

Fall 2024

HIST 214-001: History of Technology, Fall

Matt Freedman

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Technology and Culture in American History HIST214 001 | Fall 2024

Instructor: Dr. Matthew Friedman | Email: matthew.friedman@njit.edu

Office: Cullimore 326 | Office Hours: Monday 1:00-2:00 pm

Class Time and Location: Monday-Wednesday 10:00 - 11:20 am, Cullimore Lecture Hall 3

Course Description

This course will explore the history of American technology emphasizing the cultural, social and economic environments of technological change. Topics include the transfer of technology in building canals and cities, the rise of the factory system, the emergence of the American system of manufacture, and the development of major technological systems such as the railroad, telegraph, electric light and power, and automobile production and use. Focus on the professionalization of engineering practice, the industrialization of invention, and the growing links between engineers and corporate capitalism in the 20th century.

We will focus on a number of themes: Technological innovations, technological systems and their impact on social structures, and cultural practices and beliefs; Economic growth, consumer capitalism and class; Social and cultural identities, the family, gender and sexuality; and, above all the negotiation of the idea of technological “progress” in the spaces around social, conceptual and cultural frontiers.

Course Objectives:

The students of the course will analyze the history of technology in the United States through cultural and historical texts and assess their subsequent significance. Students will use critical thinking and problem-solving skills to analyze information in a collaborative research project and develop their writing skills in reflections and online discussions.

Learning Goals:

Upon completion of this course, students should specifically demonstrate knowledge of some of the fundamental concepts and theories of historical events and ideas related to the history of technology in the United States, evaluate technological change in the context of social, political, religious, and intellectual traditions, and read, analyze, organize and synthesize, evidence, historical problems, and interpretations connected to the history technology.

Readings:

Gary Cross and Rick Szostak, *Technology and American Society: A History*, Routledge.

Additional readings will be available as PDF files or external links on Canvas.

Assignments:

Attendance: Attendance is mandatory. Students are expected to attend every class, arrive on-time and stay for the duration of the class. Students may be excused for illness, family emergency and similar extreme situations, and religious observance. Absences for work, job interviews and similar events will not be excused.

Four unexcused absences will result in an automatic failing grade. Students who miss six or more sessions through *any* combination of excused and unexcused absences will not earn credit in this class. Such students should withdraw from the course.

Participation: Everyone is both expected and required to participate in class discussions. The participation grade will reflect the quality and quantity of your in-class participation.

Quizzes: Un-announced quizzes will be held at random times throughout the term.

Short Paper: Students will write two short papers on topics to be announced, based on the readings.

Midterm Exam: A midterm exam will be held online

Final Exam: A final exam will be held online.

Grading:

Attendance	10
Participation	10
Quizzes	20
Short Papers	20
Midterm Exam	20
Final Exam	20

Students *must* write the final exam and submit *both papers* to pass the course.

Late submissions will not be accepted except with prior permission and only in the most extreme circumstances.

Grading Scale:

A	90-100
B+	85-89
B	80-84
C+	75-79
C	70-74
D	60-70

Academic Integrity:

An essential part of NJIT's policy of academic integrity is that students demonstrate honesty and integrity in their courses. It is also a policy that will serve you in good stead in the rest of your personal and professional life. Turning in a paper that includes plagiarism, was written by someone else and passed off as your own work, or cheating on an examination will result in a 0 for that assignment. All cases of suspected plagiarism/cheating will be reported to the office of the Dean of Students for investigation. If you're unclear on what constitutes an honor code violation, please see the university [policy on academic integrity](#).

The unauthorized use of ChatGPT and similar AI tools in an assignment is an academic integrity violation and will be reported to the Dean of Students office.

Students with Disabilities or Special Needs:

Students who have disabilities or special needs should contact NJIT's [Student Disability Services](#) to help procure accommodations in completing coursework.

Other Resources:

There are several writing assignments both big and small for this course, and if you need them, the [Writing Center](#) can provide you with help on every part of the writing process. Also, please don't hesitate to drop by my office hours or send me an email if you're having difficulties. We all need a support network. If you need them, the [Center for Counseling and Psychological Services](#) (C-CAPS) in Campbell Hall, Room 205, is available to listen and to help.

