

History of Science 222: Technology and Social Change in History
Spring 2002

M W F 9:55-10:45
3331 Sterling

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262-6115
Office Hours: Mon. 11-1 and by appt.

Topics in the history of technology. Topics for Spring 2002 include technology and the military, history of computing, history of biotechnology, and disasters in large technical systems.

Assignments

The assignments for this course are readings, quizzes, and three short (4 pgs.) take-home exams.

1. Reading Assignments

Reading assignments are given in the course schedule. Reading must be completed before each class so that discussion can draw on your knowledge of the readings. The required text—Martin Campbell-Kelly and William Aspray's *Computer*—may be purchased at the university bookstore. The course reader, also required, is available from Eileen Ward in the History of Science Department Office. The Department Office is located in 7143 Social Sciences and is open from 7:30-3:15. You may purchase the reader with either exact change or check (no credit cards). Readers may NOT be returned. Course materials are also on reserve at the College Library.

2. Quizzes

Quizzes will consist of writing an identification for one item from the day's reading assignment. Prior to each class period, I will give you 2-3 possible identification items, such as John Hall, record-playback, or klystron. Seven class periods randomly distributed through the semester, I will select one of the items and give you 5 minutes in class to identify it in one paragraph. The paragraph should begin by situating the person, idea, thing, etc. as specifically as possible by answering who, what, when, and where. Most importantly, you should describe in 1-2 sentences the historical significance of the item. The crux of historical significance is to explain how the item is part of a larger historical story.

Each quiz will be graded out of 10 points. A paragraph displaying knowledge of the assigned reading will receive 5 points. 2 additional points will be given for identifying a historical significance of the identification item. The final 3 points will be given for providing correct and specific information about the identification item.

3. Exams

For each take-home exam, you will write a 4-page response to one of two essay questions. Due dates are given in the class schedule.

Evaluation and the Fine Print

Grades will generally be calculated as follows:

- a. Quizzes: 25%
- b. 3 take-home exams: 25% each

Thoughtful contributions to class discussions will weigh heavily in the mediation of boarder-line grades.

Make-up exams and acceptance of late assignments will only happen in university approved or dire circumstances. These include traveling with a sports team, major and documented illnesses, personal or family crises, etc. Should any of these arise, you are responsible for discussing the circumstances with me ASAP, before the work is missed if at all possible. I reserve the right to construct make-up exams or assignments more difficult than the work they replace.

Likewise, incompletes will only be given in extraordinary circumstances. To receive an incomplete, you and I would prepare a written agreement specifying how and when all work for the course would be completed. This agreement would have to be signed before I submit grades at the end of term.

Honors Credit

Students enrolled for honors credit will complete an honors project in addition to the other requirements for the class. Students may choose one of the following projects. Each student enrolled for honors credit should make an appointment to see me during the second week of class to formalize their selection and establish due dates for the honors project.

- a. *Readings journal*. For this option, the student will write a 1-page entry for every class period with an assigned reading. The goal of journal writing is to reflect on the assigned reading and connect it to broader themes of the course. I have a handout that describes the exercise of journal writing in detail, which I will give to any student who chose this option.
- b. *Research paper*. Write a 12- to 15-page research paper. The paper may be on any topic that falls within the scope of this course. It must make use of both primary and secondary sources.

Grades for honors students will generally be calculated as follows:

- a. Quizzes: 15%
- b. 3 take-home exams: 20% each
- c. Honors project: 25%

Disabilities

If you have a significant disability condition (e.g., physical, learning, psychiatric, vision, hearing, etc.) and want to arrange reasonable accommodations, you must contact me at the beginning of the semester.

Academic Integrity

You are expected to express your ideas and to sustain arguments in your own words. Failure to do so is plagiarism. It is unethical and often illegal. Plagiarism ranges from the blatant—purchasing a term paper or copying on an exam—to the subtle—failing to credit another author with the flow of ideas in an argument.

Properly acknowledging the use of the words of others and avoiding excessive quotation of the work of others will eliminate most plagiarism problems. If you want to quote from a published work (including a web page), you must put the passage in quotation marks and provide a citation.

Simply changing a few words from the writings of other authors does not alter the fact that you are essentially quoting from them. Paraphrasing of this sort, where you use the words of another almost verbatim without acknowledging your source, is the most common form of plagiarism among undergraduates. When you state another author's viewpoint, theory, or hypothesis—especially when it is original or not generally accepted—you must also include a reference to the published work. In general, citations are unnecessary when the information is considered common knowledge or a matter of widespread agreement. Common knowledge can often be identified by its appearance in several of the assigned readings for class.

All papers prepared outside of class must have a bibliography at the end. This provides readers with a complete list of sources consulted, regardless of whether you quoted directly from them, and serves to acknowledge your intellectual debts to them.

