

## HSCI 2333/3550

### Inventing the Modern World

Assistant Professor Hunter Crowther-Heyck

Office: PHSC 601      Office Hours: MWF 10:30-12:00 a.m.

Office Phone: 325-6476      Email: [HCH@ou.edu](mailto:HCH@ou.edu)

#### Course Description:

Over the past several centuries humans have constructed and inhabited an increasingly artificial world. As a result, human contact with nature has become increasingly mediated by our technologies. There is a layer between us and the natural world—sometimes many layers—that did not exist in the past. The world of artifice in which we live is more orderly, more controllable, and more predictable than a world where contact with nature is more direct and immediate. Nature cannot ever be totally controlled, however, and many of the challenges facing us today have to do with discovering the limits to our power to control nature. This course will examine some of the key steps in the construction of our artificial, mediated world, paying particular attention to the human dreams, desires, and experiences associated with momentous technological changes.

As we explore the creation and development of this artificial world, we will pay particular attention to three recurring themes: 1) first, we will see that technologies are interfaces between the natural and the artificial, meaning that they must conform to both natural laws and human goals; 2) second, we will see that technologies never exist alone, meaning that they are always parts of extended social and technical networks; 3) and third, we will see that while technologies evolve in incremental steps, sometimes small steps can have wide-ranging effects, especially if the innovation changes the basic processes of transportation, communication, work organization, or energy production and transmission.

#### Course Mechanics

Each week there will be two class meetings. You are expected to attend every class unless you have a family emergency, are ill, or have some other legitimate reason for having to miss class. If you know that you will have to miss a class, you should let me know as soon as possible. Like most professors, I am much more sympathetic to excuses presented **before** rather than **after** the fact. If you have a question or concern, **please talk to me**. Your job in this class is to learn, and my job is to help you do it. Asking questions helps both of us do our jobs better.

Typically, on Tuesdays I will present a lecture intended to provide an overview of the main topic for the week. I will post my lecture notes at the **end** of each week on the course Blackboard site. Thursdays will be devoted to discussion of the week's readings. As a rule, we will break into groups to discuss a set of questions on the readings. At the end of class, the groups will present and discuss their answers. Note that **all** members of the group who were present for a discussion will receive the **same** grade for the group assignment for that day, and that the group grade is based on the **quality of the group discussion** as well as

the quality of the answers. In other words, a group in which everyone participates will get a better grade than one in which only one or two people do all the talking, even if the second group's answers are better. At three points in the semester (the weeks of the two midterms and the last week of class), you will be asked to grade the performance of the other students in your discussion group. The group grading process will be explained in class.

Each Thursday, you will turn in a short homework assignment on the readings for that week, and you will take a short quiz on the material presented in lecture that Tuesday. Note that you will have to take the quiz **before** I post my lecture notes for the week, so you need to take notes yourself to prepare for the quizzes. The lecture notes are posted to help you prepare for the midterms and final exam.

The weekly quizzes will be worth 10 points each, as will the homeworks and group discussion assignments. There will be two midterms, each worth 120 points and a final, worth 240 points. Each midterm will consist of one essay question worth 100 points and a few short answer questions (worth 20 points total). You will be given two or three possible exam essay questions the week before each midterm, one of which will be the actual exam question. Each midterm covers the material since the previous midterm, up to and including the lecture and readings for the week of the midterm. The final will consist of two essay questions, one focusing on the last third of the course and one covering the course as a whole, plus a few short answer questions. (Think of it as a third midterm, plus a cumulative essay.) As with the midterms, you will be given a set of possible exam questions the week before the final, two of which will be the actual exam questions.

