Inventing the Modern World: 
A History of Technology, 1500-Present

HSCI 2333 / Fall 2011
History of Science Department / University of Oklahoma

Instructor: Dr. Peter Soppelsa, peter.soppelsa@ou.edu
Class Meeting Time/Place: MWF 10:30-11:20AM, Gould Hall 0160
Office Hours: Mondays 1:30-4:30PM, PHSC 611 (or by appointment via email)

COURSE DESCRIPTION AND OBJECTIVES
This course surveys the development of technology in the modern period, from about 1500 to the present. Rather than focusing on nuts and bolts, as an engineering course would, this course focuses on how technology is shaped by society and culture, as well as how it reciprocally shapes society and culture. We will do this by investigating the many uses, applications, meanings of, and debates about, technology. We will consider how technology is regulated by governments, steered by social change, and made meaningful by cultures, examining ideas, institutions and practices of technology in historical context. What are the power, problems and promise of technology? What are its ecological impacts? The course aims to teach historical narratives of modern technology, to reflect on the broader ethical, political and human significance of modern technology, and to help students sharpen their general academic reading, writing and critical thinking skills.

REQUIRED TEXTBOOKS
All other readings available on D2L, on the Internet, or as handouts in class.
[1] Brian Ladd, Autophobia: Love and Hate in the Automotive Age (University of Chicago, 2008); ISBN: 9780226467412

NOTES
[1] Please keep this paper copy of this syllabus. You will need to refer to it often and may want to mark it up with notes. An electronic copy with live weblinks will be available on D2L.
[2] This syllabus is a working document, designed to be flexible as needed. I reserve the right to make changes to assignments, due dates, schedule, readings and so on, but I will give fair warning in advance of any changes.
EXPECTATIONS, POLICIES, ASSIGNMENTS

I take attendance each class period; any more than two unexcused absences will affect your semester participation grade. This course mixes lectures and discussions. Come to class having completed the readings and prepared to discuss them. Learning is an active, group process: the more we participate, the more we learn. Active participation – both speaking and listening – enriches learning for everyone. Your participation grade will reflect both quantity (how often you speak) and quality (how well you speak). Occasionally we will discuss sensitive or controversial topics like religion or racism. Please be respectful, courteous and civil with your fellow students and the instructor, be attentive and sensitive to what everyone has to say, and above all use common sense.

Technology Policy
You may use laptops in class to take notes, but please do not browse the web (email, facebook, etc.). If you pay attention to your laptop instead of class, it is your loss. Please turn off or silence all cell phones and handheld devices; if your phone rings during class, this is not your loss, but disrupts class for everyone else.

Individual Circumstances or Needs
If you have to miss class for religious observance, let me know in advance and your absence and it will not affect your participation grade. If you have a learning disability, physical disability or other special needs, please let me know in the first week of class, provide documentation if necessary, and I will do everything I can to help meet your needs.

Assignments and Grading
This course is graded on a 1,000-point scale: A = 1,000–900 pts; B = 899–800 pts; C = 799–700 pts; D = 699–600 pts; F = 599–500 pts.

- **Reading Response**: 100 pts; due 9/9; around 2-3 pages or 600 words; a response to the readings assigned in week 3. This early assignment diagnoses your writing ability.
- **Short Paper**: 150 pts; due 10/10; around 3-4 pages or 900 words; analysis of 2-3 of the primary source readings assigned in weeks 2-7 (more details TBA on handout).
- **Movie Review**: 200 pts; due 11/21; around 5-6 pages or 1200 words; review of two movies from the back pages of this syllabus, or any others with instructor approval (more details TBA on handout).
- **Final Paper**: 300 pts; due 12/16; around 8 pages or 1800 words; analysis of 3-5 of the primary sources assigned in weeks 8-15 (more details TBA on handout).
- **Participation** (250 pts) – an evaluation of your attendance and participation in class this semester. There are 40 class meetings this semester: you get 3 points for each one you attend, for a possible total of 120 pts. The other 130 pts evaluate your participation.

Written Work
All written work is take-home, open-book work. Papers should have standard margins (1-1.5 inches top, bottom and sides), be in 11-12 point font, and be double-spaced. Please proofread carefully for grammar and spelling. Having someone else proofread your papers (a classmate,
friend or parent, or a someone at the OU Writing Center) is a good idea. Others always notice mistakes in your work more readily than you will.

