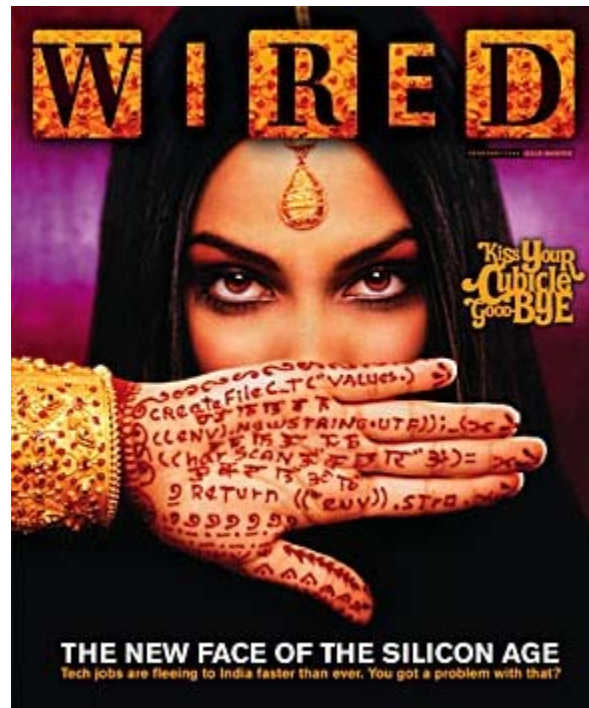Dr. Rebecca Slayton, Lecturer in STS
(650) 725-0123 / rslayton@stanford.edu
Bldg. 200-005, Office hours by appointment

# IMAGINING THE COMPUTER, WIRING THE WORLD (STS 180)



## Objectives

This is a class about the relationship between information technology and the stories we tell about it. We will critically examine five overlapping stories, with the aim of understanding how they have shaped, and been shaped by, technological changes. The course treats the past seventy years of computing somewhat chronologically, but it is primarily organized around the ebb and flow of key ideas about computing.

- *Machines Taking Over.* To what extent have machines replaced and reshaped human activities and experience? Computers have long been promoted as labor-saving devices, offering employers the opportunity to cut costs (and employees). Dystopian science fiction such as Kurt Vonnegut's *Player Piano* amplified this theme. The widespread adoption of computers in the workplace eventually brought transformations, but not necessarily the ones that employers expected.
- *Becoming Cyborgs*. Why do humans experience a real-time, symbiotic relationship with their computers? Early computers were really just giant calculators, but a few influential individuals dreamed of a human-machine symbiosis, or a cyborg. We will discuss where these visions came from, and how they contributed to the rise of more "personal" computing.

- ***Hidden Risks.*** Has computerization reduced or created new risks for society? The most innovative kinds of computing grew out of Cold War anxieties about nuclear war. Computers were designed to solve problems that no human could. But by the late 1960s, the tables had turned: computers themselves seemed risky. We will discuss the emergence of discourse about these risks, and the recurrence of this theme in events ranging from military disasters to the Toyota recall.
- ***Virtual Community.*** What notions of community have shaped computer networking and the rise of mobile communications? How, in turn, have our social selves changed with the rise of the internet and mobile technology? We will discuss the historical rationale for creating computer networks, and the unexpected consequences of modern connectivity.
- ***A World Without Borders.*** Have information and communications technologies created a world without borders? In what ways do these technologies enable new political movements and transformation, and in what ways do they reinforce existing power relations? We will discuss the influence of new media on the practices of producing and consuming news, running political campaigns, as well as the multiple ways that geographic locality continues to uphold traditional forms of governance.

We will consider how these stories are a part of the "mutual shaping" of technology and society. That is, we will examine how technology is shaped by social interests, visions, and practices, and how technology in turn shapes social values and practices.

## Course Materials

Most of the course materials will be available online through CourseWork, with the exception of readings from the following books:
- Martin Campbell-Kelly and Bill Aspray, *Computer: a history of the information machine* (New York: Basic Books, 1996).
- Tracy Kidder, *The Soul of a New Machine* (New York: Modern Library, 1997).

