HISTORY 385:101
TECHNOLOGY AND SOCIETY IN
EUROPEAN AND WORLD HISTORY
Prof. Richard Sher   NJIT, Wed. 6–9 PM, Faculty Hall 309   Fall 2013
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Required Texts:
1. Joseph Gies and Frances Gies, *Cathedral, Forge, and Waterwheel: Technology and Invention in the Middle Ages* (Harper Perennial) 978-0060-925819
2. Thomas J. Misa, *Leonardo to the Internet: Technology & Culture from the Renaissance to the Present* (Johns Hopkins University Press, 2nd ed.) 978-1-4214-0153-9
3. Noel Perrin, *Giving Up the Gun: Japan's Reversion to the Sword, 1543–1879* (Godine) 978-0792-37738
4. Steven Solomon, *Water: The Epic Struggle for Wealth, Power, and Civilization* (Harper Perennial) 978-0060548315

This course deals with the effects of technology on society and the ways that society, in turn, has shaped technology from the ancient world to the present. The scope is global, but particular emphasis is placed on the development of European technology since the Middle Ages and its role in the process of global expansion, dominance, and exchange. In the process of examining these themes in different historical contexts, the course will consider a number of theoretical issues and problems, including: the relationships of technology to science, economics, globalization, government (authority), war, culture, and the environment; the concepts of technological determinism, environmental determinism, media determinism, and their opposite, social constructivism; the transfer and exchange of technologies between different places; the processes of invention and innovation; the concept of technological momentum and displacement; the notions of technological progress, revolution, and evolution, as well as technological regression and failure; and the problem of technology in relation to two of the most important crises of the 21st century: scarcity of natural resources (especially water) and global security.

Learning Outcomes
After completing this course, students should be able to
1. Define and discuss, in historical context, major theoretical and conceptual issues in the history of technology, such as technological determinism, environmental determinism, media determinism, social constructivism, technology transfer and exchange, invention and innovation, technological momentum and displacement; technological progress, revolution, and evolution, as well as regression; and science-based technology.
2. Compare the relationships between technology and society in geographical and historical contexts, such as medieval/early modern China and Europe.
3. Identify and explain the key features of the most important technological revolutions in European history, including the Neolithic Revolution, the technological revolution in medieval and Renaissance Europe, the First Industrial Revolution, and the Second Industrial Revolution.
4. Demonstrate how the technological developments that characterized Europe's technological revolutions were used in the process of global domination but also resulted in complex global technology transfer and exchange.
5. Distinguish the main issues that led early modern Japan to give up firearms and analyze the significance of that event for other societies, including our own.
6. Identify and discuss major interpretations of the history of technology that have been formulated by different scholars, such as Jared Diamond, Lynn White, James Burke, and Lewis Mumford.
7. Analyze the 21st-century problems of water scarcity and global security in relation to technology.

Weekly Topics and Assignments

WEEK	TOPIC	ASSIGNMENT
Sept. 4	Introduction: The Problem of Technology in History	
	Video: *Guns, Germs and Steel: Out of Eden*	
Sept. 11	Irrigation, Iron & Transport: Ancient Middle East and China	Solomon, 15–52, 82–93, 96–125
	Video: *Fiery Furnace #2*	
Sept. 18	Medieval Agriculture, Energy, Metallurgy, and More	Gies, 44–66, 76–78, 105–129;
	Video: *A World Inscribed*	Solomon, 157–173

Sept. 25	Medieval Concepts of Time and Space	Gies, 66–68, 118–154, 186–200
	Video: *Cathedral*	Mumford (handout)
Oct. 2	Renaissance Technology: Leonardo, Printing	Misa, ch. 1; Gies, 237–246, 252–275
	Video: *Printing Transforms Knowledge*	
Oct. 9	Guns, Sails, and Trade I	Perrin (entire book); paper due
	Video: *Guns, Germs and Steel: Conquest*	Gies, 200–215, 247–252, 275–288
Oct. 16	Guns, Sails, and Trade II	Misa, ch. 2
	Video: *The Columbian Exchange*	Midterm Exam Review
Oct. 23	MIDTERM EXAM	
Oct. 30	The Industrial Revolution: Canals and Cotton	Misa, ch. 3
Nov. 6	The Industrial Revolution: Coal, Steam & Sanitation	Solomon, 211–231, 249–265
	Video: *Out of the Fiery Furnace #4*	
Nov. 13	Technology of Empire: Telegraph, Rails & Ships	Misa, ch. 4
	Video: *Transatlantic Cable*	
Nov. 20	Electricity, Science, Oil and Steel	Misa, ch. 5, 160–167
Nov. 27	No Class (Friday schedule)	
Dec. 4	War and Globalization	Misa, chs. 7 and 8
	Video: *The Prize #4: War and Oil*	
Dec. 11	Our Technological Crises: Scarcity & Security	Misa, ch. 9; Solomon, 357–416,
	Final Exam Review	448–496
Dec. 18	FINAL EXAM	

Grading: paper: 25%; midterm exam: 30%; final exam: 35%; class grade (preparation and participation): 10%.

University Code on Academic Integrity (http://www.njit.edu/academics/pdf/academic-integrity-code.pdf):
Every student is required to write, sign and date the following pledge on the written assignments in this class: "On my honor, I pledge that I have not violated the provisions of the NJIT University Code on Academic Integrity."

PAPER ASSIGNMENT

In the Preface to *Leonardo to the Internet: Technology & Culture from the Renaissance to the Present*, Thomas J. Misa writes: "Societies, pursuing distinct goals and aspirations, have chosen and sustained certain technologies; and these technologies have powerfully molded their economic, social, and cultural capabilities" (p. xviii). After reading Noel Perrin, *Giving Up the Gun: Japan's Reversion to the Sword*, write a paper of approximately 1000–1250 words (4-5 pages, double-spaced) on the relevance of Misa's statement for the story of firearms in early modern Japan. Do societies choose to sustain certain technologies and reject others according to differences in national goals and aspirations? If so, what kinds of goals and aspirations were at work in the Japanese case, and how were they determined? Does Perrin's book have relevance for us today, or was the situation in sixteenth- and seventeenth-century Japan special or unique?

The sources of all quotations should be clearly indicated, using any sensible system of referencing – as long as it is clear and consistent. Use quotations sparingly and only when there is a specific reason for doing so. Your paper should have a title page (consisting of the title of the paper, your name, and the course number and semester). The pages of the paper should be numbered beginning with the first page after the title page. **The paper should have a thesis, which is its organizing principle, and it should include sufficient examples and details from the assigned readings to substantiate the thesis and demonstrate your familiarity with the assigned readings.**

Please fasten your paper with one staple in the upper left-hand corner. No plastic covers, please!

Papers will be graded on the basis of three criteria: (1) originality and thoughtfulness, including organization of the paper the perceptiveness of your thesis; (2) command of the material, including appropriate examples and details from the assigned book; (3) style, including grammar and spelling.

Plagiarism (submitting work that is partly or wholly not your own) will result in a grade of "F" and may result in a failing grade for the course and other penalties. You are expected to do your own writing, and any material that is taken from other sources should be cited in footnotes. Instances of plagiarism will be referred to the Dean of Students' office and processed in accordance with the University Code on Academic Integrity.

All papers are due on **Wednesday, October 9**. No late papers please!