“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
nathanen@sas.upenn.edu
STSC 003: Technology & Society

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

Teaching Assistants: Meggie Crnic (meggie.crnic@gmail.com), Kristoffer Whitney (kwhitney@sas.upenn.edu). Office hours TBD.

Course Format:

The course meets for lecture on Tuesdays and Thursdays from 12-1:30pm in Logan 402. 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 series of short response papers (20%), one 7-8 paper based on the Artifact Pack field trip (20%), one mid-term (30%), and a final exam (30%).

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 17: Homo Faber: Man the Maker

II Technology and Civilization
January 22: On Becoming Human
January 24: 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.
McLuhan, Understanding Media, pp. 7-21

III The Wonders of the Ancient World
January 29: Greeks & Romans
January 31: China & India
McNeill, pp. 60-74
Kranzberg and Pursell, pp.47-66
Pacey, Technology in World Civilization, Chaps 1 through 3, pp. 1-57

IV Medieval Machines
February 5: Agriculture & Textiles
February 7: Cathedrals


### V The Roots of Industrialization

February 12: Canals & Infrastructure

February 14: Dark Satanic Mills


### VI Networks

February 19: Information Revolution


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


### VII The Golden Age of Invention

February 26: The Wizard of Menlo Park

February 28: Mid-Term Exam #1


### VIII The American System

March 4: Arms & Palaces

March 6: The Year of Our Ford


### IX Consumer Cultures

March 18: The Department Store

March 20: Advertising the American Dream


X  The One Best Way
March 25: Taylorism and the rise of scientific management
March 27: Technologies of control
Frederick W. Taylor, The Principles of Scientific Management, pp. 5-64.

XI  War
April 1: Mobilizing Industry
April 3: Cold War Science & Technology
Artifact Pack Paper Due
M. A. Dennis. “‘Our first line of defense’: Two university laboratories in the postwar

XII  Technocracy’s Children
April 8: @%#! Hippies!
April 10: The Counter-Culture and the Environment

XIII  The Information Age
April 15: When Computers Were People
April 17: The Electronic Office
America (1996), Chp. 2 “Why Build Computers? The Military Role in Computer
Research,” pp. 43-73.

XIV  The Computer and the Internet
April 22: The Personal Computer Revolution
April 24: Networks & Information
Turkle, Sherry. “Hackers: Loving the Machine for Itself” from The Second Self: Computers
Winner, Langdon.“Mythinformation,” from The Whale and the Reactor: A Search for Limits

XV  The Big Finish
April 29: In which all is made clear . . .

The final exam for this course is currently scheduled for May 7, from noon-2pm.
Please note that the registrar sets the exam schedule, and they are subject to change.