

History of Technology

| HIST 180 | Fall 2024 | Mon-Wed 1815-1930 | Meliora 221 |

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Required Coursework and Grading

- **Four papers are required** – Double-spaced, references are not required unless you are quoting someone or want to cite some obscure fact, use any citation method. Papers should be in PDF format and e-mailed to me by the end of class on the due date, late papers will lose points. If you prefer, you may use another format such as video or powerpoint that covers the same information, but consult with ahead of time me to ensure that it will meet the requirements. If you want me to look over your paper before you hand it in, send it to me at least one week before the due date. Using the Writing Center is encouraged. Longer papers are fine if you have more to say.
- **Paper #1: Inventions and Inventors (15 points).** Due September 25th – Research and write a 2–3 page paper about an invention and its inventor(s) that you think is either notable or neglected. As an alternative, a paper about the influence of science fiction on inventors would be fine.
- **Paper #2: Personal technology (20 points)** – Due October 21st – Write a 4-6+ page paper about the technologies you have used, how they have changed during your life, and how they impact your life. Feel free to include any relevant pictures or articles about technologies you have used. Also mention if you have ever interacted with low-tech groups such as the Amish or visited a place where people lived without reliable electricity and/or running water. And if you're making money playing Fortnite or other game that is also good information. A more complete list of topics is included in the Resources section of Blackboard, but this is a summary. Your paper should cover as many of these topics as are of interest:

Transportation	Communications	Computers/software	Telephones
Internet	Music	Movies/Photography	Energy & Water
Food and drink	Shopping & Money	Medicine	Clothing
Housing	Entertainment	Typewriters & printers	Surveillance

- **Paper #3: Ancestor technology (20 points)** – Due December 9th (Last day of class) – Write a 4-6+ page paper similar to paper #3, but based on the experience of one (or more) parents, grandparents or other ancient person. This will require gently interrogating the lucky individual(s) to reveal all the gory details of their primitive lives. Include pictures and relevant newspaper or magazine articles about their stuff. Several links to old catalogs are on the Research section of Blackboard that might trigger some stories.
- **Paper #4: Research paper (30 points)** – Due Saturday, December 21st at 10 a.m. – Research and write a 10-page (±) paper about a technology that you are interested in, expect to encounter in your work, or simply want to know more about. Include its antecedents, alternatives, and your prediction of its future impact on your work and life, as appropriate. If you want to do any other type of final project, let me know.
- Assignment grades will be posted on Blackboard. The course grade will be based on the total number of points earned in the course, with letter grades assigned according to the following scale:

94-100	A	85-88	B	78-79	C	70-72	D
92-93	A-	82-84	B-	75-77	C-	68-69	D-
89-91	B+	80-81	C+	73-74	D+	0-67	E

Texts and Resources

Lecture powerpoint slides will be posted on Blackboard along with links to videos and other relevant information

No specific textbooks are assigned for this course, but there are thousands of relevant books in the libraries on campus, plus tons of stuff on the Internet. Wikipedia is a good starting point for many topics, but don't accept it (or anything else) as gospel. Be a critical reader. YouTube and other video sites also have a lot of good (and bad) technological information and history.

Relevant articles and other information will be posted Blackboard covering a wide range of technologies. Although several periodicals just cover technology, the tight nexus between technology, politics, and money means that general news periodicals often provide good coverage of technology. In particular, students are eligible for free subscriptions to the *New York Times* and *Wall Street Journal*. The British newspaper *The Economist* and the *MIT Technology Review* are also available on the library web site under journals.

Technology is evolving rapidly with the introduction of artificial intelligence and the quest to figure out what it is good for. Whose job will it displace, and when? How will the demand for more electricity to power new data centers be met?