SCHEDULE

4 Sep – Class 1: What is Technology?

9 Sep – Class 2: Pre-Industrial Technology

Cross and Szostak, Chapter 1

11 Sep – Class 3:

Cross and Szostak, Chapter 2

16 Sep – Class 4: Origins of the Industrial Revolution

Cross and Szostak, Chapter 3

18 Sep – Class 5: The Factory

Cross and Szostak, Chapter 4

23 Sep – Class 6: Industrial Life

E.P. Thompson, "Time, Work Discipline, and Industrial Capitalism"

Harper's New Monthly Magazine, "Growth of Cities in the United States." (1853)

25 Sep – Class 7: Steam, Steel, Speed

Cross and Szostak, Chapter 5

Edward Howland, "A Railroad Study" (1877)

30 Sep – Class 8: Machine Age Capitalism

Cross and Szostak, Chapter 6

Primary Document: Henry Ford, *Today and Tomorrow*, Chapter 2 (1926)

2 Oct – Class 9: Machine Age Labor

Frederick Winslow Taylor, *The Principles of Scientific Management*, Introduction and Chapter 1. (1911)

Samuel Gompers, Testimony before the Committee on Labor of the House of Representatives (1911)

7 Oct – Class 10: Town and Country

Cross and Szostak, Chapter 7

"Mechanization and the Use of Labor on Farms" (1940)

DEADLINE: Short Paper #1

9 Oct – Class 11: Technology and Progress

Cross and Szostak, Chapter 8

Charles Beard, "The Idea of Progress" (1933)

14 Oct – Class 12: Electricity

Cross and Szostak, Chapter 9

[Report from Edison General re. AC](#) (1890)

16 Oct – Class 13: The Modern Corporation

Cross and Szostak, Chapter 10

Mumford, *Technics and Civilization* excerpt (1934)

21 Oct – Class 14: Prodigies and Marvels

Torstein Veblen, "The Place of Science in Modern Civilisation." (1919)

Time Magazine, "Flight" (1927)

23 Oct – Class 15: War Machines

Cross and Szostak, Chapter 11

H.G. Wells, *The Shape of Things to Come*, Chapter 7 (1933)

Ezra Pound, "[Vortex](#)" (1914)

28 Oct – Class 16: "Women's Work"

Cross and Szostak, Chapter 12

New York Edison Company, [Recipes for Cooking by Electricity \(excerpt\)](#) (1911)

30 Oct – Class 17: The New Factory

Cross and Szostak, Chapter 13

Film: *Valley Town* (1940)

4 Nov – Class 18: The World of Tomorrow... Today

Cross and Szostak, Chapter 14

Mumford, *Technics and Civilization* excerpt (1934)

Film: *The Middleton Family at the New York World's Fair* (1939)

6 Nov – Class 19: The Automobile

Cross and Szostak, Chapter 15

Primary Documents: C.W. Griffin, "Car Snobs, Commuters, and Chaos" (1962)

Film: *What on Earth* (1965)

11 Nov – Class 20: Mass Media

Cross and Szostak, Chapter 16

K. Trenholm, "If Radio Is to Survive it Must 'Hitch Its Wagon to a Star'" (1929)

Film: *The Flapper* (1920)

13 Nov – Class 21: Medium Cool

Cross and Szostak, Chapter 17

Marshall McLuhan, *Understanding Media*, Chapter 2

Video: "Job Switching," *I Love Lucy* (1952)

18 Nov – Class 22: It's Atomic!

Cross and Szostak, Chapter 18

Bulletin of the Atomic Scientists, "Let's Have Clear Thinking"

Sylvia Everhart, "How the American People Feel About the Atomic Bomb"

Film: *Duck and Cover* (1952)

20 Nov – Class 23: Future Shock

Alvin Toffler, *Future Shock*, Introduction and Chapter 1 (1970)

Tenner, "Another Look Back; and a Look Ahead"

25 Nov – Class 24: Technology and Technocracy

Cross and Szostak, Chapter 19

Primary Document: Vannevar Bush, "Science: The Endless Frontier."