#### ***Grade Breakdown for HSCI 2333***

Quizzes (13 total): 130 points = 13%

Homeworks (13 total): 130 points = 13%

Group Discussion Assignments (13 total): 130 points = 13%

Group Discussion Student Grades (3 total): 130 points = 13%

Midterms (2): 240 points = 24%

Final Exam (1): 240 points = 24%

#### **HSCI 3550**

Some students are taking this class as HSCI 3550. The requirements for HSCI 3550 are the same as those for HSCI 2333, with one exception: students taking HSCI 3550 will be expected to turn in a research paper of 10-12 pages in length (2500 to 3000 words) in addition to the other course requirements. The final version of this paper is due in class on **December 7**. I will hand out a style guide later in the semester to aid you in writing the paper. You are expected to turn in a brief (1-2 sentence) **statement of your topic** and the question(s) that interest you about that topic on **October 7**, a **bibliography** related to your paper topic (minimum of 3 substantial sources) on **November 4**, and a **outline** (1-2 pages) on **November 23**. These preliminary assignments will not be graded, but if you fail to turn in an acceptable

topic statement, bibliography, or outline, your final paper grade will be lowered accordingly. This paper will be worth 250 points, meaning that the total possible is 1250 points (instead of 1000 for HSCI 2333).

#### **Books to Buy:**

- 1) John Kasson, Civilizing the Machine, 1<sup>st</sup> Hill Edition (1999).
- 2) Ruth Schwartz Cowan, More Work for Mother, reprint edition (1985).
- 3) Paul Starr, The Creation of the Media, Basic Books (2004).
- 4) David Nye, Electrifying America, MIT Press (1998)
- 5) Jeffrey Meikle, American Plastic, Rutgers University Press (1997)
- 6) Arthur C. Clarke, 2001: a space odyssey, NAL (2000).
- 7) Course Pack for HSCI 2333/3550

All of the above are available at the University Bookstore, except for the Course Pack, which is available at Crimson and Cream in the Student Union.

### **Course Schedule**

#### **Week 1: Course Introduction**

August 24. Course Introduction. What is technology? Why study its history?

August 26. Discussion: technology and society

Readings:

- 1) Langdon Winner, "Do Artifacts Have Politics?" pp. 19-39. **In Course Pack.**
- 2) Melvin Kranzberg, "Technology and History," pp. 544-60. **In Course Pack.**
- 3) Lynn White, selection from Medieval Technology and Social Change, pp. 28-38. **In Course Pack.**

**(Note: because of some problems at the printing center, the Course Pack may not be ready on time. I have put all three of these readings online at the Blackboard site for this course in case the Course Pack is not ready.)**

#### **Week 2: Early Modern Technology and Culture**

August 31. Cathedral, Forge, and Waterwheel: the late medieval background

September 2. Discussion: The "Eotechnic" Era.

Readings:

- 1) Lewis Mumford, selections from Technics and Civilization, pp. 9-18, 107-23. **In Course Pack.**
- 2) David Landes, selections from Revolution in Time, pp. 1-32. **In Course Pack.**

**Week 3: The Revolution of the Word**

September 7. The Printing Press and the Vernacular Bible.

September 9. Discussion: The Revolution of the Word.

Readings:

- 1) Umberto Eco, excerpts from The Name of the Rose, pp. 32-37, 78-93. **In Course Pack.**
- 2) Jane Newman, "The Word Made Print," pp. 95-133. **In Course Pack.**
- 3) Paul Starr, The Creation of the Media, Introduction and Chapter 1, pp. 1-46.

**Week 4: Guns and Sails**

September 14. The Military Revolution.

September 16. Discussion: Exploration and Empire.

Readings:

- 1) Thomas Esper, "The Replacement of the Longbow by Firearms," pp. 382-93. **In Course Pack.**
- 2) Patrick O'Brian, selection from Master and Commander, pp. 120-37. **In Course Pack.**
- 3) Michael Adas, selection from Machines as the Measure of Men, pp. 17-68. **In Course Pack.**
- 4) Barton Hacker, "The Weapons of the West," 43-55. **In Course Pack.**

**Week 5: Iron, Coal, and Steam**

September 21. Iron, Coal, and Steam: the first industrial revolution

September 23. Discussion: industry

Reading:

- 1) John Kasson, Civilizing the Machine, Preface, Chapters 1-2, 4: pp. xii-xiv, 3-106, 139-80.

