper.

RCSSci 275/History 285 meets the core course requirement for those wanting to pursue an STS minor through the Program in Science, Technology, and Society, and also fulfills the LSA social science distribution requirement.

Course Requirements

Attendance & contribution to discussion:

Attendance at lectures and sections is mandatory. Students will be responsible for all material covered in the lectures, and active participation in section will be an important component of the overall grade for the course. **Attendance is not the same as discussion contribution. Failure to contribute regularly results in a low discussion grade.**

Please be sure to arrive at class on time, to turn off all cell phones, beepers, iPods, and the like, and to put away all non-course related materials. **See the separate handout for our laptop & media policy.**

Unexcused absences will result in a significant lowering of your course grade. We do recognize, however, that serious problems may arise that absolutely prevent you from attending class. You may therefore have up to two excused absences. Any more will affect your final grade or evaluation. **All unexcused absences will affect your final grade or evaluation. You cannot pass this course if you have more than 6 total absences.** Think of this policy as preparation for the world of employment, where regular absences result in job loss.

An excused absence is one that you inform us about **before** the class meeting **and** that receives approval from one of us. To be excused, you must present a compelling reason for your inability to come to class. (In the most exceptional emergencies, you may be excused for an absence that you have not informed us about ahead of time, but you should be prepared to present documentation after the fact).

THESE ARE NON-NEGOTIABLE CONDITIONS. IF YOU OBJECT, SAVE YOURSELF THE AGGRAVATION AND DO NOT ENROLL IN THE COURSE.

Course CTools Site: Please consult the RC 275/Hist 285 CTools web site **on a daily basis**. All announcements will be posted there, as will important handouts and links to other sites.

Reading: The single most important component of the course is the weekly reading. The materials have been chosen for their readability and value in illuminating various aspects of science, technology, and medicine. Reading will usually average 80-150 pages per week, and will need to be done carefully to derive anything substantive from the course, as well as to prepare for the exams and paper. It is critical that participants keep up with the weekly reading, as it will form the basis for discussions in lectures and section, and the foundation for all of our other activities. Most readings will be available in the Resources section of our CTools site. There are two required books for purchase (available at Ulrich's and possibly other campus bookstores):

Patrick Malone, *The Skulking Way of War: Technology and Tactics Among the New England Indians* (Madison Books, 2000)

Michelle Murphy, *Sick Building Syndrome and the Problem of Uncertainty*

Films: There may be a few films shown during the semester. The material presented in the films is an integral part of the course, will be discussed in section, can be referenced in papers, and may appear on midterms.

Weekly Reports: Every week each student must turn in a weekly report on the readings. You can either select a theme in the reading and then write a 200-400 word reaction to it, or you can write a response to the week's reading questions. The reports will be evaluated on a check/check-plus/check-minus system, and will contribute to your overall participation grade. **See your section's syllabus for details.**

Midterms: There will be two midterms: one in class, and one take-home. With the exception of serious and documented medical or personal emergencies, or official University absences, no make-up tests will be offered, nor will it be possible to take tests early or late.

Papers: There will be 1 paper due for this course (8-10 pages). The paper assignment will be distributed separately.

Note: Late papers will be penalized one-third of a grade per calendar day (including weekends) without a note from the Dean's office.

Grading: Grading will be done by the GSI in consultation with the professor. Any questions about grades must first be directed to your GSI. If the issue cannot be resolved, the professor can be consulted. The professor's decision – which may be to lower, raise, or keep the GSI's grade --will be final. For a general guide to grading, see our CTools site.

Participation	30%
Attendance (lecture and section)	
Contributions to discussion	
Weekly reports	
Midterms (each)	20% (total 40%)
Paper	30%

Academic Integrity

*Plagiarism and cheating will **not** be tolerated.* LS&A policy prohibits all forms of academic dishonesty, including plagiarism, cheating, double submission of papers, and fabrication. Any piece of work found to have violated these strictures will automatically receive a zero (not simply an F). Violations will also be reported to the Assistant Dean. Depending on the severity of the infraction, the instructor or the university may impose additional penalties.

When in doubt, be sure to cite carefully and completely all sources from which information is obtained. This includes books, articles, documents, internet sites, encyclopedias, and periodicals. You must provide a citation if you exactly quote a source, paraphrase it, or extract information from it. If you have any questions about what constitutes plagiarism, feel free to speak to your GSI, the course instructors, or the staff at the Sweetland Writing Center.

Learning Issues

Students with learning disabilities or who have other learning issues are encouraged to take advantage of the resources provided by LSA (G664 Haven Hall) and to let their section leaders know so that appropriate arrangements can be made in advance.

