

THE HISTORY OF TECHNOLOGY

Culture and Context

Course Syllabus

Instructor Information

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Course Information

Course Number: AHSE1100
Course Nickname: "HoT"
Meeting Time: Tuesday and Friday, 10:00 AM to 11:50 AM
Meeting Location: AC 128
Course Email List: hot@lists.olin.edu
Course Champion: Chris Marra, chris@chrismarra.com
Writing Tutor: Preeta Willemann, preeta.willemann@students.olin.edu
Course Website: <http://mrwiki.olin.edu/mrwiki/HistOTech2010>
Library Website: <http://libguides.olin.edu/AHSHistoryTech>
Coolness Factor: Off the charts

Learning Objectives

The philosophy and main objectives of this course are embodied in the following goals:

1. **Learn to critique historical narratives.** Historical narratives describe the development, modification, and impact of technologies in different places and times. We will learn to identify the author's intent and criticize the style, content, and impact of each.
2. **Learn to apply analytical themes to historical case studies.** We will work with analytical techniques centered on some of the main themes of this course:
 - a. **Technology and politics.** What is the relationship between technology, politics, and values in different places and times? When and how do technologies have political qualities? Robot politician: good or bad idea?
 - b. **Technology and culture.** How do we define technology? How are technologies a product of their societies and how do they influence societies? What are technological systems and how are societies and cultures a part of them?

- c. **Technology and the environment.** What are the environmental components of technological systems? How does the environment affect technological development, modification, and use? How do technologies impact the environment in return?
3. **Develop communication skills.** In this course, you will craft a variety of communication deliverables, described in ghouly detail in the **Assignments Supplement**. You will also participate in class discussions every day, as well as an innovative character-building exercise involving an enraged yak and a half-full can of vanilla coke. These activities develop many effective communication skills:
 - a. **Organization and structure:** Papers, presentations, and other deliverables will communicate a clear goal, provide and follow a logical structure governed by the goal, and orient the audience in terms of how the deliverable progresses towards its goal.
 - b. **Analysis:** Assignments will have a clear and significant goal or goals. These goals will be achieved through a combination of compelling logical reasoning and plausible, detailed analysis of evidence.
 - c. **Evidence and support:** Assignments will include an appropriate amount of specific evidence to support the deliverable's goal. The author will explain the meaning and significance of the evidence, and appropriately reference sources.
 - d. **Mechanics and Style:** all written and presentation deliverables will follow the appropriate guidelines pertaining to grammar, word usage, sentence length/structure, etc. All written, oral, and graphical deliverables must be clear, compelling, and effective.
 - e. **Constructive criticism.** in this course you will give and receive constructive, critical feedback about one another's written and oral contributions.
 - f. **Critical reading:** Students will pose and discuss questions about readings, mine readings for multiple interpretations or points of view, and compare and contrast readings to deepen understanding of content.
4. **Draw and encourage connections between "AHS" (Arts, Humanities, and Social Sciences) and technical subjects.** This foundation course explores ways that historical techniques and principles make you a better engineer, as well as ways you can bring technical strategies to bear on historical problems and topics. We also study systems and organizations that combine ethical, cultural, political, environmental, scientific, and technical components.
5. **Explore the relationship between different AHS fields.** Although this course is first and foremost a proud member of the history (or history of technology, if you prefer) discipline, we will strive wherever possible to introduce related AHS fields and investigate their methods, questions, and content. We will introduce concepts from philosophy, economics, political science, and literature.
6. **Have a great time.** We *will* have fun. Oh yes.

Competencies

This course primarily develops and assesses the **communication, contextual understanding, and qualitative analysis** competencies. These competencies closely relate to the learning objectives listed above and to the feedback you will receive on all of your assignments. This course also develops the **teamwork** and **lifelong learning** competencies to a lesser degree, but I will not formally assess them. I might also attempt to address the **food and beverage consumption** competency if students exhibit sufficient interest.

Required Texts

The following three required texts are required as requirements (note that many used copies of these books are floating around Olin's campus and you can read them in the library, where they are on reserve):

1. *Major Problems in the History of American Technology*, by Merritt Roe Smith and Gregory Clancey (ISBN 0-669-35472-4, Houghton Mifflin, 1998).
2. *Guns, Germs, and Steel*, by Jared Diamond (ISBN 0393317552, Norton Publishers, 1999)
3. *Inviting Disaster: Lessons from the Edge of Technology*, by James Chiles (ISBN 978-0066620824, Collins, 2001).

