History G8479
Information—Computing—Infrastructure
Version 2.0

Graduate Colloquium

T 10:10-12

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Description
The course introduces the major works in the history of computing and information technologies, with particular attention to transformative methodologically important texts. Students will be likewise introduced to major current works in the history of technology and media studies. The course along the way provides an outline of the development of computing from the late nineteenth century.

Prerequisites
None. The course assumes only an interest in the history of computing or technology, and a willingness to go beyond textbook history. Additional readings will be available for students with substantial technical expertise or substantial expertise in science and technologies studies. Historians and more humanities-trained students should expect some challenge from the technical material, and computer scientists from the historical methodological considerations.
Syllabus

A BIT LESS PROVISIONAL The syllabus is likely to change, once I get to know your interests.

Readings that are easily available online through CLIO (e.g. JSTOR or IEEE journals) are your responsibility. A few books have been ordered. The rest will be available on Courseworks in time.


A large number of the best books in the history of computing and information are published by MIT Press. You can access most of them at http://ieeexplore.ieee.org.ezproxy.cul.columbia.edu/browse/books/title/

Session 1. Introduction (1/19)

Session 2. Organization, Social and Computational (1/26)


Chris Kelty, Two Bits (Duke, 2009), chs. 1, 3, 4, 5, 7, conclusion, available at http://twobits.net/read/


Session 3. Ideation (2/2) [AARON]

Martin-Kelly et al., Computer, Ch. End of 2, 3-4. [read for overview]

Davis, Engines of Logic, ch 7. [Read this with some care, after you read Aspray and Martin-Campbell quickly for the overview.]

Priestley, Science of Operations, ch6
Turing, “On Computable Numbers,” 58-63 [end before the math gets involved if you want]


Session 4. Information: Business, Theory, Retrieval (2/9) [Joonwoo]


James Gleick, The Information, ch. 7. [basic intro]


Colin Burke, readings TBA.

Bush, "As We May Think" (1945)

Session 5. Cold War (2/16) [Benedict]

Campbell-Kelley and Aspray, Computer, ch. 7.

“Semi-Automatic Ground Environment (SAGE)”


Workshop: First thoughts on topic, questions, historical sources. In picking a topic, be sure to have a historical question in mind. You will not be bound to this topic and your comments can be quite informal.

Session 6.    Cybernetics and political economy (2/23) [DANIELLE]

Norbert Wiener, Cybernetics; The Human Use of Human Beings, pp. 30-44, 116-132, 155-165.


WORKSHOP
Thesis paragraph, with hypothesis at the top, supporting sub-hypotheses below, all in analytic form. No statement is allowed without "because" or some such explanatory material. No description or narrative permitted.

Session 7.    Organizing coding (3/1) [EFRAT]


Nathan Ensmenger, The Computer Boys Take Over (MIT, 2010), chs 1-3, 6-9.


Session 8.    Silicon Valley (3/8) [ELENA]


Session 9. **SPRING BREAK (3/15)**

Session 10. **Toward the PC: Heroes and Hippies (3/22) [DANIELLE T]**


Campbell-Kelly et al. *Computer*, ch. 10


Session 11. **Arpanet to Internet (3/29) [to be rescheduled]**
(Review Kelty on ISO vs. TCP/IP)

http://www.isoc.org/internet/history/brief.shtml


Session 12. Visualization and Human Computer Interaction [Eduardo] (4/5)

JCR Licklider, “Man-Computer Symbiosis,” *IRE Transactions on Human Factors in Electronics*, volume HFE-1, pages 4-11, March 1960 DEC Archives

ADDITIONAL READINGS TO BE ANNOUNCED

WORKSHOP
Sentence outline (at minimum): thesis plus major stages in argument all sentences are hypotheses, not descriptions. Goal is the architecture of the argument. No statement is allowed without "because" or some such explanatory material. No description or narrative permitted.

Session 13. Changing Epistemologies: Proof and Models (4/12) [EAMONN]

Galison, *Image and Logic*, ch. 8 “Monte Carlo Simulations”


Paul Edwards, *A Vast Machine* (MIT Press, 2010), chs. 7 (skim technical parts), 11-13, 15, conclusion;


**Session 14. “Big Data” (4/19)**


Jones, Matthew. “Querying the Archive.” (forthcoming)

Frank Pasqual, *Black Box Society*, selections

**Session 15. Cyberwar, encryption and surveillance (4/26) [PETER]**

[READINGS FORTHCOMING]

Diffie and Landau, “And then it all changed,” *Privacy on the Line*, (MIT), ch. 10


**Books to purchase**

History G8479: Information—Computing—Infrastructure 7
Ordered at Book Culture, 112th St.

Chris Kelty, *Two Bits* (Duke, 2009),


Nathan Ensmenger, *The Computer Boys Take Over* (MIT, 2010),

Janet Abbate, *Inventing the Internet* (MIT Press 1999),


**Evaluation**

Every student will complete the “workshop” assignments.

Development of a thesis topic, over the course of the semester, in the workshop sessions. This will culminate in a 15-20 page research paper. Each student will take on a presentation.

**Grading breakdown**

30% participation
15% small assignments leading to final project
10% presentation of one section
45% final project (15-20 pp. paper OR equivalent iPython research notebook or other dh project)

**Intellectual integrity:**

The intellectual venture in which we are all engaged requires of faculty and students alike the highest level of personal and academic integrity. As members of an academic community, each one of us bears the responsibility to participate in scholarly discourse and research in a manner characterized by intellectual honesty and scholarly integrity.

Scholarship, by its very nature, is an iterative process, with ideas and insights building one upon the other. Collaborative scholarship requires the study of other scholars’ work, the free discussion of such work, and the explicit acknowledgement of those ideas in any work that inform our own. This exchange of ideas relies upon a mutual trust that sources, opinions, facts, and insights will be properly noted and carefully credited.
In practical terms, this means that, as students, you must be responsible for the full citations of others’ ideas in all of your research papers and projects; you must be scrupulously honest when taking your examinations; you must always submit your own work and not that of another student, scholar, or internet agent.

Any breach of this intellectual responsibility is a breach of faith with the rest of our academic community. It undermines our shared intellectual culture, and it cannot be tolerated. Students failing to meet these responsibilities should anticipate being asked to leave Columbia.

Disability-Related Accommodations:

To receive disability-related academic accommodations, students must first be registered with Disability Services (DS). More information on the DS registration process is available online at [www.health.columbia.edu/ods](http://www.health.columbia.edu/ods). Faculty must be notified of registered students’ accommodations before exam or other accommodations will be provided. Students who have (or think they may have) a disability are invited to contact Disability Services for a confidential discussion at (212) 854-2388 (Voice/TTY) or by email at disability@columbia.edu.