

TECHNOLOGY, POWER, AND THE AMERICAN CENTURY
HISTORY 109 – SPRING 2014

Instructor: Prof. W. Patrick McCray

Time: Monday, Wednesday, and Friday, ARTS 1349, from 4:00-4:50PM

Office and Office Hours: HSSB 3251; Thursday 4-5 or by appointment

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“We are as gods and might as well get good at it.”

- Stewart Brand, *The Whole Earth Catalog*, 1968

COURSE DESCRIPTION:

In February 1942, publisher Henry Luce published an influential essay in *Life* magazine. He announced the arrival of what he called “the American century.” The phrase took on a life of its own, especially after the U.S. emerged victorious and relatively unscathed after World War Two. This course takes a different and broader perspective on Luce’s term. It surveys the development of technologies and technological systems over the “long American century,” from roughly 1870 through the end of the Cold War. We will focus on the place of technology within this time, emphasizing its role in intellectual, political, religious, and social life. This class is built on the idea that technology reflects social, cultural, and political values and that technology and these values mutually influence and change one another. A key theme we will use to approach this topic is power – literally, technologies of power (electrical, nuclear, and so forth) but also how Americans and others around the world came to see technology as an expression of U.S. power. This included political and military power as well as other forms such as consumer power and power over nature. We will see how, through technology, the U.S. came to be a global technological power and the opportunities and challenges this created both domestically and overseas.

TEXTBOOKS AND NOTE ON READINGS: Please purchase the following:

1. Merritt Roe Smith and Gregory Clancy, *Major Problems in the History of American Technology* (New York City: Houghton Mifflin Company, 1998)
2. Thomas Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970*. 2nd ed (Chicago: University of Chicago Press, 2004)
3. Audra J. Wolfe, *Competing with the Soviets: Science, Technology, and the State in Cold War America* (Baltimore: The Johns Hopkins University Press, 2013).
4. In addition to these, there will be readings posted as PDFs to GauchoSpace.

This is an upper division history class. Expect to read about 50 pages per class. If you don't think this is something you can do, you should drop the class now

DEVICE POLICY

Technology – ironically, for this class – has outpaced the etiquette associated with its use. So I regretfully have to include this note in the syllabus. I understand that many of

you use laptops, iPads, etc to take notes. I will post the lecture slides for each class on GauchoSpace just before our class meets. You may download these and annotate them during lecture, print them out, etc. and write directly on them. This is an example of how new digital devices can improve the learning process. Conversely, these devices can also detract from the same process. If you intend on using a laptop or tablet and are unable to go 75 minutes with Tweeting, checking Facebook, etc., I ask that you sit in the back of the room. That way, your activities will not distract those around you (and, believe, me, they do). Regarding smart phones – there is absolutely no reason for you to be looking at one during my class. I may use my phone to keep track of time but I can assure you I won't be updating my Facebook status while doing so. 😊

GRADING AND ATTENDANCE: Class attendance is meant to enhance participation, deepen knowledge of the themes of the course, and identify problems in understanding the information. Attendance is therefore strongly suggested. Obviously, I can't make you come to class nor do I want to. But any quizzes, etc. that you miss by not attending class has no make-up option. To be clear: There is no make up for missed in-class assignments.

Your final course grade will be based on the following:

- Short in-class writing assignments, class discussion and participation – 10% of final grade. Some of this will be short in-class analyses/reactions to readings or a question that requires you to synthesize your ideas on a topic. I do return these but instead use them as a gauge of class understanding and attendance. If you wish to discuss these, please come see me during office hours.

Also, I would like you sign up for a Twitter account. I will use it to send notes, messages, links to interesting things, and so forth. It is also a way for you to have informal chats with me (and each other) about class material.

The hash-tag for the class is: #HIST109T

- Midterm Exam – Short essay(s) and/or historical IDs; 1 hour; 10% of final grade
- Three Take Home Essay(s) – 45% of final grade. The rubrics that I use to assign grades are posted on the course GauchoSpace page. Each of these will be 3-5 pages in length. The percentage of your final grade that each essay will count for varies. Roughly, this is about:
 - Essay #1 = 10%; Essay # 2 = 15%; Essay #3 = 20%
- Final Exam – Several longer synthetic/analytical essays that cover the entire course; 3 hours; 35% of the final grade. You may bring an annotated bibliography.

