

HTS 2100
Science, Technology, and the Modern World
Spring semester 2018

Instructor:

Dr. Matthew Hild

Office: Old Civil Engineering Building, room G-17

Office hours: Mondays, 1:00-2:00, Wednesdays, 2:00-3:00, or by appointment

Office telephone: (404) 894-8335 (best means of contact outside of office hours is e-mail)

e-mail: matthew.hild@hsoc.gatech.edu

Required book:

Gary Cross and Rick Szostak, *Technology and American Society: A History*, 2nd ed.

(Pearson/Prentice Hall, 2005)

Other reading materials (essays and articles) will be supplied electronically, via links or PDFs.

Course description: This course will utilize lectures, reading assignments, and occasionally films to provide an introduction to how developments in science and technology have reflected and influenced politics and society on a global scale during the nineteenth, twentieth, and twenty-first centuries.

Area E Approved Learning Outcome: Students will demonstrate the ability to describe the social, political, and economic forces that influence social behavior. To demonstrate that they have met this learning outcome, students will be able to describe and analyze the interplay between these forces and science and technology during the time period covered by this course. Achievement of these learning outcomes will be measured through the quizzes and examinations discussed below.

Course Learning Outcome: Students will be able to identify major themes in the history of science and technology in the modern world, and will be able to identify and analyze their social, economic, political, and ethical as well as more narrowly technical components.

This course is identified by the Georgia Tech catalog as one that fulfills the Institute's undergraduate ethics requirement.

(See <https://ethics.gatech.edu/undergraduate-ethics-courses>)

Quizzes, exams, and grading:

There will be five quizzes given in this course, and two exams (a midterm exam and the final exam). The quizzes will be given about once every three weeks and will be designed to test whether you have done that week's reading. They will be given on random Fridays at the beginning of the period. There will be no makeups for exams unless you have a verified written excuse such as a doctor's note or a letter from the Dean of Students, but the lowest quiz score will be dropped, so if you miss one quiz without an excuse than that grade of zero will not be counted (provided that you miss ONLY one quiz without an excuse). The exams will be given on the dates listed in the

syllabus; the first exam will be over all of the material in the course to that point, and the final exam will be over all of the material covered in the course after the first exam.

Each of the four counted quizzes will constitute 10 percent of your course grade. Each exam will constitute 30 percent of the course grade.

Your course grade will be determined according to the following scale, with no exceptions: 89.5 or above=A; 79.5 or above=B; 69.5 or above=C; 59.5 or above=D; below 59.5=F.

Classroom etiquette:

All participants in this class (students and instructor alike) will be expected to refrain from rude or disruptive behavior in class, to keep their cell phones turned off in class, and to stay awake in class. All participants in this class will also be required to abide by the Georgia Tech honor code. (<http://www.honor.gatech.edu/content/2/the-honor-code>)

Learning Accommodations:

Classroom accommodations will be made for students with disabilities. These accommodations must be arranged in advance and in accordance with the ADAPTS office; see <http://www.adapts.gatech.edu>

Schedule of topics, reading assignments, and exam dates:

This schedule presents a plan for the course, but changes may become necessary as the semester progresses. If the instructor makes any changes to this schedule, these changes will be announced in class and on t-square.

On the list below, TAS refers to the textbook, *Technology and American Society: A History*.

Week 1 (January 8-12): Course introduction; What is technology?

Reading assignments: "The Invention of 'Technology'" by Leo Marx; "Do Artifacts Have Politics?" by Langdon Winner; "The Social Shaping of Technology" by Donald MacKenzie; "Problems with 'Skill'" by Nina Lerman

Week 2 (January 17-19): Science, Technology, and Agriculture (part I)

Reading assignments: TAS, chap. 8; "Chemical Fertilizers in Southern Agriculture" by Richard C. Sheridan

Week 3 (January 22-26): Technology and the Rise of Corporations

Reading assignments: TAS, chap. 11; "The Development of Modern Blast Furnace Practice: The Monongahela Valley Furnaces of the Carnegie Steel Company, 1872-1913" by Joel Sabadasz

Week 4 (January 29-February 2): Technology and Warfare, from the Civil War through World War I

Reading assignments: TAS, pages 195-205; "Doctor Gatling's Gun" by Albert E. Roark; "No Super War Gas!" by Alden H. Waitt

Week 5 (February 5-9): Technology and women's work

Reading assignments: TAS, chap. 13; "Less Work for Mother?" (book excerpt) by Ruth Schwartz Cowan

Week 6 (February 12-16): The Rise of the Modern Factory

Reading assignments: TAS, chap. 14; "Frederick Winslow Taylor" by Spencer Klaw; "Mass Production" by Henry Ford (ghostwritten)

Week 7 (February 19-23): The Automobile, Innovation, and American Society, circa 1900-1940

Reading assignments: TAS, chap. 15; "Why Internal Combustion" by Rudi Volti; "Sex and the Automobile in the Jazz Age" by Peter Ling

Week 8 (February 26-March 2)

No reading assignments

Midterm exam, Friday, March 2

Week 9 (March 5-9): Airplanes, Atomic Energy, and Technological Progress(?) in the World War II Era

Reading assignments: TAS, chaps. 18 & 19; "Auschwitz Observed: Report of Two Escaped Eyewitnesses" by Lucy S. Dawidowicz

Week 10 (March 12-16): Modern Medicine and Ethics

Reading assignments: "Alexander Fleming and the Age of Antibiotics" by David Bardell; "1955: The Making of the Polio Vaccine" by Douglas Hand; "More than Fact and Fiction: Cultural Memory and the Tuskegee Syphilis Study" by Susan M. Reverby

Week 11 (March 19-23): SPRING BREAK

Week 12 (March 26-30): Science, Technology, and Agriculture (part II)

Reading assignments: "The Machine That Killed King Cotton" by T.A. Heppenheimer; "Are Pesticides a Problem?" by Leslie Lang; "The Growth of Genetically Modified Foods" by T.A. Heppenheimer

Week 13 (April 2-6): Energy, Industry, and the Environment

Reading assignments: "The American Environment" by John Steele Gordon; "Nuclear Power: What Went Wrong?" by T.A. Heppenheimer; "Climate Change" (book excerpt) by James Dobbins et al.

Week 14 (April 9-13): The Computer Age

Reading assignments: TAS, chap. 20; "Transistor" by Robert Friedel; "The Revolution" (book excerpt) by Joel Shurkin

Week 15 (April 16-20): Considering the Modern Technological World

Reading assignments: TAS, chap. 21; "Industrial Society and its Future" by Theodore Kaczynski

Week 16 (April 23, 27): No reading assignment

Final exam, Friday, April 27, 11:30 A.M.