Non-circulating copies of these books may be found and read in the Lane Room in Green Library. They are part of the HAS-DIGIT collection; see http://library.stanford.edu/depts/green/about/rooms/lane/lanecollections.html for a guide to location. Green Library also has several circulating copies of *Computer* and *Soul of a New Machine*, and I will place copies of each on reserve upon request. All three of these books are available through Amazon.com at reasonable cost.

*Computer* provides an excellent survey of the development and use of information technology, with an emphasis on the second half of the twentieth century. It was written by two scholars for a general audience, with an emphasis on developments that we take for granted today (i.e. the personal computer and world-wide web). The style is oriented towards analysis rather than story-telling.

*Soul of a New Machine* is a popular non-fiction book written by a talented journalist. It tells the story of the development of the first minicomputers in the 1970s. Though this may seem dated,

the issues discussed remain pertinent to computer workers today, and the book continues to sell in volume.

# Requirements And Grading

**Reading Responses (25%)**
Required readings will average between 100-150 pages per week. As a guide, I have included the total pages of required reading for each class meeting in the schedule below. However, numbers can be deceptive, as the longer readings tend to be written for popular audiences, and come with short pages and quite entertaining prose. Some of the shorter readings may actually take more time and thought. I will post some discussion questions in advance of class to help guide you in the reading.

A short response, summarizing the reading and posing questions of your own, is due 24 hours in advance of each class meeting. Late responses may help you prepare for class, but they will not receive credit. Do your best to *synthesize* ideas from multiple readings, not to treat each of them individually. Ask yourself: what is the main theme that runs through these readings? How do they agree, or disagree, with one another? Sometimes it helps to look for the sentence that you think best captures the central theme, quote it, and explain why you chose that as central.

These short responses are not to be a recitation of every detail of the reading (you are encouraged to skim). They are also not to be a response to all (or even any) the questions that I will pose online. They ARE to be a demonstration of your original analysis and response to the assigned readings.

**Class Discussion (25%)**
Some of the questions that you post online will be used for in-class discussion. When you come to class, be prepared to participate actively, explaining your own questions, listening to the questions of others, and posing possible answers.

One absence will be excused, no questions asked. The second and all subsequent absences will be excused only if an illness or other personal matter requires the absence, AND permission is requested in advance, AND a 1-2 page response to the day's reading and questions is submitted within one week of the class meeting that is missed.

**Final Paper and Presentation (50% Total)**
There is no final exam in this class. Instead, a research paper (approximately 3000-6000 words in length) will be due at the end of finals period. The paper must treat the history of an artifact, social movement, or other aspect of modern computing, and must explicitly consider the mutual shaping of society and technology. That is, it should show how technology has shaped social practices, and how social practices have in turn shaped technology. Possible topics might include:
- iTunes
- Video games
- The one laptop per child program

- The Free Software movement
- Software outsourcing
- Text messaging
- Social networking websites (i.e. Myspace, Facebook, or SixDegrees)
- Virtual Reality games (i.e. SimCity)
- Open journal software
- Amazon.com

These are NOT your only options – just some suggestions.

The research paper is worth 50% of the final class grade, and it consists of four parts:
- Paper proposal: 10% final class grade, due Friday, April 17
- Draft Paper: 15% final class grade, due Friday, May 15
- Final Paper: 15% final class grade, due Wednesday, June 10
- Final Presentation: 10% final class grade, due Wednesday, June 10

For a more detailed description of each part of this assignment, see the "Materials" section of CourseWork.

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# READING AND DISCUSSION SCHEDULE

*Subject to Small Changes—Dates to be revised for Future Quarter*

**Tuesday, 3/3: Introduction**

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# MACHINES TAKING OVER

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**Thursday 4/1: When Computers were Women**

Required Reading [68 pages]
- "Inventing the Computer," Chapter 4 in *Computer*, 79-104.
- Jennifer Light, "When Computers Were Women," *Technology and Culture* 40 (1999): 455-483.
- ENIAC Press Release - February 16, 1946.
- Edmund Callis Berkeley, "The Future: Machines that Think, and What they Might Do for Men," in *Giant Brains*: *Machines That Think* (New York: John Wiley & Sons, 1949), 180-195.