The Final Exam is scheduled for Friday, June 13, 4-7PM

LATE ASSIGNMENTS: Credit for assignments, like radioactive isotopes, decays over time. Work that is turned late will have 1/3 of one letter grade deducted for each 24 hour increment – i.e. after 2 days, what would have been an A+ paper becomes a A- paper etc.. This adds up quickly, but not so quickly that you might want to be strategically late by one day if it will improve the final product. Be aware and use good judgment. But, after five days, the assignment has expired and you receive zero credit for the assignment. It is always a good idea to be in contact with your instructor if you believe that an assignment will be late.

REGARDING WRITTEN ASSIGNMENTS:

UCSB's standard policies for Academic Dishonesty, Attendance, and Assessment apply. All students are expected to complete all assignments and papers on time and take exams at scheduled times. Do not ask for make-up exams, etc. except in the case of a medical/family emergency (documented with writing) or other reason deemed serious by the instructor. If you have an emergency that requires you to be absent for an extended period of time, you must inform me immediately to work out a possible alternate arrangement.

You are to submit your all written assignment in hard copy. These may be electronically scanned and examined using a plagiarism-detection program for matches with on-line content.

Assignments found to contain plagiarized passages (i.e. you have included material written by others – Wikipedia included!! – without giving proper credit or citing the source) will be given an F and referred for disciplinary action. If you ever find yourself in such a panic that plagiarism starts to look like an appealing option, *get in touch with me instead*. A late, less-than-perfect paper is better than a paper that gets you expelled.

If your writing skills are poor, seek help on campus at CLAS.

If you have questions about how to properly cite articles, books, web sites, and so forth – refer to the Chicago Manual of Style which is available at: <http://www.lib.ohio-state.edu/guides/chicagogd.html> (among other places) or see the document on the course website called “Footnotes, Bibliographies, and Citations.”

COURSE SCHEDULE AND READINGS

MPHAT = Refers to selection from Smith and Clancy, *Major Problems in the History of American Technology*.

GS = Means a reading posted on the class GauchoSpace page

Week One

March 31 What is Technology?

- Leo Marx, "The Invention of Technology" (MPHAT)
- Langdon Winner, "Do Artifacts have Politics?" (MPHAT)
 - **Assignment #1 will be available on GauchoSpace**

April 2 Prologues: Virginia, 1785; Chicago, 1893; New York, 1941

- Thomas Jefferson, "Notes on Virginia" (MPHAT)
- Tench Coxe "Speaks for Factories" (MPHAT)
- Henry Luce, "The American Century" (GS)

April 4 Annihilating Space and Time

- Chandler, "The Railroads: The First Modern Business Enterprises, 1850s-1860s," from *The Visible Hand: The Managerial Revolution in American Business*. (GS)

Week Two

April 7 Electrifying America, Pt. 1

- David Hounshell, "Edison and the Pure Science Ideal" (GS)
- Hughes, *American Genesis*, Ch. 2

April 9 Electrifying America, Pt. 2

- David Nye, "The Great White Way," (GS)
- Hughes, *American Genesis*, p. 226-243
 - **Assignment #2 Available will be on GauchoSpace**

April 11 Research, Regulation, and the Corporation

- John Burke, "Bursting Boilers and Federal Power," (GS)
- Carlson, "Innovation and the Modern Corporation" (GS)
- Hughes, *American Genesis*, chapter 4
 - **Assignment #1 Due In Class**

Week Three

April 14 A New Power to Communicate

- Susan Douglas, "Amateur Operators and American Broadcasting" (excerpt is in Ch. 10 of MPHAT but you can also read full version on GS)

April 16 Inventing Efficiency

- Frederick Winslow Taylor, excerpts from *Principles of Scientific Management* (MPHAT)
- Merritt Roe Smith, "Political Economy of Pacing" (MPHAT)
- Hughes, *American Genesis*, p. 184-203