Schedule of Lecture Topics and Readings

Thursday, January 5 **Course Overview**

Part I: HOW TO THINK SOCIALLY ABOUT TECHNOLOGY, SCIENCE, AND MEDICINE

Tuesday, January 10 **Technology: Do Artifacts Have Politics?**

Reading:

Langdon Winner, "Do Artifacts Have Politics?" in *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (University of Chicago Press, 1988), pp. 19-39

Thursday, January 12 **Technology: choices, systems, uses**

Reading:

Gabrielle Hecht, "Political Designs: Nuclear Reactors and National Policy in Postwar France," *Technology and Culture* (October 1994): 657-685.

Ronald Kline and Trevor Pinch, "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States," *Technology and Culture*, Vol. 37, No. 4 (Oct. 1996): 763-795.

Tuesday, January 17 **Technology: values, power, warfare**

Reading:

Malone, *Skulking Way of War*

Thursday, January 19 Science: scientists, institutions, laboratories

Reading:

Mario Biagioli, "Galileo the Emblem Maker," *Isis*, Vol. 81, No. 2 (Jun., 1990), pp. 230-258.

Bruno Latour, "Give Me a Laboratory and I will Raise the World," in Karin Knorr-Cetina and Michael Mulkay, eds. *Science Observed: Perspectives on the Social Study of Science* (Sage 1983).

Tuesday, January 24 Science: A History of Objectivity

Reading:

Lorraine Daston, "Objectivity and the Escape from Perspective," *Social Studies of Science* (1992) Vol 2: 597-618.

Thursday, January 26 Science: Citizens, Experts, Democracy

Reading:

Steven Epstein, "The Construction of Lay Expertise: AIDS Activism and the Forging of Credibility in the Reform of Clinical Trials," *Science, Technology, & Human Values* 20 (1995): 408-37

Harry Collins and Trevor Pinch, "The Science of the Lambs: Chernobyl and the Cumbrian Sheep Farmers," in *The Golem at Large: What You Should Know about Technology* (Cambridge University Press, 1998): 113-25

**Tuesday, January 31 Modern Medicine
Guest lecture by Professor Joel Howell**

Reading:

Charles Rosenberg, "The Therapeutic Revolution: Medicine, meaning and social change in nineteenth century America," in *The Therapeutic Revolution: Essays in the Social History of American Medicine*, Morris Vogel and Charles Rosenberg eds 3-26 (1979)

Thursday, February 2 **Medicine and Biopower**
Guest lecture by Professor Elizabeth Roberts

Reading:

Deborah Gordon, "Tenacious Assumptions in Western Medicine." In Margaret Lock and Deborah Gordon, eds, *Bio-medicine examined* (Kluwer Academic Press, 1988): 19-56

Jean Comaroff, "The Diseased Heart of Africa: Medicine, Colonialism and the Black Body," in *Knowledge Power and Practice: the Anthropology of Medicine and Everyday Life* (UC Press, 1993), 305-329.

Tuesday, February 7 **How Disease Travels**
Guest lecture by Professor Marty Pernick

Reading:

Alfred Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Greenwood Press 2003 ed.), pp. 35-62; then pp. xvii-xxii.

Martin Pernick, "Diseases in Motion," in Douglas Northrop, ed. *Companion to World History* (Oxford: Wiley-Blackwell) (forthcoming).

Thursday, February 9 **Eugenics**

Reading:

Gregory Dorr, *Segregation's Science: Eugenics and Society in Virginia* (2008), introduction & ch. 4.

Tuesday, February 14 **Thematic review**

Thursday, February 16 **1st test**

PART II: EVERYDAY LIFE & SOCIAL ORDER

Tuesday, February 21 Categories & Standards (1)

Reading:

Geoffrey C. Bowker and Susan Leigh Star, "The Case of Race Classification and Reclassification under Apartheid," in *Sorting Things Out* (MIT Press 1999), 195-225.
 Steven Epstein, "Beyond the Standard Human?" in Martha Lampland and Susan Leigh Star, eds., *Standards and their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life* (Cornell University Press, 2009), 35-53.

Martin Lengwiler, "Double Standards: the History of Standardizing Humans in Modern Life Insurance," in Martha Lampland and Susan Leigh Star, eds., *Standards and their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life* (Cornell University Press, 2009), 95-113.

Thursday, February 23 Categories & Standards (2)

Reading:

Geoffrey C. Bowker and Susan Leigh Star, "The Kindness of Strangers: Kinds and Politics in Classification Systems," in *Sorting Things Out* (MIT Press 1999), 53-106.