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**Tuesday 4/6: Conservative Revolutions: IBM and the Seven Dwarfs**

Required Reading [49 pages]

- "The Computer Becomes a Business Machine," Chapter 5 in *Computer*, 105-130.
- "The Maturing of the Mainframe," Chapter 6 in *Computer*, 131-153.
- D.A.Jardine, "Obituary for Operating System/360," August 9, 1972. http://ldworen.net/fun/os360obit.html

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**Thursday 4/8: "Systems Men" and "Computer Boys"**

Required Reading [35 pages]
- Nathan Ensmenger, "Letting the Computer Boys Take Over: Technology and the Politics of Organizational Transformation," *International Review of Social History* 48 (2003): 153-80.
- Thomas Haigh, "Software in the 1960s as Concept, Service, Product," *IEEE Annals of the History of Computing* 24, no. 1 2002): 5-13.
- (OPTIONAL) Thomas Haigh, "Inventing Information Systems: The Systems Men and the Computer, 1950-68," *Business History Review* 75 (2001): 15-61.

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# BECOMING CYBORGS

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**Tuesday 4/13: Computing in Real-time**

*Special Discussion with Dr. Henry Lowood, Curator of Stanford's Special Collections in the History of Science and Technology*

Required Reading [70 pages]
- Paul Edwards, "SAGE," Chapter 3 in *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge, MA: MIT Press, 1996), 72 -111.
- "Reaping the Whirlwind," Chapter 7 in *Computer*, 157-181.

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**Thursday 4/15: Human-Machine Symbiosis**

Required Reading [69 pages]
- "The Phenomena Surrounding Computers," Ch 6 in *The Dream Machine,* 196-258.
- JCR Licklider, "Man-Computer Symbiosis," *IRE Transactions on Human Factors in Electronics,* volume HFE-1, pages 4-11, March 1960.
- "Computer design from the programmer's viewpoint," AFIPS Joint Computer Conferences Papers and discussions presented at the Eastern Joint Computer Conference: Modern computers: objectives, designs, applications, Philadelphia, Pennsylvania, December 3-5, 1958, pages 46-51. http://portal.acm.org/citation.cfm?doid=1458043.1458055

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**Tuesday 4/20: Soul of a New Machine**

Required Reading [125 pages]
- "New Modes of Computing," Chapter 9 in *Computer*, 207-229.
- Tracy Kidder, Chapters 1-3, 5, 12-13 and 15 in *The Soul of a New Machine* (Boston: Little, Brown, 1981), 1-66, 86-110, 221-248 and 268-276.

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**Thursday 4/22: Getting Personal**

Required Reading [86 pages]
- Sherry Turkle, "Hackers: Loving the Machine for Itself," Chapter 6, pages 196-238 in *The Second Self: Computers and the Human Spirit* (New York: Simon and Schusters, 1984) http://quod.lib.umich.edu/cgi/t/text/text-idx?c=acls;idno=heb01158
- "The Shaping of the Personal Computer," Chapter 10 in *Computer*, 238-258.
- "The Shift to Software," Chapter 11 in *Computer*, 259-82.

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# HIDDEN RISKS

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**Tuesday 4/27: What Software Crisis?**

Required Reading [~50 pages]
- Debate over Formal Proof, 1977-8
  - "Social processes and proofs of theorems and programs," Proceedings of the 4th ACM SIGACT-SIGPLAN symposium on Principles of programming languages, 1977. 206 – 214. http://portal.acm.org/citation.cfm?id=512970
  - Objections from Dijkstra *Software Engineering Notes*, 3(2), 14-16 http://portal.acm.org/citation.cfm?doid=1005888.1005890
  - Response of DeMillo, Perlis, Lipton *Software Engineering Notes*, 3(2), 16-17 http://portal.acm.org/citation.cfm?id=1005888.1005891
- Fred Brooks, "Preface," "The Tar Pit," and "The Mythical Man-Month," in *The Mythical Man-Month: Essays on Software Engineering, 20th Anniversary Edition*. (Reading, MA: Addison-Wesley, 1995), 1-28.
- Fred Brooks, "No Silver Bullet—Essence and Accidents of Software Engineering," *Information Processing 86*. H.J. Kugler, ed. Amsterdam: Elsevier Science Publishers B.V. (North Holland): 1069-1076. (Invited paper, International Federation of Information Processing (IFIP) Congress '86, Dublin, Ireland, September 1986.) Available online.
- OPTIONAL: "Software," Chapter 8 in *Computer*, 181-205.