We will also use smaller selections from articles, online materials, and books such as *Natural Capitalism*, *Cradle to Cradle*, and *Empires of Light*, listed below in the calendar section of the syllabus. Keep an eye on our course page on the library's website:

<http://libguides.olin.edu/AHSHistoryTech>

Reading packets will be distributed throughout the course on a “need to know” basis whenever you least expect them.

Writing Tutors

You are encouraged to contact the writing tutors at any time with any question regarding any assignment for this course. I beg you to do this: tutors increase your learning and productivity. The “dedicated” tutor for our course is Preeta Willemann (woo hoo!), who can be emailed at preeta.willemann@students.olin.edu, but you can contact all of them at olin.writing.tutor@gmail.com. In addition to sessions by appointment, all of Olin's fall semester writing tutors hold approximately one “walk in” office hour weekly. Visit the tutor wiki for current hours at: <http://gillianwiki.wikispaces.com/Olin+Writing+Tutors>. If you prefer to deal directly with Olin's fabulous writing consultant, her name is Gillian Epstein and she can be reached at gillian.epstein@olin.edu. Always email your work to the tutor (or Gillian) in advance of your meeting, along with the assignment instructions. This ensures that they will make the most of your session and target their advice towards the preparation, presentation, and promulgation of pragmatic pulchritude.

Random Course Policies

- **Attendance**
 - Attendance is required and will be considered in computing your grade.
 - If you are too sick to come to class ... well, don't come to class! Focus on getting healthy. Please contact me as soon as you can – before class if possible, or at the first opportunity after class if necessary. I will help you make up the missed material.
 - If you have a different reason for missing class, contact me as early as possible.
 - Perfect attendance will be rewarded at the end of the year with a tiny piece of sour candy. You can replace the sour candy with a small piece of gum if you obtain written permission from the Assistant Dean of Student Life.
 - Students cannot send an imaginary friend to class in their stead, even if the imaginary friend has supposedly completed all readings.
- **Lateness** is disruptive. I will end on time, and you must arrive on time. Extensive lateness will invite you a stern look and possibly an arched eyebrow in the most egregious cases. (Seriously though, don't be late!)
- **Class participation** is a vital learning objective of this course and will play a substantial role in determining your grade and in making you a better engineer and warlord. If participating in discussions is stressful in any way, please contact me and we'll talk.
- **Laptop use in class:** Laptop use has proven distracting to me and to other students, so only use your laptop for taking notes or for sanctioned activities (e.g., interactive web research during a class). Please keep your screen folded down at a twelve degree angle until you are ready to type something, at which point you should raise the screen, type, and lower it. Absolutely no email, Twitter, Facebook, etc.

- **Honor code issues:** the honor code helps us focus on cool intellectual concepts and saves me from the need to worry about dishonesty, plagiarism, cheating, or food fights. Please follow the spirit of the honor code and ask me to clarify anything that is unclear. Primary honor code issues include:
 - **Plagiarism:** always take extreme care to acknowledge the source of **all** quotes, content, and theories. *Even if you reword the original material, or if it merely informs your own argument, you must cite it as an influence. **When in doubt, cite.*** I am particularly impressed with the plagiarism discussion at: http://www.historians.org/governance/pd/Curriculum/plagiarism_intro.htm. A longer discussion of plagiarism is provided in the **Assignments Supplement**.
 - **Collaboration:** see the description of each assignment in the **Assignments Supplement** for exact guidelines on the degree of allowable collaboration. If you receive help where help is allowed, you must acknowledge it in a brief note at the end of the assignment. When in doubt, ask me in advance if you can collaborate and I will respond in rhymed verse.
 - **Writing tutors:** you can **always** seek help from the writing tutors – just tell me you did so at the end of the assignment (it will never hurt your grade).
 - **Hurling water balloons:** let's call this a tentative "no."
- **Time expectations:** A diligent and reasonably efficient student, supplied with plenty of Vanilla Coke, should spend *about* 12 hours per week doing everything associated with this course (including attending class). If you spend significantly more or less than 12 hours a week on this course please contact me and we'll do something.
- **Feedback:** feedback is an *essential* component of this course. I'll solicit feedback throughout the semester, but I also urge you to contact me at any point with suggestions or concerns, either in public or in private. I have improved this course quite a bit over the years in response to insightful student comments, and I hope to continue doing so with your help!

