New Jersey Institute of Technology
Department of History, Federated
Fall 2025
Course Outline: HIST 214:101
Technology and Culture in U.S. History
CRN: 93460, 3 Credits, 3 contact hours (3;0;0)
Class Meeting: Wednesdays: 6:00 pm – 8:50 pm
Classroom Meeting Location: Cullimore 111
Professor: Dr. H.H. Toler
Office: Cullimore Hall, Room 321– I am available on Wednesdays 5:30-6:00 pm by appointment
Email address: hht@njit.edu
Phone: 973.596.5737

STUDENT HOURS: Wednesdays 5:30-6:00 pm by appointment. Let me know so that we can arrange a meeting to chat about the course or college life. Feel free to contact me by email to schedule a Zoom meeting or phone conversation.

Prerequisites: ENGL 101 with a grade of C or better, ENGL 102 pre- or co-requisite with a grade of C or better. This course satisfies the three credit 200 GER in History and Humanities.

Course Description:

This course examines the relationship between technology and society throughout the history of the United States. We analyze the roles and impacts of major technological innovations within their cultural and historical contexts, seeking to understand how these contexts shaped and were shaped by these technologies.

The history of technology and culture has been fostered by people who believe that this discipline helps us understand the past as well as the present, that how machines work matters, and that technology and culture shapes our lives at the same time that people have organized our society. We study technology and culture to understand how technological change happens and how it can be controlled; we reject the idea that machines had to be designed or used in a particular way. By understanding the design and use of machines in the past, we can better understand the machines we meet every day. A study of technology leads us to the people who interacted with technology--from inventors to workers to consumers, in fields, factories, or the home. Finally, technology has been used by those in power to extend their power, and we cannot ignore that dimension of the interaction between technology and society, especially in a curriculum that seeks to tell women and all students of color that they can become scientists and engineers.

Social historians are fond of reporting that history explains "change over time." When applied to the history of machines, this idea often leads to what historians term as a progressive view of technology. As we read that hand carding, spinning, and weaving gave way to fascinating power machines and we learn about efforts to make the machines work faster or more efficiently, it is easy to think that life, work, and civilization are improving. This curriculum shows that each advance brought new problems; that there are countless technological dead ends and failures for every success; that technological change came about not only to increase productivity but to control workers; that while people sometimes welcome new machines, often they resist their introduction; and that technology both offers opportunities and restricts possibilities.

This course will consider the ways in which technology and culture, broadly defined, has contributed to the building of American society from colonial times to the present. Far from being an “ad- on” to political and social events, technology and culture are viewed as central organizing themes in American history. Indeed, the United States is often referred to as "a technological society." What does that expression mean? Why did it originate? How and in what ways does technology intersect with society and politics? How has technological progress been construed in America? Does technology mean progress? If so, progress for whom and for what? What is the relationship between technology and democracy in America? How have notions of "responsibility" in engineering and technology development changed over time? This course has three primary goals: to train students to ask critical questions of both technology and the broader American culture of which it is a part; to provide an historical perspective with which to frame and address such questions; and to encourage students to be neither blind critics of new technologies, for technologies in general, but thoughtful and educated participants in the democratic process.

Course Specific Learning Outcomes and Assessment Methods

Learning outcomes	Assessment Methods
Demonstrate connections between technology and society.	Formal essays, informal in-class writing, and in-class exams comprising questions based in part on thematic questions which will ask students to question the links to how technology has impacted society.
Describe the concepts of “the social construction of technology” and “technological determinism” through a discussion of technological developments.	Formal essays and essay exams that ask students to discuss these concepts.

Use primary sources and other cultural artifacts (i.e. literature and art forms), to study the Technology and Culture in American History.	Formal essay based on the study of primary source documents, informal in-class writing, and in-class short essay exams based in part on the study of these historical artifacts.
Demonstrate the ability to assess the social impact of the technical careers that they have chosen to pursue at NJIT.	Formal essay based on the study of a particular technological development, informal in-class writing, and in-class exams.