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**Thursday 4/29:** *Wargames* (1983)

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**Friday 4/30: Paper Proposal Due**

**Tuesday 5/4: Safety Critical Systems**

*Discuss Wargames*

Required Reading [120 pages]
- Gene Rochlin, *Trapped in the Net: The Unanticipated Consequences of Computerization*, Chapters 7-10 (Princeton University Press, 1997), pp 108-184. http://press.princeton.edu/books/rochlin/
- Peter Singer, *Wired for War*, (New York: Penguin Press, 2009), pp 315-359.

# VIRTUAL COMMUNITY

**Thursday 5/6: Creating the Intergalactic Network**
Required Reading [64 pgs]
- Janet Abbate, "White Heat and Cold War: The Origins and Meanings of Packet Switching," and "The Most Neglected Element: Users Transform the Internet," Chapters 1 and 3, pages 7-41, 83-112 (Cambridge, MA: MIT Press, 1999).

**Tuesday 5/11: From Counterculture to Cyberculture**
Required Reading [56 pages]
- Fred Turner, "Virtuality and Community on the WELL," Chap. 5 in *From Counterculture to Cyberculture* (Chicago: U. of Chicago Press, 2006), 141-74.
- William Gibson, "Burning Chrome," in *Burning Chrome* (New York: Ace Books, 1986) 168-191.

**Thursday 5/13: Life on, and off, the Screen: Social Identity and the Internet**
Required Reading [37 pages]
- Sherry Turkle, "Tiny Sex and Gender Trouble," Chapter 8 of *Life on the Screen: Identity in the Age of the Internet* (Simon and Schuster, November 1995), pp 210-232.
- Michael Hardey, "Life beyond the screen: embodiment and identity through the internet," *The Sociological Review*, Volume 50, Number 4, November 2002 , pp. 570-585(16)

**Tuesday 5/18: Constant Contact, Constant Absence**
Required Reading [52 pages]
- Gerard Goggin, "Making Voice Portable: the Early History of the Cell Phone," Chapter 2, pp 19-40. *Cell Phone Culture: Mobile Technology in Everyday Life* (Routledge, 2006).

- Sherry Turkle, "Always On, Always On You," Chapter 10, pp 121-138 in *Handbook of Mobile Communications Studies*, James Katz (ed) (Cambridge, MA: MIT Press, 2008) http://library.books24x7.com/toc.asp?bookid=26390
- Kenneth J. Gergen, "The challenge of absent presence," Chapter 14, pp 227-41 in James Katz, *Perpetual Contact: Mobile Phones, Private Talk, Public Performance* (Cambridge University Press, 2002) http://lib.myilibrary.com/browse/open.asp?id=43045&loc=

# A WORLD WITHOUT BORDERS

## Thursday 5/20: The Old-New Economy
Required Reading [60+ pages]
- Fred Turner, "Wired" Ch 7 *From Counterculture to Cyberculture,* (Chicago: University of Chicago Press, 2006), 207-236.
- Esther Dyson, George Gilder, George Keyworth, and Alvin Toffler "Cyberspace and the American Dream: A Magna Carta for the Knowledge Age," Progress and Freedom Foundation (1994) http://www.hartford-hwp.com/archives/45/062.html .
- Langdon Winner, "Cyberlibertarian Myths and the Prospects for Community," *ACM SIGCAS Computers and Society* 27, No. 3 (1997): 14-19.

## Friday 5/21 Draft Paper Due

## Tuesday 5/25: Governing a Borderless World
Required Reading [86 pages]
- Jack Goldsmith and Tim Wu, *Who Controls the Internet? Illusions of a Borderless World* Chapter 1-5, p 1-85 (Available to Stanford-affiliated users online at: http://site.ebrary.com/lib/stanford/docDetail.action?docID=10160558

## Thursday 5/27: Liberation Technology?
Required Reading [31 pages]
- Mohammad Ibahrine "Mobile Communication and Sociopolitical Change in the Arab World," Chapter 19, pp 257-72, in *Handbook of Mobile Communications Studies*, James Katz (ed) (Cambridge, MA: MIT Press, 2008) http://library.books24x7.com/toc.asp?bookid=26390
- Daniel Kreiss, "Developing the 'Good Citizen': Digital Artifacts, Peer Networks, and Formal Organization During the 2003-2004 Howard Dean Campaign." *Journal of Information Technology and Politics,* 6(3): 281-297, 2009.