All written work is governed the University of Oklahoma’s Integrity Policy. Please print, date and sign the Integrity Pledge on all assignments: http://integrity.ou.edu/faq.html. Academic misconduct, especially plagiarism, may result in the instructor (a) asking you to resubmit an assignment for a new grade, (b) giving you a formal warning and/or a zero on the assignment, or (c) filing an official complaint of academic misconduct with the Provost's office. For more on academic integrity and misconduct, see: http://www.ou.edu/honorcouncil/, and http://www.ou.edu/provost/integrity-rights/.

COURSE SCHEDULE

WEEK 1: Introducing the History of Technology
Mon. 8/22: Course Introduction: What is history? What is technology?

Wed. 8/24: The Renaissance (c. 1500s)
Misa, Leonardo to the Internet, Preface and Ch. 1, pp. ix-32

Fri. 8/26: Renaissance, Reformation and Print Culture (c. 1500s)
Elizabeth Eisenstein, The Printing Revolution, Ch. 3 (PDF on D2L)

WEEK 2: The Early Modern Period (1500s-1700s)
Mon. 8/29: Guns and Sails, Conquest and Trade (c. 1600s)
Misa, Leonardo to the Internet, Ch. 2, pp. 33-58

Wed. 8/31: Discuss Daniel Defoe’s Robinson Crusoe (1719)
Read Chapters 3-4 via Wikisource:
http://en.wikisource.org/wiki/Robinson_Crusoe (PDF on D2L)

Fri. 9/2: Discussion: Technology, Magic and Automata in the 1700s
Anthony Grafton, "Magic and Technology in Early Modern Europe,” Smithsonian Dibner Library Lecture (Oct. 15, 2002), read pages 11-50:
www.sil.si.edu/silpublications/dibner-library...Grafton/Grafton_2002.pdf

WEEK 3: Industrialization (c. 1750s-1820s)
Mon. 9/5: NO CLASS: LABOR DAY

Wed. 9/7: Technology, Economy and Culture in the Steam Age
Misa, Leonardo to the Internet, Ch. 3, pp. 58-97
Fri. 9/9: Discussion: Responses to Early Industrialization in Britain

Leeds Woolen Workers Petition (1786):
http://www.fordham.edu/halsall/mod/1786machines.html

Letter from Leeds Cloth Merchants (1791):
http://www.fordham.edu/halsall/mod/1791machines.html

William Wordsworth, “The Excursion” (1814):
http://www.fordham.edu/halsall/mod/1814wordsworth.html

*** Reading Response Due***

WEEK 4: Industrialization II (1820s-1850s)

Mon. 9/12: Transportation and Communication
Tarr and McShane, Horse in the City, Intro, pp. 1-18
Solnit, River of Shadows, Intro, pp. 1-24

Wed. 9/14: Time and Space
Solnit, River of Shadows, pp. 25-53
Tarr and McShane, Horse in the City, Chs. 1-2, pp. 18-57

Fri. 9/16: Discuss Reading:
Thomas Carlyle on the “Mechanical Age” from Signs of the Times (1829):
http://www.fordham.edu/halsall/mod/carlyle-times.html

*** Begin Short Paper ***

WEEK 5: Railways (1830s-1870s)

Mon. 9/19: Lecture: Railways in Europe

Wed. 9/21: Railways in the U.S.A.
Solnit, River of Shadows, pp. 55-75

Fri. 9/23: Horsecars, Urban Transportation, Urban Culture
Tarr and McShane, Horse in the City, Chs. 3-4, pp. 57-102

WEEK 6: Technology in the “New Imperialism” (1850s-1900s)

Mon. 9/26: Technology as Power and as Civilization
Misa, Leonardo to the Internet, Ch. 4, pp. 97-128

Wed. 9/28: Railways, Indian Removal and American Imperialism
Solnit, River of Shadows, pp. 75-125

Fri. 9/30: Discussion: Imperialist Ideology and its Critics
Rudyard Kipling, "The White Man's Burden" (1899):
http://www.fordham.edu/halsall/mod/Kipling.html

Henry Labouchere, "The Brown Man's Burden" (1899):
http://faculty.txwes.edu/csmeller/Human
Prospect/ProData09/01ModCulMatrix/ModWRTs/Kipling1865/Lab1899Brown.htm
Ernest Crosby, Parody of "The White Man's Burden" (1902): http://historymatters.gmu.edu/d/5477/