Course Structure

This class meets once a week on Wednesdays from 6 pm to 8:50 pm. Class meetings will consist of lecture, discussion, or film. In each class, students are expected to lead the discussion of material presented in lecture, film, and readings. In addition to attending all classes, students are expected to participate in class discussions by reading the assignment before class and thinking about the themes, questions, and historical patterns the readings suggest. There will also be presentations and assessments during class time.

Writing Assignments:

Writing for this course will consist of a book review (5-6 pages) of a book selected from a list, class primary source presentations on an assigned topic, and reading response/discussion papers (3 pages). Specific instructions and examples for these assignments will be forthcoming.

Reading response/discussion paper:

Each student will be assigned a date on which he, she, or they are expected to submit a reading response paper and lead discussion for that class period. An example response paper will be distributed, to give you an idea of how you are expected to construct your own responses.

Examinations:

There is a cumulative final examination for this class, as well as three short quizzes, covering the readings, lectures, and films. Keep in mind that the lectures and readings for this course usually do not cover the same material. This means that you must be present in class and take good notes in order to be prepared for the quizzes and final exam.

Also, there will be a three and a half (3.5) hour final examination covering all material from the entire semester. This will occur during final exam week. Keep in mind that the lectures and readings for this course do not usually cover the same material, and lecture notes are not available in the library. This means that you must take good notes during the lectures to help you study for the final exam.

Readings:

Reading assignments should be completed before each lecture. The following textbooks are required, in addition to the readings distributed in class:

Cowan, Ruth Schwartz. *A Social History of American Technology*. New York: Oxford University Press, 1997. (Canvas: Course Readings)

Smith, Merritt Roe, and Gregory Clancey, eds. *Major Problems in the History of American Technology*. Boston: Houghton Mifflin, 1998. (Canvas: Course Readings)

For students who are not familiar with American history and need to familiarize themselves with the subject, a helpful introduction is: Maier, Pauline, et. al. *Inventing America: A History of the United States*. 2nd ed. New York, New York: W.W. Norton & Co., 2005.

Course Materials:

The digital home of the course is Canvas. On this site you will find this syllabus, full assignment details, links to course readings (potentially some require purchase and/ or visits to the library to obtain access to the readings. All course announcements will also be found on this platform. Articles, chapters, and primary texts are accessible on Ebook, JSTOR, Project Muse, or UPSO sites through NJIT's library databases.

Course Requirements and Policies:

1. Attendance and participation: In order to be a successful student in this course, you will need to be present and prepared for class. Timely arrival will be rewarded, excessive absences (2 or more) will result in a grade of F for the course. **A weekly attendance roster will be circulated, so be sure to sign in**. If absence is unavoidable, my expectation is that you contact me beforehand by email to let me know that you will not be in class. **ALL EXCUSED ABSENCES MUST BE SANCTIONED BY DEAN MARYBETH DOGER BEFORE THEY WILL BE CONSIDERED REGARDING YOUR ATTENDANCE RECORD**. If an assignment is due, you should plan to submit it despite your physical absence from class. Remember, you have an obligation to your peers to be in class.

This class consists of **discussions, presentations, and a few lectures, so not showing up to do your presentation on the assigned day will result in an F. You must make me schedule and complete presentations, just as you would on your job.**

2. Reading & Discussions: Students are expected to do the readings before class and participate actively in classroom discussions. For that reason, Discussions should not mean random commenting, but directly engaging with the texts. Discussion must relate to the readings and the content of the session, including legitimate questions, critiques, connecting ideas, etc., always in relation to the readings. It is expected that you bring your readings, your notes, and posted comments to the class with you.

3. Bring a laptop or other device to class suitable for in-class research. However, keep it

closed during discussions, and use it only during designated research times in class. Class discussions will be screenless. Be sure to set up your account for access to all NJIT databases if you have not already done so.

4. Written work and presentations: Extensions are available only for certified disabilities or emergencies attested to by the Office of Student Advocacy and Compliance and must be made in consultation with me.

5. Submitting your work:

Please be sure to upload draft and final versions of papers on the assigned due dates. Your work should be submitted digitally to NJIT Canvas. Submitting your work late without prior notification to the instructor, a written medical excuse, **OR APPROVAL FROM DEAN MARYBETH DOGER** means that you will not receive credit for the draft..