## Tuesday 6/1: New Media News
Required Reading [40 pages]

- Pablo Boczkowski, "Technology, monitoring and imitation in contemporary news work," *Communication, Culture & Critique, 2* (2009): 39-58. http://www3.interscience.wiley.com/cgi-bin/fulltext/122234941/PDFSTART
- Susan Douglas, "The Turn Within: The Irony of Technology in a Globalized World," *American Quarterly* 58, No. 4 (2006): 619-638.

**We are often told** that we are living in an "Information Age," and indeed, this is a truth that seems self-evident: communications and information technologies increasingly pervade our homes, our workplaces, our schools, even our own bodies. But what exactly do we mean when we talk about the "Information Age"? If we are living in an Information Age, when did it begin? What developments — social, economic, political, or technological — made it possible? How does it differ from earlier eras? And finally, and most significantly: what does it all mean?

This course will explore the ways in Western, industrialized societies, over the course of the previous two centuries, came to see information as a crucial commercial, scientific, organizational, political, and commercial asset. Although at the center of our story will be the development of new information technologies — from printing press to telephone to computer to Internet — our focus will not be on machines, but on people, and on the ways in which average individuals contributed to, made sense of, and come to terms with, the many social, technological, and political developments that have shaped the contours of our modern Information Society. Our goal is to use these historical perspectives to inform our discussions about issues of contemporary concern about information technology.

# The Information Age

Science, Technology, and Society • STSC-160
Professor Nathan Ensmenger
nathanen@sas.upenn.edu

# STSC 160: The Information Age

Professor Nathan. Ensmenger
362 Claudia Cohen Hall
Office Hours: M 9-11 am, T 1:30-2:30 pm
nathanen@sas.upenn.edu

### Teaching Assistants:

Rachel Elder (relder@sas.upenn.edu)
Andrew Hogan (ahog@sas.upenn.edu)
Lisa Rand (lisarand@sas.upenn.edu)

### Course Format:

The Information Age course meets on Tuesdays and Thursdays from 12-1:30 in the Claudia Cohen Auditorium (G17). To the degree possible with such a large course, our meetings will be a mixed lecture-discussion format. Our Tuesday session will typically introduce our week's topic; Thursday will provide further development, as well as an opportunity to talk about the readings and answer any questions that you might have. You should have prepared the readings in advance for the Thursday session.

Attendance in the course is more than usually mandatory. Since there is no textbook for the course, it is absolutely essential that you attend the lectures. I make extensive use of images, audio, and video. Although I will make some of this material available on the course Blackboard site, much of it will be available only during class. If you do need to miss class please let me or one of the TAs know in advance.

Grading in this class will be based on four major components: two short response papers (20%), a longer primary-source research paper (20%), an in-class mid-term (30%), and a final exam (30%).

### Required Readings:

The one required book for this course is available at the Penn Bookstore (or online):

Ensmenger, Nathan. *The Computer Boys Take Over: Computers, Programmers, and the Politics of Technical Expertise* (MIT Press, 2010)

All of the other readings for this course will be made available electronically via the course Blackboard site or will be distributed in-class.

**This course fulfills the General Requirement in Sector IV: Humanities and Social Sciences.**

<h1 style="text-align:center">Course Schedule</h1>

## I  Introduction

### September 9: Information, Data, Knowledge
No readings this week.

## II  The Age of Information

### September 14: Gutenberg, Galileo, Google
### September 16: Books, Coffee, Revolution

Cook, Scott D.N. "Technological Revolutions and the Gutenberg Myth." In *Internet Dreams: Archetypes, Myths, and Metaphors*, edited by Mark Stefik. Cambridge, MA: MIT Press, 1997.

Powers, William. *Hamlet's Blackberry: Why Paper Is Eternal*, Harvard University Shorenstein Center on the Press, Politics and Public Policy, 2007.