WEEK 7: The “Second Industrial Revolution” (1870s-1920s)
Mon. 10/3: The Basics: how was it different from the first Industrial Revolution?
   Misa, Leonardo to the Internet, Ch. 5, pp. 128-58

Wed. 10/5: City and Countryside, Center and Periphery
   Solnit, River of Shadows, pp. 125-76
   Tarr and McShane, Horse in the City, Chs. 5-6, pp. 102-49

Fri. 10/7: TEXAS FRIDAY: NO CLASS

WEEK 8: The World’s Fairs
Mon. 10/10: Lecture on the World’s Fairs
   *** First Paper Due ***

Wed. 10/12: Discussion – Paris, 1900: Henry Adams and Patrick Geddes

Fri. 10/14: Muybridge’s Stop-Motion Media and the World’s Fairs
   Solnit, River of Shadows, pp. 177-238

WEEK 9: Second Industrial Revolution II
Mon. 10/17: Urban Railways Lecture
   Tarr and McShane, Horse in the City, Chs. 7-8 & Epilogue, pp. 149-83

Wed. 10/19: Discussion: Technological Ambivalence—Enthusiasm and Anxiety
   Ladd, Autophobia, Intro + Chapter 1, pp. 1-43

Fri. 10/21: The “Motor Age”
   http://muse.jhu.edu/journals/technology_and_culture/v048/48.2norton.html

*** Begin Movie Review Paper (due in one month) ***
WEEK 10: Technology, Culture and Warfare in the “Machine Age” (c. 1900-1950)

Mon. 10/24: Machine Age and Artistic Modernism
Misa, *Leonardo to the Internet*, Ch. 6-7, pp. 158-225

Wed. 10/26: Technology and Total War
First World War Diaries and Memoirs from:
http://www.firstworldwar.com/diaries/index.htm (PDFs on D2L)

Fri. 10/28: World War II, the Military Industrial Complex and Spin-Off
Vanevar Bush, “Science the Endless Frontier” (1945) and Dwight Eisenhower, Farewell Address (1961), PDFs on D2L.

WEEK 11: Post-War Boom and Cold War (1945-1975)

Mon. 10/31: Atomic Age and Space Age / Arms Race and Space Race
Ladd, *Autophobia*, Chs. 2-3, 43-97

Wed. 11/2: Consumer Technology and Popular Culture: Discuss Readings
Samuel Beckett, “Krapp’s Last Tape” (1958),
https://www.msu.edu/~sullivan/BeckettKrapp.html
Ray Bradbury, “I Sing the Body Electric” (1969, PDF on D2L)

Fri. 11/4: NO CLASS: SHOT CONFERENCE

WEEK 12: Technology and Ecology (1960s-present)

Mon. 11/7: Lecture: Industry and Catastrophe, Technology and Social Movements
Ladd, *Autophobia*, Ch. 4, 97-139

Wed. 11/9: Discuss Readings:
http://www.sciencemag.org/content/155/3767/1203.full
http://www.sciencemag.org/content/162/3859/1243.full

Fri. 11/11: Discussion: Ecology in the Suburbs
http://muse.jhu.edu/journals/technology_and_culture/summary/v051/51.3.whitney.html
http://muse.jhu.edu/journals/technology_and_culture/summary/v052/52.2.ore.html
WEEK 13: After Industrialization? (1960s-Present)
Mon. 11/14: A Post-Industrial and Information Age?
Watch Future Shock (1972) in class.
Misa, Leonardo to the Internet, Ch. 8, pp. 225-60

Wed. 11/16: And End to the Automobile Society?
Ladd, Autophobia, Ch 5 + Conclusion, 139-87

Fri. 11/18: Discuss Reading:
William Gibson, “Johnny Mnemonic” (1981), PDF on D2L.

WEEK 14: The Contemporary Era (1980s-present)
Mon. 11/21: Lecture: A Digital and Post-Human Era?
*** Movie Review Essay Due ***

Wed. 11/23 & Fri. 11/25: THANKSGIVING BREAK: NO CLASS
Solnit, River of Shadows, pp. 239-259

WEEK 15: The Contemporary Era II
Mon. 11/28: Complexity, Globalization, Security
Misa, Leonardo to the Internet, Chapter 10 (2nd edition only, PDF will be on D2L for students with the first edition).