**Week 6: Iron Ties**

September 28. The Ties That Bound: The Railroad and the West.

September 30. **Midterm #1.**

**Week 7: Everyday Technologies**

October 5. The American System and Everyday Technologies: the Colt Revolver, the Sewing Machine, and the Typewriter.

October 7. Discussion: technology at home.

**HSCI 3550: Turn in topic statements and question(s) for research papers!**

## Readings:

- 1) Ruth Schwartz Cowan, More Work for Mother, Chapters 1-5: pp. 3-150.
- 2) Daniel Boorstin, selections from “The Americans: the Democratic Experience,” pp. 5-30. **In Course Pack.**

**Week 8: Electric Connections**

October 12. The Telegraph and the Telephone.

October 14. Discussion: America Calling.

## Readings:

- 1) *The Once and Future Web*: <http://www.nlm.nih.gov/onceandfutureweb/>
- 2) Paul Starr, The Creation of the Media, Chapter 5, pp. 153-190.
- 3) Claude Fischer, “‘Touch Someone’: the Telephone Industry Discovers Sociability,” pp. 32-61. **In Course Pack.**
- 4) Claude Fischer, “Gender and the Residential Telephone,” pp. 211-233. **In Course Pack.**

**Week 9: Light and Power**

October 19. The Electrification of America.

October 21. Discussion: electricity and the modern world

## Reading:

- 1) David Nye, Electrifying America, Preface, Chapters 1, 2, 4, 6: pp. ix-xi, 1-84, 138-84, 238-86.

**Week 10: The Second Industrial Revolution**

October 26. The Automobile: mass production and the mobile life

October 28. Discussion: the system must come first.

## Readings:

- 1) Henry Ford, “Mass Production,” pp. 38-41. **In Course Pack.**
- 2) Thomas P. Hughes, selection from American Genesis, pp. 184-226. **In Course Pack.**
- 3) James Flink, “The Car Culture,” pp. 124-45. **In Course Pack.**

**Week 11: “Better Living Through Chemistry”**

November 2. Nylon!

November 4. Discussion: plastic America

**HSCI 3550: Turn in bibliographies for research papers!**

## Reading:

- 1) Jeffrey Meikle, American Plastic, Introduction, Chapters 1-4, 7: pp. 1-124, 183-241.

**Week 12: The Media Revolution**

November 9. Photography to Film, Radio to TV

November 11. The Media.

Readings:

- 1) Paul Starr, The Creation of the Media, Chapters 9-11, pp. 295-384.
- 2) Marshall McLuhan, selections from Understanding Media, pp. 3-32. **In Course Pack.**

**Week 13: A Change of Scale**

November 16. Nuclear Power from the Manhattan Project to Three Mile Island

November 18. **Midterm #2.**

**Week 14: A Controlled Environment**

November 23. Artificial Spaces: the modern office building and the mall

**HSCI 3550: Turn in outlines for research papers!**

November 25. Thanksgiving. **No Class.**

**Week 15: Space**

November 30. The Race to the Moon.

December 2. Discussion: technology, progress, evolution

Reading:

- 1) Arthur C. Clarke, 2001: a space odyssey (entire novel).

**Week 16: The Digital Revolution**

December 7. The Digital Dream and the Virtual Life

**HSCI 3550: Research Papers are due!!!**

December 9. Discussion: What is real? What is human?

Readings:

- 1) Group reports on one of the following films: *The Matrix*, *The Truman Show*, *Existenz*, *The Terminator*, *Tron*, *Total Recall*, or *Star Wars* (first series).

**Final Exam: Friday, December 17 from 1:30 to 3:30**