## III  Revolutionary Information

### September 21: Spreading the News
### September 23: The Politics of the Post-Office

Henkin, David. "Embracing Opportunities: The Construction of the Personal Letter," *The Postal Age The Emergence of Modern Communications in Nineteenth-Century America* (2007)

John, Richard. "Recasting the Information Infrastructure for the Industrial Age." In *A Nation Transformed by Information: How Information Has Shaped the United States from Colonial Times to the Present* (2000)

## IV  Industrializing Information

### September 28: Information Factories
### September 30: When Computers Were Human

Croarken, Mary. "Tabulating the Heavens: Computing the *Nautical Almanac* in 18th-Century England," *Annals of the History of Computing* 25:3 (2003), pp. 48–61.

Aspray, William and Martin Campbell-Kelly. "Babbage's Dream," *Computer: A History of the Information Machine* (1996)

## V  When Information is Power

### October 5: From Ad Men to Big Brother
### October 7: Popular Cinema, Mass-Market Music, Intellectual Property

Douglas, Susan. "Popular Culture and Populist Technology," in *Inventing American Broadcasting* (Johns Hopkins University Press, 1987).

Gladwell, Malcolm. "The Science of Shopping." *New Yorker* (Nov. 4, 1996)

## VI  Information Regurgitation

### October 14:  Mid-Term

**In-class mid-term:** covers weeks 1–5.

## VII  War: what is it good for?

### October 19:  Giant Brains; or, Machines that Think
### October 21:  Build your own Computer!

Edwards, Paul. *The Closed World: Computers and the Politics of Discourse in Cold War America* (1996), Chp. 2 "Why Build Computers? The Military Role in Computer Research," pp. 43-73.

## VIII  The Computerization of Society

### October 26:  IBM and the Seven Dwarves
### October 28:  Software Revolution

Ensmenger, Nathan. *The Computer Boys Take Over: Computers, Programmers, and the Politics of Technical Expertise* (MIT Press, 2010). Chapters 1-3.

## IX  Silicon Valley 1.0

### November 2:  Silicon Valley 1.0
### November 4:  Simulations, Simulacra, and the Matrix

Ensmenger, Nathan. *The Computer Boys Take Over: Computers, Programmers, and the Politics of Technical Expertise* (MIT Press, 2010). Chapters 5-7, 9.

## X  From Hippies to Hackers

### November 9:  From Videotext to Videogames
### November 11:  Triumph of the Nerds

Turkle, Sherry. "Hackers: Loving the Machine for Itself" from *The Second Self: Computers and the Human Spirit* (Simon & Schuster, 1984).

De Lacy, Justine. "The Sexy Computer." In *Computers in the Human Context*, edited by Tom Forrester. Cambridge, MA: MIT Press, 1989.

Buckingham, David. "Studying computer games" in Diane Carr et al., *Computer games: Text, narrative and play* (Polity, 2006)

## XI   Great Myths in the History of Computing

**November 16: No one expects the Computer Revolution . . .**
**November 18: Apple, IBM, Microsoft**

Aspray, William and Martin Campbell-Kelly. "The Shaping of the Personal Computer," "Broadening the Appeal," "From the World Brain to the World-Wide Web." *Computer: A History of the Information Machine* (1996). Chapters 10-12.

**Now Showing**: Triumph of the Nerds Documentary

## XII   Origins of the Internet

**November 23: ARPAnet to Internet**

Abbate, Janet. *Inventing the Internet* (MIT Press 1999), Chapters 1-2.

## XIII   Cyberspace(s)

**November 30: The Architecture of the Internet**
**December 2: Code is Law**

Lessig, Lawrence. *Code, and other Laws of Cyberspace*. Basic Books, 1999. Chapters 4-5.
boyd, danah. "Viewing American class divisions through Facebook and MySpace ." *Apophenia Blog Essay*. June 24, 2007.

**Artifact Assignment**: Primary source analysis of the early history of the PC.

## XIV   Red Pill, Blue Pill . . .

**December 7: The Information Revolution Revisited**
**December 9: Big Finish**

Winner, Langdon. "Mythinformation," from *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (1986), pp. 98–117.
Goldsmith, Jack and Wu, Timothy. *Who Controls the Internet?: Illusions of a Borderless World*. Oxford University Press, 2006. Selected excepts.

**Final Exam Information:**
The final exam for this course is scheduled for Monday, December 20th from 12-2 pm. Further information will be provided as the Registrar's office makes it available.