Policy on PEZ

"PEZ" will play an important, if not central, role in our class. You are encouraged to procure a "PEZ" dispenser of your choosing at the earliest opportunity. This "PEZ" dispenser will qualify you for various edible handouts throughout the year and will also enter you in the "Most Interesting PEZ Dispenser Competition" to be held on October 12. Will there be prizes? Oh yes. Oh yes indeed.

Grading

First semester Olin students can only receive a grade of "pass" or "no credit" on their official transcript. I will still grade all assignments (and the course as a whole) on the ABCDF scale even though the transcript will not record this. These grades will be assigned in accordance with the guidelines provided in the Student Handbook.

Your final grade will be based on the following breakdown. Assignments are described in horrifying detail in the **Assignments Supplement**.

Course Assignment	Percentage
Narrative assignment: individual essay and team discussion leading	10
Editorial assignment: individual editorial and team presentation	10
Poster assignment (with mat sci class)	5
Paper one first version	15
Paper one revision	10
Research project outline and source lists	5
Research project written paper	15
Research project colleague commentary	5

Research project presentation	10
Participation and attendance	15 (*)
TOTAL	100

(*) Attendance and participation can impact more than 15% of your grade in exceptional cases.

Semester Schedule

Note: all assignments (reading and writing) are DUE on the date listed.

WEEK 1	Friday Sep. 3
	Introduction! Choose groups and topics In-class survey and discussion Course goals Meet the Course Champion (king of Spyril Learning?) Let the fun begin. Oh yes.

WEEK 2	Tuesday Sep. 7	Friday Sep. 10
	Guns, Germs, and Steel <ul style="list-style-type: none"> Everyone read HANDOUT ONE: Paradigms and Scientific Revolutions Guns Germs and Steel readings depend on your group: <ul style="list-style-type: none"> Group 1 read chapters 4, 5, and pages 254-264 Group 2 read chapters 4, 6, and pages 254-264 Group 3 read chapters 4, 7, and pages 254-264 Group 4 read chapters 4, 8, and pages 254-264 Group 5 read chapters 4, 9, and pages 254-264 EVERYONE: be ready to present your chapter (5 through 9) to the class EVERYONE: think about the connections between paradigms and your chapters 	Government and Writing <ul style="list-style-type: none"> "CLIO and the Economics of QWERTY" at http://www.utdallas.edu/~liebowitz/knowledge_goods/david1985aer.htm or pdf at http://www.econ.ucsb.edu/~tedb/Courses/Ec100C/DavidQwerty.pdf Guns Germs and Steel Chapter 12 (pages 215-238) Guns, Germs, and Steel Chapter 14 (especially pages 267-288; read more if you so choose) <p>Due: Analysis Notes, email to Rob by midnight on Thursday Sep. 9</p>

WEEK 3	Tuesday Sep. 14	Friday Sep. 17
	Native American Technology and Culture CRITICAL READING WORKSHOP <ul style="list-style-type: none"> Smith and Clancey pages 26-52 OPTIONAL: Iroquois and Pima creation myths: Annotation 1.1 at http://www.norton.com/inventing/interface/ch01/ch1_annotations.htm 	Natural Capitalism... and Revolution? <ul style="list-style-type: none"> Natural Capitalism chapter one, available at: http://www.natcap.org/sitepages/pid20.php Cradle to Cradle introduction and chapter one, available in library Other reading TBA