Winter Break: February 25-March 5

Tuesday, March 6 Intelligence Guest lecture by Professor John Carson

Reading:

John Carson, "The Science of Merit and the Merit of Science: Mental Order and Social Order in Early Twentieth-Century France and America," in *States of Knowledge: The Co-Production of Science and Social Order*, ed. Sheila S. Jasanoff (London: Routledge, 2004), pp. 181-205

"The Army Alpha Intelligence Test"

Thursday, March 8 Machines for Living

Reading:

Joy Parr, "What Makes Washday Less Blue? Gender, Nation, and Technology Choice in Postwar Canada," *Technology and Culture*, Vol. 38, No. 1 (Jan. 1997): 153-186.

Warwick Anderson, "Excremental Colonialism: Public Health and the Poetics of Pollution," *Critical Inquiry* 21 (Spring 1995): 640-669

Tuesday, March 13 Buildings

Reading:

Michelle Murphy, *Sick Building Syndrome*, Introduction and chs. 2, 3, 4, and 7.

**Thursday, March 15 Redesigning and Repurposing
Lecture by Robyn d'Avignon**

Reading:

Madeleine Akrich, "The De-Description of Technical Objects," 205-224 in Bijker and Law, eds., *Shaping Technology/Building Society* (MIT, 1992).

Optional, but recommended for an extra challenge:

Brian Larkin, "Degraded Images, Distorted Sounds: Nigerian Video and the Infrastructure of Piracy," *Public Culture*, Volume 16, Number 2, Spring 2004, pp. 289-314.

**Tuesday, March 20 Spam
Guest lecture by Professor Finn Brunton**

Thursday, March 22 Take-home midterm due

PART III: ENERGY AND CLIMATE

Tuesday, March 27

Humans and Energy

Reading:

Thomas P. Hughes, *American Genesis: a century of invention and technological enthusiasm, 1870-1970* (1989, 2004): 353-381.

Nick Cullather, "Damming Afghanistan: Modernization in a Buffer State," *The Journal of American History*, Vol. 89 (Sept. 2002): 512-537

Allen Isaacman, "Displaced People, Displaced Energy, and Displaced Memories: the Case of Cahora Bassa, 1970-2004," *International Journal of African Historical Studies* 38, 2 (2005):201- 238.

Thursday, March 29

Fossil Fuels: Politics, Geography, Technology

Reading:

Timothy Mitchell, "Carbon Democracy," *Economy and Society* vol 38/3 (August 2009): 399-432.

Tuesday, April 3

**The Industrial Age and Anthropogenic climate change
Guest lecture by Professor Paul N. Edwards**

Reading:

Andrew Dessler and Edward Parson, *The Science and Politics of Global Climate Change: A Guide to the Debate* (New York: Cambridge University Press, 2006), chapter 3 (pp. 47-88).

Optional, but strongly recommended:

Andrew Dessler and Edward Parson, *The Science and Politics of Global Climate Change: A Guide to the Debate* (New York: Cambridge University Press, 2006), chapter 2 (pp.18-47)

"Summary for Policymakers," from Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis* (New York: Cambridge University Press, 2007). Parts of this document are technical, but much of it can be read easily. Browse it, especially the diagrams, charts, and tables.

Thursday, April 5 Nuclear Power and its risks

Reading:

Soraya Boudia, "Global Regulation: Controlling and Accepting Radioactivity Risks," *History and Technology*, 23, 4, 2007, p. 389-406.

Brian Wynne, "Misunderstood Misunderstandings: Social Identities and the Public Uptake of Science," in Alan Irwin and Brian Wynne, eds., *Misunderstanding Science? The Public Reconstruction of Science and Technology* (Cambridge: Cambridge University Press, 1996), pp. 19-46.

Adriana Petryna, "Biological Citizenship: The Science and Politics of Chernobyl-Exposed Populations," in *Landscapes of Exposure: Knowledge and Illness in Modern Environments*, *OSIRIS* 19 (2004), pp. 250-265.

Tuesday, April 10 Climate debates
Guest lecture by Professor Paul N. Edwards

Reading:

Fred Pearce, "Climate Wars: Guardian Special Investigation," *The Guardian Online* (London), 2010. Read parts 1, 3-4, 6-8, and 11-12. Browse some of the reader comments. <http://www.guardian.co.uk/environment/series/climate-wars-hacked-emails>.

Richard Somerville and Susan Joy Hassol, "Communicating the Science of Climate Change," *Physics Today* 64:10 (2011): 48-53.

Recommended resource: www.skepticalscience.com. Browse whatever appeals to your interest. This site has its own, very well designed iPhone app as well.

Thursday, April 12 Fukushima and after

Reading:

Short articles on the Fukushima accident. Since new publications on Fukushima are constantly emerging, precise readings will be selected later, but likely sources include the *Bulletin of Atomic Scientists* and *Japan Focus*.

Tuesday, April 17 Paper due

The paper assignment will provide further instructions.