History of Technology

Required Coursework and Grading

- **Structure** – This course includes in-person and on-line elements. The new assigned classroom is large enough for everyone enrolled (and more!) Those who are unable to attend class can access all course materials on Blackboard and submit papers via e-mail.

- **Five 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 e-mailed to me, PDF preferred but Word is ok. Paper copies also acceptable, double-sided printing saves paper. Papers are due by the end of class on the date due, 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 me to ensure that it will meet the requirements.

- **Paper #1**: **Guns, Germs & Steel – Did Jared Diamond get it right? (15 points)** – Due September 28th – Write a 2–3 page paper giving your opinion about Diamond's thesis that environmental determinism was the major factor in the rise of European technological superiority. The book, three videos and several articles supportive or critical of Diamond's thesis are posted on Blackboard and covered in class lectures. Be specific in your concurrence or criticism of his thesis.

- **Paper #2**: **Inventions and Inventors (15 points).** Due October 19th – 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 #3: Personal technology (20 points)** – Due November 18th – 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 you 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 #4: Ancestor technology (20 points)** – Due December 7th (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 #5: Research paper (30 points)** – Due Saturday, December 19th 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 most videos shown in class 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 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.

20 August 2020

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. **31 August** – The Agricultural Revolution | Video *Guns, Germs & Steel* – Part 1. 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?

3. **2 September** – The Rise of the City | Video *Guns, Germs & Steel* – Part 2. Cities were essential to the rise of civilizations, both driven by and drove technological advances.

   7 September – Labor Day – No class

4. **9 September** –Video *Guns, Germs & Steel – Part 3*. Did Jared Diamond get it right? The history of paper, ink and the printing press.

5. **14 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) Isochron travel time maps.

7. **21 September** – Water, Wind, and the Steam Engine (railroads, steamships, factories, electric generation)

8. **23 September** – The Industrial Revolution (textile mills and other factories)

9. **28 September** – Food Preparation and Storage. How it became possible to live alone in the city without starving.
Paper #1 due *Guns Germs & Steel* and its critics

10. **30 September** – Mechanical and Electric Telegraphs and Facsimile Transmission

11. **5 October** – Telephones, FaceTime, Skype, 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. **12 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. **14 October** – Photography and motion pictures (George Eastman, Kodak, digital theaters, Blockbuster, Netflix)

15. **19 October** – Water supply, sewers, and indoor plumbing
Paper #2 due Inventions and Inventors

16. **21 October** – Printing (typewriters, printing presses, linotype machines, word processors, laser printers)

17. **26 October** – The Internal Combustion Engine, cars, airplanes, lawnmowers, etc.

18. **28 October** – Hollerith, Babbage and the birth of Big Data

19. **2 November** – Voting technology – Can voting machines be hacked? Should a paper audit trail be mandatory? How is redistricting done every ten years?

20. **4 November** – Money and banking

21. **9 November** – Medicine

22. **11 November** – Radio, Television, Radar, GPS, and Consumer Electronics. Transistors.

23. **16 November** – The Internet and its predecessors. Tubes.

24. **18 November** – Aviation and the shrinking of the world.
Paper #3 due Personal technology

25. **23 November** – Rockets and Space Exploration. Is private enterprise the answer?

   25 November – Thanksgiving Break – No class

26. **30 November (On-line)** – Big Data and the future of information, communications, advertising, and entertainment. How will companies reach out to consumers?

27. **2 December (On-line)** – Does technology promote freedom or oppression? Some examples.

28. **7 December (On-line)** – Electric and self-driving cars.
Paper #4 Ancestor Technology paper due

   19 December – Final paper #5 due at 10 a.m. on Saturday

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 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.