Assistance with Research and Writing:

William Cronon's website/research guide
Van Houten Tutorials WHEN PROFESSIONALS NEED HELP, THEY ASK A LIBRARIAN! NJIT Writing Center

Incompletes: A grade of incomplete ("I") is given in a genuine emergency, and generally only for work which is due during the last two weeks of the course. The student must plan with the instructor for an incomplete before the last day of class.

Extra Credit: None

Office of Accessibility Resources and Services Statement: If you are a student with a disability who is requesting accommodations, please contact the Office of Accessibility Resources and Services (OARS) at 973.596.2994 or OARS@NJIT.edu. You must be registered with the OARS to receive accommodations.

Information about OARS can be found at hps://www.njit.edu/accessibility/. It is located in Kupfrian Hall, Room 201.

Everyone Matters: NJIT values an inclusive and equitable environment for all our students. I hope to foster a sense of community in this class and consider it a place where individuals of all backgrounds, beliefs, ethnicities, national origins, gender identities, sexual orientations, religious and political affiliations, and abilities will be treated with respect. It is my intent that all students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. If this standard is not being upheld, please feel free to speak with me.

Student Conduct: NJIT's Code of Student Conduct governs all activities in the University, including this course. Students who engage in behavior that disrupts the learning environment for others may be subject to disciplinary action under the Code. This includes any behaviors that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities. Students responsible for such behavior may have their registration cancelled.

Scholastic Dishonesty: Cheating is unacceptable. You know this. But just so you are clear about what exactly constitutes cheating please read and abide by NJIT's Academic Integrity Code: "Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: NJIT Academic Integrity Code.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu."

Even in the absence of direct proof, originality and evident effort and care in research are criteria for grading, therefore, I will assign a grade commensurate with the effort and originality of students' writing. Papers and presentations that are merely patchworks of other writers' work, even if properly attributed, do not deserve a very good grade, because they do not demonstrate that you have done the hard intellectual work of formulating a thesis, researching it, and articulating and supporting your opinion on the question.

Generative AI: This course expects students to work without artificial intelligence (AI) assistance in order to develop their skills in this content area. As such, AI usage is not permitted throughout this course under any circumstance.

Assignments:

Writing Assignments:

Writing for this course will consist of a book review (5-6 pages) of a book selected from a list (or previously agreed upon), reading response/discussion papers, and class presentations (3 pages).

All written work must be typed in 12-point font, double-spaced, with adequate margins. All papers must be proofread (not just spell checked!) before submission: papers will be downgraded for careless errors. Students who need extra help with writing should visit the writing Center as they prepare their paper for submission.

Book Review:

Each student must write a review of a book selected from a list of acceptable titles.

List of Acceptable Books for Review (PDF) - Modules

Some Guidelines on Preparing a Critical Book Review (PDF) - Modules

Example of a Book Review (PDF) - Modules

Presentation Contributions:

This course is a historical investigation of technology and culture and the ways in which these two discourses reinforce one another. We will analyze primary sources collectively and collaboratively. In the two (2) weeks assigned to each student, you will locate a primary document, through the web or in a database, that is relevant and interesting to the progression and proliferation of technology through industrialization. Students should prepare an image of the document, or copies to pass out, and explain briefly orally what the document is, what it says, and why it is interesting. Also sources may be websites, newspaper databases, Google Books, Hathitrust, etc. Primary documents should be posted to Canvas. Examples of primary source documents include but are not limited to Some types of primary sources include: **ORIGINAL DOCUMENTS** (excerpts or translations acceptable): **Diaries, speeches, manuscripts, letters, interviews, news film footage, autobiographies, official records**. Intellectuals and events to include, objects artifacts to foreground, practices to highlight – well, those decisions are up to you. It is my hope that your presentations will display both contradictions and continuities and, eventually, present a rich and accessible portrait of the troubled history we are here to study.

At minimum, your contribution needs to include a date, a headline, a one paragraph explanation of your entry, a media object (e.g., an image, a video, an audio clip, etc.), a caption for the media object, a credit for the media object, and your name at the end of your presentation.