Film: [Colossus: The Forbin Project \(1970\)](#)

2 Dec – Class 25: Cyberspace

Leiner, Cerf, et al., "[Brief History of the Internet](#)"

William Gibson, "Burning Chrome" (fiction)

4 Dec – Class 26: The Digital Age

Cross and Szostak, Chapter 20

Nicholas Negroponte, *Being Digital*, Introduction and Epilogue

Neil Postman, "The Ideology of Machines: The Computer Age" in *Technopoly: The Surrender of Culture to Technology*

DEADLINE: Short Paper #2

9 Dec – Class 27: Thinking Machines

Cross and Szostak, Chapter 21

Primary Source: Marvin Minsky, et al., "Has Artificial Intelligence Research Illuminated Human Thinking?" (1984)

11 Dec – Class 28: Biotechnology

Andrew Curry, "Seeds of Conflict"

Beth Bailey, "Prescribing the Pill: Politics Culture and the Sexual Revolution in America's Heartland"

CITATION FAQ

What do you need to cite?

Any phrase, sentence or paragraph that you have taken from another source, even if it's a sentence fragment. For example, if you use the phrase "to be or not to be: that is the question," you *must* provide a citation to the relevant page in a published edition of William Shakespeare's play *Hamlet*. As a general rule, if you are using words that someone else wrote, you *must* cite. Failure to do so constitutes plagiarism.

Any information that you found in another source (and isn't common knowledge), even if you paraphrase. For example, if you write something like "almost ten per cent of the adult males in the United States in 1924 were members of the Ku Klux Klan," you have to say where you got that information. If you don't, how do I know that you're not making it up?

As a general rule, you don't have to provide citations for information that we covered in class.

What happens if you don't cite?

It depends. The highest grade that a term paper without citations will receive is C+. If you quote substantially from another source and do not (a) indicate that it is a quote and (b) indicate *where* the quote came from, I will consider this plagiarism. You will receive a zero (0) on the paper and I will submit it to the academic integrity office for review.

If you don't know whether you should cite a passage, quote or information, err on the side of caution and cite it.

What do you need?

As a general rule, you will need a bibliography page, and footnotes or parenthetical notes in text for all of your references. Please use either the University of Chicago/Turabian citation style or the basic citation format indicated on the following page.

SUBMISSION POLICY

All assignments must be submitted *in hard copy* and electronically by the beginning of class. No assignments will be accepted after the deadline, *except with prior arrangement*. If you miss a class – and a deadline – due to illness or other excused absence, you *must* inform me, and submit the assignment at your earliest opportunity.

Late submissions of the final paper will be accepted for one week with a one-mark penalty for each day late, and only with prior arrangement.

Assignments must be typed double-spaced in 12-point Times on white paper, stapled or bound in a cover. Handwritten submissions will not be accepted.

PRIMARY AND SECONDARY SOURCES

Historians refer to primary and secondary sources. A primary source is a document, speech, or other sort of evidence written, created or otherwise produced during the time under study, or by a participant. Primary sources offer an inside view of a particular event. Secondary sources provide interpretation and analysis of primary sources. Secondary sources are usually (though not always) written by professional historians and are one step removed from the original event.

Citation Basics

As a rule, historians cite sources according to the University of Chicago style. If you plan to pursue further studies in history, you will find it advisable to acquire *A Manual for Writers of Research Papers, Theses, and Dissertations, Eighth Edition: Chicago Style for Students and Researchers* by Kate L. Turabian. For the purposes of this course, you may use the simplified guide below.

Book

Bibliography:

Lears, Jackson. *Rebirth of a Nation: The Making of Modern America, 1877-1920*. New York: Harper Perennial, 2009.

Footnote First Reference:

Jackson Lears, *Rebirth of a Nation: The Making of Modern America, 1877-1920* (New York: Harper Perennial, 2009), 236.

Footnote Subsequent References:

Lears, 113.

Lears, *Rebirth of a Nation*, 113. (If you cite more than one work by this author.)

Parenthetical Reference: (Lears, 236)

Parenthetical Reference (if you use more than one source by this author): (Lears 2009, 236)

Periodical Article

Bibliography:

Rosenfeld, Sophia. "On Being Heard: A Case for Paying Attention to the Historical Ear." *The American Historical Review* 116 (April 2011): 316-334.

Note that you include the volume number of the journal or publication following the title. Omit it if it is not known.

Footnote First Reference:

Sophia Rosenfeld, "On Being Heard: A Case for Paying Attention to the Historical Ear," *The American Historical Review* 116, April 2011, 317.

Footnote Subsequent References:

Rosenfeld, 318.

Rosenfeld, "On Being Heard," 320.

Parenthetical Reference: As with books.