Wed. 11/30: Intellectual Property
James Boyle, The Public Domain (Yale, 2008), Preface, Chs. 6-7 (122-78):
http://thepublicdomain.org/download/

Fri. 12/2: Wrapping Up / TBA

WEEK 16: Final Exam Prep Period (“Dead Week”): December 5-9
Office Hours for Final Papers

WEEK 17: Final Exam Period: Final Papers Due Friday December 16 by end of day.
MOVIE LIST

NOTE: you are not limited to writing about movies on this list. Whether you choose movies on this list or movies of your own, please approve them with me before you begin writing.

12 Monkeys (Terry Gilliam, 1995)
2001: a Space Odyssey (Stanley Kubrick, 1968)
2010: the Year We Make Contact (Peter Hyams, 1984)
A.I. Artificial Intelligence (Steven Speilberg, 2001)
Alphaville (Jean-Luc Goddard, 1965)
The Andromeda Strain (Robert Wise, 1971)
Antitrust (Peter Howitt, 2001)
Back to the Future (Robert Zemeckcis, 1985)
Be Kind Rewind (Michel Gondry, 2008)
Blade Runner (Ridley Scott, 1982)
Brazil (Terry Gilliam, 1985)
The City of Lost Children (Caro and Jeunet, 1995)
A Clockwork Orange (Stanley Kubrick, 1971)
Colossus: The Forbin Project (Joseph Sargent, 1970)
The Conversation (Francis Ford Coppola, 1974)
Demon Seed (Donald Cammell, 1977)
Desk Set (Walter Lang, 1957)
The Devil Doll (Tod Browning, 1936)
Dr. Strangelove (Stanley Kubrick, 1964)
Dune (David Lynch, 1984)
Eternal Sunshine of the Spotless Mind (Michel Gondry, 2004)
Existenz (David Croenenberg, 1999)
Fahrenheit 451 (Francois Truffaut, 1966)
Fail-Safe (Sidney Lumet, 1964)
Fast, Cheap and Out of Control (Errol Morris, 1997)
Ferris Bueller’s Day Off (John Hughes, 1986)
The Fly (Kurt Neumann, 1958; David Croenenberg, 1986)
The Net (Irwin Winkler, 1995)
The Game (John Fincher, 1997)
Gattaca (Andrew Niccol, 1997)
Hackers (Iain Softley, 1995)
The Hitchhiker’s Guide to the Galaxy (Garth Jennings, 2005)
Human Nature (Michel Gondry, 2001)
The Island (Michael Bay, 2005)
The Island of Dr. Moreau (John Frankenheimer, 1996)
Johnny Mnemonic (Robert Longo, 1995)
Jurassic Park (Steven Speilberg, 1993)
The Lawnmower Man (Brent Leonard, 1992)
Looker (Michael Crichton, 1981)
Mad Love (Karl Freund, 1935)
Mad Max 2: The Road Warrior (George Miller, 1981)
The Manchurian Candidate (John Frankenheimer, 1962; Jonathan Demme, 2004)
The Matrix (Wachowski Brothers, 1999)
Metropolis (Fritz Lang, 1927)
Minority Report (Steven Spielberg, 2002)
Modern Times (Charlie Chaplin, 1936)
Primer (Shane Carruth, 2004)
Real Genius (Martha Coolidge, 1985)
Revenge of the Nerds (Jeff Kanew, 1984)
Robocoup (Paul Verhoeven, 1987)
S1M0NE (Andrew Niccol, 2002)
Short Circuit (John Badham, 1986)
Singin in the Rain (Stanley Donen, Gene Kelly, 1952)
Soylent Green (Richard Fleischer, 1973)
Strange Days (Katherine Bigelow, 1995)
The Terminator (James Cameron, 1984)
THX-1138 (George Lucas, 1978)
Total Recall (Paul Verhoeven, 1990)
Tron (Steven Lisberger, 1982)
The Truman Show (Peter Weir, 1998)
Videodrome (David Cronenberg, 1983)
Wag the Dog (Barry Levinson, 1997)
Wargames (John Badham, 1983)
Weird Science (John Hughes, 1985)
Westworld (Michael Crichton, 1973)