WEEK 4	Tuesday Sep. 21	Friday Sep. 24
	Ethics and Technological Disasters <ul style="list-style-type: none"> HANDOUT TWO (ethics) Introduction and Chapter 2 ("Blind Spot") of Inviting Disaster Due: Narrative Assignment Group 1 (email part A by 8 PM on Monday Sep. 20)	Ethics and Technological Disasters <ul style="list-style-type: none"> Inviting Disaster Chapter 3 ("Rush to Judgment") Inviting Disaster Chapter 8 ("A Crack in the System") Due: Narrative Assignment Groups 2 and 3 (email part A by 8 PM on Thursday Sep. 23)
WEEK 5	Tuesday Sep. 28	Friday Oct. 1
	Biography: Edison and Tesla <ul style="list-style-type: none"> HANDOUT THREE: Technological Systems Empires of Light, Chapter 6 Some of Tesla autobiography: http://thelivingmoon.com/41pegasus/03PDF_files/Tesla_My_Inventions.pdf Thomas Edison document TBD Due: Narrative Assignment Group 4 (email part A by 8 PM on Monday Sep. 27)	Thesis Workshop and Revere <ul style="list-style-type: none"> HANDOUT FOUR: Paul Revere!!! Smith and Clancey pages 13-15 (Social Shaping of Technology) Read sample paper from the past Bring your laptop today! Due: PAPER ONE THESIS (Phase One) 8:00 PM on Thursday SEPTEMBER 30
WEEK 6	Tuesday Oct. 5	Friday Oct. 8
	Biotechnology and Profits <p>Reading: "Making Dollars out of DNA" by Sally Smith Hughes, <i>Isis</i> 2001, volume 92 pages 541-575. Visit JSTOR link from the http://library.olin.edu/ page, then "Browse," "Alphabetical List of Journals," and select <i>Isis</i>, Volume 92 number 3.</p> Due: Narrative Assignment Group 5 (email part A by 8 PM on Monday Oct. 4)	Pest War <p>Reading: Smith and Clancey pages 383-410 and 422-426; skim the essay on 410-422.</p> <p>In-class activity: come to class "in character" based upon an assigned role, and be ready to advocate your position using evidence.</p> Due: Nothing... but work on paper one!
WEEK 7	Tuesday Oct. 12	Friday Oct. 15
	Evidence Workshop and Feedback <ul style="list-style-type: none"> Read evidence samples from last year and prepare a critique of each one: what makes it effective, what makes it confusing or weak? Feedback session Pick Materials Science groups (for Friday) Plan activity for floating class (11/5) Talk about Paper Two! Most Interesting PEZ Dispenser Competition. Due: PAPER ONE COMPLETE DRAFT (Phase Two) 8:00 PM Monday October 11	Materials Science Alliance One <ul style="list-style-type: none"> Inviting Disaster Chapter 5 ("The Really Bad Day") We will meet with Jon Stolk's Failure Analysis class today and have a huge discussion, followed by team planning activities!
WEEK 8	Tuesday Oct. 19	Friday Oct. 22
	Politics and Space Technology <ul style="list-style-type: none"> Smith and Clancey pages 7-13 (Do Artifacts have Politics) "Democracy and Super Technologies: The Politics of the Space Shuttle and Space Station Freedom" by W.D. Kay, <i>Science, Technology, and Human Values</i> 1994, volume 19 number 2, pages 131-151. Visit JSTOR link from the http://library.olin.edu/ page, then "Browse," "Alphabetical List of Journals," and select <i>Science, Technology, and Human Values</i>, Volume 19 number 2. 	Materials Science Alliance Two <p>Poster session during class!</p>