Reading Response/Discussion Paper:

You will turn in two reading response papers during the semester, at the end of any two weeks of your choice. The reading responses must be 3 pages each, double-spaced. They must provide a summary, analysis, and critique of the readings. Each student will be assigned a date on which he, she, or they are expected to present and submit a reading response paper and lead the discussion during the section. A handout with information on the reading responses is available on Canvas under "Modules."

Tips on Writing a Good Response Paper (PDF) - Modules
Example of a Response Paper (PDF) - Modules

Grading - The grading policy in this course conforms to NJIT's Humanities guidelines. Assignment Summary: Table showing categories of requirements and points with these column headings:

ACTIVITIES	PERCENTAGES
Book Review	**20%**
Primary Source Presentation (2)	**20%**
Participation	**10%**
Reading Response Papers/Discussion Leading (2)	**15%**
Quizzes (3)	**10%**
Final Exam	**25%**

Grading Scale

A 93-100, A- 90-92.99, B+ 87-87.99, B 83-86.99, C+ 77-79.99, C 73-76.99, C 70-72.99, D 60- 69.99, F 0-59.99

The grade of A+ will only be given in exceptional circumstances.

Course Schedule:

Day 1 (9/3)	**Introductions**
Day 2 (9/10)	● **What is Technology?** ● Smith, *Major Problems in the History of American Technology*: xiii-xv (preface) and 2-15 (Marx, Winner, and Mackenzie essays). ● Cowan, *Social History of American Technology*, pgs. 1-4 and pgs. 201-218. ● **Technologies of Colonization and Conquest** ● Cowan, *Social History of American Technology*, pgs. 5-27. ● Smith, *Major Problems in the History of American Technology*, 26-60
Day 3 (9/17)	● **Crafts and Craftsmanship in Early America** ● Cowan, Social History of American Technology, pgs. 28-65. ● **Paul Revere: Technologist?**
Day 4 (9/24)	● **Politics and Early American Industrialization** ● Smith, pgs. 103-42. ● Cowan, pgs. 67-91. ● **Role of the State in Early American Industry**
Day 5 (10/1)	● **Quiz 1** ● **Social and Political Implications of the New Technology** ● Smith, 144-89. ● **The Transportation and Communication Revolution** ● Smith, 191-232. ● Cowan, 93-118
Day 6 (10/8)	● **Book Review Due** ● **Art and Industrialization** ● Cowan, pgs. 208-218. ● **The Emerging Culture of Engineering in America** ● Cowan, pgs.119-147
Day 7 (10/15)	● **Technology in the Civil War** ● Smith, pgs. 234-255. ● Cowan, pgs. 149-199. ● **Human Machines? Frederick W. Taylor and the Rise of Scientific Management** ● Smith, pgs. 267-311.
Day 8 (10/22)	● **Automobility and Mass Production** ● Cowan, pgs. 221-248.

	● Smith, pgs. 312-354 ● **Mass Production**
Day 9 (10/29)	● **Quiz 2** ● **Hobbyist Worlds and Technological Enthusiasm in Modern America** ● Smith, pgs. 355-382 and 510-515. . ● Cowan, pgs. 273-292 ● **Aeronautics and the Systems Approach** ● Cowan, pgs. 249-256
Day 10 (11/5)	● **Technology and Art at the Apex of the Machine Age** ● Cowan, pgs. 213-218. ● **World War II: A Technological Turning Point?** ● Cowan, pgs. 256-270 and 310-318.
Day 11 (11/12)	● **World War II: A Technological Turning Point?(cont.)** ● **A New World: Technology in Cold War America** ● Smith, pgs. 427-469. ● Cowan, pgs. 292-299
Day 12 (11/19)	● **Computers and Control: The Apollo Program** ● Smith, pgs. 471-496 and 516-518 ● Cowan, pgs. 292-299 ● **Nature's Revenge: Technology and the Environment** ● Smith, pgs. 383-426.
Day 13 (12/3)	● **Quiz 3** ● **The Brave New World of Biotechnology** ● Cowan, pgs. 301-326
Day 14 (12/10)	● **Course Summation**
Day 15 (12/17)	● **Final Exam during Class Time**

***Texts marked with an asterisk are primary texts presented in their entirety for you to explore in your own way and do not require you to read them fully or in depth.**