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History of Technology and Engineering in America¹

History 364, Spring 2007

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Office hours: Tuesday, Thursday, 11-12, and by appointment.

Course Description: We will explore the process of technological change along with cultural responses. Through historical analysis we can cultivate awareness of the forces that have shaped technology and hence our society. We look at colonial developments, examine the Industrial Revolutions, and explore the major factors shaping the American style of technology.

Reading:

Ruth Schwartz Cowan, Social History of American Technology

David Nye, Consuming Power

Carol Sheriff, Artificial River

Tom Standage Victorian Internet

electronic reserves

Grades: Your grade will be determined by class participation (25%), three typed 2-3 page reports and discussions (45%), a midterm (15%) and a final (15%). Coherency, grammar, and spelling count on all work, which must be typed. I gladly discuss drafts and outlines and encourage you to discuss your work with others. The work you turn in, however, is your own.² Papers are due at the start of class and the midterm by the end of class in the History Department office. The final is due Wednesday, May 9, at 10 a.m. Late work loses credit.

Participation consists of entering a question raised by the weekly reading into WebCT by 11 p.m. Wednesday and reading your classmates' contributions before class Thursday. In addition to your own posting, feel free to reply to others'. Your weekly grade should be "y/y," indicating you posted a question or comment and read 90% or more of the postings. A "n/5" means you did

¹ The handouts used in this course are copyrighted. By "handouts," I mean all materials generated for this class, which include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these are copyrighted, you do not have the right to copy the handouts, unless I expressly grant permission.

² "An Aggie does not lie, cheat, or steal, or tolerate those who do." You are expected to be aware of the Aggie Honor Code and the Honor Council Rules and Procedures, stated at www.tamu.edu/aggiehonor.

not post anything and read only half the postings. Two other components of participation are engaging in the class discussions and submitting questions for the mid-term and final. Remember, if you do not attend class, it's hard to participate.

For the papers, you should establish a central theme from the book and develop and support it, using concepts from the course where appropriate.³ A 'good faith' outline or paragraph about your paper on WebCT will serve as the basis for class discussion and is worth a grade (i.e., without the outline the B becomes a C). The third paper may be written as fiction (but no romance). For assistance in writing, take advantage of the Writing Center (uwc.tamu.edu).

The final, using the themes discussed in this class, will have the option for you to pose and answer a question about a technology that particularly interests you. Future teachers have the option to develop a lesson plan.

I strongly encourage you to participate in class. Ask questions (the only foolish question is the one not asked). If you are curious about or do not understand something, ask (quite likely you are not alone and others will be grateful). If you have a learning disability or other potential problem, let me know at the start of the course.⁴

I operate under the assumption that you are a mature, responsible adult, which, in the context of this course, means attending class, doing the readings, contributing to and reading WebCT, turning in assigned work on time, and informing me if you are having trouble.

Week 1. August 31 - September 4. What is the history of technology?

Native Americans and the colonists

Myth of the independent farmer

Reading: "Kranzberg's Laws"

"Dare anyone add to Kranzberg?"

"Railroad cars"

"For those born before 1945"

Cowan, 1; Nye, intro

Week 2. September 7-11. Technology and republican ideology: Beginnings of industrialization

Reading: Cowan, 2-3; Nye, 1

³ See <http://www-personal.si.umich.edu/~rfrost/courses/arguing.html> .

⁴The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life Services for Students with Disabilities in Room 126 of the Koldus Building, or call 845-1637.

Week 3. September 14-18. Revolutions in transportation American System of Manufactures and the military. Government as an agent of change.

Reading: Cowan, 4-5; Nye, 2; Sheriff

Week 4. September 21-25. The Civil War as organization, inspiration, and market Telegraphy and communications

Reading: Nye, 3
Standage **outline**

Week 5. September 28-October 2. Second industrial revolution
Problem of overproduction
Urban growth: Sewers, streetcars, and suburbs

Reading: Cowan, 6
Standage **paper** due February 14 in History Office

Week 6. October 5-9. Engineers as agents of change and professionals
Growth of systems: Thomas Edison and Menlo Park

Reading: Cowan, 7; Nye, 4

Week 7. October 12-16. Bicycles and petroleum

Reading: Cowan, 8
Midterm questions, February 27

Week 8. October 19-23. Henry Ford and mass production
Scientific Management

Reading: Cowan, 9; Nye, 5
Midterm due March 8 in History Office

If you are not earning the grade you want to or are otherwise having trouble with this class, please see me when there is still time to change.

Week 9. October 26-30. Industrial research: The invention of invention
Command technologies: Wars as shapers.

Reading: Cowan, 10, Nye, 6

Week 10. November 2-6. State technologies: the Space Race
Computers from Hollereith to HAL

Reading: Cowan, 11

Gore and the Internet (<http://www.h-net.org/~hns/articles/2000/102400a.html>)

Friedel **outline**

Week 11. November 9-13. Consumption junction

Reading: Nye, 7

Friedel **paper**

Week 12. November 16-20. New telecommunications

Reading: Cowan, 12; Nye, 8

Kemper **outline**

Week 13. November 23-25. Alternative technologies
Acceleration of technical change?
Reindustrialization, reinvention and deregulation

Reading: Cowan, 13; Nye, 9

Final questions, April 19

Kemper **paper**

Week 14. November 30-December 4.

Week 15. December 7.

FINAL due **May 9** at 10 a.m.