April 18 Ford and Fordism

- "Mass Production (1926)" (MPHAT)
- Henry Ford, "My Life and Work" (MPHAT)
- Charles Sorensen, "Inventing the Assembly Line" (MPHAT)
- Flink, "Modern Times," (MPHAT)
- Hughes, *American Genesis*, p. 203-220

Week Four

April 21 Automobile Cultures

- Pinch and Kline, "The Social Construction of the Automobile," (MPHAT)
- Hughes, *American Genesis*, Ch. 6

April 23 Engineering an American Empire

- Michael Adas, two chapters from *Dominance by Design* (GS)

April 25 The Power of Flight

- Joseph Corn, "Making Flying Thinkable" (GS)

Week Five

April 28 Technology and Regional Development

- Hughes, *American Genesis*, p. 353-381
 - **Assignment #2 Due In Class**

April 30 The Arsenal of Democracy

- Roosevelt, "Arsenal of Democracy" 1940 speech (GS)
- Snyder, "Caltech's Other Rocket Project" (GS)

May 2 Atoms for Peace and War

- Wolfe, *Competing with the Soviets*, Ch. 1
- Eisenhower, "Atoms for Peace" 1953 speech (GS)
- Smith, "Advertising the Atom" (GS)
 - **Assignment #3 will be available on GauchoSpace**

Week Six

May 5 **IN-CLASS MIDTERM EXAM**

May 7 **NO CLASS**

- Watch assigned documentary on the Manhattan project; also read Hughes, *American Genesis*, p. 381-442.
 - **Answer short set of questions provided.**

May 9 Building The “System”

- Bush, “Science – The Endless Frontier” (MPHAT)
- Eisenhower, “Farewell Address” 1961 speech (MPHAT)
- Wolfe, *Competing with the Soviets*, Ch. 2
 - **Turn in response to questions from May 7**

Week Seven

May 12 Consumer Power

- Cohen, “From Town Center to Shopping Center” (GS)
- Rome, “Levitt’s Progress” (GS)

May 14 Broadcasting American Power

- *National Geographic* on communication satellites, (GS)
- William Safire, “Cold War’s Hot Kitchen” (GS)
 - Assignment #3 Available on GauchoSpace

May 16 Making Silicon Valley

- *New York Times* on the transistor (GS)
- Riordan and Hoddeson, excerpt from *Crystal Fire*, “California Dreaming” (GS)
- Moore, “Cramming More Components...” (GS)

Week Eight

May 19 Power over Nature

- “Now it can be told” (MPHAT)
- Rachel Carson, “Eradicating the Japanese Beetle” (MPHAT)
- “That We May Live,” (MPHAT)
- Edmund Russell, “Testing Insecticides,” (MPHAT)

May 21 Controlling Hearts and Minds and Markets

- Rostow, “Stages of Economic Growth” (GS) –read for the basic ideas
- Wolfe, *Competing with the Soviets*, Ch. 5

May 23 The Final Frontier

- Wolfe, *Competing with the Soviets*, Ch. 6
- Nye, excerpt on Apollo from *American Technological Sublime* (GS)

Week Nine

May 26 **MEMORIAL DAY, NO CLASS**

May 28 Questioning Technology's Power

- Wolfe, *Competing with the Soviets*, Ch. 7
- Hughes, *American Genesis*, p. 443-459
- J. William Fulbright, "...the adherence of the professors" (MPHAT)
- Goldwater, "The so-called military-industrial complex," (MPHAT)

May 30 Cybernetic Thinking and Spaceship Earth

- Read excerpts from *Limits to Growth*, (GS)
- Browse *The Whole Earth Catalog* (GS)
- Mahrer, "Shooting the Moon," (GS)

Week Ten

June 2 Technology and Countercultures

- Pursell, "Rise and Fall of the Appropriate Technology Movement" (GS)
- Kirk, "Appropriating Technology" article (GS)
 - o **Assignment #3 Due In Class**

June 4 Manipulating Genes and Bits

- Ceruzzi, "From scientific instrument to personal appliance," (GS)
- Hughes, "Making Dollars out of DNA" (GS)

June 6 Epilogue: Technology and a New Morning in America?

- Wolfe, *Competing with the Soviets*, Ch. 8
- Watch the "Trouble with TED" video (GS)

The Final Exam is scheduled for Friday, June 13, 4-7PM