Class Schedule

- 1. 26 August** – Introduction and Historical Background | What is history? What is technology? Why is the History of Technology important? What are the most important technological innovations? How is new technology adopted?
- 2. 28 August** – The Agricultural Revolution | Video *Guns, Germs & Steel – Episode 1 Out of Eden*. The importance of agricultural surpluses in creating civilization, and the various roles of technology in facilitating them. How and why did Western Europeans get all the cargo?
2 September – Labor Day – No class
- 3. 4 September** – The Rise of the City | Video *Guns, Germs & Steel – Episode 2 Conquest*. Cities were essential to the rise of civilizations and were both driven by and drove technological advances.
- 4. 9 September** – The history of paper, ink and the printing press | Video *Guns, Germs & Steel – Episode 3 Into the Tropics*. Did Jared Diamond get it right?
- 5. 11 September** – Observation and measurement (telescope, microscopes, surveying, clocks, calendars, time, distance, navigation) Since most people have a GPS built into their phone, what is located at 43°07'40"N 77°37'49"W?
- 6. 16 September** – The Transportation Revolution (wheels, roads, ships, canals)
- 7. 18 September** – Water, Wind, and Steam Engines (railroads, steamships, factories, electric generation)
- 8. 23 September** – The Industrial Revolution (the adoption of coal and the rise of textile mills and other factories)
- 9. 25 September** – Food Preparation and Storage. How it became possible to live alone in the city without starving.
Paper #1 due Inventions and Inventors
- 10. 30 September** – Mechanical and Electric Telegraphs and Facsimile Transmission
- 11. 2 October** – Telephones, FaceTime, Zoom, etc. (Dorm rooms didn't have phones, then they did, now they don't.)
- 12. 7 October** – Materials (bronze, copper, iron steel, rubber, plastic, ceramics, graphene)
- 13. 9 October** – Electricity and batteries (light, heat and power) “But, after all, what use is it?” “Why, sir, there is every probability that you will soon be able to tax it!” And tax it they did.
14 October – Fall Break – No class
- 14. 16 October** – Photography and motion pictures (George Eastman, Kodak, digital theaters, Blockbuster, Netflix)
- 15. 21 October** – Water supply, sewers, and indoor plumbing
Paper #2 due Personal technology
- 16. 23 October** – Printing (typewriters, printing presses, linotype machines, word processors, laser printers)
- 17. 28 October** – The Internal Combustion Engine, cars, airplanes, lawnmowers, etc.
- 18. 30 October** – Hollerith, Babbage, census tabulation, computers, the birth of Big Data.
- 19. 4 November** – Voting technology – Can voting machines be trusted? Should a paper audit trail be mandatory? How is redistricting done every ten years? Is it done fairly?
- 20. 6 November** – Money and banking
- 21. 11 November** – Medicine
- 22. 13 November** – Radio, Television, Radar, GPS, and Consumer Electronics. Transistors and integrated circuits.
- 23. 18 November** – The Internet and its predecessors. Tubes. Satellites and undersea cables. What will replace the iPhone?
- 24. 20 November** – Aviation and the shrinking of the world. Will we ever fly supersonic again?
- 25. 25 November** – Rockets and Space Exploration. Is private enterprise the answer? Will Elon make it to Mars?
27 November – Thanksgiving Break – No class
- 26. 2 December** – Artificial Intelligence, Big Data and the future of information, communications, advertising, and entertainment. How will companies reach out to consumers? How will all this affect the general public?
- 27. 4 December** – Does technology promote freedom or oppression? Some examples.
- 28. 9 December** – Electric and self-driving cars. Someday, maybe.
Paper #3 Ancestor Technology paper due
21 December – Final paper #4 due at 10 a.m. on Saturday

Administrative Staff

The College's credit hour policy on undergraduate courses is to award 4 credit hours for courses that meet for the equivalent of 2 periods of 75 minutes each week. Students enrolled in HIST 180 are expected to devote at least one hour each week to identifying the main lines of argument in course readings, working alone or in groups, and to researching in depth their topics for their papers.

Students with disabilities: The University of Rochester respects and welcomes students of all backgrounds and abilities. In the event you encounter any barrier(s) to full participation in this course due to the impact of disability, please contact the Office of Disability Resources. The access coordinators in the Office of Disability Resources can meet with you to discuss the barriers you are experiencing and explain the eligibility process for establishing academic accommodations. You can reach the [Office of Disability Resources](mailto:disability@rochester.edu) at: disability@rochester.edu; (585) 276-5075; Taylor Hall.

Academic honesty: All assignments and activities associated with this course must be performed in accordance with the University of Rochester's Academic Honesty Policy. Cheating and plagiarism are serious offenses and will be treated as such. Anyone who engages in such activities will be turned over to the College Board on Academic Honesty for disciplinary action, as outlined at <http://www.rochester.edu/College/honesty/>.

For a helpful discussion of plagiarism (including subtle instances), see the American Historical Association's "Defining Plagiarism," <https://www.historians.org/teaching-and-learning/teaching-resources-for-historians/plagiarism-curricular-materials-for-history-instructors/defining-plagiarism>.