**Stevens Institute of Technology**
**College of Arts & Letters**
**Program in History**

| HSS 371: Computers & Society | |
|---|---|
| Dr. Andrew L. Russell | |
| | |
| email: arussell at stevens dot edu | Office Telephone: 201-216-5400 |
| Office Hours: Thursday 1.50-2.50 pm and by appointment | Office: Morton 329 |

**FALL 2010**
371 A: Wednesday 9.00-11.50 am
Classroom: Burchard 124
371 B: Thursday 9.00-11.50 am
Classroom: Babbio 220

## Link to Schedule, Reading List, and Assignments

## Course Description and Goals:

Winston Churchill once said "We shape our buildings; thereafter they shape us." The goal of this course is to apply Churchill's insight to understand the social aspects of computing. Topics will include the history of computers and the Internet, the effect that the Internet has on our brains and ways of thinking, ethical issues in computing, and policy debates over privacy, intellectual property, antitrust, the global digital divide, and the "openness" of computers and networks.

HSS 371 has the following course goals:

- Enrich your understanding of the history of computing and networks.
- Think in greater depth about some ethical dilemmas of computing.
- Become familiar with debates over the role of computers in thinking and learning.

These goals are designed to contribute to the mission of the College of Arts & Letters as well as the outcomes of the BS program in Computer Science.

Specifically, HSS 371 seeks to advance the mission of the College of Arts & Letters in the following ways:

- Promote ethical responsibility and awareness of the societal impact of one's future profession.
- Improve writing and/or public speaking skills.

Additionally, HSS 371 contributes to four of the outcomes for students in the Stevens BS in Computer Science:

- Write and present technical reports at a level expected of the software engineering profession.
- Know about ethical problems that face computer scientists and software engineers.
- Analyze the local and global impact of computing on individuals, organizations and society.

- Exhibit an ability to think and argue critically on issues that are social, historical, literary and artistic; demonstrate a basic level of skills in communication and logical analysis.

**Textbooks to purchase** (available at the campus store):

Nicholas Carr
*The Shallows: What the Internet is Doing to Our Brains*
W. W. Norton & Company (2010)
ISBM-10: 0393072223

Pekka Himanen
*The Hacker Ethic: A Radical Approach to the Philosophy of Business*
Random House Trade Paperbacks (2002)
ISBN-10: 037575878X

## Humanities Resource Center:

If you want assistance writing your papers, you should ask for help well ahead of the paper's due date. For more information, get in touch with me and/or visit the Writing & Communications Center at Stevens in Morton 210 (Office Hours M-F 1-5 pm).

## Honor Board Policies:

You should by now be familiar with The Honor System at the Stevens Institute of Technology. It is your responsibility to uphold the ideals set forth in the Honor System Constitution. Specific student responsibilities include:

- Maintaining honesty and fair play in all aspects of academic life at Stevens;
- Writing and signing the pledge, in full, on all submitted academic work;
- Reporting any suspected violations to an Honor Board member or to the Dean of Student Development;
- Cooperating with the Honor Board during investigations and hearings.

If you ever have questions about how to interpret the Honor System in relation to your work in my class, please get in touch with me.

## Students with disabilities:

If you require special accommodations due to a disability, or if you need individual arrangements should the building be evacuated, you must inform the office of Student Counseling and Psychological Services, Dr. Terence Hannigan, Director, in the Howe Center, 7th floor (x5177), and complete the Faculty Contact Form. Once you have done so, you should ask to meet with me so that we can work out any special arrangements that may be necessary.

## Grades and Course Policies:

Attendance is mandatory. Any absences must be accounted for by notifying me *before* the start of class. Otherwise I will need verification from an outside authority (i.e., doctor, coach, another professor) explaining why it was necessary for you to miss class. Cell phones should either be turned off or silenced. Computer use should be related to what we are doing in class. Any students in violation of these simple rules will be marked as absent for that particular class.

Grades will be based on the following criteria:

- Participation (30%)
    - Attendance
    - Weekly reading responses
    - Current events responses (every other week)
- Midterm and final exams (20% each)
- 3-part book assignment (30%)
    - 500-word book review
    - class presentation
    - 2000-word review essay

Percentages are approximate. I will determine final weights at the end of the course. I reserve the right to give pop quizzes.