Another common and related problem may arise from working with another student in studying and carrying out assignments. Such collaboration is encouraged, but the work that you submit must be in your own words, and not jointly written or copied.

If you are unclear about collaborating, paraphrasing, quoting, or the need to indicate sources, I will be glad to speak with you and can recommend additional materials for clarification.

Failure to maintain academic integrity in any portion of the academic work for the course shall be grounds for awarding a grade of F for that assignment.

Course Schedule

<i>Date</i>	<i>Reading Assignment</i>	<i>Topics and Due Dates</i>
1/23, W	Introduction	
F	MacKenzie and Wajcman, "Introductory Essay," 24 pgs.	
1/28, M	Smith, "Army Ordnance," 47 pgs.	Factory production
W	Noble, "Social Choice in Machine Design," 32 pgs.	
F	Noble, "Command Performance," 17 pgs.	
2/4, M	Film: <i>Day After Trinity</i>	Manhattan project
W	Film: <i>Day After Trinity</i>	
F	Goldberg, "General Groves," 50 pgs.	
2/11, M	Leslie and Hevly, "Steeple Building at Stanford," 11 pgs.	Military-Industrial-Academic Complex
W	Cowan, "Taxpayers, Generals, and Aviation," 23 pgs.	
F	Smith and Clancy, Documents, 12 pgs.	
2/18, M	McDougall, "Sputnik, Space Race, Cold War," 5 pgs. and McDougall, "Destination Moon," 17 pgs.	Space Program
W	Smith, "Selling the Moon," 33 pgs.	
F	Mendelsohn, "Science, Technology and the Military," 21 pgs.	
2/25, M	Campbell-Kelly & Aspray, <i>Computer</i> , Chs. 4-6, 74 pgs.	Mainframes
W	Film: <i>Star Trek</i> , "The Ultimate Computer" and Garson, "Computerized Order Taking at McDonald's," 3 pgs.	
F	Nelson, <i>Computer Lib</i> , 3 pgs.	Exam 1 Due
3/4, M	Campbell-Kelly & Aspray, <i>Computer</i> , Chs. 10 & 11, 25 pgs.	Personal Computers
W	Turkle, "Cyborg Babies and Cy-Dough-Plasm." 12 pgs.	
F	Bimber, "Three Faces of Technological Determinism," 21 pgs.	
3/11, M	Turkle, "Virtuality and its Discontents," 7 pgs.	Internet
W	Abbate, "Popularizing the Internet," 39 pgs.	
F	Winner, "Do Artifacts Have Politics?," 15 pgs.	
3/18, M	Wright, "Recombinant DNA Technology," 57 pgs.	DNA
W	Singer, Soll, Berg, et al, Letters, 2 pgs.	
F	Mendelsohn, "Frankenstein at Harvard," 19 pgs.	
3/25, M	Spring Break	Spring Break
W	Spring Break	Spring Break
F	Spring Break	Spring Break

4/1, M	Dugdale, "Grafenberg's IUD," 6 pgs. and Oudshoorn, "One-Size-Fits-All Paradigm," 15 pgs.	Human Biotech.
W	Film: <i>Making Babies</i>	
F	Marx, "Does Improved Technology Mean Progress?," 9 pgs.	
4/8, M	Busch et al, "Tomatoes," 32 pgs.	Agriculture Biotech.
W	Articles on Monarch Butterflies & Bt Corn, <i>New York Times</i>	
F	Staudenmaier, "Perils of Progress Talk," 25 pgs.	
4/15, M	Hughes, "Introduction" to <i>Networks of Power</i> , 16 pgs.	Electrical Systems
W	Hughes, "Electrification of America," 37 pgs.	
F	Hughes, "California White Coal," 22 pgs.	Exam 2 Due
4/22, M	MacKenzie, "Missile Accuracy," 27 pgs.	Nuclear weapons
W	Del Tredici, <i>Fields of the Bomb</i> , all.	
F	Cowan, "Nuclear Power Reactors," 24 pgs.	TMI
4/29, M	Film: <i>Meltdown at Three Mile Island</i>	
W	Perrow, Introduction and Three Mile Island, 28 pgs.	
F	Boisjoly, "Challenger Disaster," 8 pgs. and Whitbeck, "Professional Behavior," 13 pgs.	Challenger
5/6, M	Vaughan, "Eve of the Launch Revisited," 55 pgs.	
W	Perrow, "Complexity, Coupling, and Catastrophe," 38 pgs.	
5/10, F	Last Day of Class	
5/13	Exam Period. Exam 4 is due in my office between 12:25pm and 2:25pm.	Exam 3 Due

