“We shape our technologies; thereafter they shape us.”

This course surveys the ways in which technology has shaped our societies and our relations with the natural world. We will examine the origins and impact of technical developments throughout human history and across the globe—from stone tools, agriculture, and cave painting to ancient cities, metallurgy, and aqueducts; from windmills, cathedrals, steam engines and electricity to atom bombs, the internet, and genetic engineering. We will pay attention to the aesthetic, religious, and mythical dimensions of technological change, and consider the circumstances in which innovations emerge and their effects on social order, on the environment, and on the ways humans understand themselves.

Fulfills the Sector I: Society Requirement
Professor Nathan L. Ensmenger
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STSC 003: Technology & Society

Professor Nathan L. Ensmenger  
Office Hours: Monday, 1:30-3:30 pm, 362 Claudia Cohen Hall  
nathanen@sas.upenn.edu

Course Format:

The course meets for lecture on Tuesdays and Thursdays from 12-1:30pm in Claudia Cohen G17. Attendance is mandatory. If you do need to miss class please let me or your TA know in advance. Your grade will be based on a mid-term exam (35%), one 7-8 paper based on the Artifact Pack field trip (30%), and a final exam (35%).

Required Readings:

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

Course Schedule:

I Introduction  
January 14: Homo Faber: Man the Maker

II Technology and Civilization  
January 19: On Becoming Human  
January 21: Agriculture, irrigation, ritual, law

McNeill, A World History, pp. 7-21  
Kranzberg and Pursell, Technology in Western Civilization, pp.11-26  
Leroi-Gourhan, Gesture and Speech, 237-245.

III The Wonders of the Ancient World  
January 26: Greeks & Romans  
January 28: China & India

Kranzberg and Pursell, pp.26-66  
Pacey, Technology in World Civilization, Chaps 1-2, pp. 1-37

IV Medieval Machines  
February 2: Agriculture & Textiles  
February 4: Cathedrals  

Gimpel, Jean. The Cathedral Builders (Excerpts).
V  Global Networks & the Roots of Industrialization
February 9: Tea, coffee, and Sailing Ships
February 11: Dark Satanic Mills


Kasson, John. Civilizing the Machine, Ch. 2, “Factory as Republican Community.”

VI  The Annihilation of Space & Time
February 16: Modernity; or, the Joy of Tech
February 18: Working on the Railroad . . .

Eisenstein, “Emergence of the Book Culture in the West,” “The Book of Nature Transformed.”


VII  The Golden Age of Invention
February 23: The Wizard of Menlo Park
February 25: Mid-Term Exam #1

Miller, Francis. Thomas A. Edison: An Inspiring Story for Boys (1931), excerpts.


VIII  The American System
March 2: Arms & Palaces
March 4: The Year of Our Ford


IX  Spring Break!
March 9, 11: Party on.

X  Consumer Cultures
March 18: Department Store
March 20: I want to ride my bicycle . . .

Benson, Susan Porter, Counter Cultures: Saleswomen, Managers, and Customers in American Department Stores 1890-1940, pp. 12–74.
XI  The One Best Way
March 23: Taylorism and the rise of scientific management
March 25: Technologies of control
Frederick W. Taylor, The Principles of Scientific Management, pp. 5-64.

XII Dangerous Technologies
March 30: War is hell. And good for business . . .
April 1: Penicillin, A-bombs, and Birth Control

XIII Technocracy’s Children
April 6: @%#! Hippies!
April 8: Industrial Agriculture, Food Technologies, and the Environmental Movement

XIV Electronica
April 13: Information in Everyday Life
April 15: The Social Construction of the Cell Phone
Readings TBD.
Artifact Pack Paper Due

XV Technology & Ethics
April 20: Viva, Las Vegas!
April 222: Amish Factories

XVI The Big Finish
April 29: In which all will be made clear . . .