**Link to Schedule, Reading List, and Assignments**

## HSS 371: Computers & Society

## Schedule, Reading List, & Assignments:

The schedule and assignments are subject to change during the semester. If you rely on a printed version of this schedule, please check back here regularly to make sure you have the most current version.

Last revised: September 14, 2010

**Back to Syllabus Main Page**

| Date | Topic | Reading Assignment | Assignment |
|---|---|---|---|
| **Week One**<br>Sept. 1 and 2 | **Introduction** | | |
| **Week Two**<br>Sept. 8 and 9 | **Digital Nation** | 1. Mark Helprin, "The Acceleration of Tranquility" (eLearn)<br><br>2. Watch *Digital Nation* and explore the website, http://www.pbs.org/wgbh/pages/frontline/digitalnation/ | *Reading response 1 due* |
| **Week Three**<br>Sept. 15 and 16 | **Computer History** | 1. Rheingold, Tools for Thought, chapters 1-6<br><br>2. Pfaffenberger, Social Meaning of the Personal Computer<br><br>3. Explore some Computer History websites | *Reading response 2 due* |
| **Week Four**<br>Sept. 22 and 23 | **Internet History** | Everyone read: Rheingold, Tools for Thought, chapter 7; and Licklider, Man-Computer Symbiosis.<br><br>GROUPS:<br>1. Pelkey, Entrepreneurial Capitalism and Innovation: A History of Computer | *Reading response 3 due* |

Communications, 1968-1988

2. Hauben, History of ARPANET

3. Abbate, Government, Business, and the Making of the Internet; and Abbate, Privatizing the Internet (eLearn)

4. Russell, "Rough Consensus and Running Code"; and Tao of the IETF

5. Shaiman, Political Economy of OSI (eLearn)

6. History of the WWW

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| **Week Five** Sept. 29 and 30 | **Regulation and Policy I: Antitrust** | Weiser, Regulating Interoperability | *Reading response 4 due*<br><br>*Book selection due* |
| **Week Six** Oct. 6 and 7 | **The Shallows I** | Carr, *The Shallows*, beginning through page 114. | *Reading response 5 due* |
| **Week Seven** Oct. 13 and 14 | **The Shallows II** | Carr, *The Shallows*, page 115 to the end. | *Reading response 6 due* |
| **Week Eight** Oct. 20 and 21 | **Online Communities** | 1. Facebook (see links page)<br><br>2. Whatever happened to Second Life?<br><br>3. Twitter (readings TBA)<br><br>4. Reagle on Wikipedia<br><br>5. Why Craigslist is such a mess | Midterm exam due |

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| **Week Nine**<br>Oct. 27 and 28 | **Student Presentations I** | | Book review due |
| **Week Ten**<br>November 3 and 4 | **Regulation and Policy II: Autonomy and Global Justice** | 1. Privacy: Selections from Nissenbaum, *Privacy in Context*<br><br>2. International Development (readings TBA)<br><br>3. Information Labor: Lazonick and Downey (eLearn)<br><br>4. Information Technology and Health (readings TBA) | *Reading response 7 due* |
| **Week Eleven**<br>Nov. 10 and 11 | **Computer Ethics** | 1. Nissenbaum, How Computer Systems Embody Values<br><br>2. Ensmenger, "Computers as Ethical Objects"<br><br>3. Selections from Johnson, *Computer Ethics* (eLearn) | *Review essay bibliography due* |
| **Week Twelve**<br>Nov. 17 and 18 | **The Hacker Ethic** | Himanen, *The Hacker Ethic*, entire book. | *Reading response 8 due* |
| Nov. 24 and 25 | **No Class - Thanksgiving Break** | | |
| **Week Thirteen**<br>Dec. 1 and 2 | **Regulation and Policy III: Security and Intellectual Property** | 1. Lessig, The Creative Commons<br><br>2. Browse http://creativecommons.org/<br><br>3. *Steal This Film II*<br><br>4. Browse Schneier on Security | *Reading response 9 due* |

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| **Week Fourteen**<br>Dec. 8 and 9 | **Student Presentations II** | *Review essay due* |
| | **Take Home Exam** | |

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