

HIST 386 : Technology in American History

T/Th 2:30-3:55, Cullimore Hall Lect 1

Professor Elizabeth Petrick

Email: elizabeth.r.petrick@njit.edu

Office: 324 Cullimore Hall

Office Hours: T 5:30-6:30, Th 1-2, or by appointment

Prerequisites: Hum 101, Hum 102 and one from among Hum 211, Hum 212, and Hist 213 or their equivalents R510:200 through 299 or R512:200 through 299 or their equivalents with a grade of C or better.

Course Description:

This course explores the history of technology in American society. We will critically analyze examples of different kinds of public and personal technologies, from the 18th century to today, including: transportation, communication, domestic technologies, and computer technologies. We will study how these technologies came to be created, how they were used, and the social impact of their development. We will focus on the relationship between consumer technologies and the larger technological infrastructure they are a part of. We will address questions, such as: Do we, as a society, have full control over the technologies we create? Do technologies lead to consequences beyond our control? Why do certain technologies succeed and others fail?

Objectives:

- Understand the place of technology in American culture
- Understand the development of technology within its historical context
- Be able to analyze different technologies using the following historical themes:
 - Technological Determinism
 - Infrastructure
 - Technological systems
 - Use of technology
 - Unintended consequences
 - Technological failures
 - Historical memory

Required Books:

Ruth Swartz Cowan. *A Social History of American Technology*. (Oxford University Press, 1997). ISBN: 0195046056.

Stephen B. Goddard. *Getting There: The Epic Struggle between Road and Rail in the American Century*. (University of Chicago Press, 1994). ISBN: 0465026397.

Articles and Chapters: [available via moodle.njit.edu]

Janet Abbate. *Inventing the Internet*. (Cambridge, MA: MIT Press) 1999, chapter 6. pgs 181-220.

Air Defense System Engineering Committee. *Air Defense System Final Report*, 1950, pgs 1-35.

Paul Ceruzzi. *A History of Modern Computing, 2nd Edition*. (Cambridge, MA: MIT Press) 2003, chapter 1. Pgs 13-46.

Paul Ceruzzi. "From Scientific Instrument to Everyday Appliance: The Emergence of Personal Computers, 1970-77," *History and Technology*. V.13, 1996, pgs 1-31.

Ruth Swartz Cowan. *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave*. (Basic Books) 1983, chapters 4 and 7. pgs 69-101 and 192-216.

Claude Fischer. "'Touch Someone': The Telephone Industry Discovers Sociability," *Technology and Culture*. V. 29, n. 1 (Jan., 1988), pgs. 32-61.

Bill Gates. *The Internet Tidal Wave*, Memo, May 26, 1995.

Thomas P. Hughes. "The Evolution of Large Technological Systems," in W. E. Bijker, T. P. Hughes, T. Pinch, eds. *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. (Cambridge, MA: MIT Press) 1987. pgs 51-82.

Merritt Roe Smith. "Technological Determinism in American Culture," in Merritt Roe Smith and Leo Marx, eds. *Does Technology Drive History?* (MIT Press, 1994). Pgs 1-35.

E. Stratford Smith. "The Emergence of CATV: A Look at the Evolution of a Revolution," *Proceedings of the IEEE*, V.58, n.7, 1970, pgs 967-982.

E.B. White. "Farewell, My Lovely," *The New Yorker*, May 16, 1936.
<http://www.wesjones.com/white1.htm>

Thomas A. Wikle. "Cellular Tower Proliferation in the United States," *Geographical Review*, V.92, n.1, January 2002, pgs 45-62.

Course Requirements:

Research Paper: [8 pages] 25%

This research paper asks you to write about the history of a technology of your choice, applying the course themes. You must utilize at least 2 secondary sources and 1 primary source, no encyclopedias. Due Tuesday of Week 14.

The paper topic (with potential sources) must be approved by the end of Week 11.

Theory Paper: [3 pages] 10%

This paper asks you to think about technology in your own life and relate the theories discussed in class. Due Tuesday of Week 3.

3 Reading Responses: [2 pages each] 5% each

Choose a reading from the class schedule and write a two page response of your reaction to it and questions you have on it. Responses are due on Moodle by the evening before

the reading is scheduled.

At least one reading response must be submitted prior to the midterm and at least one after the midterm. Responses are not graded.

Midterm: 20%

Final Exam: 30%

Late Paper Submissions: Papers will lose 5% for every day late. Papers will not be accepted more than 1 week late.