	Due: pick one cool song for Rob to listen to. Email him by 8:00 PM on Monday Oct. 18.	Due: Poster assignment, in conjunction with materials science class
WEEK 9	Tuesday Oct. 26 Classic Sci-Fi! <ul style="list-style-type: none"> • Classic Star Trek! • Read Martian Odyssey at http://gutenberg.net.au/ebooks06/0601191h.html • Read "Repent Harlequin said the Ticktockman" by Harlan Ellison (online, in library) Due at 6:00 PM: PAPER TWO PROPOSAL (Phase One)	Friday Oct. 29 Research Meeting with Dee Magnoni <ul style="list-style-type: none"> • Revisit your project two proposal and think about the sources you will need. • Start working on your outline/source list (Paper Two, Phase Two) Due at 8:00 PM: PAPER TWO OUTLINE/SOURCE LIST (Phase Two)
WEEK 10	Tuesday Nov. 2 Floating Day <ul style="list-style-type: none"> • The details of this day will be determined later • The Course Champion will play a prominent role • Stay tuned! 	Friday Nov. 5 AHS Foundation Convocation <ul style="list-style-type: none"> • Meet in auditorium for first hour • Then: Floating Class! (TBD) Due at 8:00 PM: PAPER ONE FINAL REVISION (Phase Three)
WEEK 11	Tuesday Nov. 9 Telephone Technology and Networking <ul style="list-style-type: none"> • Smith and Clancey pages 233-246; 255-263 • Pages 149-153 and 159-162 of A Social History of American Technology, "Industrialization, Dependency, and Tech Systems" "Telegraph" and "Telephone" sections (book on reserve in library) • Read or listen to the interview transcripts at http://www.pbs.org/wgbh/amex/telephone/filmmore/reference/interview/index.html • Look at some of the clips and articles at http://www.corp.att.com/history/ Due: Editorial Assignment for Groups One and Two (email part A by 9 PM on Monday Nov. 8)	Friday Nov. 12 OLIN MONDAY: No class today Work on paper two, phases three and four! Due at 8:00 PM: PAPER TWO (Phase Three) NEW OUTLINE
WEEK 12	Tuesday Nov. 16 Scientific Management and Labor <ul style="list-style-type: none"> • Smith and Clancey pages 267-299 • Pages 208-213 of A Social History of American Technology: "Technology and Romanticism" and "Acceptance of Romanticism by Advocates of Industrialization" sections (book on reserve in library) • Group three will have something awesome for us! • Group four, on the other hand, will blow our minds! Due: Editorial Assignment for Groups Three and Four (email part A by 9 PM on Monday Nov. 15)	Friday Nov. 19 Automobiles and Mass Production <ul style="list-style-type: none"> • Smith and Clancey pages 312-328 • Pages 224-239 of A Social History of American Technology, i.e., most of the "Automobiles and Automobility" chapter (book on reserve in library) • Ford revisited, at http://www.mcdonough.com/writings/restoring_industrial.htm • Image challenge! Everyone locate two meaningful images of Henry Ford, early automobiles, early traffic, early auto manufacturing, etc. Bring them to class and be prepared to discuss what makes each image meaningful -- interpret them! Due: Editorial Assignment for Group Five (Thursday night 9 PM) Due at 6:00 PM: PAPER TWO (Phase Four) TEAM PROPOSAL

WEEK 13	Tuesday Nov. 23	Friday Nov. 26
	NO CLASS... THANKSGIVING BREAK!	HAPPY THANKSGIVING! 😊 <small>Turkey turkey, gobble gobble, eat until you wobble wobble.</small>
WEEK 14	Tuesday Nov. 30	Friday Dec. 3
	Modern Sci-fi <ul style="list-style-type: none"> • <i>Ownz0red</i>, by Cory Doctorow (online) • <i>Firefly</i> episode • Other reading or video TBD • Extra credit: wear something subtle, with a sci-fi theme 	No Class Today! <ul style="list-style-type: none"> • No class today, Rob is in California • Work on your reports – draft due tonight • Do not simply use this time to loaf • Well, some loafing is OK I suppose • Perhaps more than some • But please do your work too Due: PAPER TWO (Phase Five) DRAFT, by midnight
WEEK 15	Tuesday Dec. 7	Friday Dec. 10
	Computers and Computing <ul style="list-style-type: none"> • Smith and Clancey pages 444-445; 454-462; 476-486; 496; 516-518 • Pages 294-299 of <i>A Social History of American Technology</i>: “Computers” and “Conclusion” sections (book on reserve in library) • <i>The Conscience of a Hacker</i>, at http://www.ghostwheel.com/merlin/businesslike/hacker.html • Read the Wikipedia article on either Steve Jobs or Bill Gates (or both!) Due: pick one cool web page for Rob to enjoy. Email him by 8:00 PM on Monday Dec. 6.	LAST DAY! (Computing again) <ul style="list-style-type: none"> • <i>Pirates of Silicon Valley</i> movie • Farewell ceremonies • Let's do lunch! Due: PAPER TWO (Phase Six) COLLEAGUE COMMENTARY, by midnight
WEEK 16	Final Exam Period	
	PAPER TWO, Phases Seven (Final Paper) and Eight (Project and Presentation) due at our final exam session. Date and Time TBA.	