Paper Formatting: All papers should be typed, double-spaced, 12 pt standard font (Times, Helvetica, Arial, etc), 1" margins

<i>Grading Scale:</i>	<i>96-100</i>	<i>A+</i>
	<i>93-95</i>	<i>A</i>
	<i>89-92</i>	<i>A-</i>
	<i>86-88</i>	<i>B+</i>
	<i>83-85</i>	<i>B</i>
	<i>79-82</i>	<i>B-</i>
	<i>76-78</i>	<i>C+</i>
	<i>73-75</i>	<i>C</i>
	<i>69-72</i>	<i>C-</i>
	<i>66-68</i>	<i>D+</i>
	<i>60-65</i>	<i>D</i>
	<i>0-60</i>	<i>F</i>

Attendance:

Attendance at all lectures is required. There will be a grade deduction for having more than 3 unexcused absences. Excused absences must be either arranged in advance or have a doctor's note submitted.

Academic Integrity:

Students are expected to follow the University Code on Academic Integrity. For details, see:

<http://www.njit.edu/academics/integrity.php>

Class Schedule:

Week 1: Introduction

1.1 What is Technology?

Smith. "Technological Determinism in American Culture," (pages 1-35)

Hughes. "The Evolution of Large Technological Systems," (pages 51-82)

Optional: Cowan. "The Consumption Junction," (pages 261-280)

1.2 Technological Determinism / Infrastructure

Week 2: The Industrial Revolution

Cowan. *A Social History of American Technology*, Chapters 3, 4 (pages 45-92)

*Optional: Cowan, *A Social History of American Technology*, Chapter 1 (pages 5-27)*

2.1 Pre-industrial Technologies

Cowan. *A Social History of American Technology*, Chapter 5 (pages 93-112*)

2.2 Steam Power

Week 3: Crossing the Nation in the 19th Century

Goddard. *Getting There*. Preface, Prologue, Chapter 1 (pages ix-21)

3.1 The Railroad

Theory Paper due Tuesday

*Optional: Marx. *The Machine in the Garden*, Chapter 4 (pages 145-226)*

3.2 The Machine in the Garden

Week 4: The Decline of the Railroad

Goddard. *Getting There*. Chapter 2 (pages 22-42)

4.1 Government Regulation

Cowan. *A Social History of American Technology*, Chapter 10 (pages 224-248)

White. "Farewell, My Lovely," <http://www.wesjones.com/white1.htm>

4.2 Fordism

Week 5: The Rise of the Automobile in the Early 20th Century

Goddard. *Getting There*. Chapters 3, 6 (pages 43-64, 102-119)

5.1 *The American Road*

Goddard. *Getting There*. Chapter 10 (pages 164-178)

5.2 The Car Industry

Week 6: Car Culture

Goddard. *Getting There*. Chapters 11, 12, 13 (pages 179-225)

6.1 Freeways vs Cities

Goddard. *Getting There*. Chapter 7 (pages 120-137)

6.2 GM's Conspiracy against Trolleys

Week 7: Airplanes

Cowan, A Social History of American Technology, Chapter 11 (pages 249-272)

Optional: Bednarek. "The Flying Machine in the Garden," (pages 350-373)

7.1 Airplanes

Optional: Cowan, A Social History of American Technology, Chapter 9 (pages 201-219)

7.2 *Midterm Exam*

Week 8: From Telegraph to Telephone in the Late 19th Century

Cowan. A Social History of American Technology, Chapter 7 (pages 149-172)

8.1 The Telegraph

Fischer. "Touch Someone," (pages 32-61)

8.2 Invention of the Telephone

Week 9: Social Communication

9.1 Telephone Etiquette

Cowan. A Social History of American Technology, Chapter 12 (pages 273-300)

9.2 Radio and War of the Worlds

Week 10: Computers and War, 1950s-1970s

Paul Ceruzzi. A History of Modern Computing, Chapter 1 (pages 13-46)

10.1 The Computer Goes Commercial

Air Defense System Engineering Committee. Air Defense System Final Report, (pages 1-35)

Optional: Brand, "Spacewar: Fanatic Life and Symbolic Death among the Computer Bums"

10.2 Cold War Technology

Week 11: Household Technology

Cowan. More Work for Mother. Chapters 4 and 7 (pages 69-101, 192-216)

11.1 Utilities and Appliances

Smith. "The Emergence of CATV: A Look at the Evolution of a Revolution," (pages 967-982)

11.2 Television

Research Paper Topic Must Be Approved by Thursday

Week 12: Personal Computers and the Internet, 1970s-1990s

Ceruzzi. "From Scientific Instrument to Everyday Appliance," (pages 1-31)

12.1 The Personal Computer

Abbate. Inventing the Internet. Chapter 6 (pages 181-220)

Gates. The Internet Tidal Wave

12.2 The Internet

Week 13: Cellular Phones

Wikle. "Cellular Tower Proliferation in the United States." (pages 45-62)
13.1 Cellular Phones

Week 14: 21st Century Transportation Changes

Goddard. *Getting There*. Chapters 14 and 15 (pages 226-245)

14.1 Resurgence of Public Transit

Research Paper Due Tuesday

14.2 *Revenge of the Electric Car*

Week 15: Review

15.1 Review